A G E N D A
JAMES CITY COUNTY PLANNING COMMISSION
REGULAR MEETING
County Government Center Board Room
101 Mounts Bay Road, Williamsburg VA 23185
October 6, 2021
6:00 PM

A. CALL TO ORDER

B. ROLL CALL

C. PUBLIC COMMENT

D. REPORTS OF THE COMMISSION

E. CONSENT AGENDA

1. Minutes of the August 4, 2021 Regular Meeting

F. PUBLIC HEARINGS

1. Z-20-0002. 2280 Lake Powell Road Rezoning
2. Z-19-0006 and SUP-19-0005. Hazelwood Farms - The Enterprise Center
3. SUP-19-0006. Hazelwood Farms - The Village Center

G. PLANNING COMMISSION CONSIDERATIONS

1. James City County Parks Master Plan Update

H. PLANNING DIRECTOR'S REPORT

1. Planning Director's Report - October 2021

I. PLANNING COMMISSION DISCUSSION AND REQUESTS

J. ADJOURNMENT

AGENDA ITEM NO. E.1.

ITEM SUMMARY

DATE: 10/6/2021

TO: The Planning Commission

FROM: Paul D. Holt, III, Secretary

SUBJECT: Minutes of the August 4, 2021 Regular Meeting

ATTACHMENTS:

	Description	Type
🗋	Minutes of the August 4, 2021 Regular Meeting	Cover Memo

REVIEWERS:

Department	Reviewer	Action	Date
Planning Commission	Holt, Paul	Approved	9/3/2021 - 2:39 PM
Planning Commission	Holt, Paul	Approved	9/3/2021 - 2:39 PM
Publication Management	Pobiak, Amanda	Approved	9/3/2021 - 3:07 PM
Planning Commission	Holt, Paul	Approved	9/3/2021 - 3:11 PM

M I N U T E S
JAMES CITY COUNTY PLANNING COMMISSION
REGULAR MEETING
Legacy Hall
4301 New Town Avenue, Williamsburg, VA 23188
August 4, 2021
6:00 PM

A. CALL TO ORDER

Mr. Haldeman called the meeting to order at 6 p.m.

B. ROLL CALL

Planning Commissioners Present:
Jack Haldeman
Rich Krapf
Frank Polster
Julia Leverenz
Barbara Null
Rob Rose

Planning Commissioners Absent:
Tim O'Connor

Staff Present:
Paul Holt, Director of Community Development and Planning
Liz Parman, Assistant County Attorney
Tori Haynes, Senior Planner
Tom Leininger, Senior Planner
John Risinger, Planner

C. PUBLIC COMMENT

Mr. Haldeman opened Public Comment.

As no one wished to speak, Mr. Haldeman closed Public Comment.

D. REPORTS OF THE COMMISSION

Ms. Barbara Null stated that the Development Review Committee (DRC) met on July 21, 2021, to review the James City County Parks Master Plan Update. Ms. Null stated that the three parks reviewed were Upper County Park, the James City County Recreation Center, and the Warhill Sports Complex.

Ms. Null stated that as the oldest of the three parks, proposals for Upper County Park include: replacement of the toddler pool, a one-half mile paved multiuse trail, a gymnasium, an off-leash dog park, an archery range, a maintenance/storage area, and increased parking.

Ms. Null stated that proposals for the James City County Recreation Center include expansion of the skate park, a picnic shelter, an off-leash dog area, restroom/parking for new additions, and a restroom/concession building near the athletic field.

Ms. Null stated that proposals for the Warhill Sports Complex include a synthetic turf field complex with two lighted softball/multiuse fields and two lighted large baseball/softball fields, restrooms/concession stands, stadium complex with one baseball and one softball field, re-design of the connector road from Longhill Road to Opportunity Way, update existing indoor private pool facility, lighted pickle ball/tennis courts, update existing community garden, update existing General Service maintenance facility, and additional parking for the new amenities. Ms. Null further stated that along with the additions, the proposal recommends eliminating the following: one large field from present use to expand parking, seven multipurpose rectangle fields, proposed indoor sports facility, the BMX Park, and the running center.

Ms. Null stated that the DRC was generally supportive of the changes and made some recommendations that will be discussed by staff. Ms. Null stated that the Master Plan Update is slated to be presented to the Planning Commission at its September 1, 2021, meeting.

Mr. Frank Polster stated that the Policy Committee met on July 15, 2021, to review Phase II language regarding the keeping of bees in non-residential areas. Mr. Polster stated that in October 2020, the Policy Committee reviewed and discussed amendments to the Zoning Ordinance regarding keeping of bees in non-residential areas. Mr. Polster further stated that staff had been asked to develop performance standards applicable to non-residential properties, similar to those developed for residential properties.

Mr. Polster stated that staff proposed to use the same standards for ground-mounted hives approved for residential beekeeping and additional standards for roof-mounted hives and recommended beekeeping as a use for properties zoned Residential Planned Community (R-4, Commercial Uses), Limited Business (LB), General Business (B-1), Limited Business/Industrial (M-1), General Industrial (M-2), Planned Unit Development (PUD-R, Commercial Uses), Planned Unit Development (PUD-C), Research and Technology (RT), Mixed Use (MU), and Economic Opportunity (EO) Zoning Districts.

Mr. Polster stated that staff requested clarification on: 1) whether beekeeping should be allowed only as an accessory use; and 2) whether there should be a limit on the size of the colony on a property of one acre or less since the public is more likely to visit commercial properties than residential properties.

After discussion, the Committee provided guidance on additional performance standards for roof-top beehives and the addition of beekeeping to the use list for R-4, LB-1, M-1, M-2, PUD-R, PUD-C, RT, MU, and EO with no limit on the number of beehives.

E. CONSENT AGENDA

1. Minutes of the July 7, 2021 Regular Meeting

2. June 24, 2021 Meeting Minutes

Ms. Null made a motion to approve the Consent Agenda.

On a voice vote, the Commission voted to approve the consent agenda. (6-0)

F. PUBLIC HEARINGS

1. SUP-21-0013. 2631 Lake Powell Road Tourist Home

A motion to Approve was made by Julia Leverenz, the motion result was Passed.
AYES: 6 NAYS: 0 ABSTAIN: 0 ABSENT: 1

Ayes: Haldeman, Krapf, Leverenz, Null, Polster, Rose
Absent: O'Connor

Mr. Tom Leininger, Senior Planner, stated that Mr. Brandon Lapetina has applied for a Special Use Permit (SUP) to allow for an entire three-bedroom home to be used as a tourist home. Mr. Leininger stated that the property is located at 2631 Lake Powell Road. Mr. Leininger further stated that this use is considered a tourist home because the owner will live off-site during the time of rentals. Mr. Leininger stated that the property is zoned R-2, General Residential, is designated Low Density Residential in the Comprehensive Plan, and is located inside the Primary Service Area (PSA).

Mr. Leininger stated that no changes are proposed for the footprint of the home. Mr. Leininger further stated that he owner of the home resides at the adjacent property.

Mr. Leininger stated that staff considered the home's location, parking provisions, and appearance to be favorable factors in the evaluation of this application. Mr. Leininger stated that staff is recommending conditions intended to mitigate the impacts of the use and preserve the residential character of the home, including restrictions on commercial signage and lighting, and any future expansions of the use would require an SUP amendment.

Mr. Leininger stated that staff finds the proposal to be compatible with the 2035 Comprehensive Plan, Zoning Ordinance, and surrounding development, and recommends that the Planning Commission recommend approval of this application subject to the proposed conditions.

Mr. Haldeman called for disclosures from the Commission.

There were no disclosures.

Mr. Haldeman opened the Public Hearing.

As no one wished to speak, Mr. Haldeman closed the Public Hearing.

Ms. Leverenz stated that she wished the moratorium on Tourist homes had remained in place until the 2045 Comprehensive Plan was adopted; however, this application seemed to be consistent with the proposed language.

Ms. Leverenz made a motion to recommend approval of the application.

On a roll call vote, the Commission voted to recommend approval of SUP-21-0013. 2631 Lake Powell Road Tourist Home. (6-0)

2. SUP-21-0015. Crosswalk Community Church Daycare and School

A motion to Approve was made by Rich Krapf, the motion result was Passed.
AYES: 6 NAYS: 0 ABSTAIN: 0 ABSENT: 1
Ayes: Haldeman, Krapf, Leverenz, Null, Polster, Rose
Absent: O'Connor

Mr. John Risinger, Planner, stated that Mr. Caleb Hurst of Draper Aden Associates has applied on behalf of Crosswalk Community Church and Greenwood Christian Academy for an SUP to allow the operation of a child day care center and school, the installation of two temporary classroom trailers for the 2021/2022 school year, the installation of one permanent modular building, and the continued operation of a place of public assembly at 5100 John Tyler Highway. Mr. Risinger stated that the property is zoned R-1, Limited Residential, is

designated Low Density Residential in the adopted 2035 Comprehensive Plan, and is located inside the PSA. Mr. Risinger further stated that surrounding development includes the Williamsburg Crossing Shopping Center, and the Jamestown Farms and Indigo Park subdivisions.

Mr. Risinger stated the property has had two approved SUPs for child day care center and school use. Mr. Risinger stated that in 2002, SUP-0030-2001 was approved to allow a preschool with a maximum capacity of 200 students within the existing church building. Mr. Risinger further stated that in 2008, SUP-0009-2008 was approved to amend SUP-0030-2001 to allow the operation of an elementary school until June 30, 2010, in addition to the preschool.

Mr. Risinger stated that for the current proposal, the applicant anticipates using temporary classroom trailers for the elementary school for the 2021/2022 school year and using the permanent school building for preschool starting in the 2022/2023 school year.

Mr. Risinger stated that staff is recommending conditions that would mitigate the impacts of the use and replace the conditions of SUP-0009-2008. Mr. Risinger stated that with the conditions, the child day care center and school uses on the property would be limited to a total enrollment capacity of 200 students, pre-Kindergarten through eighth grade, with hours of operation from 7 am to 6 pm, Monday through Friday. Mr. Risinger stated that the temporary classroom trailers would be removed from the property prior to September 1, 2022. Mr. Risinger further stated that additional conditions are proposed regarding landscaping, exterior lighting, outdoor noise, and signage. Mr. Risinger stated that the proposed conditions would allow the continued operation of the church as a place of public assembly.

Mr. Risinger stated that staff finds this proposal to be compatible with surrounding development and consistent with the adopted 2035 Comprehensive Plan and Zoning Ordinance. Mr. Risinger stated that staff recommends that the Planning Commission recommend approval of this application to the Board of Supervisors, subject to the proposed conditions.

Ms. Leverenz inquired if there is a provision to ensure that the modular building is of good quality and be serviceable for a number of years.

Mr. Risinger stated that the building must meet all aspects of the Building Code and would be subject to remediation if it fell into a state of disrepair.

Mr. Polster inquired about the buffering for the back area.

Mr. Risinger stated that the buffer would be reviewed during site plan review and would be subject to Planning Director approval. Mr. Risinger stated that this would also include preservation of existing vegetation.

Mr. Polster inquired about the four-foot vinyl screen shown on the Master Plan and the buffering on either side.

Mr. Risinger stated that the vinyl screen is existing and would remain in place. Mr. Risinger further stated that the area on either side were the 15-foot side setbacks for the property and that there is a 35-foot rear setback as well. Mr. Risinger stated that any landscaping would be done in addition to what currently exists.

Mr. Haldeman called for disclosures from the Commission.

There were no disclosures. Mr. Haldeman opened the Public Hearing.

Mr. Mark Thornblom, President of the School Board for Greenwood Christian Academy, addressed the Commission in support of the application.

As no one else wished to speak, Mr. Haldeman closed the Public Hearing.

Mr. Krapf made a motion to recommend approval of the application subject to the attached conditions.

On a roll call vote, the Commission voted to recommend approval of SUP-21-0015. Crosswalk Community Church Daycare and School. (6-0)

3. Z-21-0013. 1826 Jamestown Road and 259 Sandy Bay Road Brewery and Taproom (Frothy Moon Brewhouse)

Nays: Leverenz
Abstain: Rose
Absent: O'Connor

Ms. Tori Haynes, Senior Planner, stated that Mr. Vernon Geddy has applied on behalf of Mr. Conor Halfpenny to rezone approximately 3.4 acres of land located at 1826 Jamestown Road and 259 Sandy Bay Road from B-1, General Business, and LB, Limited Business, to B-1 with Proffers. Ms. Haynes stated that the site is located inside the PSA and is designated Neighborhood Commercial in both the current 2035 and draft 2045 Comprehensive Plans. Ms. Haynes stated that the proposed use is a small-scale brewery with a taproom and coffee shop, which will be known as Frothy Moon Brewhouse.

Ms. Haynes stated that the boundary line between the two parcels will be extinguished to create one cohesive site. Ms. Haynes stated that about half of the existing 5,000-square-foot building will contain the brewing and production facilities. Ms. Haynes further stated that the other half will house a taproom, coffee shop, and retail space, along with offices and storage. Ms. Haynes noted that meal options will be provided by a third-party food truck on-site. Ms. Haynes stated that the outdoor area includes an existing patio and open-air roofed structure, which will be used as a patron space with seating and outdoor game areas.

Ms. Haynes stated that the proposal includes improvements to the 50-foot Community Character Corridor buffer along Jamestown Road and consolidation of the existing entrances to better manage traffic flow. Ms. Haynes stated that a shared parking agreement with the adjacent property is proposed as an overflow parking option. Ms. Haynes further stated that the applicant has proffered to restrict access from Sandy Bay Road, to provide additional turn lane warrants should there ever be a future expansion, to complete water conservation standards with James City Service Authority (JCSA), and to limit by-right B-1 uses to be more in keeping with LB.

Ms. Haynes stated that staff finds the proposed rezoning will not negatively impact surrounding development, and the proposed proffers mitigate impacts generated by the proposal. Ms. Haynes stated that the redevelopment of the parcel for a brewery and taproom is consistent with both the adopted 2035 and draft 2045 Comprehensive Plans' recommended uses and Goals, Strategies, and Actions (GSAs).

Ms. Haynes stated that staff recommends that the Planning Commission recommend approval of the application and acceptance of the voluntary proffers to the Board of Supervisors.

Mr. Krapf requested that Ms. Haynes elaborate on how the existing tree buffer and distance

from any residence might mitigate noise from outdoor entertainment.

Ms. Haynes stated that staff considered several items for sound mitigation during the review. Ms. Haynes stated that the transitional buffer at the rear of the property must be at least 35 feet under the Zoning Ordinance and would be at least 60 feet as indicated in the application. Ms. Haynes further stated that staff considered the four homes in proximity to the subject parcel. Ms. Haynes stated that the closest residence is approximately 25 feet from the outdoor entertainment area, and the farthest is approximately 1,400 feet away. Ms. Haynes stated that the James City County Noise Ordinance requires that any sound audible at 100 feet be discontinued at 9 p.m. Ms. Haynes stated that staff found that those factors should mitigate any noise generated.

Ms. Leverenz inquired about the proposed hours of operation.

Ms. Haynes stated that she would defer to the applicant for that question.

Mr. Haldeman called for disclosures from the Commission.

Mr. Krapf stated that he spoke with the applicant's attorney.

Ms. Leverenz stated that she spoke with Mr. Geddy as well.

Mr. Polster stated that he spoke with Mr. Geddy prior to the meeting.

Mr. Haldeman stated that he also spoke with Mr. Geddy.

There were no further disclosures.

Mr. Haldeman opened the Public Hearing.

Mr. Vernon Geddy, III, Geddy Harris Franck & Hickman, 1177 Jamestown Road, made a presentation to the Commission in support of the application. Mr. Geddy stated that he is aware of the noise concerns and has spoken with the adjacent property owners. Mr. Geddy stated that the applicant is willing to mitigate noise impacts and be a good partner in the community.

Ms. Leverenz stated she was concerned about the noise impacts mentioned by adjacent property owners, not just from music but also from food trucks. Ms. Leverenz noted that some of the adjacent property owners had suggested having restrictions on food trucks on the property. Ms. Leverenz inquired if the applicant would consider putting something in writing about directing amplified and live music towards Jamestown Road.

Mr. Geddy stated that the applicant would be willing to stipulate to directing the music toward Jamestown Road. Mr. Geddy further stated that restriction on food trucks would prove problematic to the applicant. Mr. Geddy stated that the County's Food Truck Ordinance was designed for food trucks to go into residential areas. Mr. Geddy further stated that the ability to use food trucks to provide meal service is integral to the business. Mr. Haldeman inquired if it is part of the business plan to have live music during the day. Mr. Geddy stated that there might be outdoor music on weekends in the afternoon. Mr. Geddy further stated that there would be background music for ambiance in the taproom and the gazebo; however, the volume would be minimal.

Mr. Rose inquired about preventing overflow parking at the small park across Jamestown Road.

Mr. Holt stated that the applicant has worked out an agreement with the adjacent business for a shared parking plan.

Mr. Haldeman stated that he would like to find a way to reduce noise impacts for this proposed use and future uses on the property. Mr. Haldeman inquired if the applicant would be willing to provide written assurance that there would not be live music on the property prior to 6 p.m. on weekdays.

Mr. Geddy stated that he could not make that commitment on the spot and would need to discuss the matter with the applicant.

Mr. Polster inquired if there was a difference between what Ms. Leverenz proposed and what Mr. Haldeman proposed.

Ms. Leverenz stated that she was referring to the direction of the sound.

Mr. Haldeman stated that his suggestion included the direction of the sound, the volume, and the time of day.

Mr. Polster inquired if the applicant was agreeing to proffer the volume and direction of the sound.

Mr. Geddy stated that the applicant was willing to proffer the direction of the sound. Mr. Geddy further stated that he was not sure how the volume could be addressed.

Mr. Polster inquired about the business plan for the area with the gazebo and food trucks.

Mr. Geddy stated that the majority of the time, it will be soft background music similar to a coffee shop. Mr. Geddy further stated that there may be times during the week and certainly times over the weekend when there would be live music. Mr. Geddy stated that this is not a concert venue for large bands, but certainly for smaller musical groups.

Mr. Polster inquired if the plan was to have live music indoors and outdoors. Mr. Geddy stated that the outdoor music would be weather dependent.

Mr. Ken Goldsmith, 258 Sandy Bay Road, addressed the Commission in opposition to the application.

Mr. Steve Sieling, 4108 Longview Landing, addressed the Commission in support of the application.

Celia Cackowski, 206 London Company Way, addressed the Commission in support of the application.

As no one else wished to speak, Mr. Haldeman closed the Public Hearing.

Mr. Krapf inquired if the Noise Ordinance addressed decibel levels.

Ms. Haynes stated that the Ordinance does not specify decibel levels, but does use the language "plainly audible" which is defined as any sound that can be detected by a person using his or her unaided hearing faculties. Specific words or phrases need not be discernable. The detection of bass reverberations is sufficient to constitute a plainly audible sound."

Mr. Krapf noted that this applied to noise after 9 p.m. Mr. Krapf inquired about regulations on noise between 7 a.m. and 9 p.m.

Ms. Haynes stated that there are several categories for addressing noise before 9 p.m. Ms. Haynes further stated that there is nothing in the Ordinance that addresses noise prior to 9 p.m. for this use in this location.

Ms. Null inquired if there would be any restrictions related to events held on the property.

Ms. Haynes stated that events that met the parameters to require a Special Event Permit would be governed by those restrictions. Ms. Haynes further stated that there generally are no proffers regarding events.

Mr. Haldeman stated that he believes this is an excellent proposal for the location and has many benefits for the community. Mr. Haldeman further stated that he would like to see the applicant include proffer language regarding noise that encompasses daytime hours.

Ms. Leverenz stated that she also has concerns over daytime noise and the impacts on those using the Powhatan Creek Park. Ms. Leverenz stated that future use of the property is also a concern. Ms. Leverenz further stated that even voices can carry across a distance.

Mr. Krapf stated that the proposed project is supportive of the Comprehensive Plan and is an excellent re-use of the property. Mr. Krapf further stated that he appreciates the applicant being willing to make assurances about the direction of the noise. Mr. Krapf stated that he is concerned that the Commission is overreaching in trying to restrict daytime noise. Mr. Krapf noted that it would be difficult to develop restrictions that were fair and equitable. Mr. Krapf stated that he finds established safeguards to be satisfactory.

Mr. Polster stated that he also supports the application. Mr. Polster stated that the proposal supports the Comprehensive Plan in a number of ways, not the least of which is supporting eco-tourism by providing additional food and drink resources for people using the blueway and the Capital Trail.

Ms. Null stated that she supports the application and is looking forward to the revitalization of the area.

Mr. Rose stated that he wanted to disclose that a conflict of interest has been identified and that he would abstain from voting.

Mr. Haldeman inquired if Mr. Rose wished to elaborate on the conflict.
Mr. Rose stated that his conflict comes from negative interaction with the owner of Aromas, which is partnering with Frothy Moon to provide coffee. Mr. Rose stated that he was concerned that the owner of Aromas would not honor the intent to be good neighbors in the community.

Mr. Polster made a motion to recommend approval of the application with the understanding that the applicant will work with staff to include a proffer related to the direction of noise away from Sandy Bay Road.

On a roll call vote, the Commission voted to recommend approval of Z-21-0013. 1826 Jamestown Road and 259 Sandy Bay Road Brewery and Taproom (Frothy Moon Brewhouse). (4-1-1)

G. PLANNING COMMISSION CONSIDERATIONS

There were no items for Planning Commission consideration.

H. PLANNING DIRECTOR'S REPORT

1. Planning Director's Report - August 2021

Mr. Holt stated that he had nothing to add to what was provided in the agenda packet.

Mr. Polster inquired if a date had been set for the review of the Comprehensive Plan Process.

Mr. Holt stated that it was on the list of items to do but a date had not been set. Mr. Holt stated that staff should be able to propose some options soon.

I. PLANNING COMMISSION DISCUSSION AND REQUESTS

Mr. Haldeman stated that the Board of Supervisors does not meet in August so there was no one scheduled for Board coverage.

J. ADJOURNMENT

Mr. Krapf made a motion to adjourn.

The meeting was adjourned at approximately 7:01 p.m.

_____ _____

Paul D. Holt, III, Secretary Jack Haldeman, Chair

AGENDA ITEM NO. F.1.

ITEM SUMMARY

DATE: 10/6/2021

TO: The Planning Commission

FROM: Tori Haynes, Senior Planner

SUBJECT: Z-20-0002. 2280 Lake Powell Road Rezoning

ATTACHMENTS:

	Description	Type
🗋	Staff Report	Staff Report
🗋	1. Location Map	Backup Material
🗋	2. Master Plan	Backup Material
🗋	3. Community Impact Statement	Backup Material

REVIEWERS:

Department	Reviewer	Action	Date
Planning Commission	Holt, Paul	Approved	9/29/2021 - 1:27 PM
Planning Commission	Holt, Paul	Approved	9/29/2021 - 1:27 PM
Publication Management	Pobiak, Amanda	Approved	9/29/2021 - 2:11 PM
Planning Commission	Holt, Paul	Approved	9/29/2021 - 2:29 PM

SUMMARY FACTS

Applicant:	Mr. Benming Zhang, Kaufman & Canoles, P.C., on behalf of Mr. Paul Smith, Jr.
Land Owner:	Ms. Iris L. Smith
Proposal:	Rezoning of approximately 1.985 acres from R-8, Rural Residential to R-2, General Residential for the purpose of a one-lot, single-family residential minor subdivision.
Location:	2280 Lake Powell Road
Tax Map/Parcel No.:	4830100038
Current Zoning:	R-8, Rural Residential
Proposed Zoning:	R-2, General Residential
Project Acreage:	±1.985 acres
Comprehensive Plan:	Low Density Residential
Primary Service Area: (PSA)	Inside, but must utilize private well/septic systems.
Staff Contact:	Tori Haynes, Senior Planner

PUBLIC HEARING DATES

Planning Commission:	October 6, 2021, 6:00 p.m.
Board of Supervisors:	January 11, 2022, 5:00 p.m. (tentative)

FACTORS FAVORABLE

1. The maximum subdivision potential would be one residential parcel, and the maximum by-right unit potential would be one single-family unit.

2. Staff finds that the impact of one single-family unit would not adversely impact surrounding development.

3. Staff finds that the proposal passes the Adequate Public Schools Facilities Test.

4. Impacts: See Impact Analysis on Pages 3-4.

FACTORS UNFAVORABLE

1. Impacts: See Impact Analysis on Pages 3-4.

SUMMARY STAFF RECOMMENDATION

Staff recommends that the Planning Commission recommend approval of the application to the Board of Supervisors.

PROJECT DESCRIPTION

Mr. Benming Zhang of Kaufman & Canoles, P.C. has applied on behalf of Mr. Paul Smith, Jr. to rezone approximately 1.985 acres of land located at 2280 Lake Powell Road from R-8, Rural Residential to R-2, General Residential for the purpose of subdividing one single-family residential lot. The owner's intent is to gift the new lot to her daughter. The minimum lot size in the R-8 Zoning District is three acres, even for family subdivisions. The property is located inside the PSA, but the James City Service Authority (JCSA) has confirmed that this location cannot be served by public water/sewer utilities at this time. For a new dwelling unit, the owner would need to install private well and septic systems.

Under the current R-8 zoning, the existing acreage is considered legally nonconforming since it is less than the required minimum lot size of three acres; therefore, the proposed subdivision would not be permitted in R-8.

Should the parcel be rezoned to R-2, the minimum lot size would be 30,000 square feet for parcels served by private well and septic systems. Staff reviewed a preliminary plat (same as the Master Plan; see Attachment No. 2) to confirm that the subdivision would be possible in the R-2 District, and found that the proposal can meet Ordinance requirements. The Virginia Department of Health (VDH) has also confirmed that the on-site soils can support well and septic systems.

The gross density is approximately one unit per acre. The density as defined by the R-2 District Ordinance is 1.6 units per acre. Should the parcel be rezoned, the maximum subdivision potential would be one residential lot due to existing site constraints and lot size, and the maximum by-right unit potential would be one single-family unit. Duplexes and multifamily units with a density of more than one unit per acre would require a Special Use Permit (SUP) and could not be permitted administratively.

The proposed subdivision would be considered a minor subdivision. Staff notes that major subdivisions in the R-2 District require an SUP for a density above one unit per acre, but minor subdivisions are not subject to this requirement.

PLANNING AND ZONING HISTORY

There have been no known Planning or Zoning actions on the property.

SURROUNDING ZONING AND DEVELOPMENT

The adjacent parcel to the east is split-zoned R-2 (north of Lake Powell Road) and R-8 (south of Lake Powell Road), and designated Rural Lands in both the 2035 and 2045 Comprehensive Plans. This parcel is historically associated with Gospel Spreading Church Farm. Other adjacent parcels south of Lake Powell Road are zoned R-8 and designated Low Density Residential in the 2035 and 2045 Comprehensive Plans. Adjacent parcels north of Lake Powell Road are zoned R-2 and designated Low Density Residential in the 2035 and 2045 Comprehensive Plans.

IMPACT ANALYSIS

See next page.

IMPACT ANALYSIS

Impacts/Potentially Unfavorable Conditions	Status *(No Mitigation Required/Mitigated/Not Fully Mitigated)*	Considerations/Proposed Mitigation of Potentially Unfavorable Conditions
Public Transportation: Vehicular	No Mitigation Required	- The proposal is anticipated to generate one peak-hour trip, or up to 10 weekday trips. - This segment of Lake Powell Road is classified as a local road, and there is no through-access from Brookwood Drive to Jamestown Road.
Public Transportation: Pedestrian/Bicycle	No Mitigation Required	- The proposal does not generate impacts that require mitigation for pedestrian/bicycle accommodations.
Public Safety	No Mitigation Required	- The proposal does not generate impacts that require mitigation for emergency services or facilities.
Public Schools	No Mitigation Required	- The proposal is anticipated to generate one additional student. - See additional discussion on Page 5.
Public Parks and Recreation	No Mitigation Required	- The proposal does not generate impacts that require mitigation for parks and recreation services or facilities.
Public Libraries and Cultural Centers	No Mitigation Required	- The proposal does not generate impacts that require mitigation for public libraries or cultural centers.
Groundwater and Drinking Water Resources	No Mitigation Required	- The proposal does not generate impacts that require mitigation for groundwater and drinking water resources. - VDH has confirmed that the on-site soils can adequately accommodate private well and septic systems.
Watersheds, Streams, and Reservoirs Proposal is located in the Mill Creek Watershed	No Mitigation Required	- The proposal does not generate impacts that require mitigation to watersheds, streams, and reservoirs. - Erosion & sediment control measures and/or stormwater mitigation would be reviewed as part of the building permit for single-family dwellings.
Cultural/Historic Resources	No Mitigation Required	- The proposal does not generate impacts that require mitigation for cultural or historic resources.
Nearby and Surrounding Properties	No Mitigation Required	- The proposal does not generate impacts that are anticipated to negatively affect adjacent properties.

Impacts/Potentially Unfavorable Conditions	**Status** *(No Mitigation Required/Mitigated/Not Fully Mitigated)*	**Considerations/Proposed Mitigation of Potentially Unfavorable Conditions**
Community Character	No Mitigation Required	- The proposal does not generate impacts that require mitigation for community character.
Covenants and Restrictions	No Mitigation Required	- The applicant has verified that they are not aware of any covenants or restrictions on the property that prohibit the proposed use.

FINANCIAL IMPACTS OF RESIDENTIAL UNITS

On September 10, 2019, the Board of Supervisors adopted a resolution directing staff to produce a fact sheet that outlines general financial impacts of residential dwellings based on the Adopted Budget, the Capital Improvements Program, the Comprehensive Plan, the Strategic Plan, and any other relevant data. The resolution further directs that the fact sheet should address the immediate and long-range fiscal impacts related to increased use and demand on the following public facilities and resources. The per unit Residential Impacts are based on the Fiscal Year 2022 data provided by the Department of Financial and Management Services and JCSA, as well as the projected number of annual residential unit data through 2034 (the Comprehensive Plan horizon year). The per unit impacts are detailed in the following table:

Category	Residential Impact	Proffered with Current Application
Public Transportation	$299.04	$0
Public Safety	-	$0
Public Schools	$1,417.63	$0
Public Parks & Recreation	$4,156.19	$0
Public Libraries and Cultural Centers	$170.88	$0
Groundwater and Drinking Water Resources	$3,542.69	$0
Watersheds, Streams, and Reservoirs	$1,954.03	$0

A Fiscal Impact Analysis (FIA) is typically required for re-zonings that include a residential component; however, staff determined that the impacts generated by this proposal would be more comparable to a by-right minor subdivision and would not necessitate a full FIA.

SCHOOLS

The proposal is anticipated to generate one additional student. As currently districted, the subject parcel is zoned for Laurel Lane Elementary School, Berkeley Middle School, and Lafayette High School. As illustrated in the following table, an increase of one student would not cause enrollment levels to exceed effective capacity.

School	Effective Capacity	2020-21 Enrollment	Students Generated by Proposal	Enrollment + Students Generated
Laurel Lane Elementary School	574	506	1	507
Berkeley Middle School	779	599	0	599
Lafayette High School	1,314	1,123	0	1,123

Source: FutureThink Enrollment Projections Report (October 2020) and Williamsburg-James City County Schools

COMPREHENSIVE PLAN

The property is designated Low Density Residential in both the 2035 and draft 2045 Comprehensive Plans. In both versions, recommended uses for Low Density Residential include single-family and multifamily units, cluster housing, and recreation areas. Recommended gross density is one unit per acre, up to four units per acre if particular public benefits are provided.

Staff finds that the scope of the proposed rezoning and subdivision is consistent with the intent of the Comprehensive Plans regarding Low Density Residential development.

STAFF RECOMMENDATION

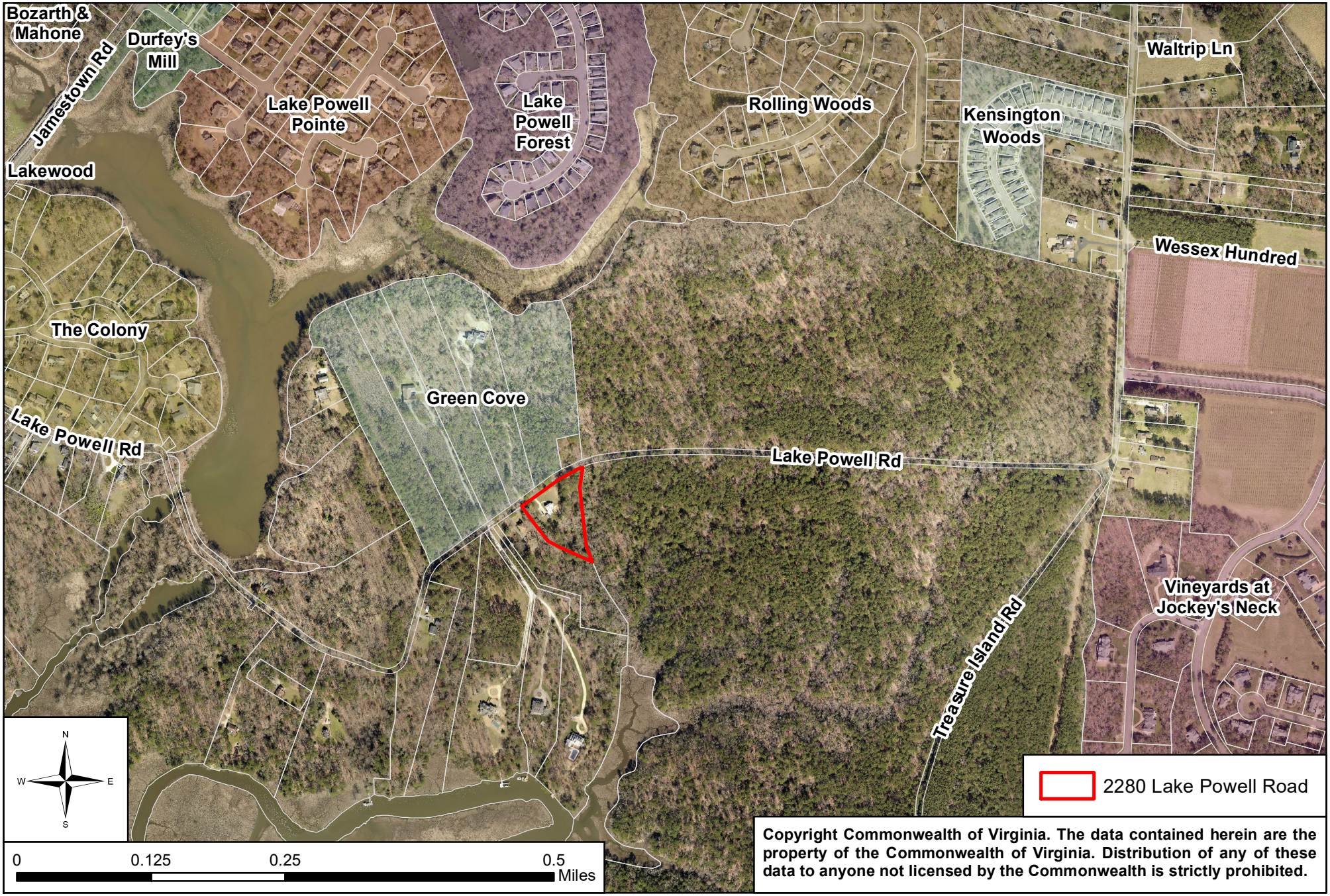
Staff finds that the proposed rezoning is consistent with the 2035 and draft 2045 Comprehensive Plans. Staff also finds that the impact of one single-family unit would not adversely impact surrounding development and would be consistent with by-right minor subdivisions currently permitted in the R-2 District.

Staff recommends that the Planning Commission recommend approval of the application to the Board of Supervisors.

TH/ap
RZ20-02-2280LkPwllRd

Attachments:
1. Location Map
2. Master Plan (Preliminary Subdivision Plat)
3. Community Impact Statement

JCC Z-20-0002
2280 Lake Powell Road Rezoning



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SUBDIVISION OF PARCEL ONE LOUISE G. WALTRIP SUBDIVISION

(PIN: 4830100038)

JAMES CITY COUNTY ROBERTS DISTRICT VIRGINIA

DATE: 05/20/2020 SCALE: 1"=30'' JOB # 19-003

LandTech Resources, Inc.
Engineering & Surveying Consultants
205 Bulifants Blvd., Suite E, Williamsburg, Virginia 23188
Phone: (757) 565-1677 Fax: (757) 565-0782
web: landtechresources.com

RECORD MERIDIAN
P.B. 23, PG. 5

LEGEND
UTILITY POLE
OH OVERHEAD UTILITY
BSL=BUILDING SETBACK LINE
RPA=RESOURCE PROTECTION AREA
IRF = IRON ROD FOUND
IRS = IRON ROD TO BE SET

NOTE: RECORD PLAT DOES NOT MATHEMATICALLY CLOSE. PROPERTY LINES SHOWN HERON ARE BASED ON RECORD PLATS AND PROPERTY CORNER MARKERS FOUND.

30 0 30 60 90
Scale: 1" = 30'

N/F
THE JAMES CITY COUNTY BIBLE
& AGRICULTURE TRAINING SCHOOL
D.B. 673, PG. 438
ZONED: R8
PIN #4830100035

N/F
BITTENGER, GAIL M.
& CLARK, FRANK R.
INST. #030026031
ZONED: R8
PIN #4830100039

S 13°54'00" E 78.85'
N 57°32'01" W 246.18'
S 01°45'00" W 139.25'
S 01°45'00" W 134.91'
S 06°26'00" E 46.93'
S 03°40'00" W 121.70'
S 14°22'00" W 92.80'
S 14°22'00" W 80.46'
S 00°53'12" E 15.94'
N 68°52'00" E 84.85'
N 68°52'00" E 98.85'
N 62°50'00" E 111.64'
N 62°50'00" E 268.17'
N 62°50'00" E 154.01'
N 26°54'06" W 335.64'
N 29°21'47" W 203.92'
N 29°21'47" W 228.94'
150.03'
25.00'
118.39'
4.34'
12.34'
59.2'
26.3'
25.02'

IRS IPF IRF

100' RPA BUFFER
100' RPA BUFFER
EDGE OF WETLANDS AS DELINEATED BY ROTH ENVIRONMENTAL
NEW PROPERTY LINE
APPROXIMATE LOCATION OF EXISTING DRAINFIELD

PARCEL ONE-A
30,311 S.F.
0.696 AC.

PARCEL ONE
OLD AREA
86,481 S.F.
1.985 AC.
NEW AREA
47,178 S.F.
1.083 AC.

PROPOSED WELL LOCATION
EXISTING RESIDENCE
EXISTING WELL LOCATION
PROPOSED RESERVE DRAINFIELD
PROPOSED PRIMARY DRAINFIELD
PROPOSED RESIDENCE 40'
10' BSL
25'
50' BSL FROM ℄
25' DEDICATED FOR PUBLIC USE
OH

0.5± MILES TO TREASURE ISLAND RD.

LAKE POWELL ROAD
(30' PRESCRIPTIVE R/W)

EXISTING EDGE OF PAVEMENT

REZONING APPLICATION NO.

2280 LAKE POWELL ROAD

COMMUNITY IMPACT STATEMENT

The subject of this Community Impact Statement is a proposed rezoning of 2280 Lake Powell Road, consisting of approximately 1.985 acres, and located in James City County Virginia (GPIN 4830100038 the "Subject Property") from R-8 to R-2 to permit a minor subdivision of two (2) single-family lots. The Subject Property is currently improved by a single family detached home. It is surrounded by single family detached residential properties to the north (zoned R-2) and west (zoned either R-2 or R-1), and by residential (R-8), agricultural, and wetlands to the east and south.

The Subject Property was first created by the recordation of a subdivision plat titled "Jamestown Dist. James City County, Virginia, Plat Showing Boundary Survey and Partition of Land Standing in the Name of Mrs. Louise G. Waltrip." made by Vincent D. McManus, dated July 28, 1965, and of record in Plat Book 23 at page 5 ("Original Subdivision Plat"). The Original Subdivision Plat was recorded four years prior to the adoption of the first zoning ordinance in James City County. At the time, in 1969, the Subject Property was zoned A-2, Limited Agricultural. The old A-2 district allowed single family homes with lot sizes as small as 20,000 sf (0.46 acres). The Subject Property was downzoned twice since its creation. The first was in 1990 when the A-2 district was replaced with the R-8 zoning district. The initial iteration of the R-8 zoning district allowed, among other things, minor subdivisions to have minimum lot sizes of 40,000 sf (0.92 acres) for lots which were not served by public water and sewer (as applicable with the Subject Property). In 1999, the R-8 zoning district was amended again to delete all of the minor subdivision exceptions, therefore downzoning the Subject Property to a minimum 3 acre lot size and creating the currently existing legal nonconformance.

The owner of the Subject Property wishes to subdivide his lot and gift the new lot to his daughter.

Pursuant to Section 24-254(a) and (b) of the James City County Zoning Ordinance, minor subdivisions with a density in excess of one (1) dwelling unit per acre are permitted in the R-2 District provided that the area requirements set forth in Section 24-255 are met. In partial fulfillment of the rezoning submission requirements, this Community Impact Statement addresses the items listed in Sec. 24-23(a)(1) of the James City County Zoning Ordinance.

Infrastructure Information

Traffic — A traffic impact study is required for all projects that are expected to generate 100 or more weekday peak hour trips to and from the site during the peak hour of the operation, based on the application of the Institute of Transportation Engineers (ITE) traffic generation rates. Two (2) single-family detached residential lots (one additional lot in excess of the one existing residence on the Subject Property) will not create sufficient trips during the peak hour to warrant a traffic impact study. Indeed, the trips that would be expected to be generated by this project would be roughly equivalent to the expected daily variation in trips across this segment of Lake Powell Road in the absence of any increase in dwelling units, and are therefore deemed to be insignificant.

Additionally, the requirement for a traffic impact study has been waived by County Staff for this project.

Water and Sewer — This project will use well and septic. The Health Department is evaluating the proposed drainfield location and will provide its results prior to the Planning Commission Public Hearing. Because there is only one new residential structure being proposed, and it will be served by well and septic, a water and sewer impact study should not be required to support the rezoning application for 2280 Lake Powell Road.

Adequate Public Facilities — Pertinent public facilities for this project include schools, police and emergency services. Issues related to water and sewer adequacy have been addressed above. The fiscal impact of the subject rezoning is addressed below; however, the requirement to determine adequate public facilities has been waived by County Staff for this project.

Schools

The Williamsburg — James City School division assumes 0.6 children per dwelling unit (CPDU) are generated by the average new home. With one (1) new residential structure proposed in the current rezoning proposal, one would expect 0.6 new school age children to attend public schools. Given the very small nature of this rezoning request, it is assumed that existing schools are adequate to accommodate any additional school age children to be generated by this proposal.

Police, Fire and Rescue Services

The James City County Police and Fire Departments should experience no significant additional burden with the creation of a single new residence.

Given the foregoing, public facilities serving the proposed rezoning of 2280 Lake Powell Road are adequate to meet all reasonably anticipated needs.

Quality of Life Information

1. Historic and Archaeological Resources — A single residential dwelling involves minimal soil disturbance. This area has been widely developed with standard lots as well as planned community cluster style developments. A Phase 1 Archeological Study is not justified.

2. Environmental Inventory — As above, a single residential unit, particularly one that is being created from an existing lot, will involve little soil disturbance. An environmental inventory is not justified for this project.

3. Fiscal Impact Analysis — It is expected that the new home to be built on the Subject Property will be granted to an immediate family member. Given the very small nature of this rezoning request, it is assumed that this project will not pose a measurable fiscal impact for local government services. Additionally, the requirement for a fiscal impact analysis has been waived by County Staff for this project.

AGENDA ITEM NO. F.2.

ITEM SUMMARY

DATE: 10/6/2021

TO: The Planning Commission

FROM: Thomas Wysong, Senior Planner II

SUBJECT: Z-19-0006 and SUP-19-0005. Hazelwood Farms - The Enterprise Center

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ATTACHMENTS:

	Description	Type
	Staff Report	Staff Report
	1. Proposed Conditions	Backup Material
	2. Proffers	Backup Material
	3. Location Map	Exhibit
	4. Master Plan	Exhibit
	5. Proposed Transportation Map	Exhibit
	6. Design Guidlines	Backup Material
	7. CIS	Backup Material
	8. Traffic Impact Analysis	Backup Material
	9. DRW Transportation Memos	Backup Material
	10. Fiscal Impact Analysis	Backup Material
	11. School Enrollment	Backup Material
	12. Economic Opportunity Construction Phasing Guidelines	Backup Material
	13. Water and Sewer Graphic	Backup Material
	14. Public Input	Backup Material

REVIEWERS:

Department	Reviewer	Action	Date
Planning Commission	Holt, Paul	Approved	9/29/2021 - 2:46 PM
Planning Commission	Holt, Paul	Approved	9/29/2021 - 2:47 PM
Publication Management	Daniel, Martha	Approved	9/29/2021 - 3:10 PM
Planning Commission	Holt, Paul	Approved	9/29/2021 - 3:22 PM

SUMMARY FACTS

Applicant:	Mr. Tim Trant, Kaufman and Canoles
Land Owners:	Hazelwood Farms LLC and Hazelwood R M III Trustee & Larry L Trustee & Drudge, Deborah H Trustee
Proposal:	Rezoning of approximately 328 acres from A-1, General Agricultural and B-1, General Business to EO, Economic Opportunity with Proffers to allow for up to 2,920,000 square feet of warehouse/industrial/office use, up to 75,000 square feet of commercial use, and up to 250 residential dwelling units. Accompanying this rezoning is a request for a Special Use Permit (SUP) to allow for the following: • apartments; • multiple-family dwellings; • fast food restaurants; • truck terminals; • the manufacture and processing of textiles and textile products in structures more than 10,000 square feet; • heavy equipment sales and service with major repair under cover or screened with landscaping and fencing from adjacent property; • machinery sales and service with major repair under cover; • a convenience store pursuant to Section 24-11(a)(1); • any commercial building or group of buildings that exceeds 10,000 square feet of floor area pursuant to Section 24-11(a)(2) of the County Code; • any commercial building or group of buildings, not including office uses, which generates, or would be expected to generate, a total of 100 or more additional trips to and from the site during the peak hour of the operation pursuant to Section 24-11(a)(3) of the County Code; and buildings, additions, and expansions requiring an SUP pursuant to Section 24-11(b) of the County Code; and • extension of public water and sewer facilities.
Locations:	301 Old Stage Road 9211 Old Stage Road 275 Old Stage Road 9400 Barnes Road (portion south of I-64)
Tax Map/Parcel Nos.:	0440100015 0440100014 0440100013 0430100017
Current Zoning:	B-1, General Business A-1, General Agricultural
Proposed Zoning:	EO, Economic Opportunity with Proffers

Project Acreage:	The four parcels together total ± 328 acres
Comprehensive Plan:	Economic Opportunity
Primary Service Area: (PSA)	Inside
Staff Contact:	Thomas Wysong, Senior Planner II

PUBLIC HEARING DATES

Planning Commission:	October 6, 2021, 6:00 p.m.
Board of Supervisors:	TBD

FACTORS FAVORABLE

1. Staff finds the proposed primary uses for this rezoning, and those requested by the SUP, align with the recommended primary uses for the Economic Opportunity (EO) designation in the Barhamsville Interchange Area in both the adopted 2035 Comprehensive Plan and draft 2045 Comprehensive Plan, which include industrial, light industrial, office, medical/research, and/or tourist attraction uses.

2. Staff finds the proposal to be consistent with both the adopted 2035 Comprehensive Plan and draft 2045 Comprehensive Plan.

3. Pursuant to the Fiscal Impact Analysis submitted for this application, the proposal is expected to have a positive fiscal impact.

4. The applicant has proffered multiple transportation commitments that are intended to mitigate the proposed impacts of the development, improve the adjacent transportation network, and establish bicycle and pedestrian connections within the development and adjacent to nearby parcels.

5. The applicant has proffered that all residential units will be constructed to the EarthCraft/Viridiant Gold standard, or equivalent.

6. The applicant has proffered that at least one million square feet of non-residential be completed before any residential dwelling units are constructed.

7. The applicant has proffered to restrict access from Barnes Road, except for in the case of emergencies.

8. The applicant has proffered an overall master water and sanitary sewer plan in order to ensure the infrastructure is appropriately sized for total build-out and not handled on a section by section basis.

9. The applicant has proffered to complete water conservation standards to be approved by the James City Service Authority (JCSA).

10. Proffered recreational amenities are consistent with the James City County Parks and Recreation Master Plan.

11. The applicant has proffered design guidelines that exceed the requirements of the EO Zoning District.

12. With the voluntary proffers and the proposed SUP conditions, staff finds that the proposal will not negatively impact surrounding development.

13. This proposal passes the Adequate Transportation Facilities Test.

14. Impacts: See Impact Analysis on Pages 12-16.

FACTORS UNFAVORABLE

1. Impacts: See Impact Analysis on Pages 12-17.

2. See Affordable/Workforce Analysis on Page 5.

3. The proposal does not pass the Adequate Public Schools Facilities Test.

4. The proposal is not guaranteed to fully align with the Economic Opportunity Construction Phasing Guidelines

5. The proposal does not fully align with the *Regional Bikeways* plan.

SUMMARY STAFF RECOMMENDATION

Staff recommends that the Planning Commission recommend approval of the proposed rezoning and SUP application, subject to the proposed proffers and conditions.

PROJECT DESCRIPTION

Rezoning

Mr. Tim Trant has applied on behalf of Hazelwood Farms LLC and Hazelwood R M III Trustee & Larry L Trustee & Drudge, Deborah H Trustee to rezone approximately 328 acres of land located at 301 Old Stage Road, 9211 Old Stage Road, 275 Old Stage Road, and 9400 Barnes Road from A-1, General Agricultural and B-1, General Business to Economic Opportunity with proffers to allow for up to 2,920,000 square feet of warehouse/industrial/office use, up to 75,000 square feet of commercial use, and up to 250 residential dwelling units.

Special Use Permit

Accompanying this rezoning is a request for an SUP to allow for certain uses which are listed in the EO District as specially permitted uses:

- Apartments;
- Multiple-family dwellings;
- Fast food restaurants;
- Truck terminals;
- The manufacture and processing of textiles and textile products in structures more than 10,000 square feet;
- Heavy equipment sales and service with major repair under cover or screened with landscaping and fencing from adjacent property;
- Machinery sales and service with major repair under cover; and
- Extension of public water and sewer facilities.

In addition, the SUP request is to allow certain commercial uses or buildings as specified in Section 24-11:

- A convenience store pursuant to Section 24-11(a)(1);
- Any commercial building or group of buildings that exceeds 10,000 square feet of floor area pursuant to Section 24-11(a)(2) of the County Code;
- Any commercial building or group of buildings, not including office uses, which generates, or would be expected to generate, a total of 100 or more additional trips to and from the site during the peak hour of the operation pursuant to Section 24-11(a)(3) of the County Code; and
- Buildings, additions, and expansions requiring a special use permit pursuant to Section 24-11(b) of the County Code.

The proposed proffers would only allow for one fast food restaurant, one convenience store with fuel sales, and one bank with drive-through on the property.

Site Layout

The Hazelwood Farms Enterprise Center is intended to be a center of major employment within the County. The Enterprise Center is a long-term project, meaning the applicant does not currently know the end users of the site or the exact locations of each use being proposed. As such, the proposed master plan shows the general layout of the Enterprise Center and the uses designated for each of the seven Land Areas of the property.

Regarding public water and sewer, the site design proposes to extend a water transmission main and sewer force main from the intersection of La Grange Parkway and Route 30 (at the entrance of Stonehouse Industrial Park) along Route 30, connecting to Route 718, and then serving the Enterprise Center from within the spine road. This is a distance of just under one mile. The entirety of this corridor is located inside the PSA, with the extensions then being available to other properties that do not currently have access to utilities.

The site design proposes access to the property solely through the two entrances from Route 746 as shown on the master plan. An internal "spine road" (to be designed as a boulevard and built to Virginia Department of Transportation (VDOT) standards) is the major transportation infrastructure proposed to provide access to the majority of the site. Bicycle and pedestrian facilities are proposed along this road and the frontage of Land Areas 3 and 6.

The two land areas closest to the two entrances at the front of the property (Land Areas 3 and 6) are designated as the general location of the "Urban/Residential Core" which is the area of commercial/retail and residential development, per the EO Zoning District. The proposed commercial and residential uses will be located within the boundaries of the "Urban/Residential Core" with the commercial uses being located north of the spine road (Land Area 3) and the proposed residential units and accessory recreation facilities being located to the south (Land Area 6). Once the maximum acreage of the Urban Core permitted by the Zoning Ordinance (33.87 acres) is built out within Land Areas 3 and 6, the remaining land in Area 3 is intended for up to 100,000 square feet of office use. The proposed master plan proposes a "Frontage Retail Area" for Area 3, in which one fast food restaurant with drive-through, one convenience store with fuel sales, and one bank with drive-through would be allowed to be located.

For the remaining five Land Areas (Land Areas 1, 2, 4, 5, and 7), the applicant is proposing up to 2,820,000 square feet of warehouse, office, and industrial use; though Land Area 7, which buffers the majority of Upper County Park from the Enterprise Center, is designated solely for recreational area and open space. In order to mitigate potential impacts to external properties and Upper County Park, the SUP conditions propose restrictions for certain special uses:

Apartments/Multiple Family Dwellings: Land Area 6
One Fast food Restaurant: Land Area 3
Textile Manufacturing: Land Area 1, 2, or 5
Heavy Equipment Sales and Service: Land Area 1, 2, or 5
Machinery Sales and Service: Land Area 1, 2, or 5
Truck Terminal: Land Area 1, 2, or 5
One Convenience Store with Fuel Sales: Land Area 3
One Bank with Drive-through: Land Area 3

For textile manufacturing, heavy equipment sales and service, machinery sales and services, and truck terminals, the proposed conditions includes a setback of 1,000 feet from the Barnes Road right-of-way if any of these uses are proposed in Land Area 1.

The applicant has proffered design guidelines for all development within the Enterprise Center. These design guidelines commit to protecting the viewshed from adjacent roadways, requiring bicycle

and pedestrian connectivity, designing for public access improvements, parking standards, building pattern and form, and special design requirements for the SUP uses being applied for in this application.

Regarding residential development, the applicant is proposing up to 250 residential units proposed to be a mix (undetermined at this time) of apartments and multiple-family dwellings. The applicant has proffered all units will achieve EarthCraft/Viridiant Gold certification (or equivalent). The applicant has also proffered residential phasing such that no residential building permit shall be issued until Certificate of Occupancy for at least 1,000,000 square feet of non-residential development has been issued on the property.

Housing Affordability Analysis

The Comprehensive Plan encourages inclusion of affordable and workforce units within new residential development. The 250 proposed residential units are planned to be a mix of multi-family apartments or townhomes, all offered at market rate. At this time, it is undetermined what the unit mix is intended to be in terms of type or ownership arrangement. The tables below provide the sales and rental prices affordable at distinct percentages of Area Median Income (AMI) level, which is $84,500.

Affordable Sales Price by AMI %

% AMI	Upper limit of the sales price affordable to this AMI level (2021 Prices)
30%	$129,750
60%	$257,250
80%	$341,950
100%	$427,125
120%	$512,000

Affordable Rental Price by AMI %

% AMI	Upper limit of the rental price affordable to this AMI level (2021 Prices)
30%	$ 634
60%	$1,268
80%	$1,689
100%	$2,113
120%	$2,535

Public Transportation: Vehicular

The scale of this proposal requires the submittal of a Transportation Impact Analysis (TIA). The TIA examines the existing conditions of vehicular traffic, including Level of Service (LOS), with a focus on the roads and intersections serving and impacted by the proposed development of the Hazelwood Enterprise Center and the Village Center. The TIA also examines the projected traffic impacts of the Hazelwood proposal with proposed improvements on these roads and intersections, as well as the impact of the development of the Moss Creek and Stonehouse projects, which are located on the other side of Route 30 from the Village Center.

For the Enterprise Center, the Route 30/Route 746 (Old Stage Road) intersection and the Route 30/Westbound I-64 ramps are the two existing intersections analyzed within the TIA. Neither of these intersections are signalized or programmed for improvement by VDOT. Both are expected to have increased demand as a result of the development of the Enterprise Center. The applicant is proposing within the proffers a multi-stepped approach to improve the road network and mitigate the traffic impacts that are anticipated for the Enterprise Center.

The first step is completing the TIA and gaining approval from VDOT for this analysis. The TIA has been reviewed by the County, Kimley-

Horn and Associates (KHA), and VDOT, with KHA recommending approval and VDOT issuing approval. The approved TIA serves as the guide for the proposed improvements accompanying this rezoning.

The second step is ensuring the appropriate improvements are reviewed and scheduled for implementation. Per the proffers, a Signal Justification Report (SJR) for the Route 30/Route 746 intersection and Phasing Plan for both intersections will need to be approved prior to the submittal of the first site plan for the Enterprise Center. The developer will be required to meet with the County and VDOT prior to submittal of both items to discuss traffic study requirements and review any updated road improvements that have occurred, been proffered by others, or funded by VDOT.

The third step is utilizing the Phasing Plan to ensure the necessary road improvements are installed as the Enterprise Center is developed. The Phasing Plan is proffered to include the improvements within the TIA, which are shown on the master plan and are intended to mitigate traffic impacts. Please see the table on the next pages for a summary of the LOS analysis of these road facilities.

Hazelwood TIA LOS Analysis						
Road/ Intersection (Project site impacted in bold)	*Current Status*	*Current Overall LOS*	*2030 Projected Overall LOS Without Hazelwood*	*Proposed Hazelwood Improvement (Proffered or Conditioned)*	*2030 Projected Overall LOS With Hazelwood*	*2030 Projected Overall LOS With Hazelwood, Moss Creek, and Stonehouse Developed**
Route 30/Fieldstone Parkway **Village Center**	Unsignalized	Level C or >	Level C or >	- Signalization. - Addition of double left turn lanes on northbound Route 30 at property entrance. - Addition of right turn lane on southbound Route 30 at property entrance. - Property entrance with four exit lanes and two entering lanes. - Shared use path.	Level C or >	Level C
Route 30/I-64 Westbound Ramps **Enterprise Center**	Unsignalized	Level C or >	Level C or >	- Signalization. - Adjustment of pavement for improvement.	Level B	Level B
Route 30/I-64 Eastbound Ramp A	Unsignalized	Level B or >	Level B or >	- Signalization.	Level B	Level A

Route 30/Old Stage Road **Enterprise Center**	Unsignalized	Level C or >	Level C or >	- Signalization. - Addition of second left turn lane on northbound Route 30. - Extension of right turn lane on southbound Route 30 at Route 746 Old Stage Road to make a continuous lane with merging lane from I-64 off ramp onto Route 30. - Third northbound through lane on Route 30 at approach to Route 746 Old Stage Road and continuing to drop off lane at ramp to I-64 east. - improvements to Route 746 Old Stage Road as shown on the master plan. - Adding second westbound approach lane and taper on VDOT frontage road. - Restriction to two entrances on Old Stage Road as shown on master plan.	Level B	Level C
Route 30/Barnes Road **Village Center**	Unsignalized	Level C or >	Level C or >	- None, Remain Unsignalized.	Level D or >	Level F**
I-64 Merges/Diverges **Enterprise Center/Village Center**	Unsignalized	Level B or >	Level B or >	- See continuous turn lane proposed for Route 30/Old Stage Road	Level B or >	Level C or >

**90/100 Cycles analysis from TIA referenced in this column. TIA also includes 70-second cycle analysis, but 90/100 cycle deemed more appropriate.*
***See DRW Consultants LLC Memo dated 1/14/2020 for context on this intersection. The possibility of a U-turn at the signalized Fieldstone Parkway is presented as a potential solution to this LOS issue and can be expected to be examined during the SJR review of the Fieldstone Parkway and Route 30 intersection.*

In addition to the improvements detailed in the preceding table, the applicant has proffered to restrict access to Barnes (except in the case of emergencies) and to include a public bus stop within the Land Area with residential units. In order to ensure development does not exceed the bounds of the TIA, the applicant has proffered development of the property cannot exceed 944 PM peak hour trips as determined by the most recent edition

of the Institute of Transportation Engineers Trip Generation Manual (the ITE Manual) at the time of each site plan approval for the development of the property. Peak hour trips will be calculated and submitted with each development plan for the property.

Roadway congestion information from the 2045 Comprehensive Plan is presented below. As shown in the table, the most recent LOS data for each of the three facilities related to this proposal have a LOS in the A-C range. For each of these facilities, this LOS is anticipated to remain in this range in 2045.

Future Roadway Congestion Level

Facility	From	To	2017 Weekday Volume	2045 Weekday Volume	2017 PM Peak Period LOS	2045 PM Peak Period LOS
Barhamsville Road (Route 30)	I-64	Route 60	19,004	32,280	A-C	A-C
Old Stage Road (Route 30)	New Kent CL	Barnes Road (Route 601 S)	14,943	19,225	A-C	A-C
Old Stage Road (Route 30)	Barnes Road (Route 601 S)	I-64	8,315	13,680	A-C	A-C

The County adopted the Adequate Transportation Facilities Test by resolution on August 14, 2018. This policy requires for a proposed SUP or rezoning to be tested during the application process to ensure that transportation facilities are adequate to mitigate traffic impacts. Per the adopted policy, a proposed rezoning or special use permit application will pass the test if:

i. No off-site improvements are required by the TIA that is approved by both the Planning Director and the Virginia Department of Transportation; or
ii. All off-site improvements recommended by a TIA that is approved by both the Planning Director and the Virginia Department of Transportation are guaranteed in a form approved by the Planning Director and County Attorney.

The proffered transportation improvements (which are recommended within the approved TIA) accompanying this rezoning ensure that this proposal passes the Adequate Transportation Facilities Test.

Economic Opportunity Construction Phasing Policy

In 2011, the Board of Supervisors adopted a phasing policy to provide guidelines for development of property zoned for EO. Per the adopted Economic Opportunity District Construction Phasing Guidelines, this proposal is recommended to develop in accordance with the following phasing approach:

1. Building permits for 20% of the primary workplace square footage, as proposed on the master plan, must be issued prior to commencing any residential construction; and

2. Any Certificate of Occupancy must be issued for at least 50% of the primary workplace square footage, as designated on the master plan, prior to building permits being issued for any residential unit above 50% of the total proposed units as shown on the master plan; and

3. Prior to issuance of building permits for construction of the final 10% of the residential units, any Certificates of Occupancy must be issued for at least 90% of the primary workplace square footage as shown on the master plan.

The proposal includes a proffer stating the County shall not issue a Certificate of Occupancy for any residential building until after 1,000,000 square feet of non-residential building has occurred on the property. As such, development of the property is guaranteed to align with the first item above. However, the proffers do not include any other phasing guarantees, meaning the second and third item above are not guaranteed to occur. As such, this proposal is not guaranteed consistency with this policy.

Schools

The proposed apartment units are anticipated to generate an additional 78 students. As illustrated in the following table, the 78 students projected from the development would not cause the enrollment levels for Toano Middle or Warhill High Schools to exceed effective capacity. However, it would contribute to an enrollment level exceeding the effective capacity at Stonehouse Elementary School.

Student Enrollment and School Capacity, Williamsburg-James City County Schools 2020

School	*Effective Capacity*	*Enrollment*	*Projected Students Generated*	*Enrollment + Projected Students*
Stonehouse Elementary School	747	718	+36	754
Toano Middle School	790	628	+19	647
Warhill High School	1,441	1,340	+23	1,363

Parks and Recreation

This proposal includes up to 250 residential units. As illustrated in the following table, the applicant is proffering to meet the development guidelines provided within the James City County Parks and Recreation Development Guidelines and exceed the bike and jogging trails requirement.

James City County Parks and Recreation Development Guidelines Comparison

Minimum Requirement (250 units)	*Minimum Required*	*Proffered or Shown on Master Plan*
Parkland Acreage	0.58 acres	0.58*
Biking/Jogging Trails	803 square feet.	8,630 square feet
Playground	1	1
Sport Court	1	1
Multiuse Field	1	1

*The 0.58 minimum is what is proffered, though the CIS states 0.69 acres.

In addition to what is included within the proffers and shown on the master plan, there are proposed SUP conditions enhancing parks and recreational facilities. Specifically, proposed SUP Condition No. 9 requires a connection between the multiuse path abutting Leisure Road and the interior of Upper County Park. Proposed SUP Condition No. 10 requires all recreation areas shown on Land Area 6 be guaranteed prior to issuance of a land disturbance permit and that the facilities will be installed prior to the issuance of the permit for the 100th residential unit in the Land Area.

PLANNING AND ZONING HISTORY

The current zoning for the properties has been in place since the 1980s and is detailed below:

301 Old Stage Road: B-1, General Business
9211 Old Stage Road: B-1, General Business
275 Old Stage Road: A-1, General Agricultural/B-1, General Business
9400 Barnes Road: A-1, General Agricultural

These parcels have been owned by the Hazelwood family and in agricultural use for decades. The parcel addressed 9400 Barnes Road used to be located within the Barnes Swamp Agricultural and Forestal District (AFD), but was withdrawn in 2006. The single-family home located on the parcel addressed 301 Old Stage Road is accessory to the farm and was built in 1955.

SURROUNDING ZONING AND DEVELOPMENT

North: LB, Limited Business
PUD-R, Planned Unit Development Residential

West: A-1, General Agricultural

South: PL, Public Lands
A-1, General Agricultural

East: B-1, General Business

The subject property is located east of Barnes Road (Route 601), south of I-64, west of Old Stage Road (Route 746), and north of Leisure Road. Upper County Park abuts the Property directly to the south.

IMPACT ANALYSIS

Impacts/Potentially Unfavorable Conditions	**Status** *(No Mitigation Required/Mitigated/Not Fully Mitigated)*	**Considerations/Proposed Mitigation of Potentially Unfavorable Conditions**
Please note the information in the Status column indicated below does not include information from the Financial Impacts of Residential Units section of this staff report.		
Public Transportation: Vehicular	Mitigated	See discussion on Page 5-7.
Public Transportation: Pedestrian/Bicycle	Not Fully Mitigated	- The County's *Pedestrian Accommodation Master Plan* requires a multi-use path along the southern frontage of Route 30. The *Regional Bikeways Map* proposes a bike lane along the southern frontage of Route 30 for the small portion abutting this property. - Pursuant to Sec. 24-35 of the Zoning Ordinance, the proposed improvements shown on these maps are required to be shown on the site plan and installed at development. The bike lane will be further evaluated during the site plan review process. **Proffers** - This proposal includes a proffer to construct the portion of the multiuse path fronting Route 30 in accordance with the master plan and includes the continuation of said multiuse path along the frontage of Old Stage Road (Route 746), the internal spine road, and the portion of the property abutting Leisure Road, as shown on the master plan. **Proposed SUP Conditions** - Condition No. 9 requires the multiuse path to be guaranteed prior to land disturbance and constructed prior to the issuance of the first commercial Certificate of Occupancy. This condition also requires a connection be provided between the multiuse path abutting Leisure Road and the interior of Upper County Park. - Conditions No. 18 ensures an internal traffic signage plan shall be submitted with site plans, which helps ensure pedestrian and cyclist safety. - Condition No. 20 requires internal pedestrian connections to be provided on the property.

Impacts/Potentially Unfavorable Conditions	**Status** *(No Mitigation Required/Mitigated/Not Fully Mitigated)*	**Considerations/Proposed Mitigation of Potentially Unfavorable Conditions**
Please note the information in the Status column indicated below does not include information from the Financial Impacts of Residential Units section of this staff report.		
Public Safety	No Mitigation Required	- Located within a six-minute radius of Fire Station 1. - The proposal does not generate impacts that require mitigation to the County's emergency services or facilities.
Public Schools	Unmitigated	- See discussion on Page 10.
Public Parks and Recreation	Mitigated	- See discussion on Page 11.
Public Libraries and Cultural Centers	No Mitigation Required	- The proposal does not generate impacts that require mitigation to public libraries or cultural centers.
Groundwater and Drinking Water Resources	Mitigated	- The Enterprise Center Master Plan proposes to extend a transmission main and force main from the intersection of La Grange and Route 30 (at the entrance of Stonehouse Industrial Park) up Route 30 and then serving the Enterprise Center from within the spine road. JCSA has reviewed and approved this conceptual proposal on the master plan, as well as the projected water and sewer flows within the CIS. The Master Plan also shows a 50-foot public utility easement in the event that future looping of the water system under I-64 should be pursued. **Proffers** - The applicant has proffered the submittal of an overall master water and sanitary sewer plan for the property, to be reviewed and approved by JCSA prior to any subdivision or development on the property. The applicant has also proffered assurances to develop water conservation standards to be approved by JCSA. **Proposed SUP Conditions** - Condition No. 4 requires the developer to consider designing the stormwater systems such that stormwater can be collected for irrigation. Furthermore, this condition prohibits the JCSA public water supply from being used for irrigation. - The conditions specific to convenience stores with fuel sales, truck terminals,

Impacts/Potentially Unfavorable Conditions	**Status** *(No Mitigation Required/Mitigated/Not Fully Mitigated)*	**Considerations/Proposed Mitigation of Potentially Unfavorable Conditions**
Please note the information in the Status column indicated below does not include information from the Financial Impacts of Residential Units section of this staff report.		
		manufacturing and processing of textiles, and heavy equipment sales and service/machinery sales and service (Condition Nos. 22, 23, 24, and 25) require a Spill Prevention, Control and Countermeasures Plan be provided prior to issuance of a land disturbance permit.
Watersheds, Streams, and Reservoirs	Mitigated	- The master plan shows a conceptual layout for stormwater management facilities, which includes Best Management Plans for each of the Land Areas within the Enterprise Center. The property is located within the Diascund Creek Watershed, which does not have a currently adopted watershed management plan. The Proposed SUP condition requires compliance with this future watershed management plan, once the plan is created by the County. **Proffers** - The applicant has submitted a proffer to work with the Colonial Soil and Water Conservation District to create a nutrient management plan for each portion of the property proposed for development. **Proposed SUP Conditions** - Condition No. 21 requires the submittal of a Master Stormwater Management Plan meeting a higher standard than what is required by the County Ordinance, including compliance with the future Diascund Watershed Management Plan.

Impacts/Potentially Unfavorable Conditions	**Status** *(No Mitigation Required/Mitigated/Not Fully Mitigated)*	**Considerations/Proposed Mitigation of Potentially Unfavorable Conditions**
Please note the information in the Status column indicated below does not include information from the Financial Impacts of Residential Units section of this staff report.		
Cultural/Historic	Mitigated	- Per the County's Geographic Information System, this property is identified as a Moderate sensitive area on the James City County archaeological assessment, meaning no archaeological study is required for these applications as part of the legislative submittal. There is one archaeological site of intact deposits (JC393) located on the southwest portion of the property in Land Area 4. Per Section 24-145 of the Zoning Ordinance, an archaeological study and natural resource inventory will be required at the development plan stage, which will inform the treatment of this site.

Impacts/Potentially Unfavorable Conditions	**Status** *(No Mitigation Required/Mitigated/Not Fully Mitigated)*	**Considerations/Proposed Mitigation of Potentially Unfavorable Conditions**
Please note the information in the Status column indicated below does not include information from the Financial Impacts of Residential Units section of this staff report.		
Nearby and Surrounding Properties	Mitigated	**Proposed SUP Conditions** - The 34-acre parcel (Land Area 7) within the Enterprise Center that abuts the majority of Upper County Park is designated for Recreation Area/Open Space on the master plan and includes a 100-foot Resource Protection Area buffer, which provides a transition to Upper County Park and is anticipated to mitigate impacts. - Condition No. 6 requires a 50-foot vegetated Community Character Corridor (CCC) buffer along Routes 30 and 746 to screen the project from nearby properties. - Condition No. 7 requires a 50-foot vegetated buffer with additional evergreen plantings along I-64 to screen development in adjacent Land Areas. - Condition No. 8 requires a 100-foot vegetated buffer with additional evergreen plantings along the Barnes Road right-of-way to screen the project from nearby residential properties. - Condition No. 12 limits the height of lighting fixtures and states that lighting shall not be routinely illuminated at night. - Condition No. 17 requires screening of all dumpsters, ground mounted HVAC, mechanical units, and cart corrals. - Condition No. 22 (Convenience Stores with Fuel Sales) limits outside displays, sale, or storage, and intercom and speaker noise. - Condition No. 23 (Truck Terminal) requires the vehicular maintenance to be fully enclosed, prohibits outside display, sales, or storage, and curtails intercom and speaker noise. - Condition No. 24 (Manufacturing and Processing of Textiles) and Condition No. 25 (Heavy Equipment Sales and Service/Machinery Sales and Service) prohibits outside storage of materials, requires the use to occur within a fully enclosed building with no outside evidence of dust, noise, odor, or other objectionable effect.

Impacts/Potentially Unfavorable Conditions	**Status** *(No Mitigation Required/Mitigated/Not Fully Mitigated)*	**Considerations/Proposed Mitigation of Potentially Unfavorable Conditions**
Please note the information in the Status column indicated below does not include information from the Financial Impacts of Residential Units section of this staff report.		
Community Character	Mitigated	**Proffers** - The applicant has provided proffers limiting the uses most impactful to community character: fast food restaurant with drive-through (one maximum), convenience store with fuel sales (one maximum) and bank with drive-through (one maximum). - The applicant has proffered design guidelines for all development on the property, which exceeds the requirements of the EO Zoning District. **Proposed SUP Conditions** - Condition No. 5 requires the proposed spine road to include street tree planting in order to create a streetscape effect. Per the proffered design guidelines, this spine road will be of boulevard design. - Condition No. 6 requires a 50-foot vegetated CCC buffer along Route 30. This segment of Old Stage Road (Route 30) is designated as a Wooded CCC. - Condition No. 14 requires each site plan submitted to include the final architectural design for all buildings and include general elevations of the buildings, as well as the view of all sides of the building visible from Old Stage Road (Routes 30 and 746) or Leisure Road for the Director of Planning's review and approval. - Condition No. 15 requires enhanced site design for Land Areas 3 and 6 which establishes higher standards for certain building facades, parking location and design, uses with drive through elements, and warehouse uses operated as a mini-storage. - Condition No. 16 requires free-standing signage to be externally illuminated monument style signs not to exceed 8 feet in height, with brick base or similar material.

FINANCIAL IMPACTS OF RESIDENTIAL UNITS

On September 10, 2019, the Board of Supervisors adopted a resolution directing staff to produce a fact sheet that outlines general financial impacts of residential dwellings based on the Adopted Budget, the Capital Improvements Program, the Comprehensive Plan, the Strategic Plan, and any other relevant data. The resolution further directs that the fact sheet should address the immediate and long-range fiscal impacts related to increased use and demand on the following public facilities and resources. The per unit Residential Impacts are based on the Fiscal Year (FY) 2022 data provided by the Department of Financial and Management Services (FMS) and JCSA, as well as the projected number of annual residential unit data through 2034 (the Comprehensive Plan horizon year). The per-unit impacts are detailed in Table 1 below.

Table 1-Per Unit Fiscal Residential Impacts Information

Category	Residential Impact	Proffered with current application
Public Transportation	$ 299.21	$0
Public Safety	-	$0
Public Schools	$1,417.63	$0
Public Parks & Recreation	$4,156.19	$0
Public Libraries and Cultural Centers	$ 170.88	$0
Groundwater and Drinking Water Resources	$3,542.69	$0
Watersheds, Streams & Reservoirs	$1,954.03	$0

The general financial impacts of dwelling units described above are for the County and residential development as a whole. Submission of a development-specific FIA is required for all rezonings that include a residential component. The FIA takes into account all development components, including both residential and non-residential uses and the results are also affected by types of residential units and projected assessed values.

- The County's FIA worksheet was submitted per the FY 2021 calculations provided by the Department of FMS (see Attachment No. 10).

- Per that analysis, the development would result in a $644,255.02 annual positive fiscal impact to the County.

2035 Comprehensive Plan

The 2035 Comprehensive Plan states that the use of land should be consistent with the capacity of existing and planned public facilities and services and the County's ability to provide such facilities and services. The Plan also states "expect developments subject to zoning or special use permit review to mitigate their impacts." Information on impacts and the mitigation provided by this application are included in this staff report.

The property is designated Economic Opportunity on both the adopted 2035 Comprehensive Plan Land Use Map and the proposed 2045 Comprehensive Plan Land Use Map. In both versions, the property is further identified as Economic Opportunity-Barhamsville Interchange Area. The following general guidance is stated for the EO designation:

<u>Economic Opportunity Designation</u>

"Lands designated as Economic Opportunity are intended primarily for economic development, increased non- residential tax base and the creation of jobs. The lands should be at strategic locations in the County relative to transportation, utilities infrastructure and adjacent uses, and the lands should only be developed consistent with comprehensive area/corridor master plans."

Staff finds the proposed rezoning and SUP application is consistent with the primary intention of the Economic Opportunity Designation of economic development and job creation.

"The principal uses and development form should maximize the economic development potential of the area and encourage development types that have certain attributes, principally that they have a positive fiscal contribution, provide quality jobs, enhance community values, are environmentally friendly and support local economic stability. Master planning is at the core of this designation, and no development should occur unless incorporated into area/corridor master planning efforts which should address environmentally sensitive areas, available infrastructure (roads, water, sewer, transit, etc.), community character and context, public facilities and adjacent land uses to include lands in adjacent jurisdictions. The intent of this designation is to include parcels with this designation in the PSA (where not already included) pending the outcome of the master planning efforts."

Staff finds that the proposed, principal use of the property for industrial, wholesale, warehouse, office and institutional use, coupled with the proffered design guidelines, is consistent with the intentions for this designation. Furthermore, the master planning of these properties, along with the submitted proffers and proposed SUP conditions, demonstrate consistency with each of the features described above. The FIA submitted for this proposal shows a positive fiscal impact.

"The master planning efforts may take the form of public-private or private-private partnerships; if public-private, the landowner(s) would need to make the majority of the investment. These area/corridor master planning efforts should phase development to be in step with, and provide for, adequate amounts or capacities of roads, water, sewer, transit, bicycle and pedestrian facilities, fire stations, police and general government services, parks and recreation facilities, schools and other facilities, and service needs generated by the development. The master plan for the area should also demonstrate appropriate variation in uses, densities/intensities, pattern, and design such that new development is compatible with the existing character of surrounding areas. If an individual landowner in lands designated EO does not wish to participate in the master planning effort, such land shall be recognized and adequate buffers provided in the master plan to protect the current use of that land. Development should be designed to encourage trips by alternative transportation modes and should be concentrated on portions of the site to avoid sensitive environmental features and respect viewsheds from historic and Community Character areas and corridors."

Staff finds that the applicant team, which is a private-private partnership of the landowners, engineers, land planners, environmental planners, architects and traffic consultants, has developed a master plan that, in conjunction with the proffers, design guidelines, and proposed SUP conditions, provides adequate amounts or capacities of the infrastructure listed above. Furthermore, the proposed special uses and "by-right" uses in the EO district permit a use mixture that allows for the variation in uses, densities/intensities, pattern, and design needed to align with this designation. Finally, the proposed multiuse paths allow for alternative transportation trips, while the proposed SUP conditions for use, location and buffering help respect viewsheds and Route 30, which is a CCC.

<u>Economic Opportunity-Barhamsville Interchange Area</u>

"For the I-64 Exit 227 Interchange Area, the primary suggested uses include industrial, light industrial, office, medical/research, and/or tourist attraction uses. Primary uses shall follow the recommendations for the general EO designation described above. Development should refer to the commercial/industrial development standards. Retail commercial uses should be limited in amount and type to support the primary uses."

Staff finds the uses within the EO Zoning District and the distinct uses applied for via SUP to be consistent with the specific recommended uses for the Barhamsville Interchange Area Designation.

"As expressed in the general Economic Opportunity language, the master plan for this area should demonstrate appropriate variation in uses, densities/ intensities, pattern, and design such that new development is compatible with the existing character of surrounding areas. In particular for this site, buffers, open space or other similar mechanisms should be used along the southern and western property lines in order to provide a transition to areas designated Rural Lands and Park, Public and Semi-Public Open Space. These parcels constitute a gateway into the County along I-64 and Route 30 which should be reflected in the development's architectural design, landscaping and buffering."

Staff finds the master plan, in conjunction with the proposed proffers, design guidelines, and proposed SUP conditions, is consistent with this expectation. The proposed SUP conditions require a 100-foot vegetated buffer along the Barnes Road right-of-way on the western and southernmost property line, providing a transition to areas designated Rural Lands. The 34-acre parcel (Land Area 7) within the Enterprise Center that abuts the majority of Upper County Park is designated for Recreation Area/Open Space on the master plan and includes a 100-foot RPA buffer, which provides a transition to Upper County Park, which is designated Open Space or Recreation on the County Land Use Map. This application includes proffered design guidelines and proposed SUP conditions requiring higher design, site location, enhanced landscaping, and architectural standards that ensure these gateway parcels are properly buffered and protect community character.

"Transportation is a key component of this Economic Opportunity (EO) area, with proximity to the interstate interchange as an important driver. The phasing and intensity of future development should safeguard this important element by maintaining adequate levels of service at the interchange and surrounding roadways. The primary access for these EO parcels should be an internal access road that connects to Old Stage Road/Route 30. A secondary access onto Barnes Road could be considered depending on the type of development that is ultimately proposed, as well as a more thorough analysis of the adequacy and safety of Barnes Road to handle traffic both from the north and the south."

Staff finds that this proposal meets this expectation. The phasing and intensity of development on the property is constrained by the transportation proffers, which require for the submittal of signal justification reports and phasing plans to ensure that traffic impacts do not overwhelm the infrastructure. Primary access to the site is proposed primarily through an internal access road, while Barnes Road access has been prohibited via proffer. Furthermore, the applicant has submitted a TIA and proffered traffic improvements that VDOT and the County has deemed adequate to accommodate traffic and ensure safe and orderly development of the site.

"Any residential uses should be subordinate to and in support of the primary economic development uses and only located on the periphery of the property in areas that are not suitable for economic development uses. In addition, the location and amount of any residential uses should be depicted as an integrated element of the larger master plan for the area, should be limited to the amount or percentage allowed in the Economic Opportunity Zoning District, and should not be developed prior to a significant portion of the primary economic development uses."

Staff finds the residential uses to be properly located in accordance with this recommendation, appropriately limited in accordance with the requirements of the EO Zoning District, and appropriately phased, as the submitted proffers require at least 1,000,000 square feet of non-residential be issued a Certificate of Occupancy before residential permitting can commence.

Draft 2045 Comprehensive Plan

The draft 2045 Comprehensive Plan Land Use text includes the following new sentence for this designation "New development should be of a design, scale and intensity that is complementary to the development standards for the Stonehouse mixed use area."

Although the Stonehouse Mixed Use development standards have a greater emphasis on the "complete communities concept" and are more oriented towards residential, urban scale development when compared with the EO designation, staff finds the Enterprise Center proposal to be generally consistent with this expectation, due to its proffered design guidelines, SUP conditions specific to design, and alternative transportation accommodations.

Goals Strategies and Actions

Staff also finds that this proposal generally aligns with multiple Goals, Strategies, and Actions (GSAs) within the Comprehensive Plan.

Land Use

This application aligns with multiple GSAs within the Land Use section. The GSAs in the Land Use section supports master-planning that emphasizes the economic potential of interchange areas by promoting office and industry uses, encourages multiple uses commercial and industrial uses within nodes inside the PSA, and promotes the inclusion of bicycle and pedestrian facilities within the new developments. The GSAs also supports development that aligns with the specific guidelines found within the specific EO subarea designation

Economic Development

This application aligns with multiple GSAs within the Economic Development section. The GSAs in the Economic Development section supports the development of a diverse economy, with non-retail core businesses, industrial and manufacturing businesses being some of the sectors recommended for approval.

Housing

There are multiples GSAs within the Housing section that support the creation and integration of affordable and workforce housing into new development and existing communities within the County. Although it is possible for the proposed units to be offered as workforce housing, there is no commitment within the proffers to do so. As such, this application does not guarantee the fulfillment of this strategy or related actions.

STAFF RECOMMENDATION

Staff recommends that the Planning Commission recommend approval of the proposed rezoning and special use permit application, subject to the proposed proffers and conditions.

TW/md
RZ19-6_SUP19-5HzlwdFmEntCtr

Attachments:
1. Proposed SUP Conditions
2. Proposed Proffers
3. Location Map
4. Proposed Master Plan
5. Proposed Transportation Improvements Location Map
6. Proposed Design Guidelines
7. Community Impact Statement
8. Traffic Impact Analysis
9. DRW Memos
10. Fiscal Impact Analysis
11. School Capacity & Projections
12. Economic Opportunity Construction Phasing Guidelines
13. Water & Sewer Graphic
14. Public Input

Enterprise Center General Conditions

1. *Master Plan*. This SUP shall be valid for approximately 328 acres of property located at 301 Old Stage Road, 9211 Old Stage Road, 275 Old Stage Road, and the portion of 9400 Barnes Road located south of Interstate 64, and further identified as James City County Real Estate Tax Map Parcel Nos. 0440100015, 0440100014, 0440100013, and 0430100017, respectively (collectively the "Property"). Development of the Property shall be generally in accordance with the master plan entitled "Master Plan for Rezoning of Enterprise Center at Hazelwood Farms" prepared by AES Consulting Engineers, dated 03/12/21 (the "Master Plan") and the design guidelines entitled "Design Guidelines for Hazelwood Farms Enterprise Center," prepared by Hopke & Associates, dated 09/24/21 (the "Design Guidelines"), with any deviations considered per Section 24-23(a)(2) of the Zoning Ordinance, as amended.

2. *Specially Permitted Uses*. This SUP shall be valid for the following specially permitted uses under the James City County Code, as amended ("County Code"):

    A. In accordance with Section 24-536.4 of the County Code:

        - Apartments;
        - Multiple-family dwellings;
        - Fast-Food Restaurants;
        - Truck terminals (see Condition 23);
        - Manufacture and processing of textiles and textile products in structures more than 10,000 square feet (see Condition 24);
        - Heavy equipment sales and service with major repair under cover or screened with landscaping and fencing from adjacent property (see Condition 25);
        - Machinery sales and service with major repair under cover (see Condition 25); and
        - Water facilities (public), and sewer facilities (public), including, but not limited to, treatment plants, pumping stations, storage facilities and transmission mains, wells and associated equipment such as pumps to be owned and operated by political jurisdictions (see Condition 27)

    B. This SUP shall also be valid for one convenience store pursuant to Section 24-11(a)(1) (See Condition 22), any commercial building or group of buildings that exceeds 10,000 square feet of floor area pursuant to Section 24-11(a)(2) of the County Code, and any commercial building or group of buildings, not including office uses, which generates, or would be expected to generate, a total of 100 or more additional trips to and from the site during the peak hour of the operation pursuant to Section 24-11(a)(3) of the County Code, and buildings, additions, and expansions requiring a special use permit pursuant to Section 24-11(b) of the County Code; however, such commercial building, group of buildings, and additions or expansions thereto shall be limited to any permitted uses under Section

24-536.4 of the County Code, as amended, and those special uses permitted by this SUP. Furthermore, the uses authorized in this condition by 24-11(a)(2), 24-11(a)(3) and 24-11(b) shall not exceed a total of 75,000 square feet of commercial as referenced on the Master Plan. The use limitations within Condition #2 are not applicable to those uses not subject to 24-11 (a) (2) and 24-11 (a) (3). The uses within such square footage are further subject to the following restrictions:

i. There shall be no more than one fast-food restaurant, one convenience store, and one bank with drive-through on the Property without amendment of these conditions and proffers.

ii. The uses identified in subsection (i) shall be located within the Frontage Retail Area, as shown on the Master Plan.

iii. Drive-through windows for the uses identified in subsection (i) shall be screened from Route 30 and Old Stage Road with landscaping and/or fencing as determined by the Director of Planning.

iv. Any fast-food restaurants within the approved commercial square footage on the Property shall also be subject to Condition 26 of this SUP.

3. *Square Footage Limitations*. Development of the Property shall not exceed the following: (i) 2,920,000 square feet of combined warehouse, industrial, or office use; (ii) 75,000 square feet of commercial use; and (iii) 250 residential units. In order to accurately track the progression of the development of the Property and requirements of this condition, each site plan or subdivision plan for any development within the Property shall include a then-current accounting of the number of residential units, unit type, and square footage of non-residential development that have previously been approved by the County and that are proposed by the plan being submitted for review. Such accounting shall be in a form reasonably acceptable to the Director of Planning.

4. *Conservation & Irrigation*. The developer and designing engineer shall take into consideration the design of stormwater systems that can be used to collect stormwater for outdoor water use for the entire development. Prior to development plan approval, the JCSA CEO and Director of the Stormwater and Resource Protection Division or designee shall confirm in writing that such design has been considered. Only surface water collected from surface water impoundments, or water taken from an underground cistern, may be used for irrigation on the Property. In no circumstances shall the JCSA public water supply be used for irrigation. If the Owner demonstrates to the satisfaction and approval of the CEO of the JCSA through drainage area studies and irrigation water budgets that the impoundments cannot provide sufficient water for all irrigation, the CEO of the JCSA may, in writing, approve a shallow (less than 100 feet) irrigation well to supplement the water provided by the impoundments or cisterns.

5. *Street Trees*. Street trees shall be planted along the entirety of the spine road and placed in such a way as to establish a streetscape effect. The initial development plan for the spine road shall include a landscape plan showing the proposed street trees, subject to approval by the Director of Planning or his designee. The street trees shall be guaranteed prior to approval of the spine road construction plan and each development plan adjacent to the spine road shall include the required plantings. The required plantings for each development plan shall be installed prior to issuance of any certificate of occupancy, unless another timeline for planting has been approved by the Director of Planning.

6. *Route 30 & Route 746 Buffer*. Prior to final approval of any site plan in Land Area 3, the Director of Planning or designee shall review and approve a landscape plan for the entirety of Land Area 3. The landscape plan for Land Area 3 shall provide a 50-foot vegetated community character corridor buffer along Route 30 and the right-of-way for Route 746 in accordance with Section 24-98 of the Zoning Ordinance. Any disturbance or grading into this area shall be the minimum necessary and shall require additional plantings consisting of no less than 125% of the required plantings per the ordinance or as may be otherwise approved by the Director of Planning, such that at maturity the plantings match or exceed the mature height and density of trees and shrubs within the buffer. In areas of the buffer that are currently comprised of mature forest, as defined in Sec. 24-98 of the Zoning Ordinance, the buffer shall be left undisturbed in its natural state. In areas of the buffer that are not completely comprised of mature forest, as defined in Sec. 24-98 of the Zoning Ordinance, supplemental evergreen shrubs and trees shall be required. In areas of the buffer where little or no vegetation exists, as determined by the Director of Planning or designee, the buffer shall be landscaped to the provisions of Section 24-96 of the Zoning Ordinance for General Landscape Areas. The landscaping detailed in this condition shall be shown as part of the initial site plan, or shall be submitted as a separate plan concurrent with the initial site plan in Land Area 3. All landscaping on the landscape plan shall be guaranteed prior to site plan approval. The landscaping shown on the approved landscape plans for Land Area 3 shall be installed within 12 months of the final site plan approval, unless another timeline for planting has been approved by the Director of Planning.

7. *Interstate 64 Buffer*. Prior to final approval of any site plan in Land Area 1, Land Area 2, or Land Area 3, the Director of Planning or designee shall review and approve a landscape plan for the Land Area(s). The landscape plan for the Land Area shall provide a 50-foot vegetated buffer along the Interstate 64 right of way and be landscaped to the provisions of Section 24-98 of the Zoning Ordinance, except that the required tree and shrubs mixture be modified to require 45 percent of all proposed trees and shrubs within the 50-foot wide vegetated buffer to be evergreen, with at least 45 percent of evergreen trees achieving a minimum height at maturity of 40 feet. Any disturbance or grading into this area shall be the minimum necessary and shall require additional plantings consisting of no less than 125% of the required plantings per the ordinance or as may be otherwise approved by the Director of Planning, such that at maturity the plantings match or exceed the mature height and density of trees and shrubs within the buffer. In areas of the buffer that are currently comprised of mature forest, as defined in Sec. 24-98 of the Zoning Ordinance, the buffer shall be left undisturbed in its natural state. In areas of the buffer that are not completely

comprised of mature forest, as defined in Sec. 24-98 of the Zoning Ordinance, supplemental evergreen shrubs and trees shall be required. In areas of the buffer where little or no vegetation exists, as determined by the Director of Planning or designee, the buffer shall be landscaped to the provisions of section 24-96 of the Zoning Ordinance for General Landscape Areas. The landscaping detailed in this condition shall be shown as part of the initial site plan, or shall be submitted as a separate plan concurrent with the initial site plan in Land Area 1, Land Area 2, or Land Area 3. All landscaping on the landscape plan shall be guaranteed prior to site plan approval. The landscaping shown on the approved landscape plans(s) for the relevant Land Area shall be installed within 12 months of the final site plan approval, unless another timeline for planting has been approved by the Director of Planning.

8. *Barnes Road Buffer*. Prior to final approval of any site plan in Land Area 1 or Land Area 4, the Director of Planning or designee shall review and approve a landscape plan for the Land Area(s). The landscape plan for the Land Area shall provide a 100-foot vegetated buffer along the Barnes Road right-of-way and be landscaped to the provisions of Section 24-98 of the Zoning Ordinance, except that the required tree and shrubs mixture be modified to require 45 percent of all proposed trees and shrubs within the 100-foot wide vegetated buffer to be evergreen, with at least 45 percent of evergreen trees achieving a minimum height at maturity of 40 feet. Any disturbance or grading into this area shall be the minimum necessary and shall require additional plantings consisting of no less than 125% of the required plantings per the ordinance or as may be otherwise approved by the Director of Planning, such that at maturity the plantings match or exceed the mature height and density of trees and shrubs within the buffer. In areas of the buffer that are currently comprised of mature forest, as defined in Sec. 24-98 of the Zoning Ordinance, the buffer shall be left undisturbed in its natural state. In areas of the buffer that are not completely comprised of mature forest, as defined in Sec. 24-98 of the Zoning Ordinance, supplemental evergreen shrubs and trees shall be required. In areas of the buffer where little or no vegetation exists, as determined by the Director of Planning or designee, the buffer shall be landscaped to the provisions of section 24-96 of the Zoning Ordinance for General Landscape Areas. The landscaping detailed in this condition shall be shown as part of the initial site plan, or shall be submitted as a separate plan concurrent with the initial site plan in Land Area 1 or Land Area 4. All landscaping on the landscape plan shall be guaranteed prior to site plan approval. The landscaping shown on the approved landscape plans(s) for the relevant Land Area shall be installed within 12 months of the final site plan approval, unless another timeline for planting has been approved by the Director of Planning.

9. *Bicycle and /Pedestrian Accommodations*.
    A. Route 30 & Route 746. A multi-use path shall be constructed along Route 30 & Route 746, as shown on the Master Plan. Prior to the issuance of a land disturbance permit for either Land Area 3 or Land Area 6, the multi-use path shall or guaranteed in a manner acceptable to the County Attorney. The multi-use path shall be constructed in its entirety prior to issuance of the first commercial Certificate of Occupancy.

B. *Leisure Road.* As shown on the Master Plan, a multi-use path shall be constructed along the property line abutting Leisure Road. The multi-use path shall be guaranteed prior to issuance of a land disturbance permit within Land Area 6 and shall installed in its entirety prior to issuance of the 1st residential Certificate of Occupancy. A connection from this multi-use path to the interior of Upper County Park shall be provided.

10. *Park and Recreation Area(s).* The Park and Recreation Area(s) shown on Land Area 6 of the Master Plan shall be guaranteed in form approved by the County Attorney prior to the County being obligated to issue any land disturbance permit on the Property. The Park and Recreation Area(s) shall be installed prior to the issuance of a building permit for the 100th residential unit in Land Area 6 designated on the Master Plan. The Park and Recreation Area(s) shall be near the area depicted on the Master Plan but the location may be adjusted with the approval of the Director of Planning.

11. *Vehicular Access Restriction*. Access to the Property from Route 30 and Route 746 shall be restricted to "South Entrance #1" and "South Entrance #2" as shown on the Master Plan. No vehicular access shall be provided to the Enterprise Center from Barnes Road, except for emergency access, as determined by the Director of Planning. Such emergency access shall be designed to cross the Barnes Road Buffer at or near a perpendicular angle to the property line, with clearing kept to the minimum necessary to accommodate the access.

12. *Lighting*. All new exterior light fixtures, including building lighting, on the Property shall have recessed fixtures with no lens, bulb, or globe extending below the casing and a lighting plan shall be submitted to and approved by the Director of Planning or designee prior to final site plan approval for each development plan that includes new lighting. Each site plan shall include a lighting plan meeting the requirements of this condition. All light poles must not exceed twenty (20) feet in height and the lighting plan must indicate no glare outside the boundary lines of the Property unless otherwise approved in writing by the Director of Planning or designee. "Glare" is defined as more than 0.1 foot-candle at the boundary of the Property or any direct view of the lighting source from adjoining properties.

13. *Sustainable Design Initiatives*:
    A. Construction of all commercial buildings within Land Areas 3 (or any office or institutional building in Land Area 1, 2, 4 or 5) on the Master Plan shall achieve the equivalent of those credits that would be required to achieve the "Certified" level in the LEED 2009 Certification program or whatever is equivalent from the Leadership in Energy and Environmental Design (LEED) for New Construction and Major Renovations (based on the most current guidelines)(the "Credits") for each building. This shall include completion of all prerequisite items, except that for the Energy and Atmosphere category prerequisite number 1, the Owner may choose to pursue Energy Star designation or such other energy systems verification

process as is approved in advance by the Director of Planning. In addition, for up to a maximum of 10% of the points needed to reach the LEED "Certified" level, the Owner may request that initiatives equivalent to, but not included on the LEED checklist as credits, be pursued instead. Any request for equivalent initiatives shall be submitted in writing as part of the process specified in (B) below, together with supporting documentation for review and approval by the Director of Planning. Documentation of the building energy performance shall be provided by a mechanical engineer to the Director of Planning before the Certificate of Occupancy for the initial building to demonstrate an improvement in efficiency of the building's thermal envelope, mechanical systems, and electrical systems over code-required baseline performance.

B. Application for formal LEED certification by the United States Green Building Council (USGBC) is at the discretion of the Owner, and is not required. If formal LEED certification is not pursued, compliance with this condition shall be monitored and verified to the County by a LEED Accredited Professional engaged by the Owner. The strategies to achieve the Credits will be incorporated into the construction documents either as part of the design, or as requirements for the contractor to substantiate during the course of construction. Compliance with the Credit requirements will be validated in a straightforward way through methods such as, but not limited to, review of contractor submittals, submission of design calculations, and letters certifying that requirements have been met. This validation will be overseen by a LEED-accredited professional and approved by the Director of Planning or designee with Credits related to the design of the project approved prior to issuance of the final site plan approval, and Credits related to the construction of the project approved prior to issuance any Certificate of Occupancy.

14. *Architectural Review*. Prior to each site plan approval for development within the Property, the Director of Planning shall review and approve the final architectural design of each proposed building to be consistent with the Design Guidelines. Each site plan shall include the final architectural design for all buildings shown and include general elevations of the buildings, as well as the view of the building for all sides visible from Old Stage Road (Route 30 & Route 746) or Leisure Road. A determination of substantial architectural consistency shall be required from the Director of Planning or designee. In the event the Director of Planning finds the design to be inconsistent with the Design Guidelines, the applicant may appeal the decision of the Director of Planning to the Development Review Committee which shall forward a recommendation to the Planning Commission.

15. *Site Design*.

A. For Land Areas 3 and 6, any building façade facing a road shall be designed in appearance as a front façade. The intent of this condition is to ensure that the side and rear of buildings, when visible from a roadway, achieve the standards put forward within the Design Guidelines for the front façade. No more than 25% of

the required parking in these areas shall be located in between the building and Old Stage Road (Route 30 & Route 746) or Leisure Road.

B. Any use containing a drive-through element shall be located to the side or at the rear of the building and shall not face Route 30.

C. All warehouse storage units operated as mini-storage shall be designed as a single footprint building. Warehouse storage units whereby individual storage units have an exterior access door are prohibited.

16. *Free Standing Signage*. All freestanding signage, including entrance signage located at the Property's two entrances as shown on the Master Plan, shall be externally illuminated monument-style signs, not to exceed eight feet in height. The base of the signs shall be brick or shall use materials similar in type and color with the site architecture. The design of the signs shall be approved by the Director of Planning prior to final site plan approval for consistency with this condition.

17. *Screening of Site Features*. All dumpsters, ground mounted HVAC, mechanical units and cart corrals which are adjacent to buildings shall be screened by an enclosure composed of masonry, closed cell PVC, prefinished metal or cementitious panels, in detail and colors to blend with adjacent building materials. Where present, such features shall be shown on the site plan for the adjacent building, and shall be reviewed and approved by the Director of Planning for consistency with this condition.

18. *Internal Traffic Signage Plan*. An internal signage plan indicating the location of internal traffic signs and the orientation of vehicular flow within the Property shall be included along with the materials submitted for the initial site plan review process. The internal signage plan shall be reviewed and approved by the Director of Planning, or designee, prior to final approval of the initial site plan for the Property. Thereafter, the internal signage plan may be amended with review and approval by the Director of Planning, or designee.

19. *Shared Maintenance of Site Improvements*. Prior to initial site plan approval, Owner shall submit documentation demonstrating that all shared site improvements (including, but not limited to, utilities, stormwater facilities, landscaping, roads and parking lots, and lighting) are subject to appropriate shared maintenance commitments ensuring that the site improvements will be maintained continuously. Compliance with this condition as to the existence of such shared maintenance documentation shall be subject to review and approval of the County Attorney or designee.

20. *Internal Pedestrian Accommodations*. Internal pedestrian connections shall be provided on the Property, including, but not limited to, wherever sidewalks enter a parking area or cross any entrance to the Property or drive-through lane, and shall provide safe connections from

any existing Williamsburg Area Transit Authority (WATA) bus stop. The connections shall be clearly delineated by use of a different color of pavement, brick pavers, or some other method determined to be acceptable by the Director of Planning.

21. *Master Stormwater Management Plan*. Development of the Property shall be governed by one or more Master Stormwater Management Plans (MSWMP). Each MSWMP shall address, at minimum, a Land Bay Area within the Property and shall be approved prior to the first site plan submittal for any such area. Furthermore, each MSWMP shall adhere to the following:
    A. Each land bay area will include a stormwater management facility designed to the standards and specifications current at the time of area development design. Furthermore, each land bay area as shown on the master plan will include no fewer than two treatment trains as part of the area master stormwater approach. Each of these trains will be required to contain at least three low impact development features, such as those noted on the submitted plan set (i.e. vegetated filter strip, permeable pavement, bioretention basin, dry swale, manufactured treatment device).

    B. The MSWMP shall comply with the standards of any adopted watershed management plan in place at time of submittal.

    C. If required by the watershed management plan adopted at the time of submittal, Special Stormwater Criteria (SSC) measures may not also be used to achieve required water quality requirements. At the time of an MSWMP submittal, specific SSC measures may be deemed unsuitable for the type of development as determined by the Director of Stormwater or designee.

22. *Convenience Stores with Fuel Sales*.
    A. Outside Display, Sale or Storage: Unless otherwise stated in this condition, no outside display, sale or storage of merchandise shall be permitted at the Property. As used for this condition, the term "merchandise" shall include but not be limited to ice, soda, candy and/or snack machines. For the Convenience Store, only two outside vending machine and one outside ice chest shall be permitted and, if used, shall be situated against the exterior wall not facing Route 30 and both shall be screened with building materials similar in type and color with the site architecture to minimize visual impacts from adjacent road rights-of-way. Final screening design shall be approved by the Director of Planning as part of the initial site plan submittal.

    B. Use Design: The convenience store shall not be designed as a truck stop, as defined within the Zoning Ordinance.

C. *Intercom and Speaker Noise:* All intercom and other speaker systems on the Property shall operate in such a manner that they shall not be audible from adjacent developments within the same Land Bay.

D. *Fueling Islands:* There shall be no more than six (6) fueling islands associated with the convenience store.

E. *Landscaping:* Prior to final site plan approval, a landscape plan shall be submitted showing adequate screening of the fuel islands from internal uses and/or external properties through the use of landscaped islands and/or medians. The islands and/or medians shall be a minimum of 5' wide in order to accommodate landscaping adjacent to the boundaries of the gas facility. Evergreen plantings with a minimum of 3' tall shall be planted in these medians to adequately screen the fuel islands. The Director of Planning shall determine whether the screening is adequate prior to final site plan approval. Landscaping of the islands/medians shall be installed and/or bonded prior to the issuance of a temporary certificate of occupancy.

F. *Architectural Review:* The architecture of any canopy, including any columns, shall match the primary colors, design and exterior building materials of the convenience store. The canopies shall have a mansard roof design, as determined by the Director of Planning. Any canopy shall have a maximum height of 15 feet measured from the finished grade to the underside of the canopy. The Canopy shall not include signage that involves backlighting or electronic lettering. There shall be no more than two signs on the canopy.

G. *Spill Prevention, Control and Countermeasures (SPCC) Plan:* Prior to the issuance of a Land Disturbing Permit, an SPCC Plan shall be reviewed and approved by the Director of Stormwater and Resource Protection. The SPCC Plan shall address chemical handling, including, but not limited to, oil, diesel, and gasoline.

23. *Truck Terminal*.

A. *Use*: The acceptable use of the Property shall be for a truck terminal as defined within the Zoning Ordinance. The Property shall not be used as a truck stop.

B. *Location:* All truck terminal facilities shall be located in either Land Area 1, 2 or 5. There shall be a minimum setback of 1,000 feet from the Barnes Road right-of-way for any structure for the truck terminal use proposed in Land Area 1. If the truck terminal is proposed in Land Area 1 or 2, a minimum 150-foot wide buffer from Interstate 64 (I-64) shall be provided. The I-64 buffer shall remain undisturbed and an additional landscape plan showing enhanced buffering and landscaping to accomplish screening consistent with Sec. 24-100 of the Zoning Ordinance shall be submitted for review and approval by the Director of Planning prior to site plan approval. The purpose of the

enhanced buffering and landscaping plan is to demonstrate that the use is fully screened from roadways external to the Property and any residential uses.

C. *Maintenance to be Enclosed:* Vehicular maintenance is to occur only within a fully enclosed building. All noise, dust, odor, and other objectionable effects from any maintenance work shall be limited to a fully enclosed building.

D. *Outside Display Sale:* No outside display or sale (wholesale, retail, or otherwise) of merchandise shall be permitted at the Property. As used for this condition, the term "merchandise" shall include but not be limited to ice, soda, candy and/or snack machines.

E. *Outside Storage of Materials:* No outside storage of materials or merchandise shall be permitted at the Property, to include, but not be limited to, off-chassis shipping containers and equipment utilized for repair and servicing.

F. *Spill Prevention, Control and Countermeasures (SPCC) Plan*: Prior to the issuance of a Land Disturbing Permit, an SPCC Plan shall be reviewed and approved by the Director of Stormwater and Resource Protection. The SPCC Plan shall address chemical handling, including, but not limited to, oil, diesel, and gasoline.

G. *Intercom and Speaker Noise:* All intercom and other speaker systems on the Property shall operate in such a manner that they shall not be audible from adjacent developments within the same Land Bay. No intercom or outdoor speakers shall be used between the hours of 11:00 p.m. – 7:00 a.m.

24. <u>*Manufacturing and Processing of Textiles*</u>.

A. *Outside Storage of Materials:* No outside display, sale or storage of materials shall be permitted at the Property. For the purpose of this condition, "materials" shall include, but not be limited to, chemicals, dyes, fabrics, etc. Off-chassis shipping containers, storage barrels, and other containers are prohibited.

B. *Location:* All facilities for the manufacturing and processing of textiles shall be located in either Land Area 1, 2 or 5. There shall be a minimum setback of 1,000 from the Barnes Road right-of-way feet for any structure for this use proposed in Land Area 1. If a textile manufacturing facility is proposed for Land Area 1, 2 or 5, an additional landscape plan showing enhanced buffering and landscaping to accomplish screening consistent with Sec. 24-100 of the Zoning Ordinance shall be submitted for review and approval by the County Director of Planning prior to site plan approval. The purpose of the enhanced buffering and landscaping plan is to demonstrate that the use is fully screened from roadways external to the Property and any residential uses.

C. *Spill Prevention, Control and Countermeasures (SPCC) Plan*: Prior to the issuance of a Land Disturbing Permit, an SPCC Plan shall be reviewed and approved by the Director of Stormwater and Resource Protection. The SPCC Plan shall address chemical handling, including, but not limited to, oil, diesel, dyes and gasoline.

D. *Limitation on Use:* Any such manufacturing and processing of textiles use shall be conducted within a fully enclosed building, with no outside evidence of dust, noise, odor, or other objectionable effect.

25. *Heavy Equipment Sales and Service and Machinery Sales and Services*.

A. *Location:* All facilities for heavy equipment sales and service or machinery sales and service shall be located in either Land Area 1, 2, or 5. There shall be a minimum setback of 1,000 feet from the Barnes Road right-of-way for any structure for this use proposed in Land Area 1. If a heavy equipment sales and service facility or machinery sales and service is proposed for Land Area 1, 2 or Land Area 5, an additional landscape plan showing enhanced buffering and landscaping to accomplish screening consistent with Sec. 24-100 of the Zoning Ordinance shall be submitted for review and approval by the Director of Planning prior to site plan approval. The purpose of the enhanced buffering and landscaping plan is to demonstrate that the use is fully screened from roadways external to the Property and any residential uses.

B. *Spill Prevention, Control and Countermeasures (SPCC) Plan*: Prior to the issuance of a Land Disturbing Permit, an SPCC Plan shall be reviewed and approved by the Director of Stormwater and Resource Protection. The SPCC Plan shall address chemical handling, including, but not limited to, oil, diesel, and gasoline.

C. *Outside Storage of Materials:* Except as described in subsection D below, no outside storage of materials or merchandise shall be permitted at the Property without being fully screened via landscaping or fencing, which is to be shown on the site plan and reviewed and approved by the Director of Planning. Materials and merchandise include, but not be limited to, off-chassis shipping containers and equipment utilized for repair and servicing.

D. *Outside Display, Sale:* The outside display or sale (wholesale, retail, or otherwise) of merchandise shall be permitted only on the locations on the property detailed on the site plan accompanying this proposal. The site plan shall show all adequate features needed, as determined by the Director of Planning, to mitigate visual impacts of this display or sale on adjacent properties. These features include, but are not limited to, landscaping, berming, buffering, vehicular display pad spacing requirements, etc.

E. *Fencing:* Except as described in subsection D above, on site fencing shall be of sufficient height and design to screen all vehicles and material related to the use on the Property from view of the spine road right-of-way and all adjacent rights-of-way.

Fencing shall be shown on the site plan and approved by the Director of Planning prior to site plan approval.

F. *Maintenance to be Enclosed:* All maintenance is to occur only within a fully enclosed building. All noise, dust and odor effects from any maintenance work shall be limited to a fully enclosed building.

26. *Fast-Food Restaurants*.

A. *Signage:* All building face signage shall be externally illuminated or use back-lit or channeled lettered lighting as defined in Section 24-67 of the Zoning Ordinance. For any back-lit or channeled lettered signs, the sign shall meet the criteria listed in Section 24-72 of the Zoning Ordinance, or successor section.

B. *Screening:* The food order board(s) and drive-through pick up window(s) shall be screened from Route 30 with landscaping and/or fencing, as determined by the Director of Planning or his designee.

C. *Outside Display, Sale or Storage:* No outside display, sale or storage of merchandise shall be permitted on the Property.

D. *Intercom and Speaker Noise*: All intercom and other speaker systems on the Property shall operate in such a manner that they shall not be audible from adjacent developments.

E. *Architectural Review - Fast Food Canopy:* The architecture of any canopy accessory to a fast-food restaurant shall match the design and exterior building materials of the fast-food restaurant, in accordance with the "Design Guidelines for Hazelwood Farms Village Center" and dated January 29, 2020. Final design of the canopy shall be reviewed and approved by the Director of Planning prior to site plan approval.

27. *Water and Sewer Facilities*.

A. *Use:* This SUP shall be valid for the installation of a force main and water main, each a diameter of 4 inches or greater, within the VDOT right-of-way for Barhamsville Road (Route 30) from the intersection of La Grange Parkway and Barhamsville Road (Route 30) north along Barhamsville Road to the intersection of Old Stage Road (Route 746), then extending south along Old Stage Road (Route 746) to then extend along the proposed public road to serve the Properties. . A water main loop may be installed from the proposed public road on the Properties under Interstate 64 to serve parcels to the north of the interstate.

B. *Construction Hours:* The hours of construction of the Project shall be limited to daylight hours, Monday through Friday. Limited night and weekend work may be approved by the Director of Planning if requested in advance and it is determined that such work will not negatively affect surrounding properties.

C. *Replanting:* Prior to issuance of a land disturbing permit, a plan addressing the replanting of disturbed vegetation within the right-of-way shall be submitted and approved by the Director of Planning or his designee. The intent of the plan is to restore the area to pre-land disturbing conditions.

D. *Lighting*: There shall be no new permanent lighting associated with the Project.

28. *Commencement for Construction*. Construction of one of these uses, excluding the public water and sewer facilities, authorized within the SUP shall commence within 60 months from the date of approval of this SUP or the SUP shall be void. Construction shall be defined as the first placement of permanent construction of a structure on a site, such as the pouring of slab or footings, the installation of piles, the construction of columns, or any work beyond the stage of excavation. Construction does not include land preparation such as clearing, grading, or filling.

29. *Severance Clause*. This SUP is not severable. Invalidation of any word, phrase, clause, sentence, or paragraph shall invalidate the remainder.

Tax Parcel Nos. 0440100015, 0440100014, 0440100013, and 0430100017

PROFFERS

HAZELWOOD FARMS, LLC

September 27, 2021

Prepared by:
Kaufman & Canoles, P.C.
4801 Courthouse Street, Suite 300
Williamsburg, Virginia 23188

HAZELWOOD FARMS, LLC PROFFERS

THESE PROFFERS ("Proffers") are made this 27th day of September, 2021, by and between **HAZELWOOD FARMS, LLC**, a Virginia limited liability company and TRUSTEES(S) OF **THE R.M. HAZELWOOD, JR. REVOCABLE TRUST DATED MAY 5, 2003** as to an undivided one-half interest, and TRUSTEE(S) OF **THE NETTIE A. HAZELWOOD RESIDUARY TRUST ESTABLISHED UNDER THE NETTIE A. HAZELWOOD REVOCABLE TRUST DATED MAY 5, 2003** as to an undivided one-half interest (collectively, "Owner") (to be indexed as grantor), and **THE COUNTY OF JAMES CITY, VIRGINIA**, a political subdivision of the Commonwealth of Virginia ("County") (to be indexed as grantee), provides as follows:

RECITALS

R-1. Owner is the owner of certain real property located in James City County, Virginia, being more particularly described on EXHIBIT A attached hereto and made a part hereof (the "Property").

R-2. The Property is now zoned B1-General Business and A1-General Agricultural. The Property is designated EO – Economic Opportunity on the County's Comprehensive Plan Land Use Map.

R-3. Owner has applied to rezone the Property from B1 – General Business and A1-General Agricultural to EO – Economic Opportunity, with proffers. The rezoning of the Property to EO, with proffers, is consistent both with the land use designation for the Property on the County Comprehensive Plan and the statement of intent for the economic opportunity zoning district set forth in Section 24-536 of the County Zoning Ordinance, Section 24-1 *et seq.* of the County Code of Ordinances, in effect on the date hereof (the "Zoning Ordinance").

R-4. A community impact study ("Community Impact Study") entitled "Community Impact Statement Rezoning of The Enterprise Center at Hazelwood Farms" prepared by AES Consulting Engineers, dated February 6, 2019 and revised April 2021, has been submitted to the

County Planning Director for review by the County in connection with this proposed rezoning. The Community Impact Study is on file in the office of the County Planning Director.

R-5. Developer has submitted to the County a traffic impact study memorandum with enclosed exhibits and technical appendix ("Traffic Impact Study") entitled "Ch. 527 Traffic Impact Statement for Village Center and Enterprise Center at Hazelwood Farms, James City County, Virginia" prepared by DRW Consultants LLC, dated January 2019, which has been prepared to address traffic associated with the Property. The Traffic Study is on file in the office of the County Planning Director.

R-6. Developer has submitted to the County a conceptual plan of development ("Master Plan") entitled "Master Plan for Rezoning of Enterprise Center at Hazelwood Farms, Stonehouse District, James City County, Virginia", dated February 7, 2019 and updated March 1, 2021, prepared by AES Consulting Engineers, for the Property in accordance with the County Zoning Ordinance. The Master Plan is on file in the office of the County Planning Director.

R-7. Developer has submitted to the County design guidelines for the proposed improvements to the Property ("Design Guidelines") entitled "Design Guidelines for Enterprise Centre", dated April 16, 2021, prepared by Hopke & Associates, Inc. The Design Guidelines are on file in the office of the County Planning Director.

R-8. The County constitutes a high-growth locality as defined by Section 15.2-2298 of the Virginia Code.

R-9. The provisions of the Zoning Ordinance, Section 24-1, *et seq.,* may be deemed inadequate for protecting and enhancing orderly development of the Property. Accordingly, Developer and Owner, in furtherance of the above-described application for rezoning, desires to proffer certain conditions which are limited solely to those set forth herein in addition to the regulations provided for by the Zoning Ordinance for the protection and enhancement of the development of the Property, in accordance with the provisions of Sections 15.2-2303 and 15.2-

2303.4(D)(1) of the Code of Virginia, as amended (the "Virginia Code"), Ordinance N0.31A-346 adopted by the James City County Board of Supervisors on October 8, 2019 and Sec 24-16 of the Zoning Ordinance.

NOW, THEREFORE, for and in consideration of the approval by the Board of Supervisors of the County of the rezoning set forth above and the Master Plan, and pursuant to Sections 15.2-2303 and 15.2-2303.4(D)(1) of the Virginia Code, and Section 24-16 of the Zoning Ordinance, it is agreed that all of the following conditions shall be met and satisfied in developing the Property.

PROFFERS:

1. **Design**. The Property shall be developed generally in accordance with the Master Plan and Design Guidelines (to include, without limitation, the design submittal, review, and approval process contained therein) and with only changes thereto that the County or its duly authorized designee determines do not alter the basic concept or character of the development in accordance with Section 24-23(a)(2)(f) of the Zoning Ordinance in effect on the date hereof; provided, however, such development shall be expressly subject to such changes in configuration, composition and location as required by all other governmental authorities having jurisdiction over such development. The following uses on the Property shall be limited in number as indicated below:

Use	Maximum Number
Fast Food Restaurant with drive-through	1
Convenience Store with fuel sales	1
Bank with drive-through	1

2. **Water Conservation**. Water conservation standards for the Property shall be developed and submitted to and approved by the James City Service Authority ("JCSA") for

general consistency with the terms of this Proffer prior to final site plan approval for development of the Property. The standards shall address such customary and reasonable water conservation measures as limitations on use of irrigation systems and irrigation wells, the use of approved landscaping materials and the use of water conserving fixtures and appliances to promote water conservation and minimize the use of public water resources. Design features, including the use of drought tolerant grasses and plantings, a water conservation plan, and drought management plan shall be implemented to accomplish the limitation on use of public water and groundwater.

3. **Nutrient Management Plan**. The owner of any portion of the Property proposed for development shall be responsible for coordinating with an agent of the Colonial Soil and Water Conservation District ("CSWCD") or, if a CSWCD agent is unavailable, a soil scientist licensed in the Commonwealth of Virginia, or other qualified professional approved by the County's Director of Planning, to conduct soil tests and to develop, based upon the results of the soil tests, customized nutrient management plans (the "Nutrient Plans") for all turf areas within the portions of the Property proposed for development. A Nutrient Plan for each portion of the Property proposed for development shall be submitted to the County Stormwater & Resource Protection Director for review and approval prior to the issuance of a Certificate of Occupancy for each portion of the Property developed. Upon approval, the owner of such portion of the Property shall be responsible for ensuring that any nutrients applied to the turf areas on such portion of the Property be applied in accordance with the applicable Nutrient Plan or any updates or amendments thereto as may be approved by the County Stormwater & Resource Protection Director.

4. **Transportation.**

a. SJR & Phasing Plan Required. Prior to the submittal of a site plan for development within the Property, a Signal Justification Report (the "SJR") shall be prepared pursuant to VDOT IIM-TE-387.0 (or such successor standard as may then be in effect) for the Rt.

30 / Rt. 746 Old Stage Road intersection and a phasing plan ("Phasing Plan") for the following intersections shall submitted to VDOT for review and approval:

i. Traffic signal at Rt. 30 / I-64 westbound ramp junctions; and

ii. SJR Improvements at Rt. 30 / Rt. 746 Old Stage Road

b. SJR & Phasing Plan Meeting. Prior to submittal of the SJR and Phasing Plan, a scoping meeting shall be conducted with VDOT and the County to:

i. Determine any traffic study requirements; and

ii. Review any updated road improvements that have occurred, been proffered by others, or are publically funded.

c. SJR Completion, Phasing Plan Completion & Road Improvement Plans. Prior to final approval of the first site plan for development within the Property:

i. The SJR must be approved by VDOT;

ii.. A Phasing Plan for the improvements recommended in the approved SJR and, except to the extent superseded by the recommendation of the approved SJR, the improvements listed in subsection 3(f) (collectively, the "Traffic Improvements") below must be approved by VDOT;

iii. Road improvement plans containing the portion of the Traffic Improvements recommended by the Phasing Plan based on the then proposed development of the Property shall be submitted to and approved by VDOT; and

iv. The improvements reflected in the road improvement plans described in subsection 3(c)(iii) shall be completed or guaranteed ("Guaranteed") in accordance with Section 15.2-2299 of the Virginia Code (or such successor provision) and the applicable provisions of the County Code of Ordinances (such performance assurances to be herein referred to as a "Guarantee" or "Guarantees").

d. Subsequent Approvals. Prior to approval of any site plan for development

within the Property subsequent to the first site plan:

i. Road improvement plans containing the portion of the Traffic Improvements recommended by the Phasing Plan based on the then proposed development of the Property shall be submitted to and approved by VDOT; and

ii. The improvements reflected in the road improvement plans described in subsection 3(d)(i) shall be completed or Guaranteed.

e. Subsequent SJR Approval. Any subsequent SJR approved by VDOT for the two locations in subsection 3(a) above shall be deemed substituted for the SJR approval specified in subsection 3(c).

f. Intersection Improvements. The following traffic improvements shall be constructed in accordance with the Phasing Plan described above:

i. Rt. 30/Rt. 746 Old Stage Road:

A. Signalization of the intersection, either as a new signal installation or as an addition to a signal installed by others, or other intersection control improvements as determined by VDOT;

B. Addition of a second left turn lane on northbound Rt. 30 at Rt. 746 Old Stage Road;

C. Extension of the right turn lane on southbound Rt. 30 at Rt. 746 Old Stage Road to make a continuous lane with merging lane from I-64 off ramp onto Rt. 30.

D. Third northbound through lane on Rt. 30 at approach to Rt. 746 Old Stage Road and continuing to drop off lane at ramp to I-64 east;

E. Improve Rt. 746 Old Stage Road as shown on the Master Plan; and

F. Add second westbound approach lane and taper on VDOT frontage road.

ii. Rt. 30/westbound I-64 ramps:

A. Signalization of the intersection, either as a new signal installation or as an addition to a signal installed by others, or other intersection traffic control improvements as determined by VDOT; and

B. Any adjustment of pavement required for signal installation or other intersection traffic control improvements as determined by VDOT.

g. Alternative Intersection Design. If VDOT, through SJR review, requires alternative intersection design at any location in subsections 3(f)(i) and 3(f)(ii), then the improvements recommended by the approved SJR shall be substituted for the corresponding improvements listed in subsection 3(f).

h. Multi-Use Path. A VDOT shared use path in the following locations shall be included with all road improvement plans:

i. On southbound Rt. 30 from north of Ramp A (eastbound I-64 exit ramp to Rt. 30) at approximately Station 348+10 to Old Stage Road; provided, however, construction of the VDOT shared use path shall be contingent upon applicable federal and state approvals;

ii. On westbound Rt. 746 Old Stage Road from Rt. 30 to Leisure Road;

iii. On South Entrance #1 (as shown on the Master Plan) from Rt. 746 Old Stage Road to Barnes Road; and

iv. On northbound Leisure Road from Rt. 746 Old Stage Road to limits of the Property.

The foregoing shared use paths shall be located in public right of way or within an easement dedicated to public use and VDOT maintenance.

j. Barnes Road. There shall be no vehicular access to Barnes Road except in the event of emergencies.

k. Bus Stops. A public bus stop shall be included in the first site plan submitted for development within Area 3 of the Master Plan. If placed on a public road, the bus stop may include a bumpout and will have connections to the shared use path system. If placed within the private property parking lot, the bus stop will include landings for bus patrons and pedestrian connections to shared used paths on public right of way. The bus stop shall be completed or Guaranteed prior to issuance of a certificate of occupancy for the development shown on such site plan. Bus stop design shall be coordinated with the Williamsburg Area Transit Authority (WATA) prior to site plan approval to meet their design standards for shelters and pull-offs and ensure ADA accessibility. Prior to final site plan approval the bus stop location, design, and bus circulation shall be approved by WATA and the Director of Planning.

l. Trip Generation. Development of the Property shall not exceed 944 PM peak hour trips as determined by the most recent edition of the Institute of Transportation Engineers Trip Generation Manual (the "ITE Manual") at the time of each site plan approval for the development of the Property. Accordingly, each site plan for the development of the Property shall, when submitted to the County for review, contain an accounting of the PM peak hour trip generation, as determined by the ITE Manual, associated with the development proposed by such site plan, all development shown on previously approved site plans for development of the Property (except to the extent the proposed site plan is in lieu of a previously approved site plan for development of the Property), and all development shown on site plans then under review by the County for development of the Property. No site plan for development of the Property shall be approved by the County which includes an amount of development that, together with all other development shown on previously approved site plans for development of the Property (except to the extent the proposed site plan is in lieu of a previously approved site plan for development of the Property), would generate more than 944 PM peak hour trips as determined by the ITE Manual. In determining and accounting for the foregoing PM peak hour trips: (i) internal and

pass-by capture shall be determined in accordance with VDOT standards, and (ii) traffic counts for completed and occupied development on the Property may, with the approval of the County's Director of Planning, be substituted for ITE Manual estimated trips.

5. **Residential Phasing**. No certificates of occupancy shall be issued by the County for residential buildings until after a certificate or certificates of occupancy have been issued for at least 1,000,000 square feet of non-residential building(s) on the Property.

6. **Sustainability of Residential Construction**. The owner of the portion of the Property shown as Area 6 on the Master Plan (the "Residential Parcel") shall achieve EarthCraft/Viridiant gold certification, or equivalent certification as determined by the County's Director of Planning for all residential buildings to be constructed on the Residential Parcel. Proof of EarthCraft/Viridiant gold certification, or equivalent certification, shall be provided to the County's Director of Planning within three months of issuance of a Certificate of Occupancy for the residential buildings constructed on the Residential Parcel or such other time as is agreed to in writing in advance by the County's Director of Planning.

7. **Parks and Recreation**. The site plan for development of residential units on Area 6 of the Master Plan shall include such recreational amenities as necessary to comply with the requirements of the now current James City County Parks and Recreation Master Plan Update 2017 – Appendix F Development Guidelines; provided, however, such site plan may include alternative recreational amenities to those specified in the guidelines upon approval by the Planning Director that such alternative recreational amenities are of a comparable recreational value and extent to those specified in the guidelines. Such recreational amenities shall be completed or Guaranteed prior to issuance of a certificate of occupancy for the development shown on such site plan.

8. **Water and Sewer Master Plans**. Owner shall submit to the JCSA for its review and approval an overall master water and sanitary sewer plan for the Property prior to the

submission of any development or subdivision plans for the Property. The overall water master plan will be submitted as a skeletized layout reflecting the major pressure lines of the system with calculations justifying the line sizes. The purpose of the overall water master plan is to be sure the "system backbone" is appropriately sized for total build-out and not handled on a section-by-section submittal basis.

9. **Headings**. All section headings and subheadings of these Proffers are for convenience only and shall not be read as a part of these Proffers or utilized in interpretation thereof.

10. **Delegation of Subsequent Approvals**. The County Board of Supervisors by accepting these Proffers is exercising its legislative function. While these Proffers provide for subsequent approvals by the County or by its duly authorized designees appointed by the County, such subsequent approvals by any duly authorized designee of the County shall not include the exercise of any legislative function.

11. **Severability**. In the event that any clause, sentence, paragraph, section or subsection of these Proffers shall be adjudged by any court of competent jurisdiction to be invalid or unenforceable for any reason, including a declaration that it is contrary to the Constitution of the Commonwealth of Virginia or of the United States, or if the application thereof to any owner of any portion of the Property or to any government agency is held invalid, such judgment or holding shall be confined in its operation to the clause, sentence, paragraph, section or subsection hereof, or the specific application thereof directly involved in the controversy in which the judgment or holding shall have been rendered or made, and shall not in any way affect the validity of any other clause, sentence, paragraph, section or provision hereof.

12. **Successors and Assigns**. These Proffers shall be binding upon and shall inure to the benefit of the parties hereto, and their respective heirs, successors and/or assigns;

provided, however once a party ceases to own any portion of the Property, such party shall have no continuing liability hereunder.

13. **Void if Rezoning Not Approved**. In the event that any of the proposed rezoning sought by this application is not approved by the County as submitted or is overturned by subsequent judicial determination, these Proffers shall be null and void.

14. **Reasonable Proffers**. The Owner, as evidenced by its signature below, deems these proffers to be reasonable and appropriate.

[SIGNATURES APPEAR ON THE FOLLOWING PAGES]

[COUNTERPART SIGNATURE PAGE TO PROFFERS]

WITNESS the following signatures, thereunto duly authorized:

HAZELWOOD FARMS, LLC , a Virginia limited liability company

By: Robert M. Hazelwood III

Name: Robert M. Hazelwood, III

Title: MEMBER

County of Mecklenburg
State of North Carolina

~~COMMONWEALTH~~ OF ~~VIRGINIA~~ NC
AT LARGE, to-wit:

The foregoing instrument was acknowledged before me this 28th day of September, 2021, by Robert M Hazelwood III member of Hazelwood Farms, LLC, a Virginia limited liability, in its behalf.

Carol K Palillo
Notary Public

My commission expires: July 21 2023
My registration number is: 2008 2050 0063

CAROL K PALILLO
Notary Public - North Carolina
Mecklenburg County
My Commission Expires July 21, 2023

[COUNTERPART SIGNATURE PAGE TO PROFFERS]

WITNESS the following signatures, thereunto duly authorized:

HAZELWOOD FARMS, LLC , a Virginia limited liability company

By: Larry Hazelwood

Name: LARRY Hazelwood

Title: Member

COMMONWEALTH OF VIRGINIA
AT LARGE, to-wit:

The foregoing instrument was acknowledged before me this 27th day of September, 2021, by Larry Hazelwood of Hazelwood Farms, LLC, a Virginia limited liability, in its behalf.

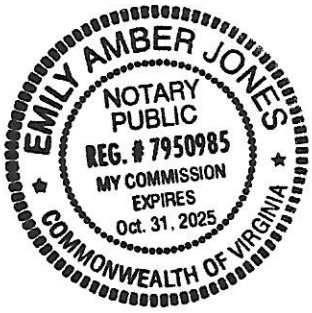
Notary Public

My commission expires: 12/31/2021
My registration number is: 262639

MINI N. AMIN
Notary Public
Commonwealth of Virginia
Registration No. 262639
My Commission Expires Dec 31, 2021

[COUNTERPART SIGNATURE PAGE TO PROFFERS]

WITNESS the following signatures, thereunto duly authorized:



HAZELWOOD FARMS, LLC , a Virginia limited liability company

By: Deborah H. Drudge

Name: Deborah H. Drudge

Title: Manager

COMMONWEALTH OF VIRGINIA
AT LARGE, to-wit:

The foregoing instrument was acknowledged before me this 28th day of Sept., 2021, by Deborah H Drudge, _____ of Hazelwood Farms, LLC, a Virginia limited liability, in its behalf.

Emily Jones
Notary Public

My commission expires: 10/31/2025
My registration number is: 7950985

Emily Jones

[COUNTERPART SIGNATURE PAGE TO PROFFERS]

Robert M. Hazelwood III
Trustee
Trustees(s) of The R.M. Hazelwood, Jr. Revocable Trust Dated May 5, 2003

Robert M. Hazelwood III
Trustee
Trustee(s) of The Nettie A. Hazelwood Residuary Trust Established Under The Nettie A. Hazelwood Revocable Trust Dated May 5, 2003

County of Mecklenburg
State of North Carolina

~~COMMONWEALTH OF VIRGINIA~~ CKP
AT LARGE, to-wit:

The foregoing instrument was acknowledged before me this 28th day of September, 2021, by Robert M Hazelwood III, Trustees(s) of The R.M. Hazelwood, Jr. Revocable Trust Dated May 5, 2003.

Carol K Palillo
Notary Public

My commission expires: July 21, 2023
My registration number is: 2008 2050 0063

CAROL K PALILLO
Notary Public - North Carolina
Mecklenburg County
My Commission Expires July 21, 2023

County of Mecklenburg
State of North Carolina
~~COMMONWEALTH OF VIRGINIA~~
AT LARGE, to-wit:

The foregoing instrument was acknowledged before me this 28th day of September, 2021, by Robert M Hazelwood III, Trustee(s) of The Nettie A. Hazelwood Residuary Trust Established Under The Nettie A. Hazelwood Revocable Trust Dated May 5, 2003.

Carol K Palillo
Notary Public

My commission expires: July 21, 2023
My registration number is: 2008 2050 0063

CAROL K PALILLO
Notary Public - North Carolina
Mecklenburg County
My Commission Expires July 21, 2023

[COUNTERPART SIGNATURE PAGE TO PROFFERS]

Larry Hazelwood

Larry Hazelwood Trustees(s) of The R.M. Hazelwood, Jr. Revocable Trust Dated May 5, 2003

Larry Hazelwood

Larry Hazelwood Trustee(s) of The Nettie A. Hazelwood Residuary Trust Established Under The Nettie A. Hazelwood Revocable Trust Dated May 5, 2003

COMMONWEALTH OF VIRGINIA
AT LARGE, to-wit:

The foregoing instrument was acknowledged before me this 27th day of September 2021, by Larry Hazelwood, Trustees(s) of The R.M. Hazelwood, Jr. Revocable Trust Dated May 5, 2003.

Notary Public

My commission expires: 12/31/2021
My registration number is: 262639

MINI N. AMIN
Notary Public
Commonwealth of Virginia
Registration No. 262639
My Commission Expires Dec 31, 2021

COMMONWEALTH OF VIRGINIA
AT LARGE, to-wit:

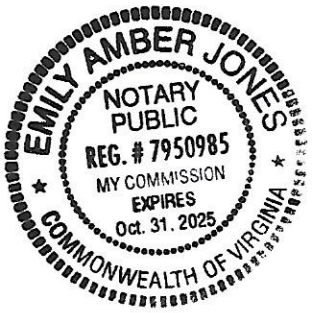
The foregoing instrument was acknowledged before me this 27th day of September 2021, by Larry Hazelwood, Trustee(s) of The Nettie A. Hazelwood Residuary Trust Established Under The Nettie A. Hazelwood Revocable Trust Dated May 5, 2003.

Notary Public

My commission expires: 12/31/2021
My registration number is: 262639

MINI N. AMIN
Notary Public
Commonwealth of Virginia
Registration No. 262639
My Commission Expires Dec 31, 2021

[COUNTERPART SIGNATURE PAGE TO PROFFERS]



Deborah H. Drudge Trustees(s) of The R.M. Hazelwood, Jr. Revocable Trust Dated May 5, 2003

Deborah H. Drudge Trustee(s) of The Nettie A. Hazelwood Residuary Trust Established Under The Nettie A. Hazelwood Revocable Trust Dated May 5, 2003

COMMONWEALTH OF VIRGINIA
AT LARGE, to-wit:

The foregoing instrument was acknowledged before me this 28th day of Sept., 2021, by Deborah H Drudge, Trustees(s) of The R.M. Hazelwood, Jr. Revocable Trust Dated May 5, 2003.

Notary Public
Emily Jones

My commission expires: 10/31/2025
My registration number is: 7950985

COMMONWEALTH OF VIRGINIA
AT LARGE, to-wit:

The foregoing instrument was acknowledged before me this 28th day of Sept., 2021, by Deborah H Drudge, Trustee(s) of The Nettie A. Hazelwood Residuary Trust Established Under The Nettie A. Hazelwood Revocable Trust Dated May 5, 2003.

Notary Public
Emily Jones

My commission expires: 10/31/2025
My registration number is: 7950985

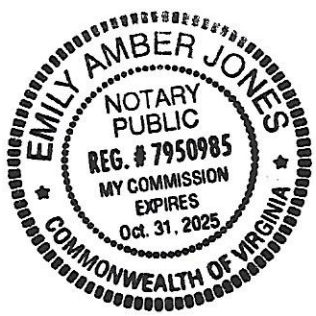
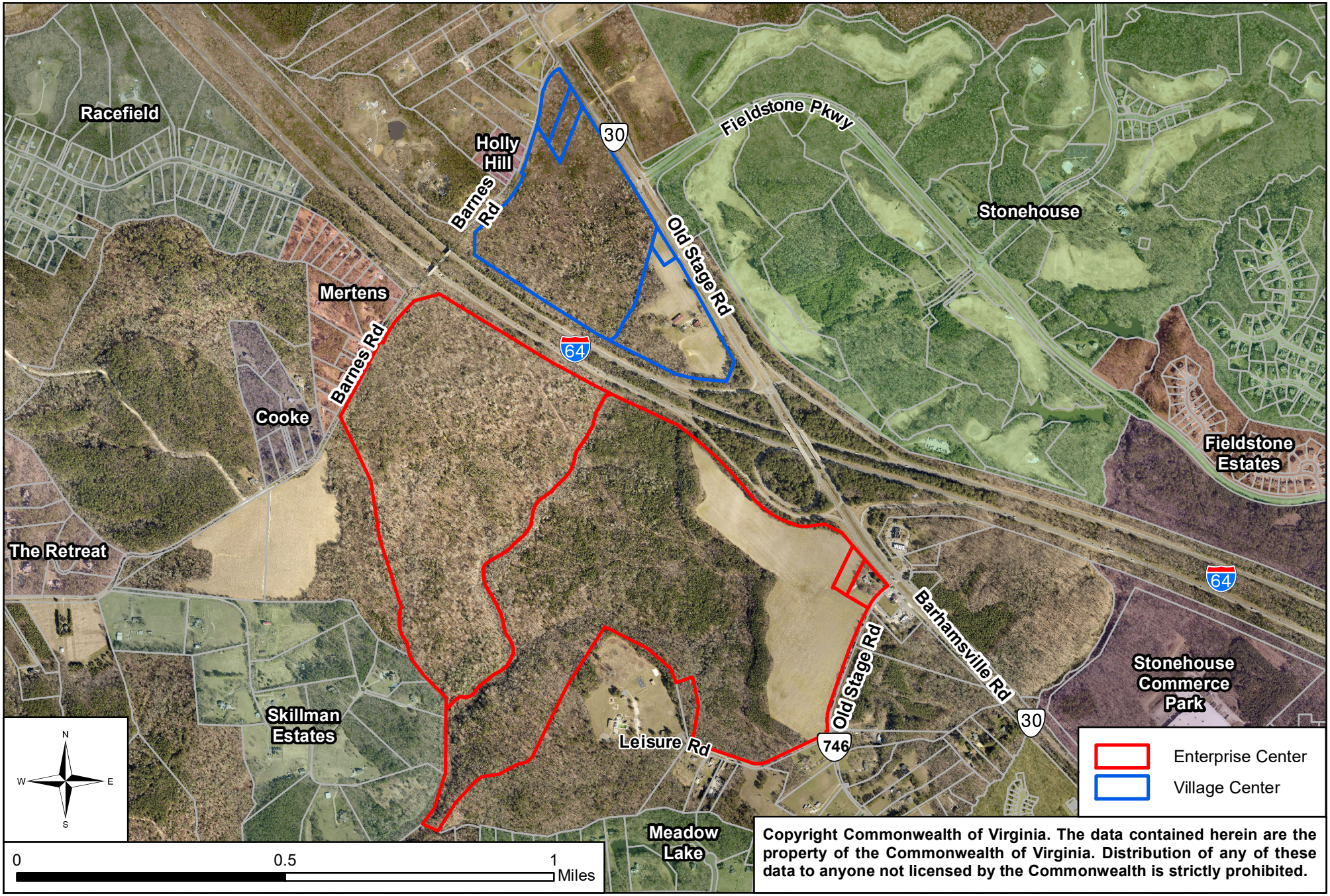


EXHIBIT A

Areas 1 – 6 as shown on the Master Plan

JCC Z-19-0006, SUP-19-0005 & SUP-19-0006: Hazelwood Enterprise Center & Village Center



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MASTER PLAN FOR

REZONING OF ENTERPRISE CENTER

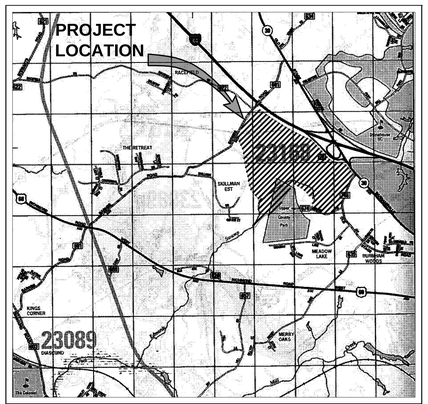
AT

HAZELWOOD FARMS

STONEHOUSE DISTRICT JAMES CITY COUNTY VIRGINIA

GENERAL NOTES

1. TOPOGRAPHIC INFORMATION IS BASED ON 2-FOOT CONTOUR INTERVALS PROVIDED BY AN AERIAL SURVEY FLOWN IN 2015.
2. SHEET 2, ENVIRONMENTAL INVENTORY, INDICATES 25% SLOPES, SOIL INVENTORY, WETLANDS, THE APPROXIMATE LOCATION OF RESOURCE PROTECTION AREAS (RPA) AND ASSOCIATED BUFFERS, AND PERENNIAL STREAM DETERMINATIONS. FOR FURTHER INFORMATION ON THE ENVIRONMENTAL INVENTORY, REFER TO THE COMMUNITY IMPACT STATEMENT.
3. THIS PROJECT IS LOCATED WITHIN THE WARE CREEK AND DIASCUND CREEK RESERVOIR WATERSHEDS.
4. CURB AND GUTTER STREETS ARE PROPOSED.
5 ALL PUBLIC STREETS WITHIN THE DEVELOPMENT WILL BE DESIGNED PER APPLICABLE VDOT STANDARDS.
6. HYDROLOGIC UNIT CODES
   Y062 WARE CREEK
   JL27 DIASCUND CREEK RESERVOIR
7. MAXIMUM BUILDING HEIGHT = 60'



VICINITY MAP
(Approximate Scale: 1"=2000')

Copyright ADC The Map People permitted use number 21004223

COUNTY PROJECT NO.: CZ-19-006
SUP-19-006
ORIGINAL SUBMITTAL DATE: 2/7/2019
APPROVAL DATE:

INDEX OF SHEETS

SHEET NO.	SHEET DESCRIPTION
MP-1	COVER SHEET
MP-2	EXISTING CONDITIONS PLAN
MP-3	CONCEPTUAL LAND USE AND SHARED USE PATH PLAN
MP-4	CONCEPTUAL STORMWATER MASTER PLAN
MP-5	CONCEPTUAL UTILITY PLAN
MP-6	CONCEPTUAL RT. 30 ROAD IMPROVEMENTS PLAN

SITE DATA:

SITE ADDRESS: 9400 BARNES ROAD, 275 & 301 OLD STAGE ROAD
WILLIAMSBURG, VIRGINIA 23185

CURRENT ZONING: A-1, GENERAL AGRICULTURAL
B-1, GENERAL BUSINESS

PROPOSED ZONING: EO, ECONOMIC OPPORTUNITY

PARCELS:

T.M. 0430100017 (PART 2)	130.60± AC (A-1)
T.M. 0440100013	193.75± AC (B-1)
T.M. 0440100014	1.53± AC (B-1)
T.M. 0440100015	2.30± AC (B-1)
TOTAL ACREAGE:	328.18± AC

FLOOD HAZARD MAP: THIS PROPERTY IS IN FLOOD ZONE "X" AS SHOWN ON MAP NUMBER 51095C0037D, PANEL 0037D, FOR COMMUNITY NUMBER 510201, DATED 12/16/2015 OF THE FLOOD INSURANCE RATE MAPS FOR JAMES CITY COUNTY, VIRGINIA. ZONE "X" IS DEFINED AS AREAS OUTSIDE THE 500 YEAR FLOOD PLAIN.

Rev.	Date	Description	By
3	3/12/21	REVISED PER JCC COMMENTS	JAG
2	1/25/20	UPDATED PER JCC COMMENTS	JAG
1	8/29/19	UPDATED PER JCC COMMENTS	JAG

5248 Olde Towne Road, Suite 1
Williamsburg, Virginia 23188
Phone: (757) 253-0040
Fax: (757) 220-8994
www.aesva.com

AES CONSULTING ENGINEERS
Hampton Roads | Central Virginia | Middle Peninsula

MASTER PLAN FOR
REZONING OF ENTERPRISE CENTER
AT
HAZELWOOD FARMS
STONEHOUSE DISTRICT JAMES CITY COUNTY VIRGINIA

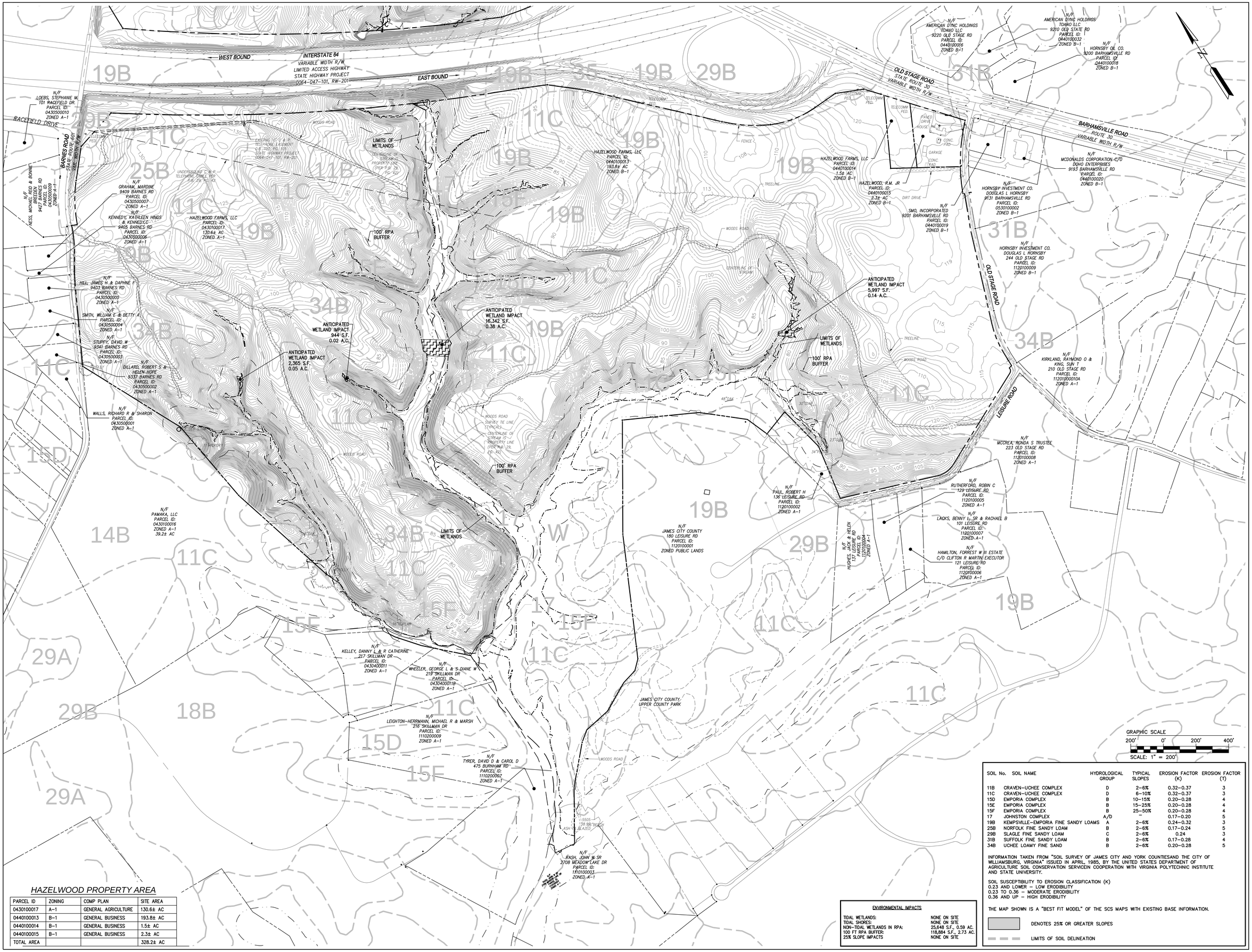
Project Contacts:	JAG
Project Number:	W10325-01
Scale: NONE	Date: 2/7/19

Sheet Title: COVER SHEET

Sheet Number
MP-1

S:\JOB\W10325\01\Hazelwood Farms 2.0\Layouts\Master Planning\Drafted Rezoning\W10325(1) MP1 cover.dwg, 3/12/2021 4:34:55 PM, GeenyAnn

No.	Date	Description	By
3	3/12/21	REVISED PER JCC COMMENTS	JAG
2	1/22/20	UPDATED PER JCC COMMENTS	JAG
1	8/20/19	UPDATED PER JCC COMMENTS	JAG



HAZELWOOD PROPERTY AREA

PARCEL ID	ZONING	COMP PLAN	SITE AREA
0430100017	A-1	GENERAL AGRICULTURE	130.6± AC
0440100013	B-1	GENERAL BUSINESS	193.8± AC
0440100014	B-1	GENERAL BUSINESS	1.5± AC
0440100015	B-1	GENERAL BUSINESS	2.3± AC
TOTAL AREA			328.2± AC

SOIL No.	SOIL NAME	HYDROLOGICAL GROUP	TYPICAL SLOPES	EROSION FACTOR (K)	EROSION FACTOR (T)
11B	CRAVEN-UCHEE COMPLEX	D	2-6%	0.32-0.37	3
11C	CRAVEN-UCHEE COMPLEX	D	6-10%	0.32-0.37	3
15D	EMPORIA COMPLEX	B	10-15%	0.20-0.28	4
15E	EMPORIA COMPLEX	B	15-25%	0.20-0.28	4
15F	EMPORIA COMPLEX	B	25-50%	0.20-0.28	4
17	JOHNSTON COMPLEX	A/D	-	0.17-0.20	5
19B	KEMPSVILLE-EMPORIA FINE SANDY LOAMS	A	2-6%	0.24-0.32	3
25B	NORFOLK FINE SANDY LOAM	B	2-6%	0.17-0.24	5
29B	SLAGLE FINE SANDY LOAM	C	2-6%	0.24	3
31B	SUFFOLK FINE SANDY LOAM	B	2-6%	0.17-0.28	4
34B	UCHEE LOAMY FINE SAND	B	2-6%	0.20-0.28	5

INFORMATION TAKEN FROM "SOIL SURVEY OF JAMES CITY AND YORK COUNTIESAND THE CITY OF WILLIAMSBURG, VIRGINIA" ISSUED IN APRIL, 1985, BY THE UNITED STATES DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICEIN COOPERATION WITH VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY.

SOIL SUSCEPTIBILITY TO EROSION CLASSIFICATION (K)
0.23 AND LOWER - LOW ERODIBILITY
0.23 TO 0.36 - MODERATE ERODIBILITY
0.36 AND UP - HIGH ERODIBILITY

THE MAP SHOWN IS A "BEST FIT MODEL" OF THE SCS MAPS WITH EXISTING BASE INFORMATION.

DENOTES 25% OR GREATER SLOPES

LIMITS OF SOIL DELINEATION

ENVIRONMENTAL IMPACTS

TIDAL WETLANDS:	NONE ON SITE
TIDAL SHORES:	NONE ON SITE
NON-TIDAL WETLANDS IN RPA:	25,648 S.F., 0.59 AC.
100 FT RPA BUFFER:	118,884 S.F., 2.73 AC.
25% SLOPE IMPACTS	NONE ON SITE

5248 Olde Towne Road, Suite 1
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www.aesva.com
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Hampton Roads | Central Virginia | Middle Peninsula

MASTER PLAN FOR
REZONING OF ENTERPRISE CENTER
AT
HAZELWOOD FARMS
JAMES CITY COUNTY VIRGINIA
STONEHOUSE DISTRICT

Project Contacts:	JAG
Project Number:	W10325-01
Scale: 1"=200'	Date: 2/7/19

Sheet Title:
EXISTING CONDITIONS PLAN

Sheet Number
MP-2

S:\0WORKING\W10325\01\Engineering\Drawings\Rezoning\Exhibits\Rezoning Exhibit.dwg, 3/12/2021 8:56:37 AM, Jeff Gallagher

GRAPHIC SCALE
200' 0' 200' 400
SCALE: 1" = 200'

No.	Date	Description	By
3	3/12/21	REVISED PER JCC COMMENTS	JAG
2	1/20/20	UPDATED PER JCC COMMENTS	JAG
1	8/20/19	UPDATED PER JCC COMMENTS	JAG

WEST BOUND
INTERSTATE 64
VARIABLE WIDTH R/W
LIMITED ACCESS HIGHWAY
STATE HIGHWAY PROJECT
0064-047-101, RW-201
EAST BOUND

CORRIDOR TO BE RESERVED TO ACCOMMODATE JCSA EASEMENT FOR POTENTIAL FUTURE WATERMAIN LOOP (FINAL LOCATION TO BE DETERMINED AT TIME OF SITE PLAN ON SUBJECT PARCEL(S))

N/F LOEBS, STEPHANIE M. 101 RACEFIELD DR. PARCEL ID: 0430500010 ZONED A-1

BARNES ROAD STATE ROUTE 601 VARIABLE WIDTH R/W

100' PERIMETER BUFFER

50' BLDG SETBACK & LANDSCAPE BUFFER

100' RPA BUFFER

LIMITS OF WETLANDS

N/F DEFOREST KERRY ANN 9415 BARNES RD PARCEL ID: 0430500008 ZONED A-1

N/F GRAHAM, MARDINE 9409 BARNES RD PARCEL ID: 0430500007 ZONED A-1

N/F HOGGE KATHERINE & MOOREFIELD NATHANIEL 9405 BARNES RD PARCEL ID: 0430500006 ZONED A-1

N/F HILL, JAMES H & DAPHNE F 9403 BARNES RD PARCEL ID: 0430500005 ZONED A-1

N/F SMITH, WILLIAM E & BETTY A PARCEL ID: 0430500004 ZONED A-1

N/F STUPPY, DAVID W 9341 BARNES RD PARCEL ID: 0430500003 ZONED A-1

N/F NESS, MICHAEL REID & BONNIE BREEDEN 9427 BARNES RD PARCEL ID: 0430500009 ZONED A-1

AREA 1
76± AC.
LAND USE:
F,G,H,I

AREA 2
67± AC.
LAND USE:
F,G,H,I

AREA 3
27± AC.
LAND USE:
E,G,I,J

AREA 4
51± AC.
LAND USE:
F,G,H,I

AREA 5
32± AC.
LAND USE
F,G,H,I

AREA 6
26± AC.
LAND USE:
C,D,J

AREA 7
34± AC.
LAND USE
J

NOTE: A BUS STOP WILL BE LOCATED WITHIN THE "URBAN CORE"

MULTI-USE PATH (5,130± LF)

MULTI-USE PATH

25' SETBACK

PROPOSED PUBLIC ROAD

100' PERIMETER BUFFER

N/F DILLARD, ROBERT S & HELEN HOPE 9337 BARNES RD PARCEL ID: 0430500002 ZONED A-1

N/F WALLS, RICHARD R & SHARON PARCEL ID: 0430500001 ZONED A-1

N/F PAMAKA, LLC PARCEL ID: 0431000016 ZONED A-1 39.2± AC

100' RPA BUFFER

LIMITS OF WETLANDS

POTENTIAL PEDESTRIAN ACCESS

N/F KELLEY, DANNY L & R CATHERINE 212 SKILLMAN DR PARCEL ID: 0430400011 ZONED A-1

N/F WHEELER, GEORGE L & S DIANE W 219 SKILLMAN DR PARCEL ID: 0430400011B ZONED A-1

N/F LEIGHTON-HERRMANN, MICHAEL R & MARSH 216 SKILLMAN DR PARCEL ID: 1110200009 ZONED A-1

N/F TYRER, DAVID D & CAROL D 475 BURNHAM RD PARCEL ID: 1110200007 ZONED A-1

JAMES CITY COUNTY UPPER COUNTY PARK

N/F JAMES CITY COUNTY 180 LEISURE RD PARCEL ID: 1120100001 ZONED PUBLIC LANDS

N/F PAUL, ROBERT H 136 LEISURE RD PARCEL ID: 1120100002 ZONED A-1

N/F HUGHES, JACK & HELEN 137 LEISURE RD PARCEL ID: 1120100004 ZONED A-1

N/F RUTHERFORD, ROBIN C 129 LEISURE RD PARCEL ID: 1120100005 ZONED A-1

N/F HAMILTON, FORREST W III ESTATE C/O CLIFTON R MARTIN EXECUTOR 121 LEISURE RD PARCEL ID: 1120100006 ZONED A-1

N/F LACKS, BENNY L, SR & RACHAEL B 101 LEISURE RD PARCEL ID: 1120100007 ZONED A-1

N/F MCCREA, RONDA S TRUSTEE 223 OLD STAGE RD PARCEL ID: 1120100008 ZONED A-1

N/F KIRKLAND, RAYMOND O & KING, SUN T 210 OLD STAGE RD PARCEL ID: 1120100010A ZONED A-1

LEISURE ROAD

OLD STAGE ROAD STATE ROUTE 30 VARIABLE WIDTH R/W

BARHAMSVILLE ROAD ROUTE 30 VARIABLE WIDTH R/W

STA 348+02 BEGIN SHARED USE PATH RT. 30

MULTI-USE PATH (1100± LF)

N/F AMERICAN DYNC HOLDINGS TOANO LLC 9220 OLD STAGE RD PARCEL ID: 0440100016 ZONED B-1

N/F AMERICAN DYNC HOLDINGS TOANO LLC 9210 OLD STATE RD PARCEL ID: 0440100032 ZONED B-1

N/F HORNSBY OIL CO. 9200 BARHAMSVILLE RD PARCEL ID: 0440100018 ZONED B-1

PROPOSED TRAFFIC SIGNAL

N/F SMO, INCORPORATED 9201 BARHAMSVILLE RD PARCEL ID: 0440100019 ZONED B-1

N/F MCDONALDS CORPORATION C/O DOHO ENTERPRISES 9193 BARHAMSVILLE RD PARCEL ID: 0440100020 ZONED B-1

N/F HORNSBY INVESTMENT CO. DOUGLAS L HORNSBY 9131 BARHAMSVILLE RD PARCEL ID: 0530100002 ZONED B-1

N/F HORNSBY INVESTMENT CO. DOUGLAS L HORNSBY 244 OLD STAGE RD PARCEL ID: 1120100009 ZONED B-1

50' BLDG SETBACK & LANDSCAPE BUFFER

30' LANDSCAPE BUFFER

MULTI-USE PATH (1800± LF)

SOUTH #2 ENTRANCE

SOUTH #1 ENTRANCE

PARK/OPEN SPACE AREAS ±1.50 AC. (LOCATION SHOWN FOR SCALE ONLY)

FUTURE RIGHT OF WAY TO BE DEDICATED ±131,173 S.F., ±3.01 AC.

BEGIN SHARED USE PATH PI STA 1+19.72 ROUTE 746 = END LIMITED ACCESS FENCE STA 359+24.41 ROUTE 30

END SHARED USE PATH RT. 746 PI STA 16+61.28 ROUTE 746 = BEGIN SHARED USE PATH STA 1+01.06 LEISURE ROAD

PARK/RECREATION AREA(S) ±2.00 AC. (LOCATION SHOWN FOR SCALE ONLY)

MULTI-USE PATH (600± LF)

PEDESTRIAN ACCESS TO PARK ALONG LEISURE ROAD

END SHARED USE PATH LEISURE ROAD STA 15+74

LEGEND:

- PRIVATE/COMMERCIAL ROAD ACCESS
- PROPERTY BOUNDARY
- APPROXIMATE INTERNAL DEVELOPMENT BOUNDARY
- MULTI-USE PATH
- URBAN CORE BOUNDARY
- OPEN SPACE WITHIN URBAN CORE
- FRONTAGE RETAIL AREA: SHALL BE LIMITED IN NUMBER TO NO MORE THAN: 1 FAST FOOD W/ DRIVE THRU., 1 CONVENIENCE STORE W/ FUEL SALES, AND 1 BANK W/DRIVE THRU. SPECIAL CONSIDERATION SHOULD BE GIVEN TO SCREEN DRIVE THRU WINDOWS FROM ROUTE 30 AND OLD STAGE ROAD.

TOTAL SITE:

TOTAL AREA	TOTAL DEVELOPABLE AREA	% OF TOTAL SITE AREA
328± AC.	224.8± AC.	±69% OF TOTAL SITE AREA

MAXIMUM RETAIL/COMMERCIAL AND RESIDENTIAL (15% OF DEVELOPABLE AREA): 33.72 AC.±
OPEN SPACE (WITHIN AREA 3&6) – 10% OF DEVELOPABLE AREA
REQUIRED: ±3.37 AC.±
PROVIDED: ±3.5 AC.±*

*NOTE: APPROXIMATE LOCATION SHOWN FOR PLANNING PURPOSES. EXACT LOCATION OF PARK/OPEN SPACES WILL BE DETERMINED WITH FUTURE SITE PLANS.
** NOTE: THE URBAN CORE IS SHOWN AS A COMBINATION OF LAND AREAS 3 AND 6, TOTALING 53± AC. LAND AREA 3 WILL BE A MIX OF PRIMARY AND NON-PRIMARY USES, AND THE NON-PRIMARY USES WILL NOT EXCEED 11.2± AC, AS REQUIRED.

*DENSITY PER GROSS ACRE = DWELLING UNITS/ ACRE

DESIGNATED LAND USE KEY:
C: MULTIFAMILY DWELLINGS UP TO AND INCLUDING 4 UNITS
D: APARTMENTS
E: COMMERCIAL USES
F: WHOLESALE AND WAREHOUSE USES
G: OFFICE USES
H: LIGHT INDUSTRIAL USES
I: INSTITUTIONAL OR PUBLIC USES
J: AREAS OF COMMON OPEN SPACE, WITH RECREATION AREAS NOTED
M: STRUCTURES CONTAINING A MIXTURE OF USES
X: OTHER STRUCTURES, FACILITIES OR AMENITIES

DEVELOPMENT TABULATION

AREA NUMBER	AREA DESIGNATION	PROPOSED USE	TOTAL AREA (AC.)	NON-DEVELOPABLE AREA (AC.)	DEVELOPABLE AREA (AC.)	MAX GROSS FLOOR AREA (RATIO)
1,2,4,5	F,G,H,I	INDUSTRIAL, WHOLESALE, WAREHOUSE, OFFICE, INSTITUTIONAL	±226	±64.5	±161.5	UP TO 2,820,000 S.F.(WAREHOUSE/ INDUSTRIAL/OFFICE), (0.3 MAX)
1	FGHI		±76	±10.8	±65.2	
2	FGHI		±67	±16.5	±50.5	
4	FGHI		±51	±23.7	±27.3	
5	FGHI		±32	±13.5	±18.5	
3	E,G,I,J	COMMERCIAL, OFFICE, INSTITUTIONAL RECREATION AREA/OPEN SPACE	±27	±0.0	±27 (MAXIMUM OF 11.2 AC. OF RETAIL/COMMERCIAL USE)	UP TO 75,000 S.F. (COMMERCIAL) & 100,000 S.F. (OFFICE), (0.3 MAX)
6	C,D,J	RESIDENTIAL RECREATION AREA/OPEN SPACE	±26	±3.5	±22.5**	UP TO 250 RESIDENTIAL UNITS
7	J	RECREATION AREA/OPEN SPACE	±34	±19.2	±14.8	
RW		PUBLIC RIGHT-OF-WAY	±15			
		TOTALS	**±328**	**±87.2**	**±225.8**	**UP TO 2,920,000 S.F. (WAREHOUSE/INDUSTRIAL/OFFICE); 75,000 S.F. (COMMERCIAL) AND 250 RESIDENTIAL UNITS**

**NOTE: A MAXIMUM OF 22.5 AC. SHALL BE DEVELOPED AS RESIDENTIAL; A MAXIMUM 7 DWELLING UNITS/DEVELOPABLE ACRE FOR MULTI-FAMILY ATTACHED STRUCTURES AND 10 DWELLING UNITS PER DEVELOPABLE ACRE FOR APARTMENTS.

*NOTE: MAXIMUM OVERALL GFA SHALL BE RESTRICTED BASED UPON A TRIP GENERATION OF 944 PM PEAK HOUR TRIPS FROM THE SITE. IF TRIPS EXCEED THAT AMOUNT A REVISION TO THE APPROVED TRAFFIC STUDY SHALL BE REQUIRED.

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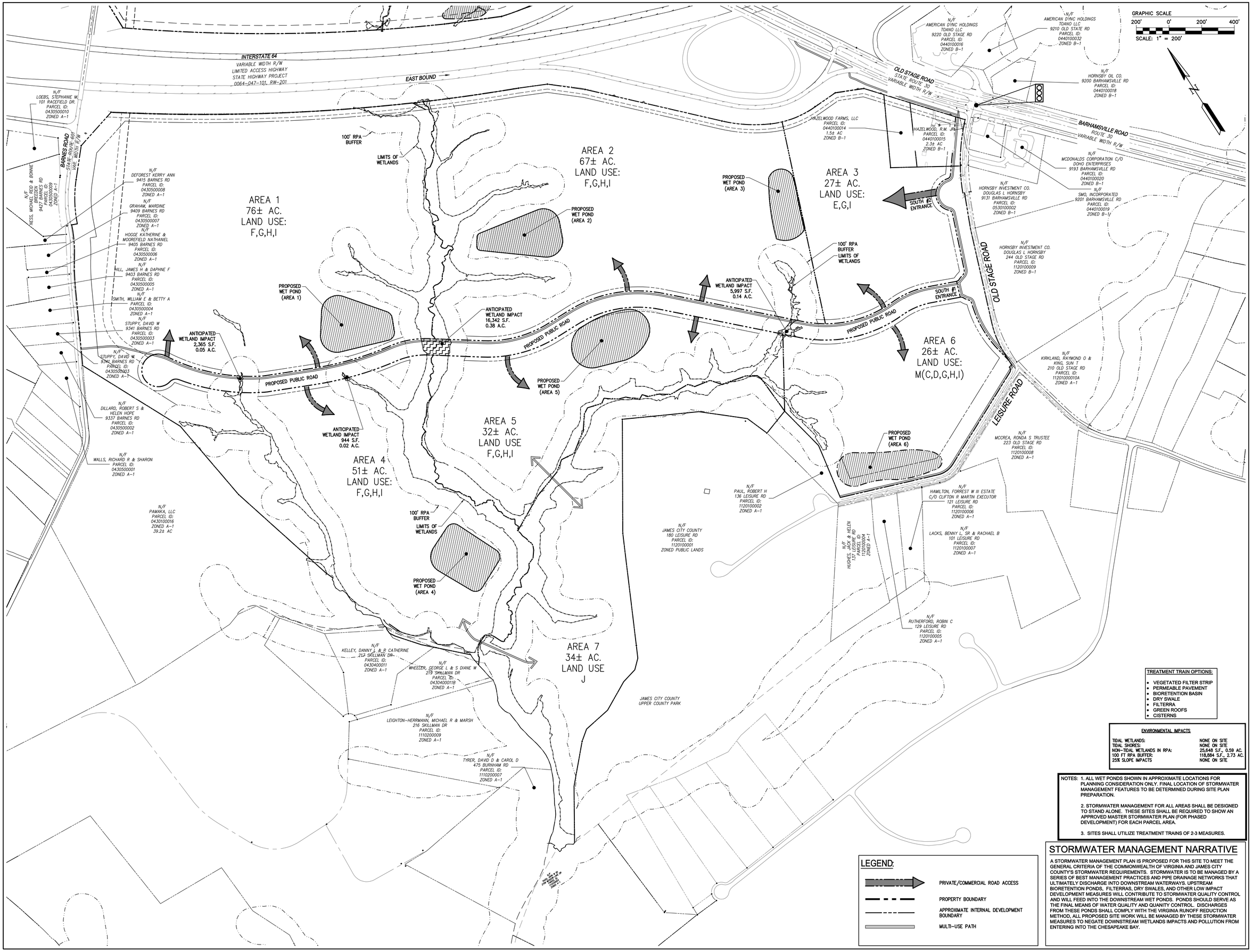
MASTER PLAN FOR
REZONING OF ENTERPRISE CENTER
AT
HAZELWOOD FARMS
JAMES CITY COUNTY VIRGINIA
STONEHOUSE DISTRICT

Project Contacts:	JAG
Project Number:	W10325-01
Scale: 1"=200'	Date: 2/7/19

Sheet Title:
CONCEPTUAL LAND USE AND SHARED USE PATH PLAN

Sheet Number
MP-3

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Rev.	Date	Description	Initial By
3	3/12/21	REVISED PER JCC COMMENTS	JAG
2	1/20/20	UPDATED PER JCC COMMENTS	JAG
1	8/20/19		JAG

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MASTER PLAN FOR
REZONING OF ENTERPRISE CENTER AT HAZELWOOD FARMS
JAMES CITY COUNTY VIRGINIA
STONEHOUSE DISTRICT

TREATMENT TRAIN OPTIONS:

- VEGETATED FILTER STRIP
- PERMEABLE PAVEMENT
- BIORETENTION BASIN
- DRY SWALE
- FILTERRA
- GREEN ROOFS
- CISTERNS

ENVIRONMENTAL IMPACTS

TIDAL WETLANDS:	NONE ON SITE
TIDAL SHORES:	NONE ON SITE
NON-TIDAL WETLANDS IN RPA:	25,648 S.F., 0.59 AC.
100 FT RPA BUFFER:	118,884 S.F., 2.73 AC.
25% SLOPE IMPACTS	NONE ON SITE

NOTES:
1. ALL WET PONDS SHOWN IN APPROXIMATE LOCATIONS FOR PLANNING CONSIDERATION ONLY. FINAL LOCATION OF STORMWATER MANAGEMENT FEATURES TO BE DETERMINED DURING SITE PLAN PREPARATION.
2. STORMWATER MANAGEMENT FOR ALL AREAS SHALL BE DESIGNED TO STAND ALONE. THESE SITES SHALL BE REQUIRED TO SHOW AN APPROVED MASTER STORMWATER PLAN (FOR PHASED DEVELOPMENT) FOR EACH PARCEL AREA.
3. SITES SHALL UTILIZE TREATMENT TRAINS OF 2-3 MEASURES.

LEGEND:

- PRIVATE/COMMERCIAL ROAD ACCESS
- PROPERTY BOUNDARY
- APPROXIMATE INTERNAL DEVELOPMENT BOUNDARY
- MULTI-USE PATH

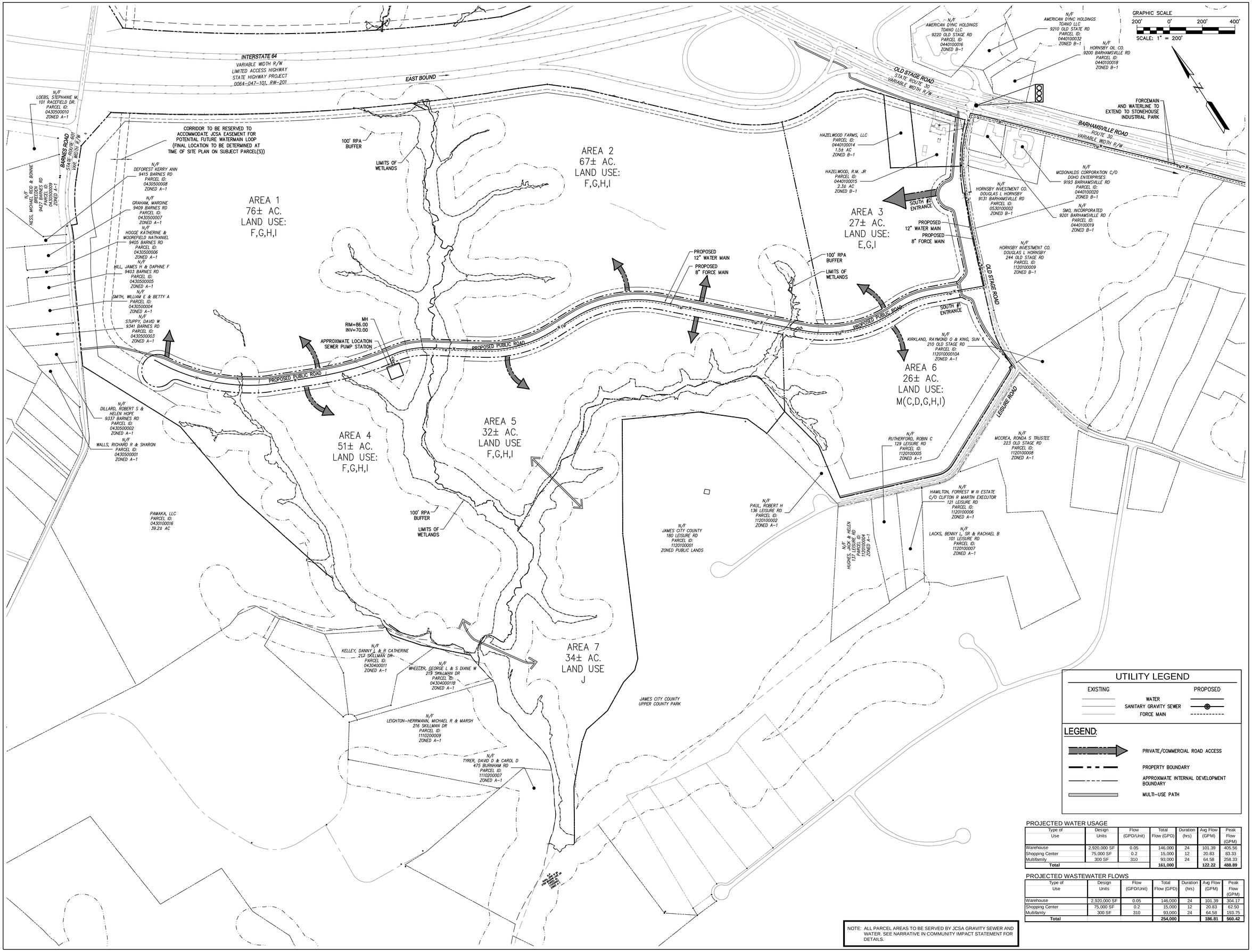
STORMWATER MANAGEMENT NARRATIVE

A STORMWATER MANAGEMENT PLAN IS PROPOSED FOR THIS SITE TO MEET THE GENERAL CRITERIA OF THE COMMONWEALTH OF VIRGINIA AND JAMES CITY COUNTY'S STORMWATER REQUIREMENTS. STORMWATER IS TO BE MANAGED BY A SERIES OF BEST MANAGEMENT PRACTICES AND PIPE DRAINAGE NETWORKS THAT ULTIMATELY DISCHARGE INTO DOWNSTREAM WATERWAYS. UPSTREAM BIORETENTION PONDS, FILTERRAS, DRY SWALES, AND OTHER LOW IMPACT DEVELOPMENT MEASURES WILL CONTRIBUTE TO STORMWATER QUALITY CONTROL AND WILL FEED INTO THE DOWNSTREAM WET PONDS. PONDS SHOULD SERVE AS THE FINAL MEANS OF WATER QUALITY AND QUANITY CONTROL. DISCHARGES FROM THESE PONDS SHALL COMPLY WITH THE VIRGINIA RUNOFF REDUCTION METHOD, ALL PROPOSED SITE WORK WILL BE MANAGED BY THESE STORMWATER MEASURES TO NEGATE DOWNSTREAM WETLANDS IMPACTS AND POLLUTION FROM ENTERING INTO THE CHESAPEAKE BAY.

Project Contacts:	JAG
Project Number:	W10325-01
Scale: 1"=200'	Date: 2/7/19

Sheet Title:
CONCEPTUAL STORMWATER MASTER PLAN

Sheet Number
MP-4



Rev.	Date	Description	By
3	3/12/21	REVISED PER JCC COMMENTS	JAG
2	1/22/20	UPDATED PER JCC COMMENTS	JAG
1	8/20/19	PER JCC COMMENTS	JAG

UTILITY LEGEND

EXISTING		PROPOSED
	WATER	
	SANITARY GRAVITY SEWER	
	FORCE MAIN	

LEGEND:

- PRIVATE/COMMERCIAL ROAD ACCESS
- PROPERTY BOUNDARY
- APPROXIMATE INTERNAL DEVELOPMENT BOUNDARY
- MULTI-USE PATH

PROJECTED WATER USAGE

Type of Use	Design Units	Flow (GPD/Unit)	Total Flow (GPD)	Duration (hrs)	Avg Flow (GPM)	Peak Flow (GPM)
Warehouse	2,920,000 SF	0.05	146,000	24	101.39	405.56
Shopping Center	75,000 SF	0.2	15,000	12	20.83	83.33
Multifamily	300 SF	310	93,000	24	64.58	258.33
Total			**161,000**		**122.22**	**488.89**

PROJECTED WASTEWATER FLOWS

Type of Use	Design Units	Flow (GPD/Unit)	Total Flow (GPD)	Duration (hrs)	Avg Flow (GPM)	Peak Flow (GPM)
Warehouse	2,920,000 SF	0.05	146,000	24	101.39	304.17
Shopping Center	75,000 SF	0.2	15,000	12	20.83	62.50
Multifamily	300 SF	310	93,000	24	64.58	193.75
Total			**254,000**		**186.81**	**560.42**

NOTE: ALL PARCEL AREAS TO BE SERVED BY JCSA GRAVITY SEWER AND WATER. SEE NARRATIVE IN COMMUNITY IMPACT STATEMENT FOR DETAILS.

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MASTER PLAN FOR
REZONING OF ENTERPRISE CENTER AT HAZELWOOD FARMS
JAMES CITY COUNTY VIRGINIA
STONEHOUSE DISTRICT

Project Contacts:	JAG
Project Number:	W10325-01
Scale: 1"=200'	Date: 2/7/19

Sheet Title:
CONCEPTUAL UTILITY PLAN

Sheet Number
MP-5

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BEGIN TAPER
STA 378+67

660' TAPER

BEGIN LANE
STA 370+06

STA 375+00

STA 370+00

1000' ADD ON LANE

STA 365+00

BARHAMSVILLE ROAD
ROUTE 30
VARIABLE WIDTH R/W

STA 360+00

SIGNALIZED
INTERSECTION
STA 359+58

N/F
AMERICAN DYNC HOLDINGS
TOANO LLC
9210 OLD STATE RD
PARCEL ID:
0440100032
ZONED B-1

N/F
HORNSBY OIL CO.
9200 BARHAMSVILLE RD
PARCEL ID:
0440100018
ZONED B-1

N/F
AMERICAN DYNC HOLDINGS
TOANO LLC
9220 OLD STAGE RD
PARCEL ID:
0440100016
ZONED B-1

BEGIN RAMP D
STA 353+47

SIGNALIZED
INTERSECTION
STA 350+38

BRIDGE DECK

STA 350+00

345+00

OLD STAGE ROAD
STATE ROUTE 30
VARIABLE WIDTH R/W

STA 355+00

BEGIN LANE
STA 352+41

MULTI-USE
PATH

BEGIN TAPER
STA 345+70

N/F
SMG, INCORPORATED
9201 BARHAMSVILLE RD
PARCEL ID:
0440100019
ZONED B-1

N/F
MCDONALDS CORPORATION C/O
DOHO ENTERPRISES
9193 BARHAMSVILLE RD
PARCEL ID:
0440100020
ZONED B-1

30' LANDSCAPE BUFFER

N/F
HORNSBY INVESTMENT CO.
DOUGLAS L HORNSBY
9131 BARHAMSVILLE RD
PARCEL ID:
0530100002
ZONED B-1

SINGLE LANE ROUNDABOUT

SOUTH #2
ENTRANCE

OLD STAGE ROAD

30' LANDSCAPE BUFFER

N/F
HORNSBY INVESTMENT CO.
DOUGLAS L HORNSBY
244 OLD STAGE RD
PARCEL ID:
1120100009
ZONED B-1

SINGLE LANE ROUNDABOUT

25' SETBACK

SOUTH #1
ENTRANCE

25' SETBACK

30' LANDSCAPE BUFFER

PROPOSED PUBLIC ROAD

N/F
KIRKLAND, RAYMOND O & KING, SUN T
210 OLD STAGE RD
PARCEL ID:
1120100001A
ZONED A-1

OYSTER REPORT

N/F
MCCREA, RONDA S TRUSTEE
223 OLD STAGE RD
PARCEL ID:
1120100008
ZONED A-1

100' RPA
BUFFER

LIMITS OF
WETLANDS

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3	3/12/21	REVISED PER JCC COMMENTS	JAG
2	1/22/20	UPDATED PER JCC COMMENTS	JAG
1	8/26/19		JAG

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STONEHOUSE DISTRICT

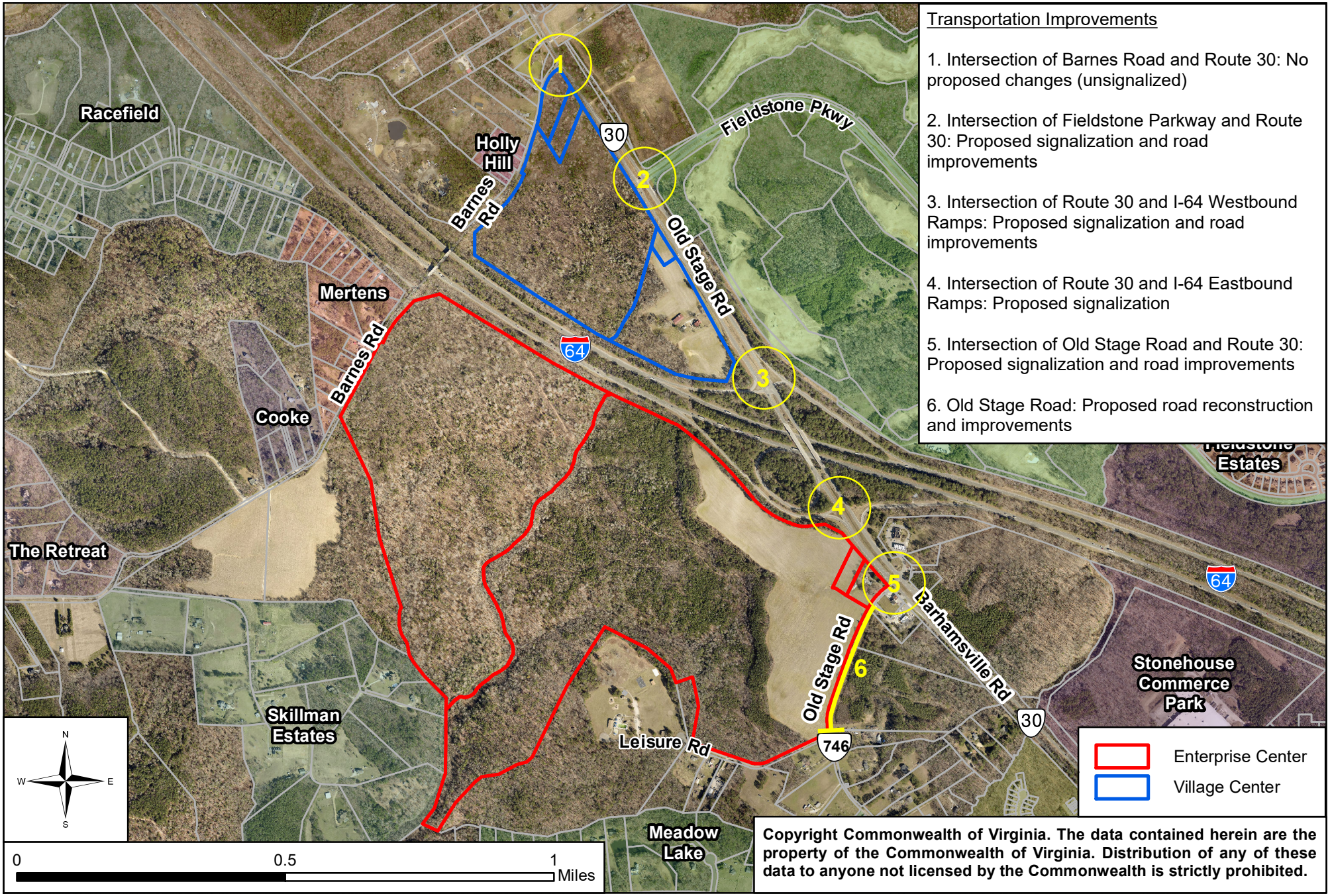
Project Contacts:	JAG
Project Number:	W10325-01
Scale: 1"=80'	Date: 2/7/19

Sheet Title:
CONCEPTUAL RT. 30 ROAD IMPROVEMENTS PLAN

Sheet Number
MP-6

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JCC Z-19-0006, SUP-19-0005 & SUP-19-0006: Hazelwood Enterprise Center & Village Center



BEGIN TAPER
STA 378+67

660' TAPER

BEGIN LANE
STA 370+06

STA 375+00

STA 370+00

1000' ADD ON LANE

STA 365+00

BARHAMSVILLE ROAD
ROUTE 30
VARIABLE WIDTH R/W

STA 360+00

SIGNALIZED
INTERSECTION
STA 359+58

N/F
AMERICAN DYNC HOLDINGS
TOANO LLC
9210 OLD STATE RD
PARCEL ID:
0440100032
ZONED B-1

N/F
HORNSBY OIL CO.
9200 BARHAMSVILLE RD
PARCEL ID:
0440100018
ZONED B-1

N/F
AMERICAN DYNC HOLDINGS
TOANO LLC
9220 OLD STAGE RD
PARCEL ID:
0440100016
ZONED B-1

BEGIN RAMP D
STA 353+47

SIGNALIZED
INTERSECTION
STA 350+38

BRIDGE DECK

STA 350+00

345+00

OLD STAGE ROAD
STATE ROUTE 30
VARIABLE WIDTH R/W

STA 355+00

BEGIN LANE
STA 352+41

MULTI-USE
PATH

BEGIN TAPER
STA 345+70

N/F
SMG, INCORPORATED
9201 BARHAMSVILLE RD
PARCEL ID:
0440100019
ZONED B-1

N/F
MCDONALDS CORPORATION C/O
DOHO ENTERPRISES
9193 BARHAMSVILLE RD
PARCEL ID:
0440100020
ZONED B-1

30' LANDSCAPE BUFFER

N/F
HORNSBY INVESTMENT CO.
DOUGLAS L HORNSBY
9131 BARHAMSVILLE RD
PARCEL ID:
0530100002
ZONED B-1

SINGLE LANE ROUNDABOUT

SOUTH #2
ENTRANCE

OLD STAGE ROAD

30' LANDSCAPE BUFFER

N/F
HORNSBY INVESTMENT CO.
DOUGLAS L HORNSBY
244 OLD STAGE RD
PARCEL ID:
1120100009
ZONED B-1

SINGLE LANE ROUNDABOUT

25' SETBACK

SOUTH #1
ENTRANCE

25' SETBACK

30' LANDSCAPE BUFFER

PROPOSED PUBLIC ROAD

N/F
KIRKLAND, RAYMOND O & KING, SUN T
210 OLD STAGE RD
PARCEL ID:
1120100001A
ZONED A-1

OYSTER REPORT

N/F
MCCREA, RONDA S TRUSTEE
223 OLD STAGE RD
PARCEL ID:
1120100008
ZONED A-1

100' RPA
BUFFER

LIMITS OF
WETLANDS

Rev.	Date	Description	By
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MASTER PLAN FOR
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AT
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STONEHOUSE DISTRICT

Project Contacts:	JAG
Project Number:	W10325-01
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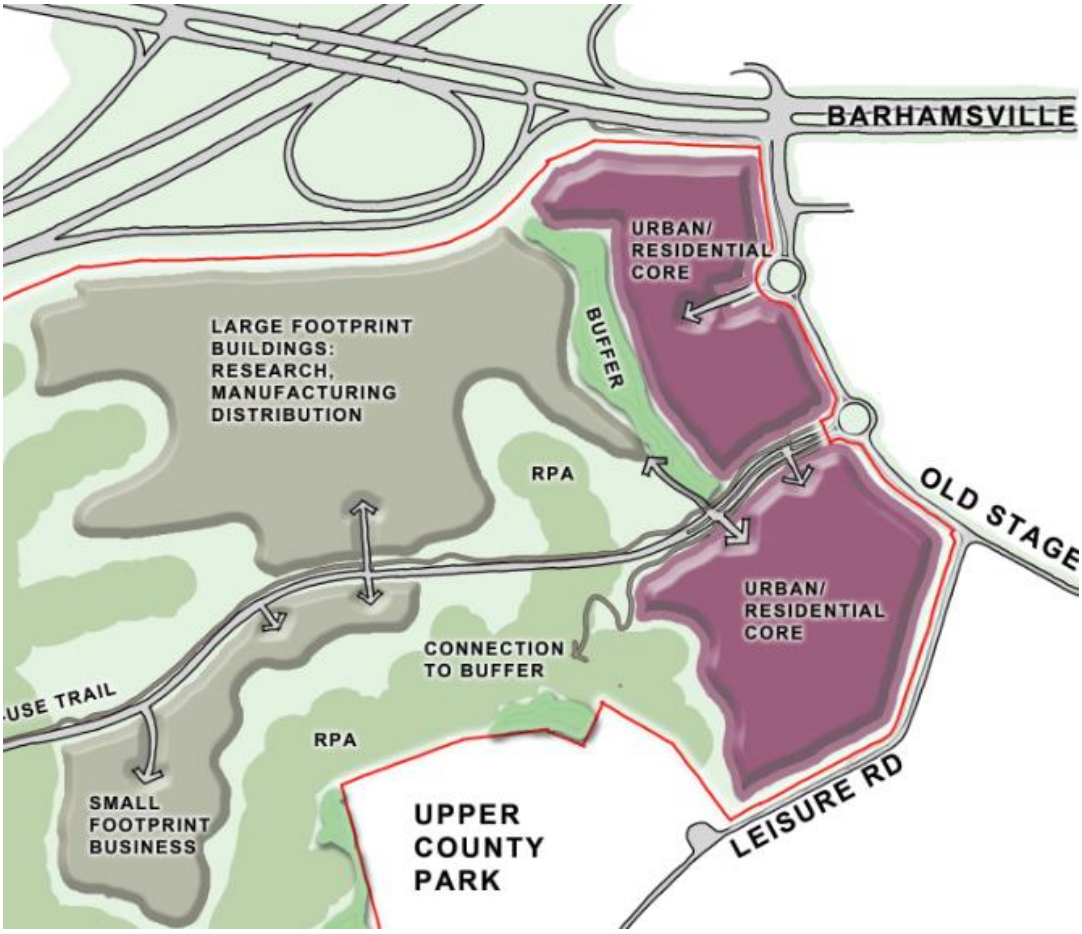
Sheet Title:
CONCEPTUAL RT. 30 ROAD IMPROVEMENTS PLAN

Sheet Number
MP-6

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Design Guidelines
for
Hazelwood Farms Enterprise Center

James City County, Virginia
September 24, 2021



prepared for:
Hazelwood Realtors, LLC
757-880-8070
804-512-5892

prepared by:
HOPKE & ASSOCIATES, Inc.
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757-229-1100
www.hopke.com

AES, Consulting Engineers
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Williamsburg, VA 23188
757-253-0040
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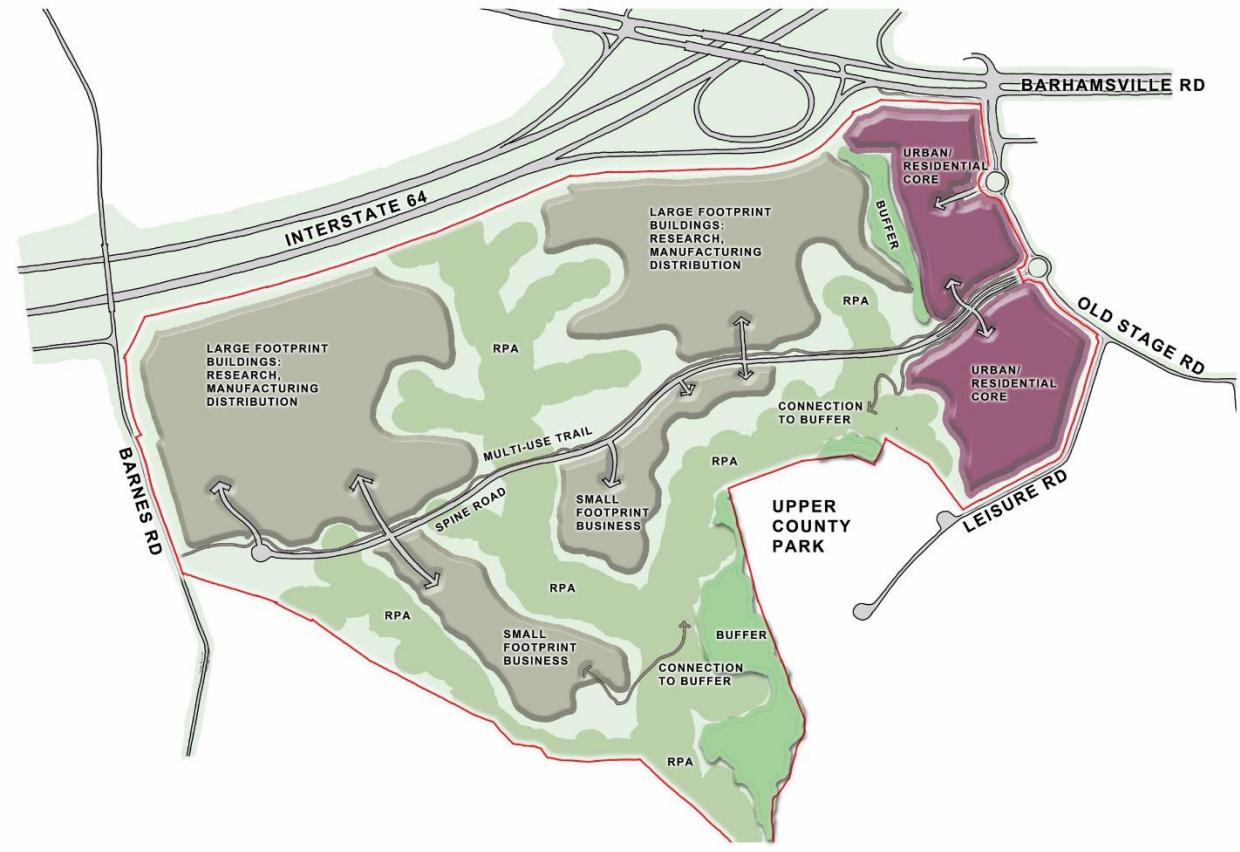
Parking Areas *21*

Signage **22**

Overview

The property is located in the Stonehouse district of James City County, Virginia, at the intersection of Interstate 64 and Route 30/Barhamsville Road. It lies entirely to the west side of Route 30/Barhamsville Road and is subdivided by Interstate 64 into two major sections. These guidelines are concerned with the south section, heretofore referred to as the "Enterprise Center."

The Enterprise Center has easy access from the interstate for east-bound traffic and shares a major intersection with established off-interstate businesses (fast-food, fuel stations). It is bounded to its south and east by Old Stage Road, Leisure Road and the James City County Upper County Park. East of the intersection is the already master planned as the Stonehouse Industrial Park and other complementary zoned property. Thus the Enterprise Center is proposed to be master planned as a mixed use development where a large portion is devoted to manufacturing and/or research facilities with large-footprint buildings and/or a single corporate office campus and/or warehousing & distribution centers. As transitional uses, portions of the Enterprise Center will be devoted to commercial development (near the Barhamsville-Stage Road intersection) and multi-family (near Upper County Park).



Architecturally, the buildings on this parcel should read with a coherency, yet portray their distinct uses and invoke an appropriate sense of scale to their functions. Some buildings will be exceptionally large, housing office, research, warehousing and/or manufacturing functions. Others will be of a residential

character and scale, while others will require an automobile-friendly siting. These design guidelines are intended to promote standards of development for each of these functions such that all of the elements contribute to a coherent whole, consistent with the character of the surrounding area, but without unduly burdening the large-footprint user with afunctional architectural embellishment.

These standards are intended to comply with the James City County Zoning Ordinance Division 17, "Economic Opportunity," generally, and sub-section 24-536.5, "Requirements for Improvements and Design," in particular. Wherein any discrepancies or ambiguities may occur, these guidelines shall not be interpreted to allow standards which are less restrictive than the Zoning Ordinance. These guidelines are also written to satisfy the conditions of Landscape Standards, in accordance with Section 24-98(3) of the Zoning Ordinance.

The Developer shall be responsible for administration of these Design Standards and shall engage a licensed Architect ("Review Architect") to interpret their application for all aspects of the project through a formal, documented review process. Selection of the Review Architect shall be at the sole discretion of the Developer. The responsibility for administration of the Design Standards may be assigned to another entity (such as a "property owners association") in the future, at the sole discretion of the Developer.

It is recognized by the Owner and agencies having jurisdiction that these guidelines are written with an overarching intent of establishing a standard of quality and consistency in the architecture and site development for the property. It is furthermore understood that actual development and detailed planning may occur in the less immediate future when real estate market trends, best practices of land planning and transportation technology have changed in ways that cannot be imagined or anticipated at this time. As such these guidelines may be re-visited in the future and may be appropriately amended to reflect such changes at the discretion of the developer, property owner or property owners association, with the review and approval of the James City County Planning Director.

Design submission procedures and forms shall be developed and formalized by the developer prior to submission to James City County for building permits or site plan approvals. At a minimum, those procedures shall include:

- Conceptual Review of proposed site development of a given parcel as well as any implied master plan adjustments.
- Conceptual Review of proposed exterior architectural development with rendered perspectives and/or elevations, consistent with footprints depicted on the site development plan and indicating grade adjustments with reasonable accuracy.
- Final building design and site plan submissions with proposed materials and colors at appropriate scale and detail.
- Final building material and color selections submitted and documented with samples of predominant materials
- Final landscape and hardscape selections submitted and documented with photographs of key elements, such as street furnishing (e.g. bike racks, street light posts, trash receptacles, benches, etc…)

The developer shall commit to "sustainable" land planning and building design, incorporating best practices of EarthCraft/Viridiant Certification for residential projects and LEED or other equivalent "Green Building" certification and assessment tools, in compliance with the "Endorsement of Green

Building Incentives" policy of James City County (case no. ZO-00005-2011). If the developer elects to obtain formal certification through such a program, it is recognized that they would be entitled to the benefits outlined in that official resolution.

General Description

The Enterprise Center is a mixed use of residential, retail and business with an emphasis on large-footprint users for research, manufacturing and/or warehousing. This parcel location is ideal for arrival from the interstate by automobile. Thus, a portion of the site is to be organized to orient toward the traveler. It is also convenient for access to Hampton Roads, Richmond and technology rich areas to the north, west and south. Therefore the bulk of the site is organized around a generous spine road accessing the large-footprint building sites. Since much of the site is adjacent to James City County Upper County Park, a family friendly municipal facility, a portion is to be devoted to multi-family development. The combination of these uses creates a complete environment in which to live, work and play in a walk-able community. To that end, the developer and county staff are encouraged to allow for possible pedestrian/bike paths to provide connectivity directly to the park.

The Enterprise Center parcel is naturally subdivided by a small amount of environmentally sensitive wetlands. Buffers are to be utilized to both protect these areas and feature them for pedestrians, bikers and vehicles.

View Shed and Approach

As one approaches the property along Route 30/Barhamsville Road, one travels through a pastoral, wooded landscape punctuated with clusters of village-like development (e.g. Barhamsville, itself). When this property comes into view, it should have a similar character, utilizing architectural detail and massing that is of a pedestrian-friendly scale within parcels that border the Barhamsville-Old Stage Road-Leisure Road edges. This portion of the development, designated the "Urban/Residential Core" on the master plan and described further below, should create a "sense of place" consistent with the character of the surrounding area.

Building construction in the other parcels will necessarily be of a larger scale, due to the uses foreseen in them. As such, buffering between parcels will be critical to achieve a transition to support a cohesiveness within the development as a whole. The master plan proposes using natural wetlands to achieve that buffering, augmented by landscaping as needed.

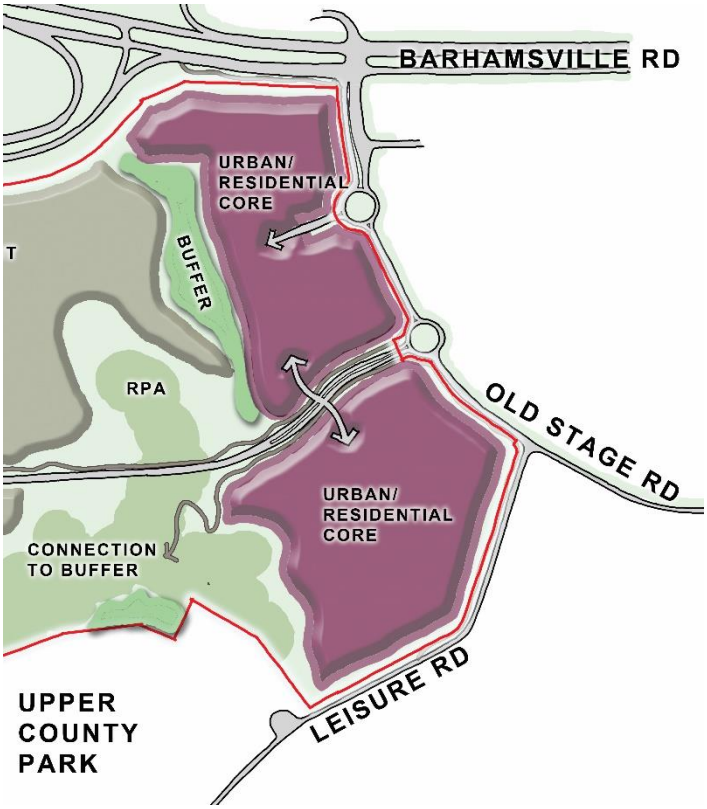
Views into the property along I-64 and off-ramps are of special concern, as they constitute a "gateway" into the County and a first impression for many. Buildings which border the interstate highway right-of-ways are to retain a 50' building setback and a 50' landscaped buffer, minimum. Wherein, the proposed and existing landscape buffer which is retained does not effectively screen the proposed buildings, they shall be developed architecturally in proportion to their increased visibility from I-64. Generally, large unadorned facades, where necessary, should be of a dark color to blend into the natural environment as the backdrop to retained or newly developed landscape buffering.

Vehicular and Pedestrian Circulation

The parcel is organized around a “spine road” that terminates at Old Stage Road. This main spine road will provide a safe and park-like entrance into and through the development, channeling both auto and truck/delivery vehicles to the large-user sites. A physically separated multi-use path is to be planned to provide both residents and workers a connection to the outdoors.



The spine road is to be designed and developed as a park-like boulevard that provides a safe and pleasant drive as a common experience connecting all of the parcels of the Enterprise Center. The initial portion of the drive, extending from Old Stage Road, should have a landscaped median where separating the multi-family from commercial areas. Beyond this point, at least one side should be tree-lined separating vehicular traffic from a minimum 8’-0” to 10’-0” wide multi-use trail. Both sides should be neatly landscaped to the extent of active development.



The parcels fronting on Old Stage Road will be developed as an “Urban/Residential Core,” as described in Section 24-536.1 of the Zoning Ordinance. As such, it allows for convenient access by automobile to and from the interstate. The portion closest to Route 30/Barhamsville Road will likely be developed as a retail/restaurant enclave, extending the existing commercial development pattern along Route 30/Barhamsville Road. The portion furthest from Route 30/Barhamsville Road is envisioned as the central hub of multi-family apartments or townhomes. Thus, the Urban/Residential Core will be anchored at each end, connected by a lively fabric of sidewalks, commercial buildings and parking courts. Detailed development of this entire area will entail strong pedestrian/cycling connections to the spine road, the commercial area, Route 30/Barhamsville Road, and Upper County Park.

The remaining portions of the site are interwoven with ravines and some wetlands. Development will work within grade limitations to the greatest extent practical, consistent with the property usage. Pedestrian connections through wetlands to areas contiguous with Upper County Park should be

considered, providing both an effective buffer between the park and Enterprise Center as well as a nature-rich amenity for both residents and workers.

Public Access Improvements

Vehicular and non-vehicular public access to Enterprise Center is provided by extensive improvement to roads, VDOT shared use paths on all existing public road frontages, creation of an internal public road with VDOT shared use path and accommodations for bus service.

Vehicular access to the site includes the following road improvements:

- Reconstruction of Rt. 746 Old Stage Road from Rt. 30 to Leisure Road on a new alignment
    - Two single lane roundabouts providing direct access to the Enterprise Center
    - Four travel lanes with turn lanes form Rt. 30 to first roundabout
    - Two lanes from first roundabout to second roundabout to Leisure Road.
- Expansion of the Rt. 30/Rt. 746 Old Stage Road intersection with additional turn lanes on three approaches, widening and on Rt. 30, and signalization.
- A spine within the site connecting to the second roundabout.

The improvements at Rt. 30/Rt. 746 Old Stage Road provide the capacity to accommodate traffic from Enterprise Center and other planned developments in the area. The four-lane section of Rt. 746 from Rt. 30 to the first roundabout provides a transition from arterial traffic operations to local street traffic. The two roundabouts provide a local street, low speed means of effective access on a new two-lane road alignment for Rt. 746 Old Stage Road.

Non-vehicular access is to be provided by VDOT shared use paths (10 foot wide):

- On the west side of Rt. 30 from I-64 ramps to Old Stage Road: approximately 1000 feet. This section is within the I-64 limited access fence and is contingent upon Federal and State approval.
- On the north side of reconstructed Rt. 746 Old Stage Road from Rt. 30 to Leisure Road: approximately 1600 feet.
- On the east side of Leisure Road along the property frontage: approximately 1400 feet.
- On the east side of the spine road from Rt. 746 Old Stage Road to a connection to Barnes Road: approximately 5600 feet.
- Total: approximately 9600 feet.

These shared use paths are to be built to VDOT specifications for VDOT maintenance. These paths will be located with public rights of way or on easements dedicated to public use and VDOT maintenance.

A bus stop will be included as approved by WATA. Bus stops on public roads may include bump outs designs and will include access to the shared use path system. Bus stops within the private property parking lots will include landings for bus patrons and pedestrian connections to shared used paths.

Parking

Parking is to be arranged so as to maintain a park-like setting for the spine road with a comfortable degree of screening and, simultaneously, adequate view lines for a high degree of safety.

1. Parking for the multi-family parcel shall be distributed so as to be convenient to the living units and identifiable as private.
2. Parking for the commercial parcel shall be arranged in an easily navigable shared parking court, accessible to all of the buildings along Old Stage and Route 30/Barhamsville Roads. Additional small parking enclaves between commercial/retail buildings are also acceptable and may be integrated with drive-through window functions at the buildings.



3. Parking for the large-user sites is to be distributed to the degree practical, but always well screened from the spine road and Interstate. Special attention should be paid to "way-finding" signage and security controls to enable visitors to find public entrances at large facilities. Security Gates must be located a minimum of 100' from the spine road.
4. Parking for any small-user sites that may be accessed from the spine road must similarly provide effective screening. Security Gates are not allowed except on a case-by-case basis, based upon adequate analysis showing back-up onto the spine road will not occur.
5. Parking for uses in more visually sensitive areas should be located behind buildings or otherwise screened using means such as berms, fencing or hedges.
6. Landscaping within these parking enclaves shall be minimized in favor of more effective landscaping at their perimeter for screening. Parking capacity shall be provided in accordance with the James City County Zoning Ordinance, the location and number to be confirmed as a part of the final site plan development. All parking lot landscaping shall meet or exceed zoning ordinance requirements.

Building Pattern and Form

General

There are four general categories that each building project will fall into:

1. Large-footprint (research, manufacturing, warehouse, etc…)
2. Small-footprint/Business Support (small offices, small storage, etc…)
3. Commercial/Retail Buildings
4. Multi-family Buildings

To promote an architectural consistency within the Enterprise Center it is anticipated that all of the buildings will be designed with a contemporary architectural character, utilizing more commercial-like materials and fenestration. However, within that contemporary vocabulary, buildings are expected to

strive to be responsive to a human pedestrian scale. Strategies for doing so will vary, depending on the building use. Thus, each category will be taken in turn:

Large-footprint Buildings

1. Large-footprint buildings are generally anticipated to be single-user buildings which are to have a large, industrial size. Simple, unadorned building massing is anticipated. However, user entrances, exits and loading docks represent opportunities for architectural development to address the human scale. While the unadorned mass of the building should be a dark tone and of a color hew that allows it to blend into the tree canopies, openings in the building should be an opportunity to interrupt that pattern, catching the eye with colorful or transparent elements that recede into or project from the main building envelope. Common considerations in the design of these elements include:

1.1. The main public/visitor entrance should be more predominant than other more utilitarian or employee oriented entrances.



1.2. While well-proportioned to the mass of the building, they should also be well proportioned to the pedestrian. Devices for accomplishing this may include canopies for rain protection, bris-soleil or trellis for sun protection and seat-walls or planters to guide pedestrian circulation to the appropriate arrival point.



1.3. Architectural styling of these elements should relate and/or respond to the predominant materials in the rest of the building while still relating to the smaller footprint buildings. Thus it is anticipated they may be contemporary style in detail, while making allusions to historic styles common to the area. Historic and Classical Revival elements are also acceptable, but should be tastefully designed with attention paid to proportion, scale and detail.

2. Edge Definition and Screening

2.1. Fences and walls shall be used for screening mechanical and utility systems in areas adjacent to public parking, public right-of way and/or facing the spine road architecturally consistent with the building designs. Walls are to be made of industrial or commercial quality materials found in the main building (such as concrete or metal panels). Landscaping may be used in conjunction with fences and walls to better define edges or screen views and activities.



3. Building Materials - General

3.1. Building walls: brick, metal panels, clad wood, wood clapboard, wood board and batten, and fiber cement siding. Stucco (including EIFS) may be used in limited amounts at key features. In no case may the portion of stucco exceed 20% of a façade.
3.2. Arcades and colonnades: brick, stucco, wood, poly-stone, fiberglass, structural steel (painted), and structural aluminum.
3.3. Porticos, porches and columns: painted wood, cellular pvc, painted metal, poly-stone, fiberglass, structural steel (painted), and structural aluminum.
3.4. Posts, spindles, balusters: pained wood, cellular pvc, painted metal, poly-stone, fiberglass, structural steel (painted), and structural aluminum.
3.5. Stoops, plazas, decks and exterior stairs: brick, concrete, stamped concrete
3.6. Awnings, bris soleils and canopies: canvas-covered metal, structural steel (painted), and structural aluminum

4. Roofs

4.1. Recommended Materials

4.1.1. Visible, Sloped Roofs: Wood shingles, metal panel, slate, synthetic slate, architectural grade asphalt or fiberglass shingle.
4.1.2. Live Roofs: Live roofs are permissible, to be approved on a case-by-case basis and should be integral to the architectural character of the entire building or concealed from view by parapets
4.1.3. Gutters and downspouts: galvanized aluminum, painted metal, copper
4.1.4. Exposed Flashing: copper, lead coated copper, galvanized aluminum

4.2. Roof Shapes

4.2.1. Large-footprint buildings are expected to have simple, economic overall building mass and roof forms with shallow slopes and/or parapets. However, some variation, especially at entrances and loading docks should be utilized to create interest, balance and visual cues for wayfinding. See “commercial/retail buildings” below for general guidance with respect to roof forms at these locations.

4.3. Fenestration

4.3.1. Window Glazing: Reflective glass (such as black spandrel) is unacceptable and will not be permitted. All window glazing should allow visibility to the interior of the building. Windows generally should be treated as "punched openings" in a façade, rather than as a siding or cladding material.

4.3.2. Windows, doors, louvers, etc… are opportunities to not only punctuate the façade, but establish rhythm, balance and organization to the building. It is anticipated that significant amounts of fenestration will be steel or aluminum storefront or curtainwall, although use of other materials at the entrance elements of buildings will be allowed, if consistent with the design concept. See "commercial/retail buildings" below for guidance.

4.3.3. Metal panel siding color and transparency can also be thought of as elements of fenestration. For example, reducing the scale of a façade can be accomplished by horizontal bands of color depth along a façade.

Small-Footprint Business/Support Buildings

1. Small Footprint Business/Support buildings are generally anticipated to be multi-tenant office or warehousing buildings in support of or in proximity to the large-footprint users. Unlike the large-footprint buildings, they are anticipated to have more active facades and building massing. Simple, unadorned building massing is not acceptable.

1.1. They should be designed to be seen from the spine road.
1.2. Each building shall also have a sidewalk connection to the spine road and/or the multi-use trail adjacent to the spine road.
1.3. Architecturally, they should relate to the public entrance elements of the large-footprint users or the commercial/retail buildings in the urban/residential core.
1.4. The height of each building shall be limited by code and zoning ordinance as well as specific tenant requirements. Mechanical equipment shall be screened from view utilizing roof-top equipment or, if ground mounted, fencing and/or landscaping. Tenant entrance elements should exceed the height of the main building form.

2. Edge Definition and Screening

2.1. Fences and walls shall be architecturally consistent with the building designs. Walls are to be made of a combination of materials, including concrete, brick, decorative cmu, siding, stone, and to a limited extent, stucco. Fences and privacy screens are to be made of wood pickets, pvc lumber, wrought iron, vinyl board on board fencing, or painted metal. Chain link fences are not permitted unless screened with landscaping. Landscaping may be used in conjunction with fences and walls to better define edges or screen views and activities.



3. Scale and Articulation

3.1. Scale is the relationship in size between buildings and the human form. Articulation is the way in which architectural elements are used to reduce the scale of the masses that compose the building form. Buildings shall be designed to appear smaller through the articulation of the overall massing and organizing it as a collection of smaller component masses. The use of architectural elements such as bays, balconies, porches, loggias and arcades add interest to building facades and aid in relating the scale of any building to human dimensions. Roofs may be articulated through the use of dormers, lanterns, monitors, widow's watches and other roof¬top elements. Each of these devices adds character and interest to the buildings of the development which, in turn, reinforces the village character intended by these guidelines.



3.2. There shall be an adequate variety of architectural elements along all facades to distinguish individual tenants while remaining stylistically consistent within the entire development.

4. Building Elements

4.1. Building Materials - General

4.1.1. Building walls: brick, concrete, metal panel, clad wood, wood shingle, wood clapboard, wood board and batten, and fiber cement siding. Stucco and/or EIFS is allowable on a limited basis only (less than 20% of a given façade)

4.1.2. Exposed Foundation Walls: Brick or brick facing, or stucco finished poured concrete or concrete block.

4.1.3. Materials shall transition and terminate appropriately. If a material transition is desired, such transition shall occur at interior corners, not outside corners. Materials shall be utilized to express component massing and shall not be treated as surface decoration. No more than two wall materials may occur on any individual building.

4.1.4. Arcades and colonnades: brick, stucco, wood, poly-stone, fiberglass, structural steel (painted), and structural aluminum.

4.1.5. Porches, columns: painted wood, cellular pvc, painted metal, poly-stone, fiberglass, structural steel (painted), and structural aluminum.

4.1.6. Posts, spindles, balusters: pained wood, cellular pvc, painted metal, poly-stone, fiberglass

4.1.7. Stoops, exterior stairs: brick, wood, or steel

4.1.8. Decks: steel, concrete, wood, composite lumber, or high quality synthetic wood decking

4.1.9. Awning and canopies: canvas-covered metal or wood structure, structural steel (painted), and structural aluminum.

4.2. Roofs

4.2.1. Recommended Materials

- Roofs: Metal Panel Wood shingles, galvanized or painted metal seamed, copper, lead-coated copper, slate, synthetic slate, architectural grade asphalt or fiberglass shingle.
- Live Roofs: Live roofs are permissible, to be approved on a case-by-case basis and should be integral to the architectural character of the entire building or screened by parapet.
- Gutters and downspouts: galvanized aluminum, painted metal, copper
- Exposed Flashing: copper, lead coated copper, galvanized aluminum

4.2.2. Roof Shapes

- Buildings shall have a varied character of industrial and traditionally shaped roofs.
- Principal Roofs: Gabled, hipped, hipped gables, gabled hips or gambrel in a symmetrical fashion with a slope of 6:12 to 12:12. Alternatively, the principal roof may be lower slope or low-sloped and parapetted, if it is interrupted with secondary elements, similar to the large-footprint buildings.
- Parapets: Horizontal
- Dormers: Shed, Pitched or eyebrow
- Special roof-top elements: Symmetrically situated or aligned with the rhythm of structural bays and fenestration.
- Roof-top mechanical enclosures: Concealed from view by sloped roofs of the character described above.

4.3. Fenestration

4.3.1. Window Glazing: Reflective glass (such as black spandrel) is unacceptable and will not be permitted. All window glazing should allow visibility to the interior of the building. Windows generally should be treated as “punched openings” in a façade, rather than as a siding or cladding material.

4.3.2. Windows: steel or aluminum storefront, wood, painted metal, vinyl, metal clad wood

4.3.3. Bay windows: wood, metal clad wood, painted metal, with metal tops

4.3.4. Doors: painted wood, metal clad wood, painted metal, fiberglass resin

4.3.5. Garage doors: metal roll up, painted wood, metal with incorporated glazing, clad wood

4.3.6. Shutters: wood, fiberglass resin

4.3.7. Security doors and grilles: metal

Urban/Residential Core

Building design, in the urban/residential core as designated on the master plan, will be coordinated with regard to color, materials, architectural form and detailing to achieve design harmony, continuity, and horizontal and vertical relief and interest. This area will focus on pedestrian-scaled design, a mixing of uses within buildings where possible, and general design standards (such as landscaping, road design, etc.) that may be different from the design of the primary uses within an economic opportunity area. Building facades facing a road shall be designed with the same quality appearance as a front façade. No more than 25% of the required parking in the Urban Core shall be located between the building façades and Old Stage Road (Route 30 & 746) or Leisure Road. Any use incorporating a drive-through element shall not face Route 30. Within the urban/residential core, commercial retail and multifamily buildings will have some differing standards, taken here separately:



Example of a proposed development evocative of nearby Toano

Commercial/Retail Buildings

1. Commercial/Retail buildings are generally anticipated to be single-user buildings which are to have a village or small-urban scale. Simple, unadorned building massing is not acceptable.

- **1.1.** They should be predominantly slope-roofed or heavily articulated parapet forms and designed to be seen from all four sides.
- **1.2.** Where drive-through windows are incorporated, they should not be located on the side of the building facing the public right-of-way.
- **1.3.** Parking for each building should be placed to the side or behind, away from the public right-of-way, Old Stage Road, and be screened with a landscaping device, such as a berm. Generally, it is anticipated the main entrance for each building will face a shared parking court. In such cases, there should also be a public entrance fronting Old Stage Road (or appear to front it). If the main entrance to the building faces to a side parking area, a well landscaped, prominent sidewalk should connect that entrance to the shared parking field as well as Old Stage Road.
- **1.4.** Each commercial/retail building shall also have a sidewalk connection to a common sidewalk to be constructed along Old Stage Road.
- **1.5.** Architecturally, they should relate to the hardscape and landscaping of the multi-family development and spine road. While reference to corporate chain architecture is not prohibited, it must be customized to appear as part of a consistent development theme.

2. The height of each building shall be limited by code and zoning ordinance as well as specific tenant requirements. Mechanical equipment shall be screened from view utilizing roof-top equipment or, if ground mounted, fencing and/or landscaping. Tenant entrance elements should exceed the height of the main building form.

3. Edge Definition and Screening

3.1. Fences and walls shall be architecturally consistent with the building designs. Walls are to be made of a combination of materials, including brick, decorative cmu, siding, stone, and to a limited extent, stucco. Fences and privacy screens are to be made of wood pickets, pvc lumber, wrought iron, vinyl board on board fencing, or painted metal. Chain link fences are not permitted. Landscaping may be used in conjunction with fences and walls to better define edges or screen views and activities.



4. Scale and Articulation



4.1. Scale is the relationship in size between buildings and the human form. Articulation is the way in which architectural elements are used to reduce the scale of the masses that compose the building form. Buildings shall be designed to appear smaller through the articulation of the overall massing and organizing it as a collection of smaller component masses. The use of architectural elements such as bays, balconies, porches, loggias and arcades add interest to building facades and aid in relating the scale of any building to human dimensions. Roofs may be articulated through the use of dormers, lanterns, monitors, widow's watches and other roof¬top elements. Each of these devices adds character and interest to the buildings of the development which, in turn, reinforces the village character intended by these guidelines.

4.2. There shall be an adequate variety of architectural elements along all facades to distinguish individual shops while remaining stylistically consistent within the entire development.

5. Building Elements

5.1. Building Materials - General

5.1.1. Building walls: brick, stucco, clad wood, wood shingle, wood clapboard, wood board and batten, and fiber cement siding.

5.1.2. Exposed Foundation Walls: Brick or brick facing, or stucco finished poured concrete or concrete block.

5.1.3. Materials shall transition and terminate appropriately. If a material transition is desired, such transition shall occur at interior corners, not outside corners. Materials shall be utilized to express component massing and shall not be treated as surface decoration. No more than two wall materials may occur on any individual building.

5.1.4. Chimneys: brick, stucco, or tabby (coastal concrete)

5.1.5. Arcades and colonnades: brick, stucco, wood, poly-stone, fiberglass
5.1.6. Porches, columns: painted wood, cellular pvc, painted metal, poly-stone, fiberglass
5.1.7. Posts, spindles, balusters: pained wood, cellular pvc, painted metal, poly-stone, fiberglass
5.1.8. Stoops, exterior stairs: brick, wood, or steel
5.1.9. Decks: wood, concrete, composite lumber, or high quality synthetic wood decking
5.1.10. Awning and canopies: canvas-covered metal or wood structure

5.2. Roofs

5.2.1. Recommended Materials

5. Roofs: Wood shingles, galvanized or painted metal seamed, copper, lead-coated copper, slate, synthetic slate, architectural grade asphalt or fiberglass shingle.
6. Live Roofs: Live roofs are permissible, to be approved on a case-by-case basis and should be integral to the architectural character of the entire building.
7. Gutters and downspouts: galvanized aluminum, painted metal, copper
8. Flashing: copper, lead coated copper, galvanized aluminum

5.2.2. Roof Shapes

- Buildings shall have a varied character of traditionally shaped roofs.
- Principal Roofs: Gabled, hipped, hipped gables, gabled hips or gambrel in a symmetrical fashion with a slope of 6:12 to 12:12.
- Secondary Roofs: Shed with minimum slope of 2:12.
- Flat Roofs: Permitted as a primary roof when interrupted with other sloped or parapeted roof elements. Permitted as a secondary roof when in the form of a special rooftop element or tower. Flat roofs generally are to have parapets, balustrades or railings.
- Parapets: Horizontal
- Dormers: Shed, Pitched or eyebrow
- Special roof-top elements: Symmetrically situated or aligned with the rhythm of structural bays and fenestration.
- Roof-top mechanical enclosures: Concealed from view by sloped roofs of the character described above.

5.3. Fenestration

5.3.1. Window Glazing: Reflective glass (such as black spandrel) is unacceptable and will not be permitted. All window glazing should allow visibility to the interior of the building. Windows generally should be treated as “punched openings” in a façade, rather than as a siding or cladding material.
5.3.2. Recommended Materials

- Windows: wood, painted metal, vinyl, metal clad wood
- Bay windows: wood, metal clad wood, painted metal, with metal tops
- Doors: painted wood, metal clad wood, painted metal, fiberglass resin
- Garage doors: painted wood, metal with incorporated glazing, clad wood

- Shutters: wood, fiberglass resin
- Security doors and grilles: metal

5.3.3. Configuration

- Windows: Rectangular with a minimum proportion of 1.5 vertical to 1 horizontal.
- Bay windows: rectangular or chamfered.
- Doors: rectangular with rectangular transoms, if used. Glazing within doors shall be consistent with window glazing.
- Garage doors: 16' max. in width, articulated to appear as multiple doors where possible.
- Shutters: Operable or given the convincing appearance of being operable and sized to fully cover the opening.
- Security doors and grilles: metal
- Service Doors (rear facade only): Overhead coiling metal or folding metal.

Multi-Family Buildings

1. Multi-family buildings are generally anticipated to be either townhouse, rowhouse or multi-story flats. They are to have a contemporary small-urban scale. Simple, unadorned building massing is not acceptable. They should have a domestic character and designed to be seen from all four sides.

2. Mechanical equipment shall be screened from view utilizing roof-top equipment or, if ground mounted, fencing and/or landscaping. Tenant entrance elements should be prominent and scaled to the human form.

3. Support buildings and amenities shall have a public scale, but maintain a consistency of architectural detailing with the living unit building(s).

4. Edge Definition and Screening

4.1. Fences and walls shall be architecturally consistent with the building designs. Walls are to be made of a combination of materials, including brick, decorative cmu, siding, stone, and to a limited extent, stucco. Fences and privacy screens are to be made of wood pickets, pvc lumber, wrought iron, vinyl board on board fencing, or painted metal. Chain link fences are not permitted. Landscaping may be used in conjunction with fences and walls to better define edges or screen views and activities.



5. Scale and Articulation

5.1. Scale is the relationship in size between buildings and the human form. Articulation is the way in which architectural elements are used to reduce the scale of the masses that compose the building form. Buildings shall be designed to appear smaller through the articulation of the overall massing and organizing it as a collection of smaller component masses. The use of architectural elements such as bays, balconies, porches, loggias and arcades add interest to building facades and aid in relating the scale of any building to human dimensions. Roofs may be articulated through the use of dormers, lanterns, monitors, widow's watches and other roof¬top elements. Each of these devices adds character and interest to the buildings of the development which, in turn, reinforces the village character intended by these guidelines.



5.2. There shall be an adequate variety of architectural elements along all facades to distinguish individual units while remaining stylistically consistent within the entire development.

6. Building Elements

6.1. Building Materials - General

6.1.1. Building walls: metal panel, brick, stucco (EIFS), clad wood, wood shingle, wood clapboard, wood board and batten, and fiber cement siding.
6.1.2. Exposed Foundation Walls: Brick or brick facing, or stucco finished poured concrete or concrete block.
6.1.3. Materials shall transition and terminate appropriately. If a material transition is desired, such transition shall occur at interior corners, not outside corners. Materials shall be utilized to express component massing and shall not be treated as surface decoration. No more than two wall materials may occur on any individual building.
6.1.4. Chimneys: brick, stucco, or tabby (coastal concrete)
6.1.5. Arcades and colonnades: brick, stucco, wood, poly-stone, fiberglass, painted structural steel and structural aluminum
6.1.6. Porticos, porches, columns: painted wood, cellular pvc, painted metal, poly-stone, fiberglass, painted structural steel and structural aluminum
6.1.7. Posts, spindles, balusters: pained wood, cellular pvc, painted metal, poly-stone, fiberglass, , painted structural steel and structural aluminum
6.1.8. Stoops, exterior stairs: brick, wood, or steel
6.1.9. Decks: wood, concrete, composite lumber, or high quality synthetic wood decking, concrete, steel
6.1.10. Awning and canopies: canvas-covered metal or wood structure, painted structural steel and structural aluminum

6.2. Roofs

6.2.1. Recommended Materials

- Roofs: Wood shingles, galvanized or painted metal seamed, copper, lead-coated copper, slate, synthetic slate, architectural grade asphalt or fiberglass shingle.
- Live Roofs: Live roofs are permissible, to be approved on a case-by-case basis and should be integral to the architectural character of the entire building.
- Gutters and downspouts: galvanized aluminum, painted metal, copper
- Flashing: copper, lead coated copper, galvanized aluminum

6.2.2. Roof Shapes

- Buildings shall have a varied character of traditionally shaped roofs.
- Principal Roofs: Gabled, hipped, hipped gables, gabled hips or gambrel in a symmetrical fashion with a slope of 6:12 to 12:12.
- Secondary Roofs: Shed with minimum slope of 2:12.
- Flat Roofs: Permitted as a primary roof when interrupted with other sloped or parapeted roof elements. Permitted as a secondary roof when in the form of a special rooftop element or tower. Flat roofs generally are to have parapets, balustrades or railings.
- Parapets: Horizontal
- Dormers: Shed, Pitched or eyebrow
- Special roof-top elements: Symmetrically situated or aligned with the rhythm of structural bays and fenestration.
- Roof-top mechanical enclosures: Concealed from view by sloped roofs of the character described above.

6.3. Fenestration

6.3.1. Window Glazing: Reflective glass (such as black spandrel) is unacceptable and will not be permitted. All window glazing should allow visibility to the interior of the building. Windows generally should be treated as “punched openings” in a façade, rather than as a siding or cladding material.

6.3.2. Recommended Materials

- Windows: wood, painted metal, aluminum, vinyl, metal clad wood
- Bay windows: wood, painted metal, aluminum, metal clad wood, painted metal, with metal tops
- Doors: painted wood, metal clad wood, painted metal, fiberglass resin
- Garage doors: painted wood, metal with incorporated glazing, clad wood
- Shutters: wood, fiberglass resin
- Security doors and grilles: metal

6.3.3. Configuration

- Windows: Rectangular with a minimum proportion of 1.5 vertical to 1 horizontal.
- Bay windows: rectangular or chamfered.

- Doors: rectangular with rectangular transoms, if used. Glazing within doors shall be consistent with window glazing.
- Garage doors: 16' max. in width, articulated to appear as multiple doors where possible.
- Shutters: Operable or given the convincing appearance of being operable and sized to fully cover the opening.
- Security doors and grilles: metal
- Service Doors (rear facade only): Overhead coiling metal or folding metal.

Special Requirements for Specific Building Types

There are several building types which, under the Economic Opportunity zoning category, would require a Special Use Permit approval. However, to expedite the development of the project in the future, the proposed zoning application seeks approval of these specific, special uses:

- Fast Food Restaurants
- Truck Terminals
- Heavy Equipment and/or Machinery Sales and Service
- Large Manufacture and Processing of Textiles Facilities

Understanding that these uses typically require a Special Use Permit in order to address exceptional externalities characteristic of their use, below is a listing of additional design constraints for each. Please note that each type is also restricted to certain areas of the master plan, within the parcel. As such, each would be constrained by the specific requirements of that area, as described above, as well as the additional requirements of this section.

1. Fast Food Restaurants: Fast Food Restaurants will be limited to the Urban/Residential Core area. While national and regional franchise facilities are anticipated, unmodified standard corporate building designs will generally not be acceptable. Corporate building models must be modified to be in keeping with the guidelines above. Allusions to standard corporate elements may be acceptable, unless inconsistent with the guidelines and local vernacular/rural/historic architecture. Other specific requirements include:

1.1. Drive-through windows/canopies, when utilized, should face a public way (such as Old Stage Road) and be developed as a entry or porch element, matching the design and building materials of the fast-food restaurant.

1.2. Drive-through lanes, when provided, should not wrap more than two sides of the building and allow for a prominent, pedestrian entrance without conflict with the drive-through queue.

1.3. A sidewalk must extend from the main entrance to a sidewalk along any adjacent pedestrian ways.

2. Truck Terminals: Truck Terminals will be limited to the Large Building Footprint areas. In addition to the criteria above, the loading docks of these facilities may not face toward the Spine Road. If

perpendicular to the Spine Road, the loading dock and docked trucks must be effectively screened by structure or evergreen landscaping of adequate size and thickness.

3. Heavy Equipment and/or Machinery Sales and Service: These facilities are not allowed in the Urban/Residential Core. In addition to the criteria above, the following restrictions will also apply:

   3.1. Exterior display of equipment and vehicles for sale will be limited to areas that are designed for that purpose, and designated as such on an approved site plan. These areas may be landscaped in such a way as to appear coordinated with the overall site landscaping when not in use. Lawns and Landscaping should also be designed so as to accommodate traffic and long periods of shade.

   3.2. Garage Doors shall not face the Spine Road.

   3.3. Areas for the queuing of vehicles to be serviced or for vehicles which have been serviced shall be screened from the Spine Road and adjacent properties.

4. Manufacture and Processing of Textiles Facilities (in excess of 10,000 sf): These facilities will be limited to those areas designated for large footprint users. In addition to the applicable requirements above, these facilities must be designed with adequate waste collection and treatment areas. Any exterior areas used for storage of supplies, collection of waste, or treatment of waste water, shall be fully screened from view by structures and be contained to fully protect them from negatively impacting the environment.

5. Convenience Stores: Convenience Stores shall be designed so as to safely and effectively separate vehicular from pedestrian traffic with techniques that allow for convenient access by automobile but without sacrificing pedestrian access and connectivity. Convenience Stores with Fuel Sales and canopy must have a canopy that is visually subservient to the main store building. Canopies must relate to the store building architecturally in form, color and materials. This includes columns, ceilings, and all exposed trim, fascias and roofing. The roof element itself shall reference vernacular roof forms (gabled, hipped, mono-pitched, mansard, etc..) while being consistent with the main building form. A predominant ceiling height is limited to 15' maximum, so as not to dominate the main building form. Use of exposed trusses and/or decorative elements that reduce the industrial feel of the canopy is strongly encouraged. There shall be no more than two signs on the canopy and shall be integrated into the canopy design so as not to appear "mounted" as an afterthought. Halo lighting is allowed. The background of any backlit signs shall be opaque, allowing only lettering and logos to broadcast light. String or tape lighting is not allowed. Electronic lettering in canopy signs is not allowed.

Landscape and Open Space Standards

General Requirements

Landscaped open spaces, parking areas and pedestrian ways shall have emphasis placed on their edges either with buildings or plantings to create the effect of "outdoor rooms." Walk-ways adjacent to buildings shall reinforce the sense of a public street. Walk-ways adjacent to open spaces shall be lined with trees to reinforce the edge of the open space. All dumpsters, ground mounted HVAC, mechanical units and cart corrals which are adjacent to buildings shall be screened by an enclosure composed of masonry, closed cell PVC, prefinished metal or cementitious panels, in detail and colors to blend with adjacent building materials. Where present, such features shall be shown on the site plan for the adjacent building, and shall be reviewed and approved by the Director of Planning for consistency with this condition.

The following apply generally to all areas, except where specifically identified.

Open Spaces and Pedestrian Ways



Pedestrian ways are to be planted with trees spaced a maximum of 40' o.c. Shade/Canopy type trees are the preferred tree type for all formal open spaces; ornamental trees may be used to emphasize special open spaces and pedestrian ways. In all cases, species and planting sizes are to be selected to be in keeping with the scale of the space in which they will reside. Street-lights shall be provided in public ways and along the multi-use trail and sidewalk system and shall be spaced so-as not to conflict with tree plantings and be of a pedestrian scale and design, a maximum of 16' in height.

Parking Areas

Parking shall be arranged in simple, rational parking enclaves.

Landscaping within parking enclaves shall be minimized in favor of more effective landscaping at their perimeter for screening.



Parking layout is to be simple and logical. Fencing and landscape screening is to be utilized to effectively screen parking areas from adjacent properties, public right-of-ways and the spine road. Lighting in parking areas shall be taller than the pedestrian oriented fixtures, providing a reasonable degree of ambient lighting for public safety.

Parking layout for large users (such as warehouses, manufacturing facilities, distribution centers, etc..) should be organized for functional efficiency of the large vehicles or large number of vehicles they may have to accommodate. Consideration should be given for separate visitor parking and effective natural screening of loading dock and employee parking areas.

Signage



Signs are to be submitted as part of building design and park design submissions.

All freestanding signage, including entrance signage located at the Property's two entrances as shown on the Master Plan, shall be externally illuminated monument-style signs. The base of the signs shall be brick or shall use materials similar in type and color with the site architecture. The design of the signs shall be approved by the Director of Planning prior to final site plan approval for consistency with this condition.

Monument signs are encouraged. Pedestrian oriented, architecturally detailed signs are also encouraged. Wall-mounted blade signs and simple pole-mounted signs are prohibited.

Building face signs must be coordinated with the architectural design of the building and sized to fit naturally into a sign band or other location anticipated in the building design. Roof mounted signs are prohibited.



Where allowed by ordinance, a secondary building face sign facing a public street is allowed, but must be sized and designed to coordinate with the building architecture.

Large single users (such as warehouses, manufacturing facilities, distribution centers, etc..) are encouraged to size building face signage appropriate to the distance at which they will be viewed, consistent with the James City County sign ordinance, designed tastefully as an architectural element in and of itself.

Large single users and the multifamily developer are encouraged to provide directional signage for both vehicular and pedestrian way-finding. Such signage may include logos and should be in keeping with the particular developer's architectural theme.

All signs must conform with the James City County sign ordinances and be approved by James City County subsequent to approval by the developer.

It is anticipated there will be significant entrance elements with tasteful monument signage at the two entrances to the property. These design elements may but need not relate to the Village entrance element, but should be consistent with each other in material and character. Monument signs shall comply with the James City County zoning ordinance, should identify the development, and may include names of major businesses within.



Community Impact Statement

Rezoning

Of

The Enterprise Center
at
Hazelwood Farms

Prepared For

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And
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AES Project Number: W10325-01

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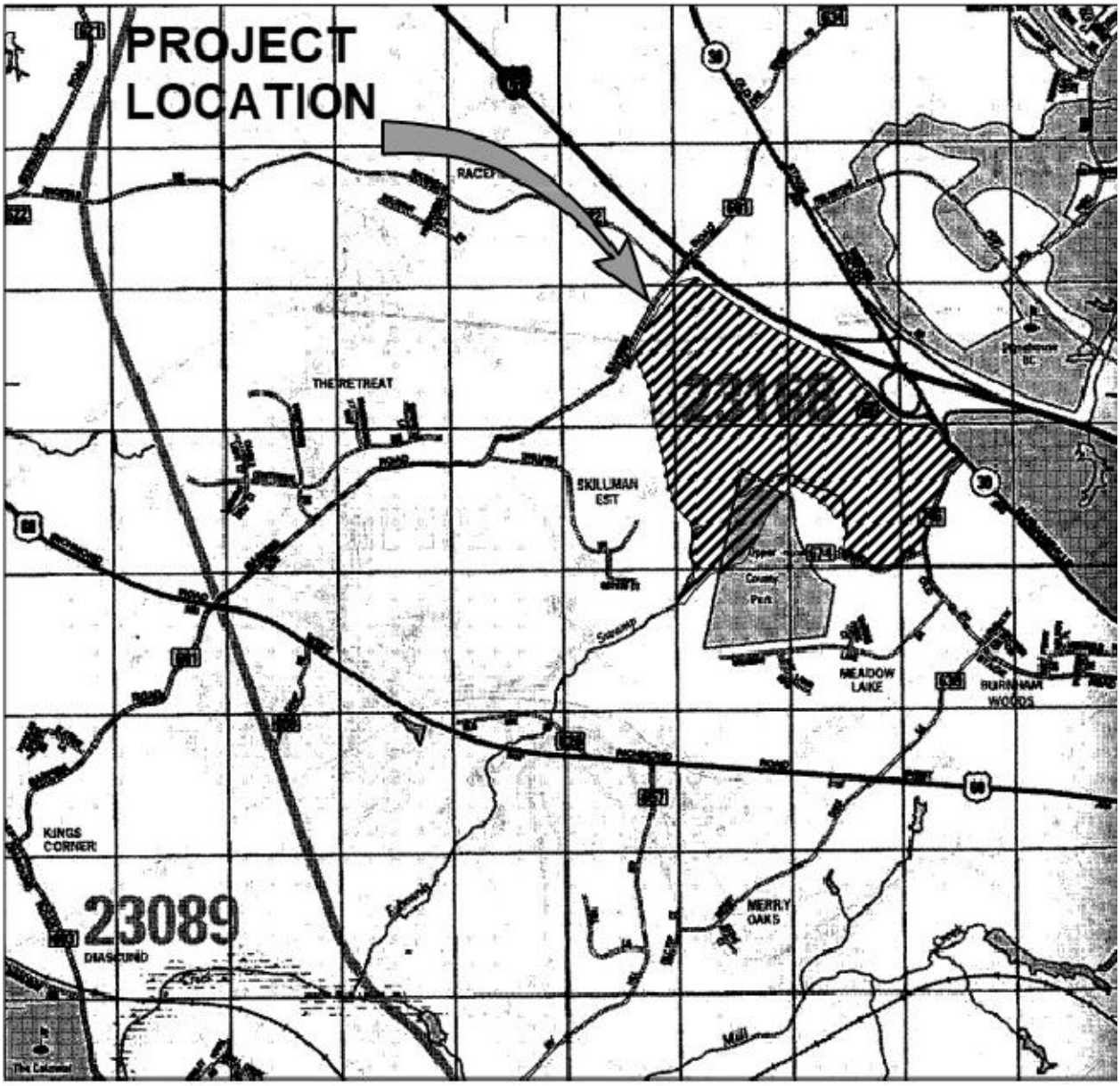
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I. INTRODUCTION

On behalf of Hazelwood Farms, LLC, Timothy O. Trant II of Kaufman & Canoles, P.C. proposes a Rezoning for several parcels of land within the Stonehouse district which is to be referred to as the Enterprise Center (Southern parcel). These parcels are approximately 328 acres total consisting of 4 parcels in the Name of Hazelwood Farms, LLC and are in the B-1 (General Business) and A-1 (General Agricultural) zoning district and all acreage being within the Primary Service Area with (PSA). The property is located on the Southern side of Interstate 64 and accessible along its eastern edge by Old Stage Road. A Rezoning is being sought to bring this site into the EO (Economic Opportunity) zoning district. The proposal includes for 2,920,000 square foot of Warehousing/Manufacturing/Office, 75,000 square feet of commercial and 250 units of Multifamily (Mid-Rise Apartments). These uses may include such specialty uses as a fast-food restaurant, gas station, bank, truck terminal, heavy equipment sales, and other commercial buildings over 10,000sf.

An application to rezone the project from B-1 and A-1 to EO (Economic Opportunity Zoning District) with proffers is being sought to bring the property into conformance with county comp. Plan.

Exhibit 1 – Location Map



VICINITY MAP
(Approximate Scale: 1"=2000')
Copyright ADC The Map People permitted use number 21004223

II. THE PROJECT TEAM

The organizations that participated in the preparation of the information provided in this impact study are as follows:

- Developer -Hazelwood Farms, LLC
- Legal -Kaufman & Canoles
- Land Planning -AES Consulting Engineers
- Civil Engineering -AES Consulting Engineers
- Environmental & Natural Resources -Kerr Environmental
- Traffic -DRW Consulting

III. PROJECT DESCRIPTION AND PLANNING CONSIDERATIONS

Project Description

The developer is proposing to rezone multiple parcels from B-1 and A-1 to EO for the purpose of developing a project to include warehousing, office, manufacturing and an Urban Core which may include retail/commercial and multifamily apartments on approximately 328 acres in the Stonehouse District in James City County.

Potential Special Permit Uses

- Multifamily apartments
- Any convenience stores
- Automobile and gasoline service stations
- Commercial in excess of 10,000 square feet of floor area
- Commercial that generates more than 100 additional trips during peak hour of operation
- Truck terminals
- Heavy equipment/machinery sales and service

Planning Considerations

The Enterprise Center at Hazelwood Farm lies within the Primary Service Area (PSA) of the County and within an Economic Opportunity Zone in the JCC Comprehensive Plan. It is bounded to the East by Old Stage Road (US Rte. 30), which is identified by James City County as a Community Character Corridor.

The Primary Service Area (PSA) is an important planning tool within James City County

and it encourages efficient use of public facilities and services, avoids overburdening such facilities and services, helps ensure facilities are available where and when needed, increases public benefit per dollar spent, promotes public health and safety through improved emergency response time, and minimizes well and septic failures. As this Site is within the PSA it has been identified as one where James City County has planned for growth with the knowledge that services can be brought to the site and that there is ample capacity in these systems to support this project.

The project frontage along Old Stage Road (US Rte. 30) is designated as an open/agricultural in the Community Character Corridor classification. It is the intent to enhance the character of this area of the County with the implementation of Design Guidelines that will help to frame the development within the proposed EO zone. The site is designated as Economic Opportunity on the Comprehensive Plan and is suitable for business development, physical attributes and density of the property being planned, and the degree of the project's consistency with the Comprehensive Plan.

IV. ANALYSIS OF IMPACTS TO PUBLIC FACILITIES AND SERVICES

The subject property of this rezoning application is located within the Primary Service Area of James City County. Identified on the zoning maps, the Primary Service Area is an area where urban development is encouraged to occur. Public water and public sanitary sewer services and other public services (police, fire and life rescue, and transportation) are presently provided or intended to be provided to these parcels.

A. Public Water Facilities

The subject property is not currently served by public water service. The site is within the Primary Service Area (PSA) and is intended to be served with public drinking water by the existing JCSA water distribution system. JCSA currently maintains a 12" water at the intersection of La Grange Parkway and Barhamsville Road (Route 30) at the entrance to Stonehouse Industrial Park. The developer will extend the water system along Barhamsville Road (Route 30) to intersect of Old Stage Road and Barhamsville Road. Depending on future growth and water system demands it is possible that additional system pressures will be required within the development. The developer agrees to reserve a 50-ft JCSA public utility easement to accommodate future looping of the water system under Interstate 64 should it be needed in the future as part of this development or as part of other expansions outside of this development in the area.

The project's internal water system will likely consist of 12-inch water main through the project providing the project adequate volumes and pressures for consumption and fire protection. Verification the JCSA existing water system and design of the on-site water main extensions will be further analyzed with modeling techniques during development of construction plans for the project. Should additional volumes or pressure needs arise the developer shall interconnect the water system to Fieldstone Parkway on the opposite side of Interstate 64.

Water consumption for the proposed project is estimated at a Maximum Day Water Demand of 254,000 gallons per day. Peak Hour Water Demand for this project is estimated at approximately 747.22 gallons per minute.

TABLE 1 - PROJECTED WATER USAGE

Type of Use	Design Units	Flow (GPD/Unit)	Total Flow (GPD)	Duration (hrs)	Avg Flow (GPM)	Peak Flow (GPM)
Warehouse	2,920,000 SF	0.05	146,000	24	101.39	405.56
Shopping Center	75,000 SF	0.2	15,000	12	20.83	83.33
Multifamily	250 Units	310	77,500	24	53.82	215.28
Total			**238,500**		**176.04**	**704.17**

B. Public Sewer Facilities

This project is intended to include industrial, office park and commercial development such as retail shops, bank, restaurant, and a convenience store that will be located off of Old Stage Road (Route 30) in James City County, Virginia. The properties and buildings in the development are anticipated to be served by an on-site sewer pump station and an 8" force main that will connect to the existing JCSA maintained force main along Barhamsville Road before connecting to the HRSD force main system at La Grange Parkway which ultimately discharges to the Williamsburg Wastewater Treatment Plant. The estimated average daily flow generated from the proposed development is 254,000 gallons per day (GPD) with a peak flow rate of 560.42 gallons per minute (GPM). See Table 2 below for details of projected wastewater flows.

Table 2 – Wastewater Flows

Type of Use	Design Units	Flow (GPD/Unit)	Total Flow (GPD)	Duration (hrs)	Avg Flow (GPM)	Peak Flow (GPM)
Warehouse	2,920,000 SF	0.05	146,000	24	101.39	304.17
Shopping Center	75,000 SF	0.2	15,000	12	20.83	62.50
Multifamly	250 SF	7 310	77,500	24	53.82	161.46
Total			**238,500**		**176.04**	**528.13**

C. Public Schools

The Enterprise Center is located within the Stonehouse Elementary, Toano Middle, and Warhill High School districts. The Enterprise Center Master Plan proposes a total of up to 250 Multifamily units and based on WJCC School Projections this development would be anticipated to generate 78 school age children (0.31 students per unit). Table 3 shows the school capacities and enrollments for 2019/2020.

Table 3 - School Capacity

Existing Public School Facility	Design Capacity	Effective Capacity	Current 2019/20 Enrollment	Capacity (No. & % Over(-)/Under(+))		% of Student Breakdown	Additional Students
Stonehouse Elementary	765	765	764	1	0.1%	47%	36
Toano Middle School	790	790	678	112	14.2%	24%	19
Warhill High School	1441	1441	1372	69	4.8%	29%	23
Total	**2996**	**2996**	**2814**	**182**		**100%**	**78**

** Note: Stonehouse Enrollment includes Pre-K*

D. Fire Protection and Emergency Services

There are currently five fire stations providing fire protection and Emergency Medical Service (EMS) to James City County. Each station is placed within the County in such a way as to help achieve the response goal of six minutes or less. Every station is staffed by three shifts of career and volunteer Firefighters. Station crews are responsible for the pre-planning of target hazards in their area as well as safety inspections of private businesses within the response district

In addition, there exists a mutual aid agreement with the York County and City of Williamsburg for backup assistance. The location of the project allows for coverage by one of the county's five stations: James City County Station 1, located on Forge Road, York County Station 5, located on Newman Road, and the City of Williamsburg as a third backup all will be within reasonable response times of the project.

E. Solid Waste

The proposed development on the subject property will generate solid wastes that will require collection and disposal to promote a safe and healthy environment. Reputable, private contractors will handle the collection of solid waste. Both commercial trash and recyclable material will be removed from this site to a solid waste transfer station.

F. Franchise Utility Service Providers

Virginia Natural Gas, Dominion Enginery, Cox Communications, and Verizon Communications provide, respectively, natural gas, electricity, cable TV/ Internet service, and telephone service to this area. The current policy of these utility service providers is to extend service to new development at no cost to the developer when positive revenue is identified; plus, with new land development, these utility service providers are required to place all new utility service underground.

G. Parks and Recreation

This project proposes to provide an abundance of recreational amenities designed to meet the needs of the anticipated residents while exceeding ordinance standards. The open space requirement, which is 10% of the developable site area, will be met through the use of several different recreational amenities. There are multiple defined amenity areas on the provided Master Plan. Recreation area with the residential area will include recreation building(s), and other active amenities to include playground equipment as well as a minimum of 0.69 acres of open park area. One of the playgrounds shall be at least 2,500 square feet and contain at least 5 activities. In addition to the residential recreational amenities, other passive amenities available to residents will include open spaces, sidewalks, pocket parks and pedestrian benches.

H. Transit

The Master Plan identifies a series of multiuse pedestrian and bike pathways throughout the development. Additionally, internal sidewalks will provide pedestrian interconnection from residential and commercial areas of the project and along the main development access road. Additionally, public transit access will be made within the “Urban Core” shown on the Master Plan by Williamsburg Area Transit Authority (WATA). At least one bus stop is to be provided by the development as coordinated with WATA.

V. ANALYSIS OF ENVIRONMENTAL IMPACTS

An environmental inventory, wetland delineation, and perennial stream analysis has been prepared by the Kerr Environmental Group 4/15/15. The inventory is incorporated into the provided Master Plan for the development.

VI. ANALYSIS OF STORMWATER MANAGEMENT

A brief needs-analysis for stormwater management, meeting the general criteria of the Commonwealth of Virginia and James City County's stormwater requirements, was completed as a component of the planning for the proposed project. The goal of the stormwater management plan is to adhere to local and state stormwater requirements and provide a sustainable development utilizing the latest stormwater design techniques. In evaluating stormwater management solutions on the subject site, unique site characteristics were considered. Preliminary site investigation identified the following site characteristics to be considered in stormwater management planning:

- The property drains to an unnamed tributary of Diascund Creek watershed.
- The site is currently largely undeveloped; forested and in open fields.
- All of the project area's existing drainage is surface runoff, ultimately converging to the unnamed tributary of Diascund Creek, located in central and south east of the project site.
- This project collects uncontrolled runoff from adjacent properties and roadways including; Route 30, Barnes Road and Interstate 64.
- The project site largely consists of sloping of 0 to 6% slopes, with a few 0-10% slopes and are well drained soils.

At this time the stormwater management approach has not been fully designed due to the lack of specific end users however it is anticipated that all the proposed development will be treated at the runoff source, adjacent to buildings and parking lots, through a series of bioretention cells or similar small-scale infiltration-based features. The stormwater management plan proposed for this site will protect overall downstream water quality, help preserve the natural hydrology of the watershed, and reduce the likelihood of the existing Interstate and Route 30 roadway drainage to cause downstream erosion to receiving channels through maintaining post-developed flows at or below pre-developed flows through on-site detention, and when and where feasible, through infiltration.

Stormwater is to be managed by a series of best management practices and pipe drainage networks that ultimately discharge into downstream wetlands. Upstream bioretention ponds, filterras, dry swales, and other low impact development measures will contribute to stormwater quality control and will feed into the downstream wet ponds for additional quality and quantity control. Downstream of these upstream features, it is envisioned that ponds will serve as the primary means of water quantity control. Per compliance with the Virginia Runoff Reduction Method (VRRM), all proposed site work will be managed by these stormwater measures to negate downstream wetlands impacts and pollution from entering into the Chesapeake Bay.

The main road network and infrastructure is anticipated to be designed and installed in advance of individual parcel development. The initial infrastructure plan will require the preparation of a stormwater master plan showing how the infrastructure plan and all installed stormwater features will be incorporated into the overall stormwater planning for the entire development. Future site development plans will need to show that they are in compliance with the stormwater master plan, comply with regulations on a standalone basis and/or update the previously approved master plan that show how the overall site remains in compliance with current and possible future stormwater regulations.

VII. ANALYSIS OF IMPACTS TO TRAFFIC

The traffic impacts for the proposed development have been addressed by DRW Consulting and is addressed within the Master plan.

VIII. ANALYSIS OF FISCAL IMPACTS

A James City County Fiscal Impact Worksheet has been prepared outlining the impacts of the fiscal impacts of the development. The fiscal impact worksheet is based upon the following development buildout: the construction of 250 housing units and 2,800,000 square feet of warehouse/manufacturing and 120,000 square feet of office and 75,000 square feet of retail/commercial. The Commercial portion of the development will lead to a generation of over $1.7 million in tax revenues and the overall Enterprise Center project shows a fiscal positive of over $690,000 per year at full buildout. A copy of the worksheet has been included in our submittal package to James City County staff. A point of clarification is that the analysis is based upon the speculative master plan and as such no businesses have been targeted to fill

any of the specific locations. We believe that this has been successfully offset by providing a conservative estimate of the building values and number of potential employees generated by the development at buildout.

IX. ANALYSIS OF CULTURAL RESOURCES IMPACTS

An Archaeological Assessment for James City County (Preserving Our Hidden Heritage); and, per the County's Archaeological Policy was prepared. A Phase I Cultural Resources Assessment prepared by Circa (October 2014) and the report is attached to this submittal.

X. ANALYSIS OF NATURAL RESOURCES IMPACTS

Rouse Environmental Services working on behalf of Kerr Environmental Group conducted an investigation of the site to review it for potential endangered wildlife and plant species. It was determined following an investigation that there were no such species or potential habitats deemed to be present on this property. A copy of their report is attached to this submittal.

XI. CONSTRUCTION PHASING

Due to the fact that the exact phasing and total buildout for this project is impossible to predict, we have provided the below guidelines to ensure that there is a significant commercial component to the project prior to the residential component of the project coming on line to ensure a positive fiscal impact for James City County. Specifics on the construction phasing is included in the proffered conditions for the project but is generally described as follows:

- No residential certificates of occupancy shall be issued prior to the issuance for certificate of occupancy on roughly 1,000,000 square feet of industrial, warehouse and/or office space. Once this trigger has been met, there should be no restriction of Certificates of Occupancy for residential units.

XII. CONCLUSION

In summary, The Enterprise Center at Hazelwood Farm is being planned as an Economic Opportunity site to include manufacturing, warehousing, office, and commercial development with a small component of multifamily mid-rise apartment units within the EO District. Planning

and redevelopment of the site incorporates open space design principles, respects the environmental sensitivity of the watershed and meets the intent of the Comprehensive Plan. The Community Impact Statement for The Enterprise Center at Hazelwood Farm development concludes that the County and the community realize the tangible public benefits of open space design, unusual environmental protection, significant fiscal benefits and the following:

- Adequate public facilities (water, sewer and fire), and utility services (gas, electric cable TV, telephone), are available for development
- The proposed use is consistent with the intended land use designated on the current Comprehensive Plan for this area
- There is adequate capacity in the system of roads serving this project with additional roadway improvements scheduled to accommodate the future growth.
- The proposed stormwater management system will protect downstream channels from erosion and the onsite bioretention and dry swales will increase water infiltration and reduce uncontrolled runoff
- The development provides a significant tax benefit to the County
- The Master Plan and Design Guidelines proffered provide a high standard of architecture and layout to enhance this area of the County for decades to come

Ch. 527 Traffic Impact Statement For Village Center And Enterprise Center At Hazelwood Farms

JAMES CITY COUNTY, VIRGINIA

For:
Hazelwood Farms, LLC

By:
DRW Consultants, LLC
Midlothian, VA

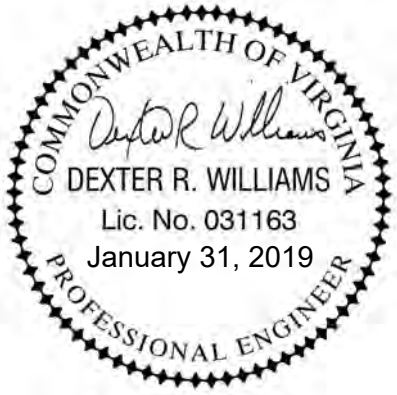
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REPORT
TEXT

INTRODUCTION

Hazelwood Farms proposes to rezone their property at the I-64/Rt. 30 interchange in James City County. This traffic study is the second phase of study to address the requirements of VDOT Traffic Impact Analysis Regulations (24VAC30-155), commonly known as Chapter 527.

The first phase traffic study included complete background information as well as complete traffic counts and forecasts required for the study. It addressed only PM peak hour traffic analysis for buildout of the area and an evaluation of two Rt. 30 intersections pursuant to VDOT Roundabout Policy (Road Design Manual Appendix F). VDOT review of the first phase study acknowledged that roundabouts are not preferable for Rt. 30 locations and only traffic signals are included in this study.

This second phase study includes traffic signals on Rt. 30 and analysis of existing conditions, future conditions without and with Hazelwood Farms, and future conditions without and with Stonehouse and Moss Creek.

The approved Ch. 527 Pre-Scope of Work Meeting Form and the signed Scope of Work Meeting Checklist are included at the end of the Appendix. This study will also provide information to James City County for its consideration of the proposed rezoning.

EXECUTIVE SUMMARY

Hazelwood Farms location in the Hampton Roads region is shown on the upper section of Exhibit 1a. The lower section of Exhibit 1a shows the two sections of Hazelwood Farms:

1. North Hazelwood Farms (formally named Village Center at Hazelwood Farms): northwest quadrant of the I-64/Rt. 30 interchange. This area is referred to in planning documents as Village Center.
2. South Hazelwood Farms (formally named Enterprise Center at Hazelwood Farms): southwest quadrant of the I-64/Rt. 30 interchange. This area is referred to in planning documents as Enterprise Center.

The directional convention in this report is Rt. 30 runs north and south and I-64 runs east and west, and North Hazelwood Farms and South Hazelwood Farms nomenclature are used.

Exhibit 1b shows the Hazelwood Farms property location with on an area parcel map. I-64 and all other public roads are maintained by VDOT.

Rt. 30 is a minor arterial under VDOT functional classification in the area and has traffic in the 10,000 vehicles per day range. North Hazelwood Farm is anticipated to be developed with all access on Rt. 30 only.

Rt. 746 Old Stage Road is located on the west side of Rt. 30 and has daily traffic in the 1,000 vehicles per day range. South Hazelwood Farms frontage on Rt. 30 is a limited access line, and all property is anticipated to be developed with access on Rt. 746 Old Stage Road. (Note: part of Rt. 30 carries the name Old Stage Road, but the name Old Stage Road only applies to Rt. 746 in this report).

North Hazelwood Farms land use plan is shown on Exhibit 2a. Anticipated development consists of 135,000 square feet office (Area 1) and 375,000 square feet of retail space (Areas 2, 3 and 4). Depending on future conditions, the rear of the property (Area 4) may have less trip generation with alternative warehouse use.

Exhibit 2b shows the access plan for North Hazelwood Farms on Rt. 30. The major access (Entrance 1) will align across from Fieldstone Parkway at a signalized intersection with four-way access. Entrance 2 will have right turn in and out only access at approximately the current location of a crossover on Rt. 30. Per VDOT directive, the existing crossover is to be closed when Entrance 2 is constructed. All site access is anticipated to be VDOT commercial entrances with private internal access.

South Hazelwood Farms land use plan is shown on Exhibit 2c. Anticipated development consists of 2,920,000 square feet warehouse (Areas 1, 2, 4, and 5), 75,000 square feet of retail space (Area 3) and 300 apartments (Area 6).

Exhibit 2d shows the access plan for South Hazelwood Farms. All access for South Hazelwood Farms is on Old Stage Road. The proposed access road (Entrance 1) will be the primary entrance and is planned to be a VDOT subdivision street. Entrance 2 will be the secondary entrance closest to Rt. 30 and is anticipated to be a commercial entrance. Both entrances are proposed to be constructed with single lane roundabouts on Old Stage Road. Roundabouts are a recommended design when left turns are a substantial part of traffic (as is the case here). Access includes reconstruction of Old Stage Road with raised median and added lanes and a traffic signal at the Rt. 30/Old Stage intersection.

The raised median on Old Stage Road will block existing left turns at the Shell Station and McDonald's entrances. The roundabout at Entrance 2 also serves to accommodate U-turns for existing left turn entering the Shell Station and McDonald's entrances.

The Rt. 30 corridor also serves as primary access for two other developments: Stonehouse and Moss Creek shopping center.

Exhibit 1i shows the Stonehouse phasing plan included with the Timmons Group traffic study for Stonehouse in 2015. That study included full development of Phase 1 and 2 and that Stonehouse traffic is included in this study. On Rt. 30, Stonehouse has two access points:

1. Fieldstone Parkway north of I-64 across from North Hazelwood Farms serves the generally residential area of Stonehouse.
2. LaGrange Parkway south of I-64 and Old Stage Road serving Hazelwood Farms the generally warehouse area of Stonehouse.

Exhibit 1j shows the Moss Creek master plan by LandMark from 2006. Trip generation for Moss Creek is included in this study. Moss Creek has two access points:

1. Moss Creek #1 entrance on Rt. 30 with full access and traffic signal.
2. Moss Creek #2 entrance on Fieldstone Parkway with full access.

Development improvements to the Rt. 30 corridor within the study are included at the following intersections from north to south (see Exhibit 2g for reference):

1. Moss Creek #1 Entrance #1 (Station 303+86). Extend 2nd northbound through lane from Fieldstone to drop off right turn at MC1. Widen for southbound left turn lane. Add traffic signal. All work by Moss Creek development.
2. Fieldstone Parkway/North #1 Entrance (Station 313+06). For Stonehouse, future signalization is required with second westbound left turn lane. For North Hazelwood Farms, signalization also required with northbound double left turn lanes, southbound right turn lane, and four eastbound lanes: double left turn lanes, through lane and right turn lane. See Exhibit 2b for details.
3. North #2 Entrance (Station 321+35). Close crossover and add southbound right turn lane. Right turn in/out only. All work by Hazelwood Farms.
4. I-64 Westbound Ramps B & C (Station 337+23). Westbound double left turn lanes and northbound double left turn lanes with signal proffered by Stonehouse. Only signalization required by Hazelwood Farms.
5. I-64 Eastbound Off Ramp A (Station 350+36). Signal addition by North Hazelwood Farms. See Exhibit 2f.
6. I-64 Eastbound On Ramp D (Station 353+47). Extend northbound right turn lane back to Old Stage Road intersection as drop-off lane by South Hazelwood Farms. See Exhibit 2f.
7. Old Stage Road (Station 359+58). South Hazelwood Farms improvements include (see Exhibit 2e):
    a. Four lanes on Old Stage Road eastbound approach: double left turn lanes, through lane and right turn lane.
    b. Two lanes on westbound approach.
    c. Double left turn lane on northbound approach.

d. Add third through lane on northbound approach (Note: this improvement is required for all development traffic, but not required for Hazelwood Farms only.
e. Extend southbound right turn lane back to Ramp A as drop-off lane at Old Stage Road.
f. Add signal.

Traffic analysis for the signalized intersection have been performed for all development build out conditions on the Rt. 30 corridor for the 2030 PM peak hour forecast year. This includes analysis with 70 second cycle lengths used in the 2015 Timmons Group traffic study as well as 90 (AM) and 100 (PM) second cycle lengths. All signalized intersections have overall LOS C or better for all development scenarios and traffic signal cycle lengths.

BACKGROUND INFORMATION

Site Location And Description

Hazelwood Farms site location in the Hampton Roads region is shown on the upper section of Exhibit 1a. The site is located in northern James City County at the I-64 and Rt. 30 interchange (Note: The directional convention in this report is Rt. 30 runs north and south and I-64 runs east and west).

Hazelwood Farms property location with respect to area roads is shown on the lower portion of Exhibit 1a. I-64 and all other public roads are maintained by VDOT. North Hazelwood Farms is in the northwest quadrant of the I-64/Rt. 30 interchange. South Hazelwood Farms is located in the southwest quadrant of the I-64/Rt. 30 interchange.

Exhibit 1b shows Hazelwood Farms property on the county parcel map. Please note the name Old Stage Road includes Rt. 746 as well as Rt. 30 north of Rt. 746. For this report, all of Rt. 30 is referred to as Rt. 30 and Rt. 746 is referred to as Old Stage Road.

The property's land use is now farm and woodlands. General terrain in the area is level plains divided by drainage ravines and wetlands.

Study Area

Weekday AM and PM peak hours have been confirmed with VDOT and James City County for counts and analysis for inclusion in this report.

The existing intersections confirmed with VDOT and James City County for weekday AM and PM peak hour counts and analysis for inclusion in this report are shown on Exhibit 1c as follows:

1. Rt. 30/Barnes Road
2. Rt. 30/Fieldstone Parkway
3. Rt. 30/Overpass Road (count and forecast only)
4. Rt. 30/I-64 westbound ramps
5. Rt. 30/I-64 eastbound ramps
6. Rt. 30/Old Stage Road
7. Old Stage Road/Shell Station entrance (count and forecast only)
8. Old Stage Road/McDonalds entrance (count and forecast only)

All of these intersections are unsignalized.

The I-64/Route 30 interchange ramp junction merges and diverges confirmed with VDOT and James City County for weekday AM and PM peak hour counts and analysis are shown on Exhibit 1c (light blue lettering) as follows:

- Diverge 1 (D1): Eastbound Ramp A Diverge
- Diverge 2 (D2): Westbound Ramp C Diverge
- Merge 1 (M1): Westbound Ramp B Merge
- Merge 2 (M2): Eastbound Loop A Merge
- Merge 3 (M3): Eastbound Ramp D Merge

Peak hour counts are tabulated in the Appendix Exhibit A series.

Existing Roadways

The study area existing intersections, ramp junctions and roads are shown on a road network diagram on Exhibit 1d. Existing lane configurations at the intersections are also shown.

Rt. 30 is a four-lane divided median highway south of Fieldstone Parkway. Rt. 30 tapers to a two-lane road north of Fieldstone Parkway at Barnes Road. The road is posted 55 mph throughout the study area. Rt. 30 is the key arterial in the area and has traffic in the 10,000+ vehicle per day range.

Exhibit 1d shows the existing intersections (all unsignalized) from north to south on Rt. 30 as follows:

1. Rt. 30/Barnes Road. Barnes Road and Rt. 30 are two lane roads without auxiliary lanes. Barnes Road is stop sign controlled.
2. Rt. 30/Fieldstone Parkway. Rt. 30 is four lane divided highway with crossover at Fieldstone Parkway. Fieldstone Parkway is a four-lane divided highway and is stop controlled with left and right turn lanes as shown.
3. Rt. 30/Overpass Road. Rt. 30 is four lane divided highway with crossover at Overpass Road (a dead-end state frontage road).
4. Rt. 30/I-64 Westbound Exit Ramp C & On Ramp B. Rt. 30 is four lane divided highway with crossover at the I-64 westbound ramps. Exit Ramp C has a stop controlled left turn lane at Rt. 30 and a channelized right turn with acceleration lane to northbound Rt. 30. There is a northbound left turn lane.
5. Rt. 30/I-64 Eastbound Exit Ramp A. Rt. 30 is four lane divided highway with crossover at the I-64 eastbound ramp. Exit Ramp A has a stop controlled left turn lane at Rt. 30 and a channelized right turn with acceleration lane to southbound Rt. 30.
6. Rt. 30/Old Stage Road. Rt. 30 is four lane divided highway with crossover at Old Stage Road. Eastbound Old Stage Road and westbound C-store are two lane roads with stop-controlled approaches to Rt. 30. Auxiliary lanes on Rt. 30 are shown.

On Old Stage Road, the Shell Station and McDonald's entrances are combined for simplicity of forecast.

I-64/Rt. 30 is a diamond interchange with the single loop A in the southwest quadrant.

Programmed Improvements

There are no programmed improvements in the area.

Area Land Uses And Zoning

See Exhibit 1e for zoning in the area. North Hazelwood Farms property is all zoned B1 General Business. South Hazelwood Farms is zoned A1 Agriculture and B1 General Business.

There are two convenience stores with gas and the McDonald's at the Rt. 30/Old Stage Road intersection. These are within existing B1 zoning that includes part of South Hazelwood Farms.

Stonehouse east of North Hazelwood Farms and Rt. 30 is zoned PUD-C and PUD-R. It is developed primarily as residential in this area. Moss Creek east of North Hazelwood Farms is zoned MU Mixed Use and is vacant.

Much of the area north, west and south of Hazelwood Farms is zoned A1 Agriculture.

Comprehensive Plan Recommendations

Exhibit 1f shows the JCC 2035 Comprehensive Plan Land Use Map for this area. North Hazelwood Farms (proposed SUP) is consistent with the Mixed Use designation and South Hazelwood Farms (proposed EO zoning) is consistent with the Economic Opportunity designation.

Exhibit 1g-1 shows Map 8 of the James City/York Transportation Study prepared by the Hampton Roads TPO in March 2012. The only improvement shown in the vicinity of Hazelwood Farms is the widening of I-64.

Exhibit 1g-2 shows Hampton Roads 2040 Long Range Transportation Plan. There are no Regional Priority Projects shown in the vicinity of Hazelwood Farms.

Enclosed Exhibit 1g-3 shows the Regional Bikeway Plan for this area.

Enclosed Exhibit 1g-4 shows the JCC Pedestrian Accommodation Master Plan for this area.

The proposed development is consistent with/not in conflict with any comprehensive plan for roads.

Analysis Locations

Exhibit 1h shows the intersection analysis locations with future analysis conditions for build out of all development as follows:

1. Rt. 30/Barnes Road. Unsignalized.
2. Rt. 30/Moss Creek Entrance 1. Signalized.
3. Rt. 30/North #1 Entrance/Fieldstone Parkway. Signalized.
4. Rt. 30/North #2 Entrance. Right turn in and out with Rt. 30 crossover closed.
5. Rt. 30/I-64 Westbound Exit Ramp C & On Ramp B. Signalized.
6. Rt. 30/I-64 Eastbound Exit Ramp A. Signalized Vs. Roundabout.
7. Rt. 30/Old Stage Road. Signalized Vs. Roundabout.
8. Old Stage Road/South #2 Entrance. Roundabout.
9. Old Stage Road/South #1 Entrance. Roundabout.

Exhibit 1h also shows the I-64 ramp junction analysis locations as follows:

- Diverge 1 (D1): Eastbound Ramp A Diverge
- Diverge 2 (D2): Westbound Ramp C Diverge
- Merge 1 (M1): Westbound Ramp B Merge
- Merge 2 (M2): Eastbound Loop A Merge
- Merge 3 (M3): Eastbound Ramp D Merge

Current And Proposed Site Zoning

Hazelwood Farms is comprised of approximately 407 acres of land currently zoned A1 and B1. Rezoning by James City County is required to allow proposed uses.

The following table shows the conceptual development inventory:

TABLE A – PROPOSED REZONING FOR HAZELWOOD FARMS

	Rezoning Area	Acres	Units		
North	B1 to B1 w/Special Use Permit	79	Retail	375,000	sq. ft.
			Office	135,000	sq. ft.
South	A1 & B1 to EO	328	Warehousing	2,920,000	sq. ft.
			Retail	75,000	sq. ft.
			Apartments	300	units

Stonehouse Development Plan

The 2017 Stonehouse Development Phasing Plan prepared by Timmons Group is shown on Exhibit 1i. Timmons Group also did a traffic analysis dated April 16, 2015 that included forecast and analysis for Phases 1 and 2 on the phasing plan. The 2015 zoning addressed only Phases 1 and 2 for traffic impact and proffers.

On Rt. 30, Stonehouse has two access points:

1. Fieldstone Parkway north of I-64 across from North Hazelwood Farms serves the generally residential area of Stonehouse.
2. LaGrange Parkway south of I-64 and Old Stage Road serves the generally warehouse area of Stonehouse.

April 20, 2015 proffers include:

1. traffic signal and pavement markings to add second westbound left turn lane at Rt. 30/Fieldstone Parkway
2. traffic signal and second westbound left turn lane at Rt. 30/westbound I-64 ramps
3. second left turn lane on northbound Rt. 30 at westbound I-64 ramps

Moss Creek Development Plan

Exhibit 1j shows the Moss Creek master plan by LandMark from 2006. Trip generation for Moss Creek is included in this study. Moss Creek has two access points:

1. Moss Creek #1 entrance on Rt. 30 with full access and traffic signal.
2. Moss Creek #2 entrance on Fieldstone Parkway with full access.

Hazelwood Farms Proposed Development Plan

North Hazelwood Farms land use plan is shown on Exhibit 2a. Anticipated development consists of 135,000 square feet office (Area 1) and 375,000 square feet of retail space (Areas

2, 3 and 4). Depending on future conditions, the rear of the property (Area 4) may have less trip generation with alternative warehouse use.

Exhibit 2b shows the access plan for North Hazelwood Farms on Rt. 30. The major access (Entrance 1) will align across from Fieldstone Parkway at a signalized intersection with four-way access. Entrance 2 will have right turn in and out only access at approximately the current location of a crossover on Rt. 30. Per VDOT directive, the existing crossover is to be closed when Entrance 2 is constructed. All site access is anticipated to be VDOT commercial entrances with private road internal circulation.

South Hazelwood Farms land use plan is shown on Exhibit 2c. Anticipated development consists of 2,920,000 square feet warehouse (Areas 1, 2, 4, and 5), 75,000 square feet of retail space (Area 3) and 300 apartments (Area 6).

Exhibit 2d shows the access plan for South Hazelwood Farms. All access for South Hazelwood Farms is on Old Stage Road. The proposed access road (Entrance 1) will be the primary entrance. Entrance 2 will be the secondary entrance closest to Rt. 30. Both entrances are proposed to be constructed with single lane roundabouts. Roundabouts are a recommended design when left turns are a substantial part of traffic (as is the case here). Access includes reconstruction of Old Stage Road with raised median and added lanes and a traffic signal at the Rt. 30/Old Stage intersection, which is the gateway for South Hazelwood Farms.

The raised median on Old Stage Road will block existing left turns at the Shell Station and McDonald's entrances. The roundabout at Entrance 2 also serves to accommodate U-turns for existing left turn entering the Shell Station and McDonald's entrances.

Related VDOT Requirements

Change In Limited Access. Reconstruction of Old Stage Road will require adjustment of the limited access line on Rt. 30 north of Old Stage Road. At Rt. 30, the Old Stage Road reconstruction will add approximately 50 feet of pavement on the Hazelwood Farms side of Old Stage Road. This will require moving the end of the limited access line back toward I-64 50 to 75 feet depending on final design details. Commonwealth Transportation Board approval for this limited access change will be required with approval of plans for widening Old Stage Road.

Secondary Street Acceptance Regulations (SSAR). The cul-de-sac of the proposed public road in South Hazelwood Farms is not permitted by right under SSAR: at least two connections are required. An exception request for VDOT to allow the cul-de-sac has been included with this study for concurrent VDOT review. The basis for the exception is incompatible land use.

Access Management Regulations (AMR) & Signal Justification Report (SJR). Any AMR and SJR approval that may be required will be addressed prior to site approval by conditions for North Hazelwood Farms and proffers for South Hazelwood Farms.

EXISTING CONDITIONS

2017 TRAFFIC COUNTS

Weekday AM and PM peak hour turning movement counts and machine counts were conducted in January 2017. Tabulated traffic counts are in the Technical Appendix Exhibit A series. 2017 AM and PM peak hour counts with balance are shown on Exhibits 3a and 3b.

2018 TRAFFIC

For existing conditions, 2017 counts have been increased to 2018 levels based on growth factors. Exhibit 4a and 4b respectively show 2018 weekday AM and PM peak hour traffic volumes using a 1.1% increase in Rt. 30 traffic over 2017 counts and a 1.2% increase in I-64 traffic over 2017 counts. These growth factors were stipulated in the Ch. 527 Pre-Scope of Work Meeting Form.

Available VDOT daily counts are shown on Exhibit 4c. Exhibit 4c also shows calculated daily counts which have been developed by applying area road k-factors (ratio of peak hour traffic to daily traffic) to PM peak hour counts to calculate daily traffic.

EXISTING PEDESTRIAN/BICYCLE/TRANSIT FACILITIES

Exhibit 4c shows the existing bicycle/pedestrian facilities in the area. The only multi-use path is on Fieldstone Parkway and at Rt. 30. These were built by Stonehouse. There are no other sidewalks or multi-use paths in the area.

There is no transit service in the area. The closest WATA route has a turnaround end on LaGrange Parkway to the south on Rt. 30.

INTERSECTION TRAFFIC ANALYSIS PROCEDURES

Synchro 10 has been used to calculate traffic level of service (LOS) at signalized and unsignalized intersections. 95th percentile Synchro queuing reports and SimTraffic Queuing and Blocking reports are also included. SimTraffic queuing includes average of five simulations per recommended procedures for 95th percentile interval simulations.

The following table describes the six different LOS letter grades for signalized intersections from the Highway Capacity Manual 6th Edition (HCM6):

TABLE B - SIGNALIZED INTERSECTION TRAFFIC LEVELS OF SERVICE

Level Of Service (LOS)	Stopped Delay Per Vehicle (seconds)	Description
A	≤10.0	Low delay. Many vehicles do not stop.
B	>10 - 20	More stopping vehicles than LOS A.
C	>20 - 35	Longer cycle length. Stopping vehicles significant.
D	>35 - 55	Congestion more noticeable. Many vehicles stop.
E	>55 - 80	Long cycle lengths. High delay
F	>80	Considered in excess of acceptable delay.

The following table presents the six different LOS letter grades for unsignalized intersections from HCM6:

TABLE C – UNSIGNALIZED AND ROUNDABOUT INTERSECTION TRAFFIC LEVELS OF SERVICE

Level Of Service (LOS)	Stopped Delay Per Vehicle (seconds)
A	0-10
B	>10 - 15
C	>15 - 25
D	>25 - 35
E	>35 - 50
F	>50

It should be noted that HCM6 also defines LOS F as having a volume/capacity (v/c) ratio of greater than 1.0.

RT. 30/FIELDSTONE PARKWAY- 2018

The following table shows unsignalized intersection LOS results at Rt. 30/Fieldstone Parkway:

TABLE 1-1 Rt. 30/FIELDSTONE PARKWAY
2018 UNSIGNALIZED

SIGNALIZED LOS And Seconds Delay					95th Percentile Queues By Lane Group				
	AM		PM		Storage Length	Synchro		SimTraffic Q&B	
						AM	PM	AM	PM
WBL	B	14.6	C	19.6		28	25	305	94
WBR	A	9.2	B	11.4		3	3	29	8
SBL	A	8.2	A	9.7	150	0	3	9	7

All lanes have LOS C or better. Queueing on the southbound left turn lane on Rt. 30 at Fieldstone is well within storage.

RT. 30/I-64 WESTBOUND RAMPS - 2018

The following table shows unsignalized intersection LOS results at Rt. 30/I-64 westbound ramps:

TABLE 1-2 Rt. 30/I-64 WESTBOUND RAMPS
2018 UNSIGNALIZED

SIGNALIZED LOS And Seconds Delay					95th Percentile Queues By Lane Group				
	AM		PM		Storage Length	Synchro		SimTraffic Q&B	
						AM	PM	AM	PM
WBL	C	15.4	C	19.3		18	28	109	79
NBL	B	10.9	A	8.6	200	15	10	74	55

All lanes have LOS C or better. Queuing on northbound Rt. 30 at the westbound ramps is well within storage.

RT. 30/I-64 EASTBOUND RAMP A - 2018

The following table shows unsignalized intersection LOS results at Rt. 30/I-64 eastbound off ramp:

TABLE 1-3 Rt. 30/I-64 EASTBOUND RAMP
2018 UNSIGNALIZED

SIGNALIZED LOS And Seconds Delay					95th Percentile Queues By Lane Group				
	AM		PM		Storage Length	Synchro		SimTraffic Q&B	
						AM	PM	AM	PM
EBL	B	12.1	B	11.8		3	8	35	52

All lanes have LOS B or better.

RT. 30/OLD STAGE ROAD - 2018

The following table shows unsignalized intersection LOS results at Rt. 30/Rt. 746 Old Stage Road:

TABLE 1-4 Rt. 30/OLD STAGE ROAD
2018 UNSIGNALIZED

SIGNALIZED LOS And Seconds Delay					95th Percentile Queues By Lane Group				
	AM		PM		Storage Length	Synchro		SimTraffic Q&B	
						AM	PM	AM	PM
EBL/T/R	C	18.2	C	19.3		23	23	70	90
WBL/T/R	B	12.1	B	14.5		20	33	90	87
NBL	A	9.7	A	8.2	200	3	5	30	33
SBL	A	8.2	A	9.3	200	5	5	30	24

All lanes have LOS C or better. Queuing on the northbound and southbound left turn lanes on Rt. 30 are well within storage.

RT. 30/BARNES ROAD - 2018

The following table shows unsignalized intersection LOS results at Rt. 30/Barnes Road:

TABLE 1-5 RT. 30/BARNES ROAD
2018 UNSIGNALIZED

UNSIGNALIZED LOS And Seconds Delay					95th Percentile Queues By Lane Group				
	AM		PM		Storage Length	HCM 6th		SimTraffic Q&B	
						AM	PM	AM	PM
EBL/R	C	19.4	C	20.6		30	15	74	56
NBL/T	A	9.5	A	8.5		3	5	56	105

All lanes have LOS C or better.

I-64 RAMP MERGES/DIVERGES - 2018

The following table shows I-64 ramp merge and diverge LOS:

TABLE 1-6 I-64/RT. 30 RAMPS MERGE/DIVERGE
2018

LOS And Passenger Cars Per Mile Per Lane				
	AM		PM	
I-64 Eastbound Ramp A Diverge	B	12.0	B	12.3
I-64 Eastbound Loop A Merge	B	14.4	B	12.3
I-64 Westbound Ramp B Merge	B	12.3	B	12.1
I-64 Westbound Ramp C Diverge	B	12.1	B	11.8
I-64 Eastbound Ramp D Merge	B	16.5	B	14.2

All merge/diverge movements have LOS B or better.

SUMMARY COMMENTS - 2018

All intersections and ramp merge/diverge movements have LOS C or better with intersection auxiliary lane queuing within storage limits. Exhibits 4d and 4e show LOS results on the network diagram.

2030 BACKGROUND TRAFFIC FORECAST WITHOUT HAZELWOOD FARMS

The forecast analysis year used in this study is 2030 as stipulated in the Ch. 527 Pre-Scope of Work Meeting Form.

2030 PEAK HOUR FORECAST

Background traffic growth factors were stipulated Ch. 527 Pre-Scope of Work Meeting Form. A 1.14 growth factor is applied to all 2017 peak hour traffic counts on Rt. 30. A 1.16 growth factor is applied to I-64. The resulting 2030 background traffic forecast is shown on Exhibits 5a and 5b for the weekday AM and PM peak hours, respectively.

Exhibit 5c shows calculated 2030 daily background traffic calculated from 2030 PM peak hour traffic with k-factors.

2030 PEDESTRIAN AND BICYCLE FACILITIES

There are no planned additions to pedestrian, bicycle or transit facilities. The facilities shown on Exhibit 5c are the same as existing.

RT. 30/FIELDSTONE PARKWAY- 2030 BACKGROUND

The following table shows unsignalized intersection LOS results at Rt. 30/Fieldstone Parkway:

TABLE 2-1 Rt. 30/FIELDSTONE PARKWAY
2030 BACKGROUND UNSIGNALIZED

SIGNALIZED LOS And Seconds Delay					95th Percentile Queues By Lane Group				
	AM		PM		Storage Length	Synchro		SimTraffic Q&B	
						AM	PM	AM	PM
WBL	C	15.1	C	21.8		33	28		
WBR	A	9.3	B	11.8		3	3		
SBL	A	8.2	B	10.1	150	0	3		

All lanes have LOS C or better. Queueing on the southbound left turn lane on Rt. 30 at Fieldstone is well within storage.

RT. 30/I-64 WESTBOUND RAMPS - 2030 BACKGROUND

The following table shows unsignalized intersection LOS results at Rt. 30/I-64 westbound ramps:

TABLE 2-2 Rt. 30/I-64 WESTBOUND RAMPS
2030 BACKGROUND UNSIGNALIZED

SIGNALIZED LOS And Seconds Delay					95th Percentile Queues By Lane Group				
	AM		PM		Storage Length	Synchro		SimTraffic Q&B	
						AM	PM	AM	PM
WBL	C	16.0	C	20.0		20	23		
NBL	B	11.3	A	8.8	200	15	10		

All lanes have LOS C or better. Queuing on northbound Rt. 30 at the westbound ramps is well within storage.

RT. 30/I-64 EASTBOUND RAMP A - 2030 BACKGROUND

The following table shows unsignalized intersection LOS results at Rt. 30/I-64 eastbound off ramp:

TABLE 2-3 Rt. 30/I-64 EASTBOUND RAMP
2030 BACKGROUND UNSIGNALIZED

SIGNALIZED LOS And Seconds Delay					95th Percentile Queues By Lane Group				
	AM		PM		Storage Length	Synchro		SimTraffic Q&B	
						AM	PM	AM	PM
EBL	B	12.3	B	12.0		3	10		

All lanes have LOS B or better.

RT. 30/OLD STAGE ROAD - 2030 BACKGROUND

The following table shows unsignalized intersection LOS results at Rt. 30/Rt. 746 Old Stage Road:

TABLE 2-4 Rt. 30/OLD STAGE ROAD
2030 BACKGROUND UNSIGNALIZED

SIGNALIZED LOS And Seconds Delay					95th Percentile Queues By Lane Group				
	AM		PM		Storage Length	Synchro		SimTraffic Q&B	
						AM	PM	AM	PM
EBL/T/R	C	18.1	C	20.4		20	25		
WBL/T/R	B	12.0	B	14.4		18	25		
NBL	A	8.7	A	9.5	200	5	5		
SBL	A	8.3	A	8.3	200	3	5		

All lanes have LOS C or better. Queuing on the northbound and southbound left turn lanes on Rt. 30 are well within storage.

RT. 30/BARNES ROAD - 2030 BACKGROUND

The following table shows unsignalized intersection LOS results at Rt. 30/Barnes Road:

TABLE 2-5 RT. 30/BARNES ROAD
2030 BACKGROUND UNSIGNALIZED

UNSIGNALIZED LOS And Seconds Delay					95th Percentile Queues By Lane Group				
	AM		PM		Storage Length	HCM 6th		SimTraffic Q&B	
						AM	PM	AM	PM
EBL/R	C	19.9	C	22.5		30	18		
NBL/T	A	9.6	A	8.5		3	5		

All lanes have LOS C or better.

I-64 RAMP MERGES/DIVERGES - 2030 BACKGROUND

The following table shows I-64 ramp merge and diverge LOS:

TABLE 2-6 I-64/RT. 30 RAMPS MERGE/DIVERGE
2030 BACKGROUND

LOS And Passenger Cars Per Mile Per Lane				
	AM		PM	
I-64 Eastbound Ramp A Diverge	B	12.9	B	14.8
I-64 Eastbound Loop A Merge	B	15.6	B	14.9
I-64 Westbound Ramp B Merge	B	13.2	B	14.8
I-64 Westbound Ramp C Diverge	B	12.9	B	14.8
I-64 Eastbound Ramp D Merge	B	17.4	B	16.6

All merge/diverge movements have LOS B or better.

SUMMARY COMMENTS - 2030 BACKGROUND

All intersections and ramp merge/diverge movements have LOS C or better with intersection auxiliary lane queuing within storage limits. Exhibits 5d and 5e show LOS results on the network diagram.

HAZELWOOD FARMS TRIP GENERATION, DISTRIBUTION AND ASSIGNMENT

Trip generation for Hazelwood Farms has been calculated using Trip Generation Manual, 10th Edition (TGM10), published by the Institute of Transportation Engineers (ITE).

The development includes the following anticipated uses and estimated sizes:

TABLE D – PROPOSED REZONING FOR HAZELWOOD FARMS

	Acres	Units		
North	79	Shopping Center	375,000	sq. ft.
		Office	135,000	sq. ft.
South	328	Warehousing	2,920,000	sq. ft.
		Shopping Center	75,000	sq. ft.
		Apartments	300	units

Exhibit 6-1 shows trip generation for Hazelwood Farms as follows:

- Table 1 shows trip generation for North Hazelwood Farms. Internal capture percentage is calculated on Exhibit 6-4 and applied to total trips in Table 1 to show internal trips. % pass by trips for the shopping center are calculated using the equation in the Trip Generation Manual Handbook and the pass by trip percentage is applied to total trips to calculate pass by trips. Primary trips are total trips remaining after internal capture and pass by trip reductions.
- Table 4 shows trip generation for South Hazelwood Farms. Internal capture percentage is calculated on Exhibit 6-5 and applied to total trips in Table 4 to show internal trips. % pass by trips for the shopping center are calculated using the equation in the Trip Generation Manual Handbook and the pass by trip percentage is applied to total trips to calculate pass by trips. Primary trips are total trip remaining after internal capture and pass by trip reductions.

Primary trip distribution for Hazelwood Farms trips was derived from trip distribution in the 2015 Stonehouse study by Timmons Group and counts. Trip distribution percentages for North Hazelwood Farms are shown on the road network on Exhibit 6-2 and for South Hazelwood Farms on Exhibit 6-3. These trip distribution percentages were stipulated in the Ch. 527 Pre-Scope of Work Meeting Form.

North Hazelwood Farms primary trip distribution is tabulated in Table 2 on Exhibit 6-1. Primary trips are assigned in Appendix Exhibits I5 and I6. North Hazelwood Farms pass by trip distribution is tabulated in Table 3 on Exhibit 6-1 based on background traffic. Pass by trips are assigned in Appendix Exhibit I7 and I8.

South Hazelwood Farms primary trip distribution is tabulated in Table 5 on Exhibit 6-1. Primary trips are assigned in Appendix Exhibits I9 and I10. South Hazelwood Farms pass by trip distribution is tabulated in Table 6 on Exhibit 6-1 based on background traffic. Pass by trips are assigned in Appendix Exhibit I11 and I12.

North and South Hazelwood Farms off site trips are shown on Exhibit 7a for the AM peak hour, Exhibit 7b for the PM peak hour, and Exhibit 7c for daily traffic.

OLD STAGE ROAD TRIP DIVERSIONS

The raised median on Old Stage Road to be constructed with South Hazelwood Farms access will change the route for trips using the McDonald's and Shell Station entrances on Old Stage Road. Appendix Exhibits E1 and E2 respectively show AM and PM diversion of these trips. Appendix Exhibits E3 and E4 respectively show 2030 AM and PM peak hour traffic with diversion of these trips

HAZELWOOD FARMS TRUCK TRIPS

15% trucks are assumed for the warehouse component of South Hazelwood Farms. All other uses are assumed to have 2% trucks.

Appendix Exhibits E5 and E6 show truck trip assignments for North Hazelwood Farms.

Appendix Exhibit 6-1 shows the calculation of truck trips for South Hazelwood Farms. 15% trucks are calculated for warehousing and 2% for other uses in Table 2. Table 5 shows tabulated trip distribution and Appendix Exhibit E7 and E8 respectively show AM and PM truck trip assignments for South Hazelwood Farms.

HAZELWOOD FARMS PEDESTRIAN AND BICYCLE FACILITIES

Exhibit 2a shows a multi-use path along the North Hazelwood Farms Rt. 30 frontage as part the master plan. Exhibit 2c shows multi-use paths as part of the South Hazelwood Farms frontage on Old Stage Road from Rt. 30 to Leisure Road and on the South Entrance #1 access road.

Exhibit 7c shows the multi-use paths and a pedestrian connection across Rt. 30 north of Fieldstone Parkway. A pedestrian connection north of Fieldstone Parkway is preferable to south of Fieldstone Parkway because north of Fieldstone Parkway has 10,000 fewer vehicles per day than south of Fieldstone Parkway. North of Fieldstone Parkway also aligns with a multi-use path to be built by Moss Creek along the north side of Fieldstone Parkway (see Exhibits 1j and 11c).

ANALYSIS OF 2030 TRAFFIC WITH HAZELWOOD FARMS

Total 2030 AM peak hour traffic with Hazelwood Farms is shown on Exhibit 8a. Total 2030 PM peak hour traffic with Hazelwood Farms is shown on Exhibit 8b. 2030 daily traffic with Hazelwood Farms is shown on Exhibit 8c.

RT. 30/FIELDSTONE PARKWAY- 2030 WITH HAZELWOOD FARMS

The following table shows signalized intersection LOS results at Rt. 30/Fieldstone Parkway:

TABLE 3-1 Rt. 30/FIELDSTONE PARKWAY
2030 HAZELWOOD ONLY 70 SECOND CYCLE

SIGNALIZED LOS And Seconds Delay					95th Percentile Queues By Lane Group				
	AM		PM		Storage	Synchro		SimTraffic Q&B	
Overall	C	23.8	C	20.3	Length	AM	PM	AM	PM
EBL2	C	29.8	C	23.4	150	20	91	36	202
EBT	C	29.7	C	28.9		5	28	8	64
EBR	C	20.6	B	13.6	200	0	82	83	246
WBL	C	32.2	C	27.3	250	117	65	155	89
WBT/R	C	26.3	C	34.8		19	22	43	44
NBL2	C	24.8	C	22.3	300	55	209	125	315
NBT2	B	10.6	B	15.5		67	169	130	406
NBR	B	11.3	B	17.4	350	0	9	0	0
SBL	B	15.7	C	23.7	150	11	18	64	42
SBT2	C	28.2	C	30.5		342	127	289	133
SBR	B	16.5	C	23.4	200	0	0	83	65

SimTraffic queue shown is maximum report value for multi-lane groups

Overall intersection LOS and all lane groups are LOS C or better.

RT. 30/I-64 WESTBOUND RAMPS - 2030 WITH HAZELWOOD FARMS

The following table shows signalized intersection LOS results at Rt. 30/I-64 westbound ramps:

TABLE 3-2 Rt. 30/I-64 WESTBOUND RAMPS
2030 HAZELWOOD ONLY 70 SECOND CYCLE

SIGNALIZED LOS And Seconds Delay					95th Percentile Queues By Lane Group				
	AM		PM		Storage	Synchro		SimTraffic Q&B	
Overall	B	12.2	B	11.9	Length	AM	PM	AM	PM
WBL	C	32.8	C	34.6		137	107	120	109
NBL	C	35.0	C	25.9	200	138	143	117	183
NBT2	A	6.8	A	6.8		71	209	100	134
SBT2	A	8.0	B	13.0		94	194	433	215
SBR	A	0.0	A	0.2	300	0	0	163	0

SimTraffic queue shown is maximum report value for multi-lane groups

Overall intersection LOS is LOS B and all lane groups are LOS C or better.

RT. 30/I-64 EASTBOUND RAMP A - 2030 WITH HAZELWOOD FARMS

The following table shows signalized intersection LOS results at Rt. 30/I-64 eastbound ramp A:

TABLE 3-3 Rt. 30/I-64 EASTBOUND RAMP
2030 HAZELWOOD ONLY 70 SECOND CYCLE

SIGNALIZED LOS And Seconds Delay					95th Percentile Queues By Lane Group				
	AM		PM		Storage	Synchro		SimTraffic Q&B	
Overall	A	3.2	A	5.3	Length	AM	PM	AM	PM
EBL	C	30.9	C	29.1		84	129	134	153
NBT2	A	0.7	A	2.0		5	18	57	78
SBT2	A	0.3	A	2.6		0	29	120	72

SimTraffic queue shown is maximum report value for multi-lane groups

Overall intersection LOS is LOS B and all lane groups are LOS C or better.

RT. 30/OLD STAGE ROAD - 2030 WITH HAZELWOOD FARMS

The following table shows signalized intersection LOS results at Rt. 30/Old Stage Road:

TABLE 3-4 Rt. 30/OLD STAGE ROAD
2030 HAZELWOOD ONLY 70 SECOND CYCLE

SIGNALIZED LOS And Seconds Delay					95th Percentile Queues By Lane Group				
	AM		PM		Storage	Synchro		SimTraffic Q&B	
Overall	B	16.7	B	19.3	Length	AM	PM	AM	PM
EBL2	C	29.6	C	30.6	200	65	125	110	162
EBT	C	27.3	C	23.9		14	15	22	29
EBR	B	16.5	B	14.9	200	0	34	83	145
WBL/T	C	30.8	C	30.8		40	33	54	52
WBR	C	29.7	C	30.0		0	0	65	67
NBL2	C	29.2	C	31.1	200	72	81	106	101
NBT2	B	15.5	B	18.6		111	206	67	129
NBR	B	13.7	B	13.7		0	0	19	16
SBL	B	17.1	C	21.8	200	36	42	71	51
SBT2	A	9.9	B	10.8		83	68	92	76
SBR	A	8.9	A	9.5		10	0	85	66

SimTraffic queue shown is maximum report value for multi-lane groups

Overall intersection LOS is LOS B and all lane groups are LOS C or better.

RT. 30/BARNES ROAD – 2030 WITH HAZELWOOD FARMS

The following table shows unsignalized intersection LOS results at Rt. 30/Barnes Road:

TABLE 3-5 RT. 30/BARNES ROAD
2030 HAZELWOOD ONLY UNSIGNALIZED

UNSIGNALIZED LOS And Seconds Delay					95th Percentile Queues By Lane Group				
	AM		PM		Storage	HCM 6th		SimTraffic Q&B	
					Length	AM	PM	AM	PM
EBL/R	C	23.1	D	32.7		35	28	89	79
NBL/T	A	9.9	A	8.8		3	5	92	177

All lanes have LOS D or better.

OLD STAGE ROAD/SOUTH #2 ENTRANCE – 2030 WITH HAZELWOOD FARMS

The following table shows roundabout intersection LOS results at the Old Stage Road/South #2 entrance:

TABLE 3-6 OLD STAGE ROAD/South #2 Entrance
2030 HAZELWOOD ONLY ROUNDABOUT

ROUNDABOUT LOS And Seconds Delay					95th Percentile Queues By Lane Group				
	AM		PM		Storage	SIDRA		SimTraffic Q&B	
Overall	A	6.0	A	5.8	Length	AM	PM	AM	PM
EBL/T	A	7.4	A	7.4		41	41	36	79
WBT	A	4.9	A	4.4		29	25	18	24
WBR	A	4.0	A	3.8		16	16	0	0
SBL/R	A	7.2	A	6.8		37	36	42	78

All approach lanes have LOS A. All queues are less than 90 feet.

OLD STAGE ROAD/SOUTH #1 ENTRANCE – 2030 WITH HAZELWOOD FARMS

The following table shows roundabout intersection LOS results at the Old Stage Road/South #1 entrance:

TABLE 3-7 OLD STAGE ROAD/South #1
2030 HAZELWOOD ONLY ROUNDABOUT

ROUNDABOUT LOS And Seconds Delay					95th Percentile Queues By Lane Group				
	AM		PM		Storage	SIDRA		SimTraffic Q&B	
Overall	A	4.5	A	4.8	Length	AM	PM	AM	PM
EBL/T	A	3.7	A	4.1		4	5	21	30
WBT/R	A	5.0	A	4.4		30	24	12	9
SBL/R	A	3.7	A	5.4		10	30	23	52

All approach lanes have LOS A. All queues are less than 60 feet.

I-64 RAMP MERGES/DIVERGES - 2030 WITH HAZELWOOD FARMS

The following table shows I-64 ramp merge and diverge LOS:

TABLE 3-8 I-64/RT. 30 RAMPS MERGE/DIVERGE
2030 HAZELWOOD ONLY 70 SECOND

LOS And Passenger Cars Per Mile Per Lane				
	AM		PM	
I-64 Eastbound Ramp A Diverge	B	12.9	B	14.8
I-64 Eastbound Loop A Merge	B	15.8	B	16.5
I-64 Westbound Ramp B Merge	B	13.8	B	17.3
I-64 Westbound Ramp C Diverge	B	12.9	B	14.8
I-64 Eastbound Ramp D Merge	B	18.1	B	19.4

All merge/diverge movements have LOS B or better.

SUMMARY COMMENTS - 2030 WITH HAZELWOOD FARMS

All signalized intersections have LOS C or better overall and for each turning movement. For unsignalized Barnes Road, eastbound AM was LOS C and PM is LOS D. Roundabouts have LOS A overall and for approaches. All I-64 ramp merges and diverge sections have LOS B.

Exhibits 8d and 8e show LOS results on the network diagram.

MOSS CREEK TRIP GENERATION, DISTRIBUTION AND ASSIGNMENT

Trip generation for Moss Creek was provided in the LandMark Design Group traffic study for Moss Creek revised March 2006. Those trips are shown in Table 1 on Exhibit 9.

Primary trip distribution for Moss Creek trips is shown in Table 2 on Exhibit 9. Trip distribution to north Rt. 30 and Fieldstone Parkway are taken from the LandMark study. The remainder of primary trips is distributed throughout the remainder of the network in general accordance with North Hazelwood Farms distribution. Moss Creek primary trips as assigned on Appendix Exhibits D1 and D2.

Moss Creek pass by trips are distributed in Table 3 on Exhibit 9. Moss Creek pass by trips are assigned on Appendix Exhibits D3 and D4.

All Moss Creek AM peak hour traffic assignment is shown on Exhibit 9a and all Moss Creek PM peak hour traffic is shown on Exhibit 9b. Daily traffic for Moss Creek is shown on Exhibit 9c. Exhibit 9c also shows the multi-purpose path and bike lane to be included with the Moss Creek development.

Moss Creek truck assignments are shown on Appendix Exhibits C5 and C6 for the AM and PM peak hours respectively.

STONEHOUSE TRIP GENERATION, DISTRIBUTION AND ASSIGNMENT

Exhibits 10a and 10b respectively show AM and PM peak hour traffic for Stonehouse phases 1 and 2 presented in the Timmons Group traffic study for Stonehouse in 2015. Exhibit 10c shows daily traffic for Stonehouse based on trip generation k-factor.

Stonehouse truck assignments are shown on Appendix Exhibits F1 and F2 for the AM and PM peak hours respectively.

ANALYSIS OF 2030 TRAFFIC WITH ALL DEVELOPMENT

Total 2030 AM peak hour traffic with all three developments is shown on Exhibit 11a. Total 2030 PM peak hour traffic with all three developments is shown on Exhibit 11b. 2030 daily traffic with all development is shown on Exhibit 11c.

Appendix Exhibits F3 and F4 show total trips in 2030 with all development for the AM and PM peak hours respectively. Appendix Exhibits F3 and F4 show truck percentages for turning movements in 2030 with all development for the AM and PM peak hours respectively.

Development improvements to the Rt. 30 corridor within the study are included at the following intersections from north to south (see Exhibit 2g for reference):

1. Moss Creek #1 Entrance #1 (Station 303+86). Extend 2nd northbound through lane from Fieldstone to drop off right turn at MC1. Widen for southbound left turn lane. Add traffic signal. All work by Moss Creek development.
2. Fieldstone Parkway/North #1 Entrance (Station 313+06). For Stonehouse, future signalization is required with second westbound left turn lane. For North Hazelwood Farms, signalization also required with northbound double left turn lanes, southbound right turn lane, and four eastbound lanes: double left turn lanes, through lane and right turn lane. See Exhibit 2b for details.
3. North #2 Entrance (Station 321+35). Close crossover and add southbound right turn lane. Right turn in/out only. All work by Hazelwood Farms.
4. I-64 Westbound Ramps B & C (Station 337+23). Westbound double left turn lanes and northbound double left turn lanes with signal proffered by Stonehouse. Signalization also proffered by South Hazelwood Farms.
5. I-64 Eastbound Off Ramp A (Station 350+36). Signal addition proffered by North Hazelwood Farms. See Exhibit 2f.
6. I-64 Eastbound On Ramp D (Station 353+47). Extend northbound right turn lane back to Old Stage Road intersection as drop-off lane by South Hazelwood Farms. See Exhibits 2f.
7. Old Stage Road (Station 359+58). South Hazelwood Farms proffered improvements include (see Exhibit 2e):
    a. Four lanes on Old Stage Road eastbound approach: double left turn lanes, through lane and right turn lane.
    b. Two lanes on westbound approach.
    c. Double left turn lane on northbound approach.
    d. Add third through lane on northbound approach.
    e. Extend southbound right turn lane back to Ramp A as drop-off lane at Old Stage Road.
    f. Add signal.

Synchro and SimTraffic reports are included in the Technical Appendix as follows for signalized and unsignalized (two way stop) intersections:

TABLE E: 2030 FULL DEVELOPMENT ANALYSIS REPORT EXHIBITS

Report	70 Second Cycle		90/100 Second Cycle	
	AM	PM	AM - 90	PM - 100
HCM2000 Signalized Intersection	J9	J10	J11	J12
HCS6 Unsignalized Intersection	K9	K10	K11	K12
Synchro 10 Queues	L9	L10	L11	L12
SimTraffic Queuing & Blocking	M9	M10	M11	M12

Analyses for roundabouts are not included for full buildout conditions because the traffic assignments on Old Stage Road at the Hazelwood Farms South entrances have the same traffic as Hazelwood only conditions.

The 90 second AM and 100 second PM cycles were optimized by Synchro for coordinated signal operation.

I-64 ramp merge and diverges LOS are including in the Appendix Exbibit T series for full build out.

Exhibit 11c shows 2030 daily traffic with all development and all pedestrian/bicycle facilities.

2030 TRAFFIC WITH ALL DEVELOPMENT – 70 SECOND CYCLE

RT. 30/FIELDSTONE PARKWAY- 2030 WITH ALL DEVELOPMENT 70 SEC CYCLE

Table 4-1 shows signalized intersection LOS and queuing for Rt. 30/Fieldstone Parkway:

TABLE 4-1 Rt. 30/FIELDSTONE PARKWAY
2030 ALL DEVELOPMENT 70 SECOND CYCLE

SIGNALIZED LOS And Seconds Delay					95th Percentile Queues By Lane Group				
	AM		PM		Storage	Synchro		SimTraffic Q&B	
Overall	C	22.1	C	20.8	Length	AM	PM	AM	PM
EBL2	C	33.1	C	26.3	150	15	91	39	126
EBT	C	29.7	C	27.0		5	28	8	38
EBR	B	17.0	B	12.9	200	0	95	76	198
WBL2	C	32.2	C	31.2	250	85	67	146	138
WBT/R	C	25.3	C	32.0		26	39	45	70
NBL2	C	23.1	B	19.1	300	62	118	122	361
NBT2	B	13.1	B	15.8		137	321	118	547
NBR	B	17.6	A	2.2	350	2	3	0	77
SBL	B	13.2	B	18.0	150	17	20	64	57
SBT2	C	25.0	C	34.3		385	245	267	208
SBR	B	15.1	C	33.1	200	0	4	57	73

SimTraffic queue shown is maximum report value for multi-lane groups

All turning movements are LOS C or better with overall LOS C. Auxiliary lane queues are accommodated by storage length provided.

RT. 30/I-64 WESTBOUND RAMPS - 2030 WITH ALL DEVELOPMENT 70 SEC CYCLE

Table 4-2 shows signalized intersection LOS and queuing for Rt. 30/I-64 westbound ramps:

TABLE 4-2 Rt. 30/I-64 WESTBOUND RAMPS
2030 ALL DEVELOPMENT 70 SECOND CYCLE

SIGNALIZED LOS And Seconds Delay					95th Percentile Queues By Lane Group				
	AM		PM		Storage	Synchro		SimTraffic Q&B	
Overall	B	19.3	B	15.4	Length	AM	PM	AM	PM
WBL	C	32.2	C	29.6		174	117	120	110
NBL	C	26.0	C	23.1	200	109	153	117	175
NBT2	A	8.5	A	6.3		141	178	100	108
SBT2	B	18.3	C	20.7		444	376	433	294
SBR	A	0.1	A	0.2	300	0	0	0	0

SimTraffic queue shown is maximum report value for multi-lane groups

All turning movements are LOS C or better as well as overall LOS B. Auxiliary lane queues are accommodated by storage length provided.

RT. 30/I-64 EASTBOUND RAMP A - 2030 WITH ALL DEVELOPMENT 70 SEC CYCLE

Table 4-3 shows signalized intersection LOS and queuing for Rt. 30/I-64 eastbound ramps:

TABLE 4-3 Rt. 30/I-64 EASTBOUND RAMP
2030 ALL DEVELOPMENT 70 SECOND CYCLE

SIGNALIZED LOS And Seconds Delay					95th Percentile Queues By Lane Group				
	AM		PM		Storage	Synchro		SimTraffic Q&B	
Overall	A	5.4	A	5.9	Length	AM	PM	AM	PM
EBL	C	28.8	C	29.0		112	166	134	174
NBT2	A	1.5	A	4.1		43	84	57	174
SBT2	A	4.4	A	2.2		48	11	120	105

SimTraffic queue shown is maximum report value for multi-lane groups

All turning movements are LOS C or better as well as overall LOS A.

RT. 30/OLD STAGE ROAD - 2030 WITH ALL DEVELOPMENT 70 SEC CYCLE

Table 4-4 shows signalized intersection LOS for Rt. 30/Old Stage Road:

TABLE 4-4 Rt. 30/OLD STAGE ROAD
2030 ALL DEVELOPMENT 70 SECOND CYCLE

SIGNALIZED LOS And Seconds Delay					95th Percentile Queues By Lane Group				
	AM		PM		Storage	Synchro		SimTraffic Q&B	
Overall	C	23.8	C	28.7	Length	AM	PM	AM	PM
EBL2	C	28.0	C	30.6	200	62	125	101	164
EBT	C	26.0	C	23.9		14	15	23	26
EBR	B	15.9	B	14.9	200	0	34	88	147
WBL/T	C	30.8	C	30.8		40	33	65	56
WBR	C	29.7	C	30.0		0	0	70	80
NBL2	C	30.2	C	31.1	200	73	81	98	110
NBT/R3	B	16.2	C	29.8		139	430	109	245
SBL	C	27.8	C	26.0	200	47	36	68	58
SBT2	C	28.0	C	33.2		411	377	242	235
SBR	C	20.6	A	6.9		20	10	85	78

SimTraffic queue shown is maximum report value for multi-lane groups

All turning movements are LOS C or better with overall LOS C. Auxiliary lane queues are accommodated by storage length provided.

RT. 30/MOSS CREEK - 2030 WITH ALL DEVELOPMENT 70 SEC CYCLE

Table 4-5 shows signalized intersection LOS and queuing for Rt. 30/Old Stage Road:

TABLE 4-5 Rt. 30/MOSS CREEK 2030 ALL DEVELOPMENT 70 SECOND CYCLE									
SIGNALIZED LOS And Seconds Delay					95th Percentile Queues By Lane Group				
	AM		PM		Storage	Synchro		SimTraffic Q&B	
Overall	A	9.4	C	24.1	Length	AM	PM	AM	PM
WBL	C	30.8	C	30.7		74	133	89	149
WBR	C	27.7	C	24.7		22	45	32	94
NBT	A	2.9	C	33.9		88	893	129	731
NBR	A	0.4	A	2.9		0	3	41	250
SBL	A	2.9	D	39.1	200	19	100	65	176
SBT	B	11.0	A	7.3		637	208	206	201

Most turning movements are LOS C or better with LOS D for the southbound left turn as well as overall LOS C. Auxiliary lane queues are accommodated by storage length provided.

RT. 30/BARNES ROAD – 2030 WITH ALL DEVELOPMENT 70 SEC CYCLE

Table 4-6 shows unsignalized intersection LOS and queuing for Rt. 30/Barnes Road:

TABLE 4-5 Rt. 30/MOSS CREEK 2030 ALL DEVELOPMENT 70 SECOND CYCLE									
SIGNALIZED LOS And Seconds Delay					95th Percentile Queues By Lane Group				
	AM		PM		Storage	Synchro		SimTraffic Q&B	
Overall	A	9.4	C	24.1	Length	AM	PM	AM	PM
WBL	C	30.8	C	30.7		74	133	89	149
WBR	C	27.7	C	24.7		22	45	32	94
NBT	A	2.9	C	33.9		88	893	129	731
NBR	A	0.4	A	2.9		0	3	41	250
SBL	A	2.9	D	39.1	200	19	100	65	176
SBT	B	11.0	A	7.3		637	208	206	201

The eastbound Barnes Road approach has LOS F while northbound Rt. 30 traffic has LOS A and southbound Rt. 30 traffic doesn't register any delay.

I-64 RAMP MERGES/DIVERGES - 2030 WITH ALL DEVELOPMENT

TABLE 4-7 I-64/RT. 30 RAMPS MERGE/DIVERGE 2030 ALL DEVELOPMENT 70 SECOND				
LOS And Passenger Cars Per Mile Per Lane				
	AM		PM	
I-64 Eastbound Ramp A Diverge	B	12.9	B	14.8
I-64 Eastbound Loop A Merge	B	16.4	B	17.9
I-64 Westbound Ramp B Merge	B	15.2	C	20.5
I-64 Westbound Ramp C Diverge	B	12.9	B	14.8
I-64 Eastbound Ramp D Merge	B	19.9	C	23.5

SUMMARY COMMENTS - 2030 WITH ALL DEVELOPMENT 70 SEC CYCLE

With the 70 second cycle length, all turning movements at signalized intersections on Rt. 30 have LOS C except for the Moss Creek intersection with LOS D for the southbound left turn. Overall signalized LOS is LOS C or better at all intersections.

Exhibits 11d and 11e show LOS results on the network diagram.

2030 TRAFFIC WITH ALL DEVELOPMENT – 90/100 SECOND CYCLE

Synchro traffic signal optimization was used for the Rt. 30 corridor to determine cycle lengths for signal coordination on the corridor. The results were 90 seconds for the AM peak hour and 100 seconds for the PM peak hour. Green time splits at intersections were also set using Synchro optimization.

RT. 30/FIELDSTONE PARKWAY- 2030 WITH ALL DEVELOPMENT 90/100 SEC CYCLE

Table 5-1 shows signalized intersection LOS and queuing for Rt. 30/Fieldstone Parkway:

TABLE 5-1 Rt. 30/FIELDSTONE PARKWAY
2030 ALL DEVELOPMENT 90/100 SECOND CYCLE

SIGNALIZED LOS And Seconds Delay					95th Percentile Queues By Lane Group				
	AM		PM		Storage	Synchro		SimTraffic Q&B	
Overall	C	23.5	C	22.9	Length	AM	PM	AM	PM
EBL2	D	37.8	D	41.0	150	19	110	43	151
EBT	D	39.6	D	40.2		5	34	10	53
EBR	C	23.6	C	25.7	200	0	117	87	200
WBL2	D	40.3	D	47.1	250	104	91	161	158
WBT/R	D	37.7	D	44.9		31	47	45	70
NBL2	C	31.5	C	31.7	300	97	232	154	236
NBT2	B	11.6	B	12.6		130	282	118	343
NBR	B	16.7	A	9.2	350	6	20	0	0
SBL	B	16.0	C	21.0	150	25	27	60	66
SBT2	C	23.6	C	23.9		311	198	194	236
SBR	B	16.2	A	5.5	200	0	4	38	85

SimTraffic queue shown is maximum report value for multi-lane groups

All turning movements are LOS D or better with overall LOS C. Auxiliary lane queues are accommodated by storage length provided.

RT. 30/I-64 WESTBOUND RAMPS - 2030 WITH ALL DEVELOPMENT 90/100 SEC CYCLE

Table 5-2 shows signalized intersection LOS and queuing for Rt. 30/I-64 westbound ramps:

TABLE 5-2 Rt. 30/I-64 WESTBOUND RAMPS
2030 ALL DEVELOPMENT 90/100 SECOND CYCLE

SIGNALIZED LOS And Seconds Delay					95th Percentile Queues By Lane Group				
	AM		PM		Storage	Synchro		SimTraffic Q&B	
Overall	B	19.2	B	19.6	Length	AM	PM	AM	PM
WBL	D	42.0	D	48.4		212	169	116	114
NBL	D	46.4	C	34.7	200	112	213	160	235
NBT2	A	7.9	A	3.0		45	51	109	173
SBT2	A	9.3	C	25.5		164	436	240	321
SBR	A	0.1	A	0.3	300	0	0	0	0

SimTraffic queue shown is maximum report value for multi-lane groups

All turning movements are LOS D or better as well as overall LOS B. Auxiliary lane queues are accommodated by storage length provided.

RT. 30/I-64 EASTBOUND RAMP A - 2030 WITH ALL DEVELOPMENT 90/100 SEC CYCLE

Table 5-3 shows signalized intersection LOS and queuing for Rt. 30/I-64 eastbound ramps:

TABLE 5-3 Rt. 30/I-64 EASTBOUND RAMP 2030 ALL DEVELOPMENT 90/100 SECOND CYCLE									
SIGNALIZED LOS And Seconds Delay					95th Percentile Queues By Lane Group				
	AM		PM		Storage	Synchro		SimTraffic Q&B	
Overall	B	10.2	A	8.0	Length	AM	PM	AM	PM
EBL	D	40.0	D	45.9		142	240	156	183
NBT2	A	9.0	A	4.3		87	124	113	170
SBT2	A	6.7	A	2.8		116	96	129	116

SimTraffic queue shown is maximum report value for multi-lane groups

All turning movements are LOS D or better as well as overall LOS A.

RT. 30/OLD STAGE ROAD - 2030 WITH ALL DEVELOPMENT 90/100 SEC CYCLE

Table 5-4 shows signalized intersection LOS for Rt. 30/Old Stage Road:

TABLE 5-4 Rt. 30/OLD STAGE ROAD 2030 ALL DEVELOPMENT 90/100 SECOND CYCLE									
SIGNALIZED LOS And Seconds Delay					95th Percentile Queues By Lane Group				
	AM		PM		Storage	Synchro		SimTraffic Q&B	
Overall	C	25.3	C	24.3	Length	AM	PM	AM	PM
EBL2	D	41.4	D	46.9	200	85	176	121	225
EBT	D	37.0	D	35.5		18	20	27	34
EBR	C	27.1	C	25.1	200	20	72	99	192
WBL/T	D	42.1	D	46.8		51	44	63	55
WBR	D	40.0	D	45.0		0	0	71	99
NBL2	D	37.0	D	50.2	200	92	114	120	128
NBT/R3	B	19.5	C	20.9		176	408	145	264
SBL	D	41.3	D	52.8	200	78	63	77	61
SBT2	C	23.6	B	15.1		341	255	219	200
SBR	B	19.0	B	11.9		32	0	125	70

SimTraffic queue shown is maximum report value for multi-lane groups

All turning movements are LOS D or better with overall LOS C. Auxiliary lane queues are accommodated by storage length provided.

RT. 30/MOSS CREEK - 2030 WITH ALL DEVELOPMENT 90/100 SEC CYCLE

Table 5-5 shows signalized intersection LOS and queuing for Rt. 30/Old Stage Road:

TABLE 5-5 Rt. 30/MOSS CREEK 2030 ALL DEVELOPMENT 90/100 SECOND CYCLE									
SIGNALIZED LOS And Seconds Delay					95th Percentile Queues By Lane Group				
	AM		PM		Storage	Synchro		SimTraffic Q&B	
Overall	A	9.2	B	18.9	Length	AM	PM	AM	PM
WBL	D	50.8	E	69.9		99	243	107	249
WBR	D	38.3	D	38.6		28	47	21	123
NBT	A	3.2	B	18.0		64	454	93	498
NBR	A	1.8	A	2.0		0	1	36	87
SBL	A	2.4	C	32.0	200	15	116	55	201
SBT	A	8.3	A	5.7		428	179	186	230

Overall LOS B with turning movements LOS A through E. Auxiliary lane queues are accommodated by storage length provided.

Exhibits 11f and 11g show LOS results on the network diagram.

SUMMARY AND CONCLUSIONS

70 SECOND CYCLE RESULTS

70 second cycle traffic signal analysis was incorporated into this study because:

1. 70 second cycle length was used in the 2015 Stonehouse study by Timmons Group.
2. JCC has LOS C objective for turning movements.
3. Traffic signals do not operate to provide LOS C on turning movements: that is not a performance criterion.
4. Only short cycles (i.e., shorter than realistic) produce LOS C for turning movements.

With 70 second cycles lengths, development of Hazelwood Farms alone and with development of Stonehouse and Moss Creek produce LOS C on turning movements as well overall intersection LOS C for the four Rt. 30 signalized intersections serving Hazelwood Farms (Fieldstone Parkway, I-64 westbound ramps, I-64 eastbound off-ramp and Old Stage Road). The only LOS for signalized intersections less than LOS C is LOS D for the exiting left turn from Moss Creek to Rt. 30.

2018 traffic studies for Stonehouse by Gorove-Slade used cycle length less than 70 seconds for Rt. 30/Fieldstone and Rt. 30/westbound I-64 ramps (mitigated).

90 SECOND AM/100 SECOND PM CYCLE RESULTS

90/100 second cycle traffic signal analysis is far more typical of how signals are designed and operated. There are LOS D results mostly located on minor street approaches for the four Rt. 30 signalized intersections serving Hazelwood Farms. All signalized intersections have overall LOS C or better. In some instances, overall delay at the intersection decreased in seconds delay relative to 70 second cycle results.

In almost all instances, signalized intersection delay for northbound and southbound through movements on Rt. 30 decreased from 70 second cycle levels. This illustrates the essence of traffic signal design: green time on minor streets is minimized with related increases in delay to allow greater green time and reduced delay for major street through movements, which are the bulk of the traffic. Forcing traffic signal timing to produce LOS C for turning moments is not an element of modern traffic signal efficient design and operation.

RT. 30/MOSS CREEK DESIGN

At the Rt. 30/Moss Creek intersection, there is overall LOS A and B with LOS D for some minor street movements and LOS E for the PM peak hour westbound left turn movement. This intersection is essentially one northbound through lane and one southbound through, and thus is an inferior design to the other four signalized intersections. The traffic study for Moss Creek also used artificially reduced signal timing (less than 50 seconds) to get LOS C for turning movements.

RT. 30/BARNES ROAD

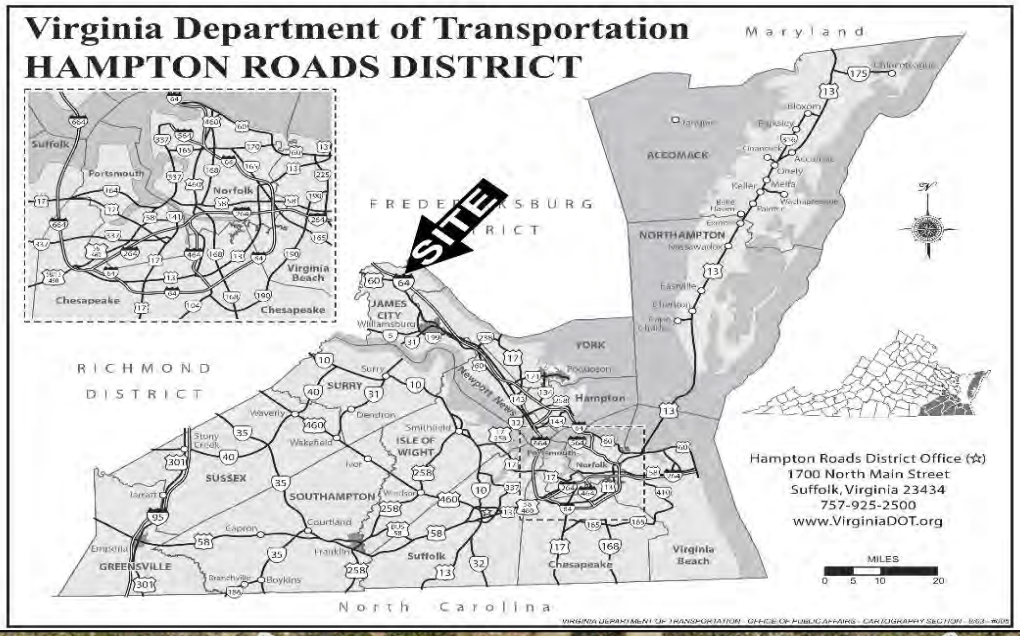
With all development in 2030, the eastbound approach on Barnes Road is LOS F in the PM peak hour. Some alternatives for this intersection include:

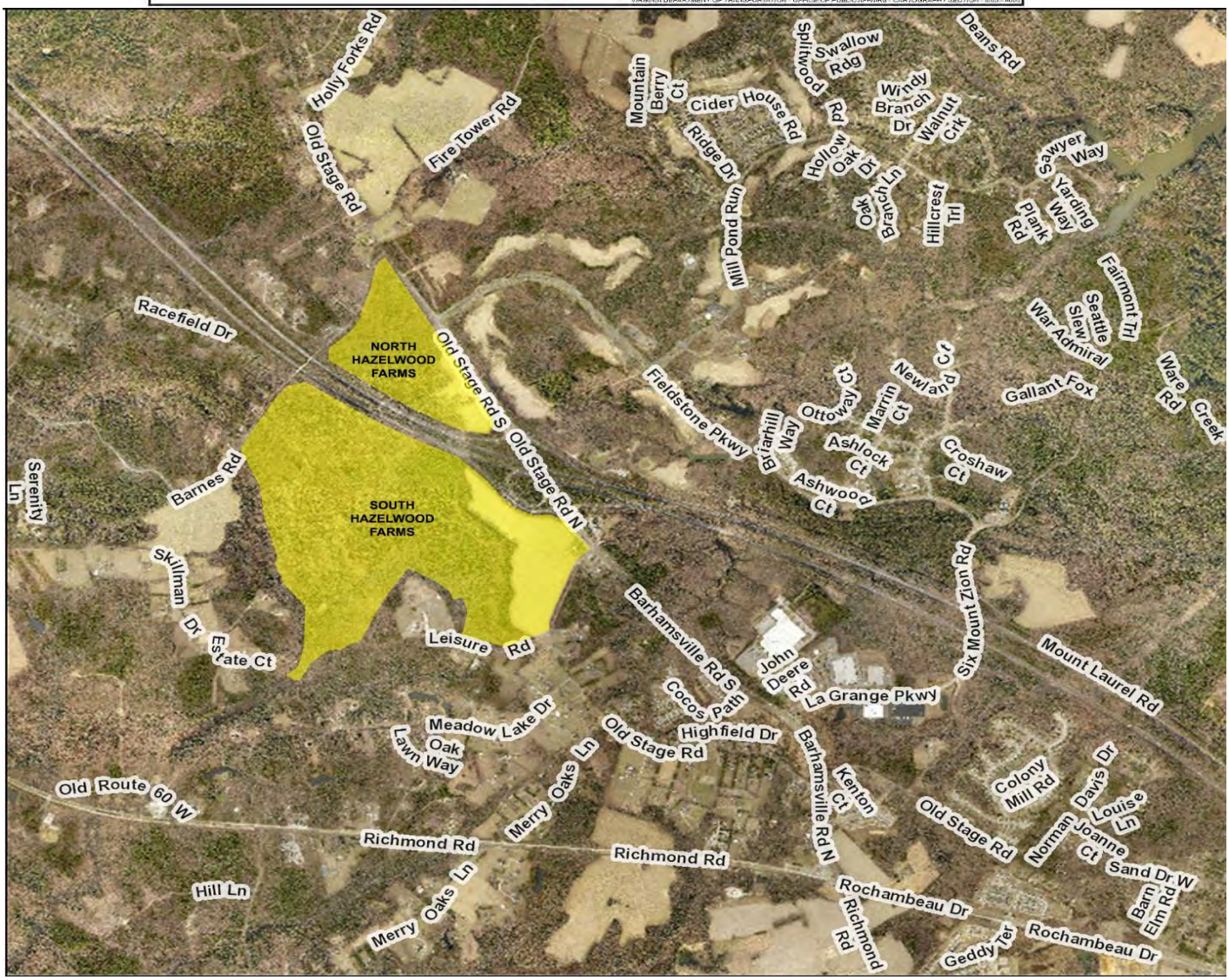
1. Add a left turn lane on the eastbound approach. This produces LOS F for the resulting separate left turn lane.
2. Prohibit eastbound left turn and divert to U-turn at Fieldstone Parkway. This produces LOS B for the eastbound approach with a slight increase in delay at the Rt. 30/Fieldstone Parkway intersection.
3. Widen Rt. 30 to four lanes. With wide median and yield bar treatments in the median, this produces LOS C for the eastbound approach.

CONCLUSIONS

The proffered improvements by Stonehouse and Hazelwood Farms at four intersections on Rt. 30 accommodates all future traffic. Moss Creek access on Rt. 30 is under designed and warrants further consideration during development plan review. If traffic on Barnes Road at Rt. 30 becomes a problem, the problem eastbound left turns can be diverted to the Rt. 30/Fieldstone Parkway to be constructed Stonehouse and Hazelwood Farms developments.

REPORT
EXHIBITS





HAZELWOOD FARMS
REGIONAL AND AREA MAPS

DRW Consultants, LLC
804-794-7312

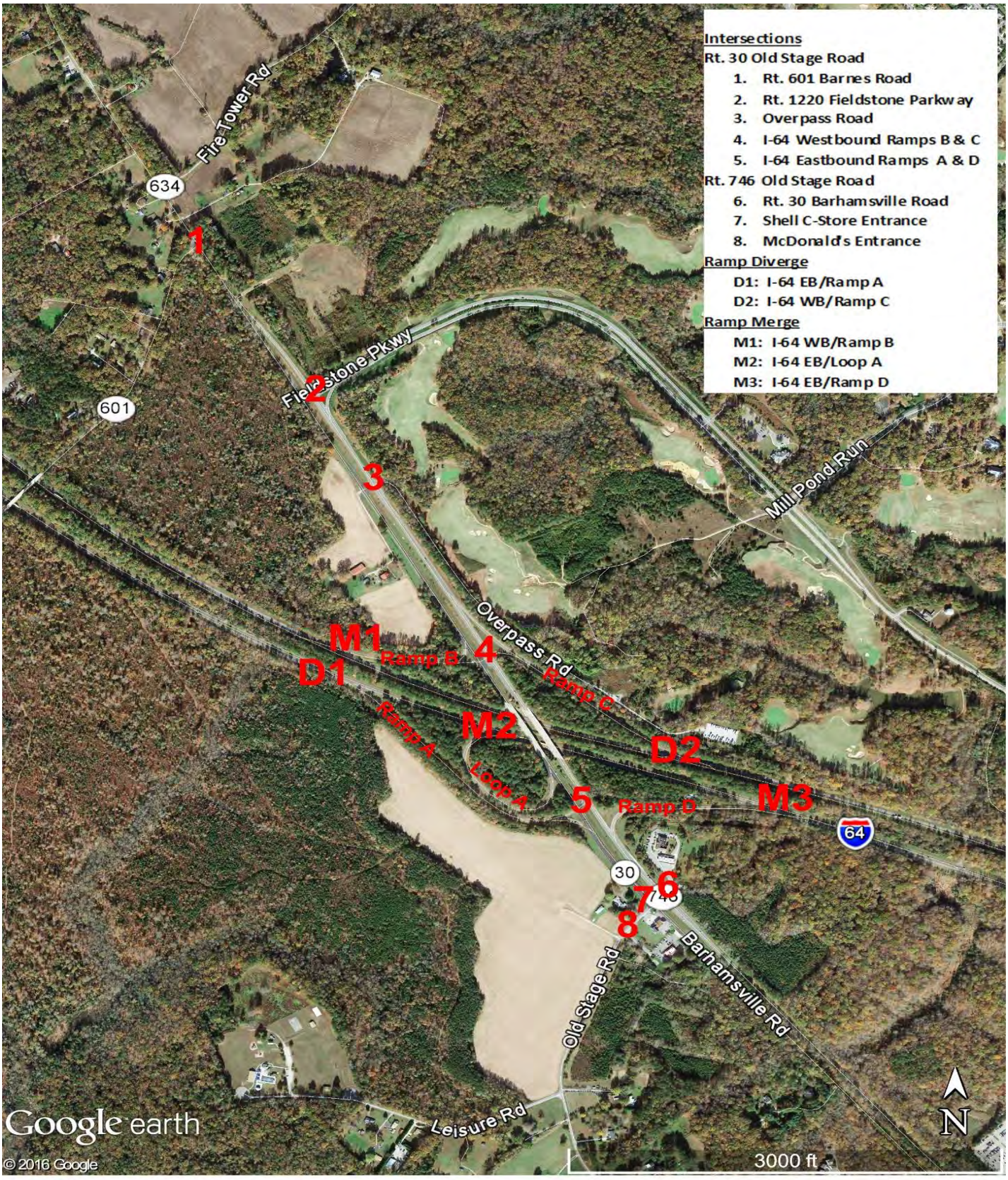
Exhibit 1a



HAZELWOOD FARMS
AREA PARCEL MAP

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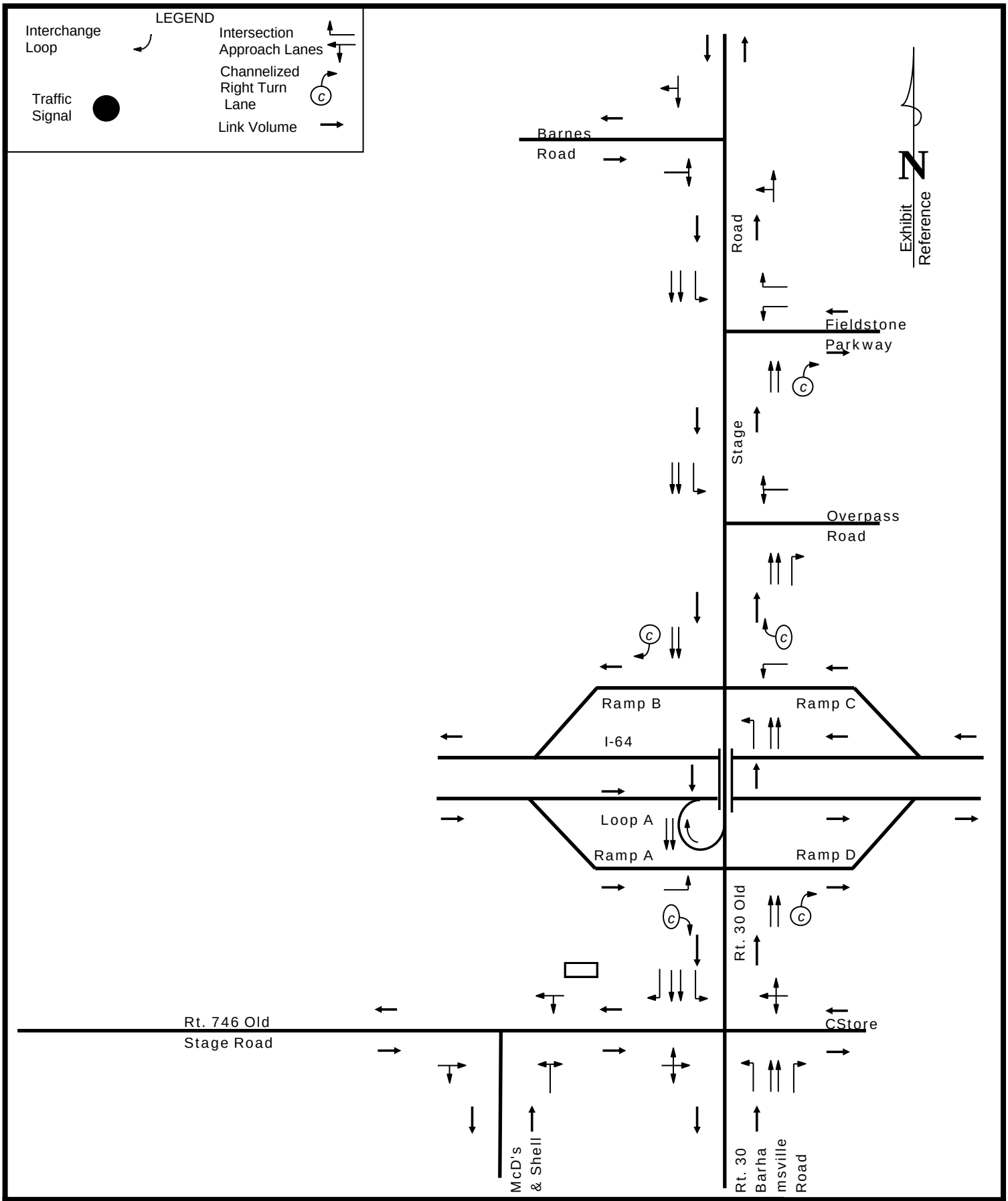
Exhibit 1b



HAZELWOOD FARMS
PEAK HOUR COUNT LOCATIONS

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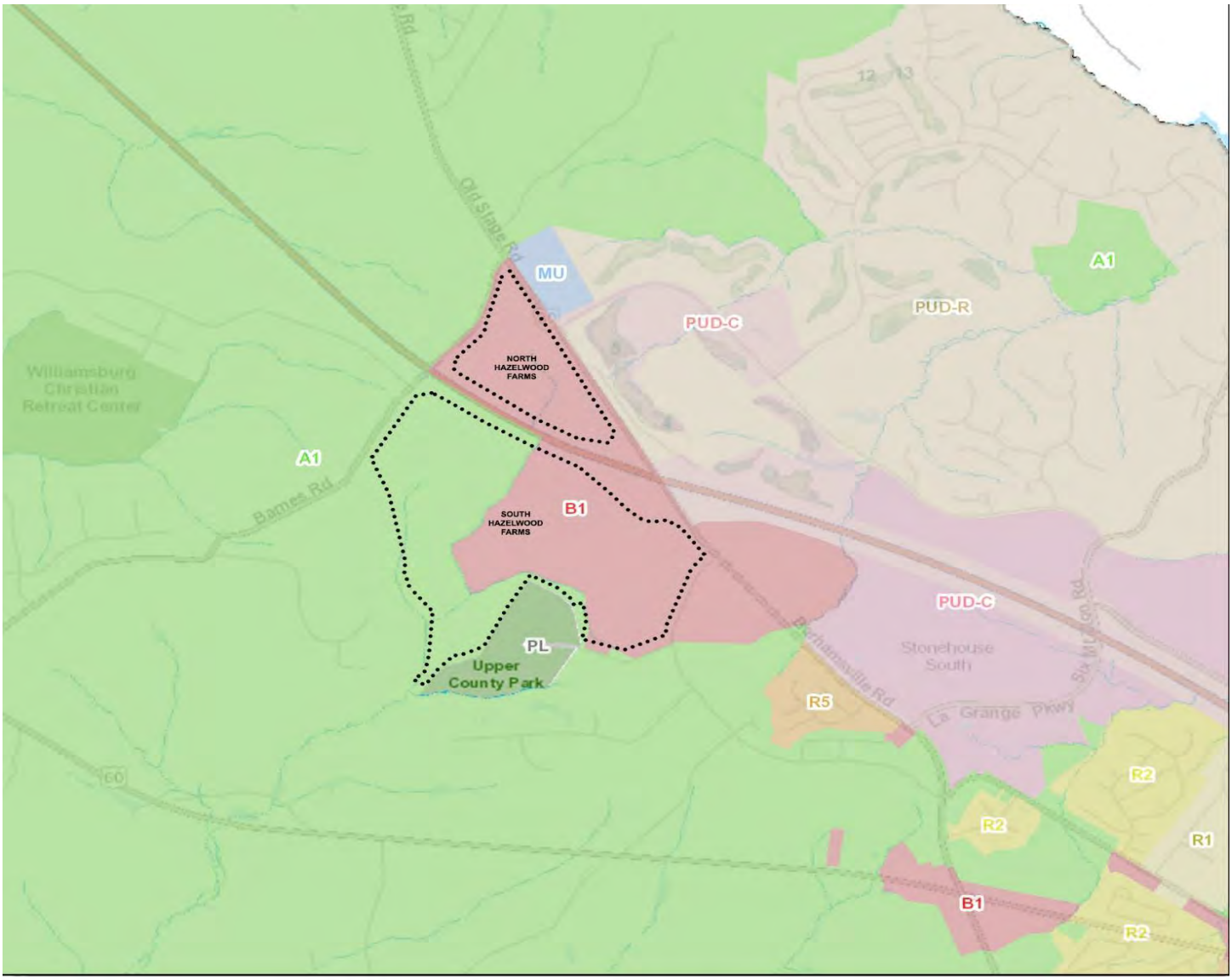
Exhibit 1c



HAZELWOOD FARMS
EXISTING ROADWAYS

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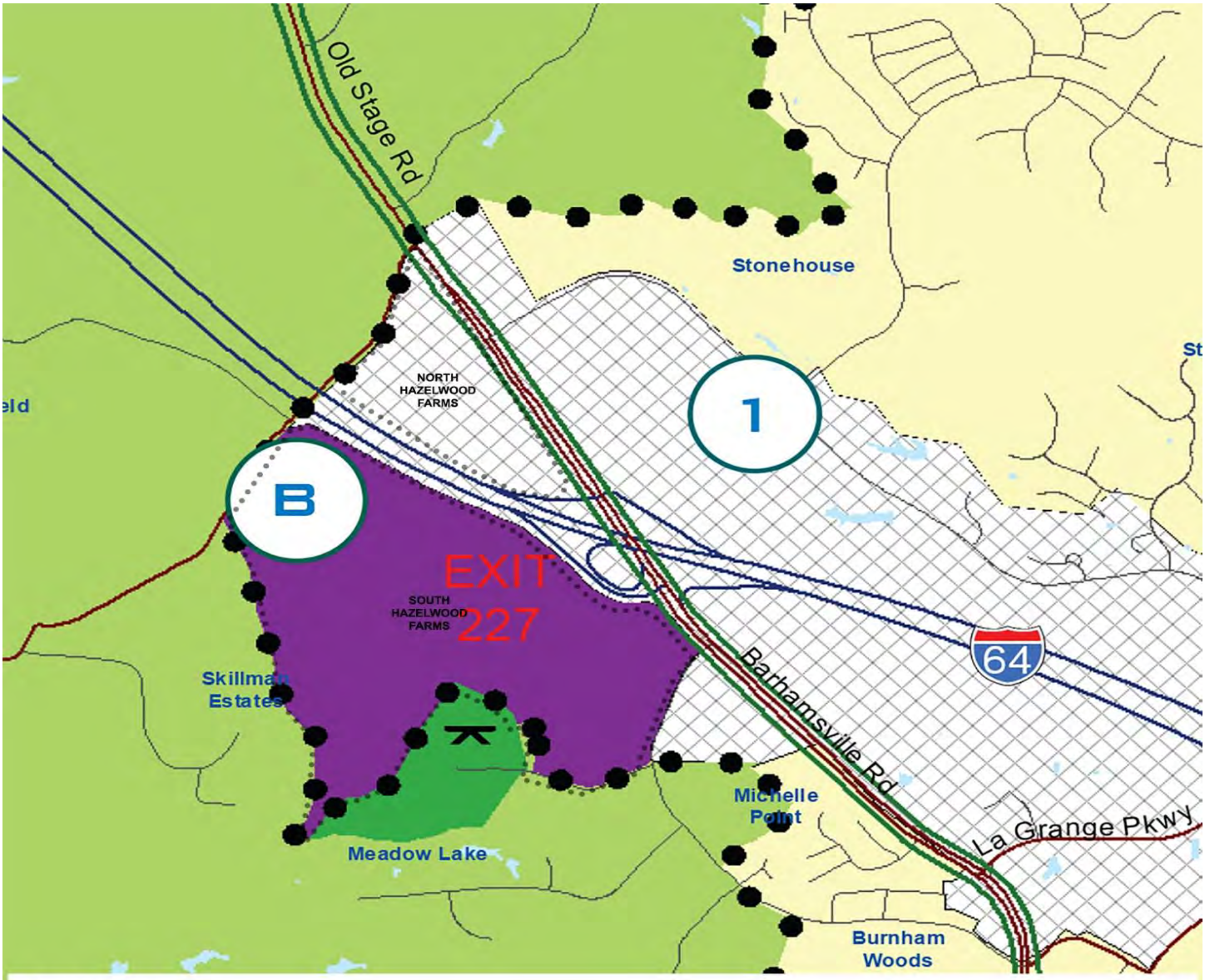
Exhibit 1d



HAZELWOOD FARMS
EXISTING ZONING

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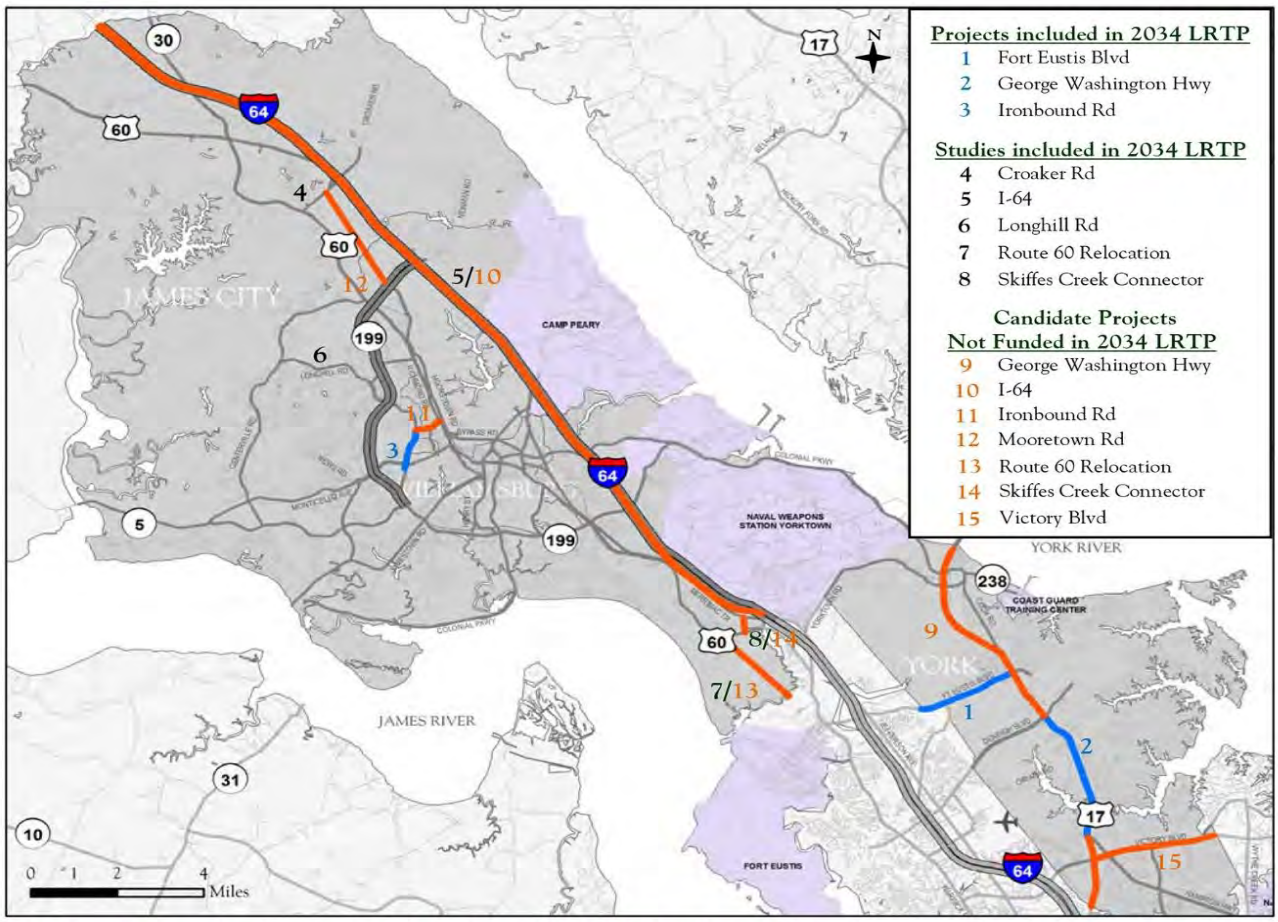
Exhibit 1e



HAZELWOOD FARMS
JAMES CITY COUNTY 2035 LAND USE MAP

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804-794-7312

Exhibit 1f



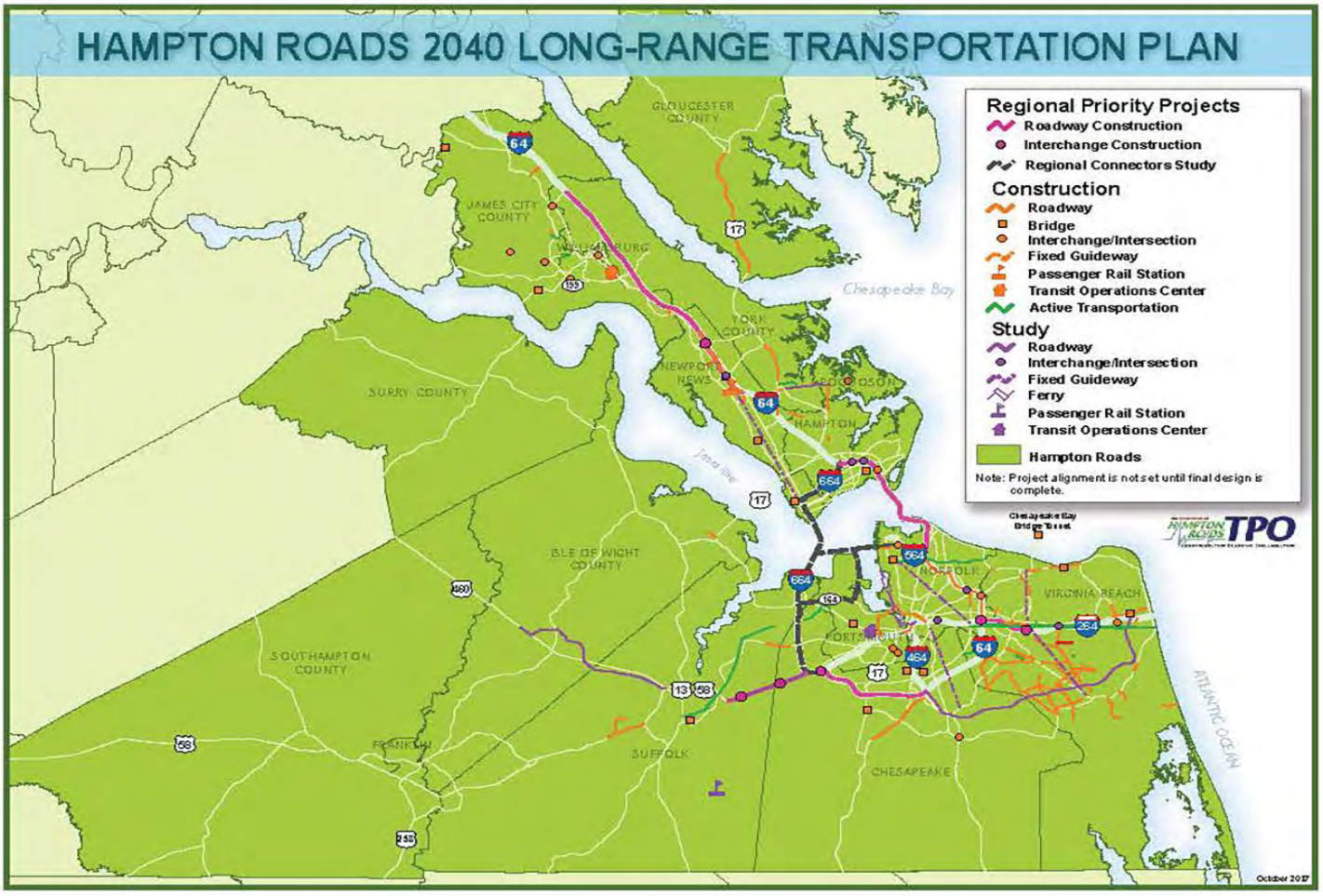
Map 8 – Projects/Studies Included in the 2034 LRTP and Candidate Projects Not Funded in the 2034 LRTP

Data Source: HRTPO.

2034 LONG RANGE TRANSPORTATION PLAN
JAMES CITY COUNTY/WILLIAMSBURG/YORK COUNTY
COMPREHENSIVE TRANSPORTATION STUDY
HAMPTON ROADS TPO MARCH 2012

DRW Consultants, LLC
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Exhibit 1g-1



HAMPTON ROADS 2040 LONG-RANGE TRANSPORTATION PLAN
HAMPTON ROADS TPO

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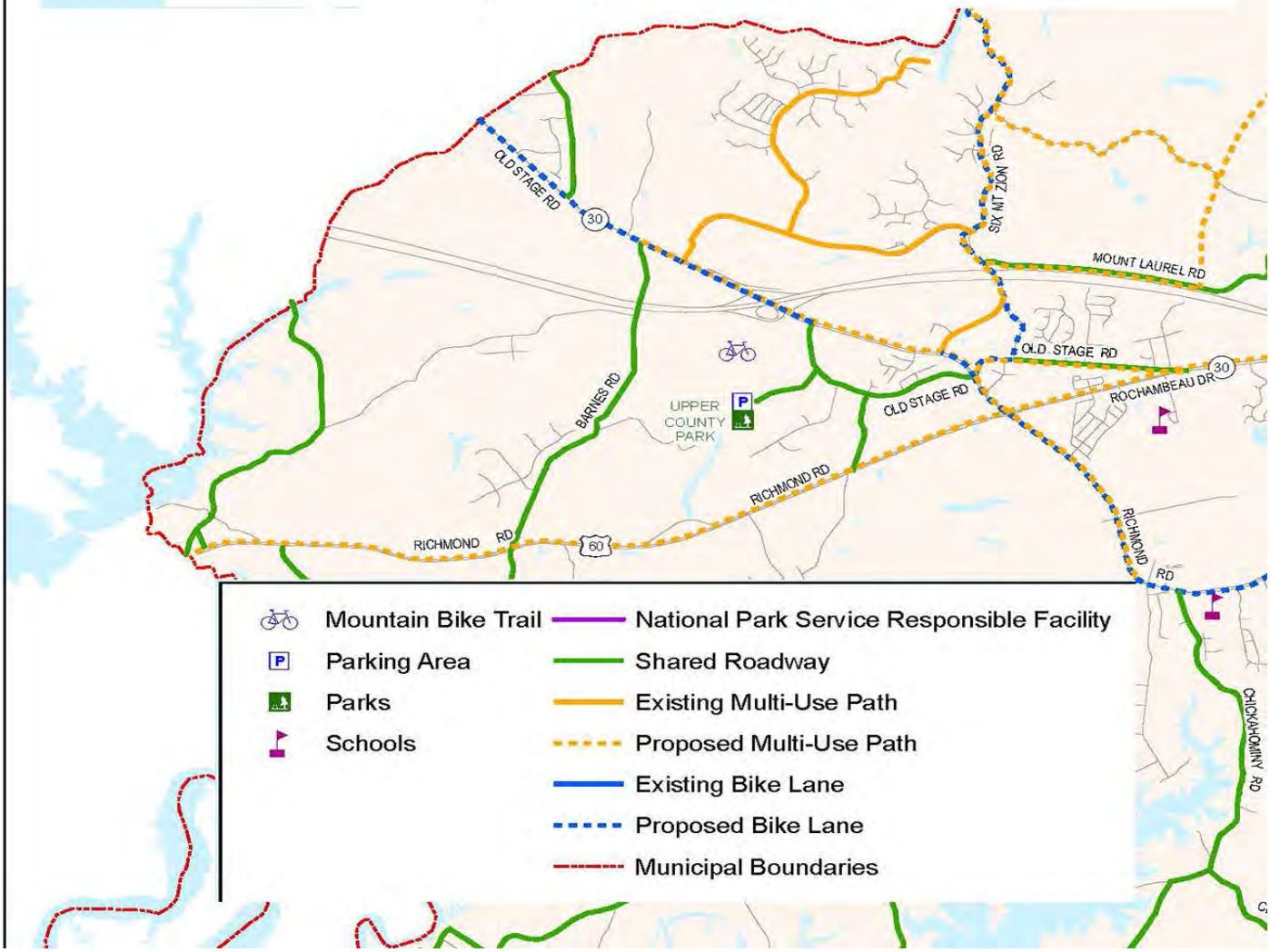
Exhibit 1g-2

Regional Bikeways

James City County, Williamsburg, and York County, Virginia

Adopted by City of Williamsburg City Council 6/10/93
Adopted by York County Board of Supervisors 6/17/93
Adopted by James City County Board of Supervisors 6/21/93

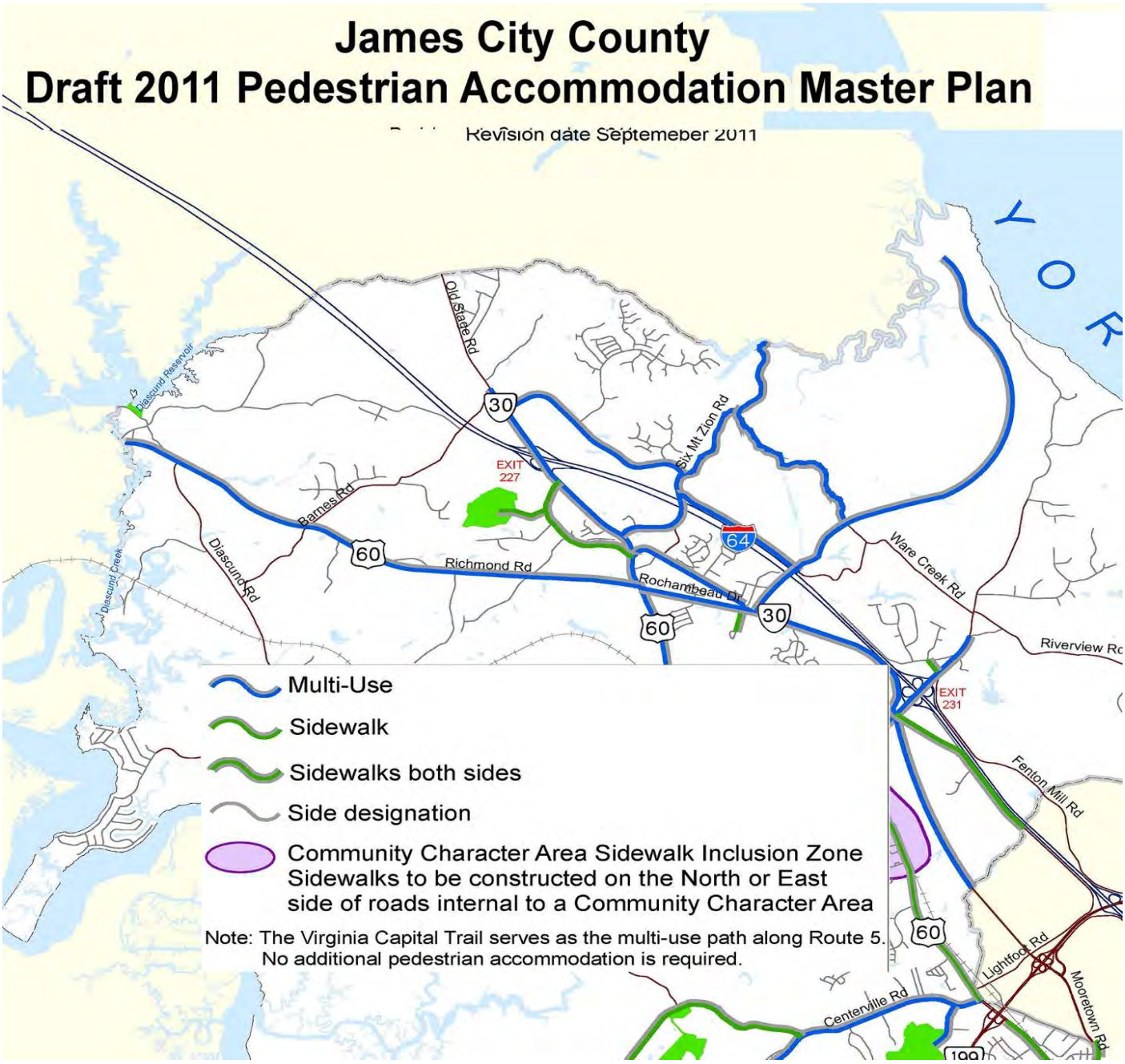
Revised by City of Williamsburg City Council 11/12/98, 10/12/06, **1/10/13**
Revised by York County Board of Supervisors 10/6/99, 12/6/05, **9/3/13**
Revised by James City County Board of Supervisors 11/10/98, **9/10/13**



REGIONAL BIKEWAYS
JAMES CITY COUNTY , WILLIAMSBURG, AND YORK COUNTY
REVISED 2013

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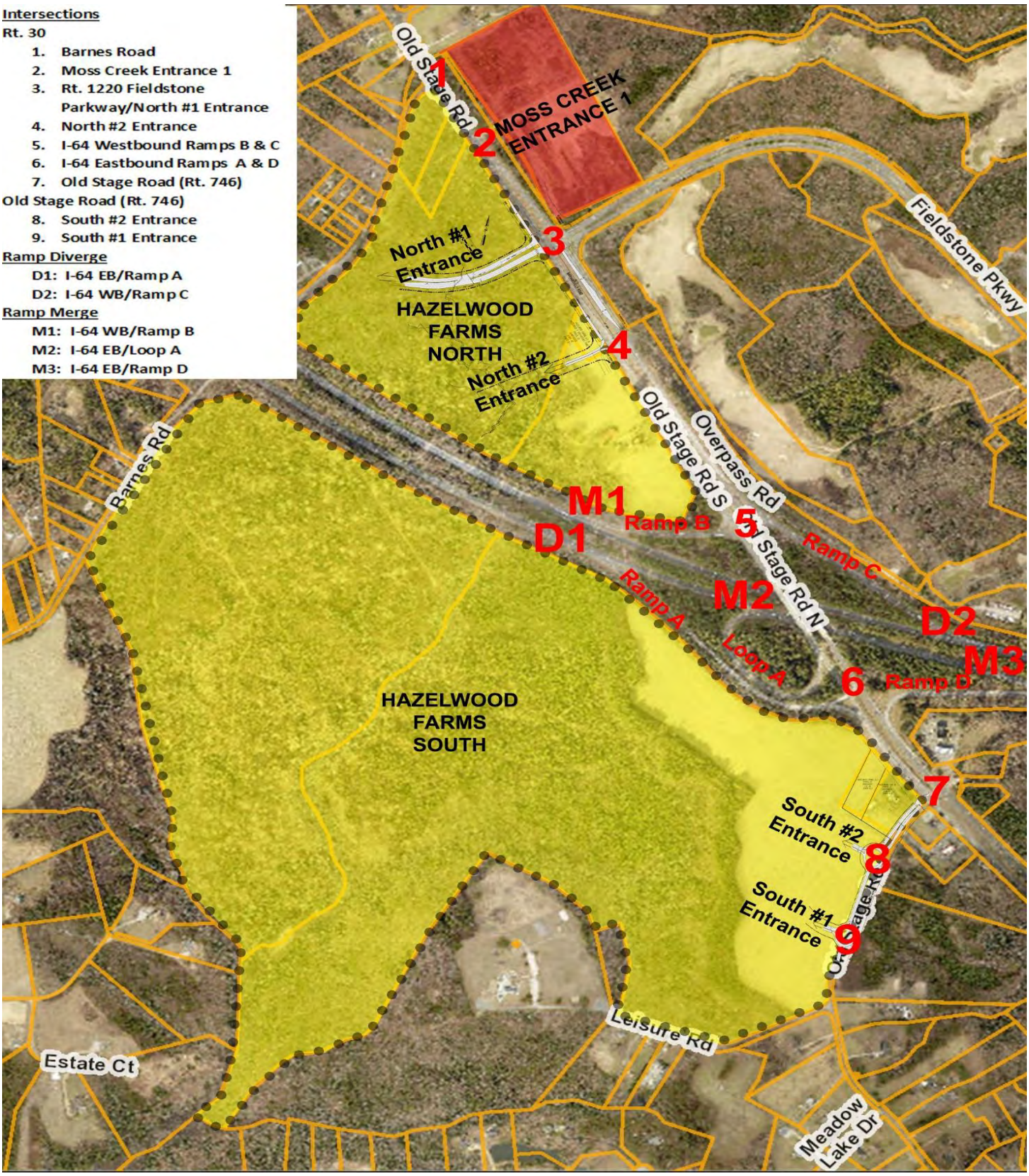
Exhibit 1g-3



JAMES CITY COUNTY
DRAFT 2011 PEDESTRIAN
ACCOMMODATION MASTER PLAN

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Exhibit 1g-4



HAZELWOOD FARMS
PEAK HOUR ANALYSIS LOCATIONS

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Exhibit 1h

NEW KENT COUNTY

YORK RIVER

TRACT 8

TRACT 7

TRACT 6

TRACT 5

TRACT 4

TRACT 3

TRACT 2

TRACT 1A

TRACT 1B

TRACT 9

TRACT 10A

TRACT 10B

TRACT 11A

TRACT 11B

TRACT 12

TRACT 13

SCHOOL

LAND BAY 14

LB 1

LB 3

LB 5

LB 8

NORTH HAZELWOOD FARMS

SOUTH HAZELWOOD FARMS

FUTURE PARKWAY

FIELDSTONE PKWY

A GRANGE PKWY (RT 1045)

EXIT 227

INTERSTATE 64

FIRE TOWER RD (RT 634)

OLD STAGE RD (RT 30)

OLD STAGE RD (RT 746)

BARHAMSVILLE RD (RT 30)

RICHMOND RD (RT 60)

ROCHAMBEAU DR (RT 30)

SPLITWOOD RD

RIDGE RD

CIDER HOUSE RD

OLD GROVE LN

RIDGE DR

LEATHERLEAF DR

MILL POND RUN

SIX MT ZION RD (RT 600)

WARE CREEK RD (RT 606)

MT LAUREL RD (RT 608)

SYCAMORE LANDING RD (RT. 607)

CROAKER LANDING RD (RT. 605)

CROAKER RD (RT. 607)

MASSENA DR

WOODLAND RD

NAD 83

HATCH LEGEND

- PHASE 1
- PHASE 2
- PHASE 3
- PHASE 4

SCALE 1"=1,000'

0 1,000' 2,000'

THIS DRAWING PREPARED AT THE
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1001 Boulders Parkway | Richmond, VA 23225
TEL 804.200.6500 FAX 804.560.1016 www.timmons.com

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TIMMONS GROUP

REVISION DESCRIPTION

DATE

DATE 3-12-2015

DRAWN BY A.CAMPBELL

DESIGNED BY S. WORTHINGTON

CHECKED BY

SCALE 1"=1,000'

STONEHOUSE

STONEHOUSE DISTRICT - JAMES CITY COUNTY - VA

DEVELOPMENT PHASING PLAN

EXHIBIT 1i

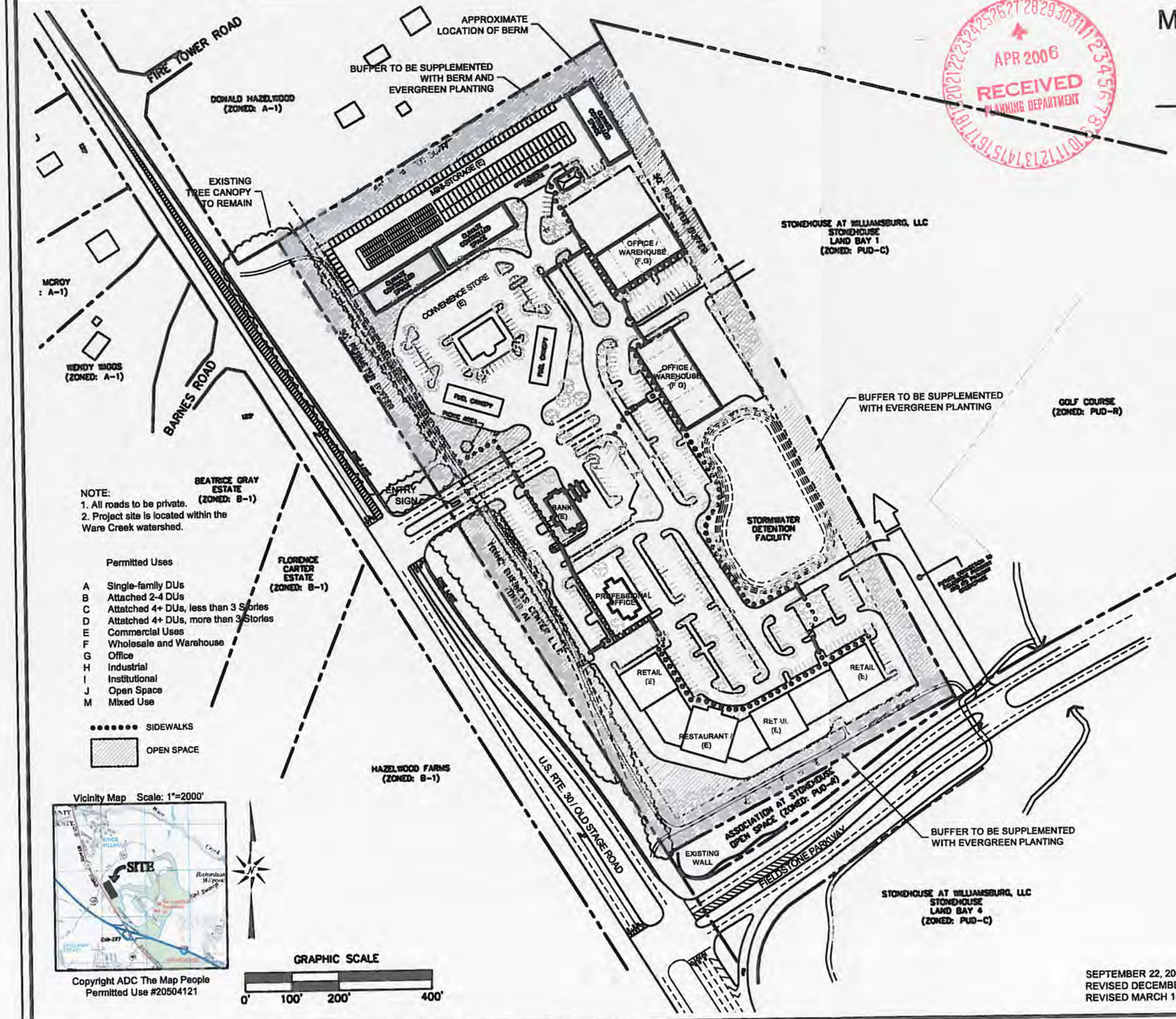
JOB NO. 34549

SHEET NO. 1 OF 1

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G:\30034549-Stonehouse\Civil\DWG\34549_GIS_PHASING_-15-03-12.dwg | Plotted on 3/12/2015 10:35 AM | by Steve Worthington

Z-12-05 BOS adopted 5/9/06



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APR 2006
RECEIVED
PLANNING DEPARTMENT

PROPOSED MASTER PLAN
MOSS CREEK COMMERCE CENTRE
AT STONEHOUSE

9690 OLD STAGE ROAD
JAMES CITY COUNTY, VIRGINIA

SITE SUMMARY:

PARCEL ID #:	0440100004 and 044010034
GROSS SITE AREA:	21.9 AC +/-
NET DEVELOPABLE AREA:	21.9 AC.+/-
EXISTING ZONING:	A1 (GENERAL AGRICULTURAL)
PROPOSED ZONING:	MU (MIXED USE)
PERIMETER BUFFER REQU'D.:	50'
MIN. LOT SIZE, FRONT YARD:	N/A
REAR YARD AND SIDE YARD:	N/A
OPEN SPACE REQU'D.:	10% (2.19 AC. +/-)
OPEN SPACE PROVIDED:	2.19 AC. +
NON-RESIDENTIAL FLOOR AREA.:	3.1 AC
FLOOR AREA DENSITY:	.14
IMPERVIOUS COVER:	9.5 +/-AC (43%+/-)

PROGRAM SUMMARY:

- 3,574 S.F. BANK WITH 3 DRIVE-THRU LANES
- 3,910 S.F. CONVENIENCE STORE WITH FUELING
- 54,250 S.F. MINI-STORAGE FACILITY:
  - ~ 3-CLIMATE CONTROLLED BUILDINGS
  - ~ 5' X 10' STORAGE SPACE (120 IUNITS)
  - ~ 10' X 20' STORAGE SPACE (28 UNITS)
  - ~ 10' X 15' STORAGE SPACE (60 UNITS)
  - ~ 10' X 25' STORAGE SPACE (28 UNITS)
  - ~ OFFICE/CARETAKER BLDG.
- 44,475 S.F. RETAIL WITH RESTAURANT ANCHOR
- 26,400 S.F. OFFICE/WAREHOUSE SPACE
- 3,628 S.F. PROF. OFFICE BLDG.

NOTE: ALL QUANTITIES ARE APPROXIMATE, BASED ON ASSUMED BOUNDARY, TOPOGRAPHIC AND PHYSICAL FEATURES INFORMATION. LANDSCAPING IS SHOWN FOR ILLUSTRATIVE PURPOSES ONLY.

Parking Calculations

	Formula	Qty.	Required
Bank	1 per 250 s.f.	3,574 s.f.	14
Convenience Store	1 per 250 s.f.	3910 s.f.	16
Retail	1 per 200 s.f.	*29,358 s.f.	147
Office**	1 per 250 s.f.	11,428 s.f.	45
Mini-Storage & Climate Storage	1 per 100 Units & 2 per caretaker residence	236 Units & 1 res.	4
Restaurant	1 per 250	7,777 s.f.	31
Warehouse	1 per 2 employees	T.B.D.	-

TOTAL PARKING PROVIDED: 355

EXHIBIT
1j

* BASED ON NET AREA EQUAL TO 80% OF GROSS AREA
** INCLUDES PROF. OFFICE AND 1/2 S.F. OF OFFICE/WAREHOUSE
(Calculations are approximate, may change with final site plan)

SEPTEMBER 22, 2004
REVISED DECEMBER 28, 2005
REVISED MARCH 14, 2006

Job # 2004085-000.00
LFV Drawing # 15818W

LANDMARK DESIGN GROUP
Engineers • Planners • Surveyors
Landscape Architects • Environmental Consultants
4029 IRONBOUND ROAD SUITE 100
WILLIAMSBURG, VIRGINIA
(757) 253-2075 FAX: (757) 229-0049

EXHIBIT 2a

EXHIBIT 2b

EXHIBIT 2c

EXHIBIT 2d

EXHIBIT 2e

EXHIBIT 2f

STA 290+00
STA 295+00
STA 300+00
STA 305+00
STA 310+00
STA 315+00
STA 320+00
STA 325+00
STA 330+00
STA 335+00
STA 340+00
STA 345+00
STA 350+00
STA 355+00
STA 360+00
STA 365+00
STA 370+00
STA 375+00
STA 380+00

TELEGRAPH ROAD
OLD STAGE ROAD
OVERPASS ROAD
WEST BOUND
INTERSTATE 64
EAST BOUND
BARNES ROAD
BARHAMSVILLE ROAD
OLD STAGE ROAD
8' MULTI-USE TRAIL
LISBURE ROAD

BRIDGE DECK
BRIDGE DECK

GRAPHIC SCALE
300' 0' 300' 600'
SCALE: 1" = 300'

N

Revised	Description	Rev.	Date

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HAZELWOOD FARM
EXHIBIT INDEX

JAMES CITY COUNTY VIRGINIA

STONEHOUSE DISTRICT

Project Contacts:	JAG
Project Number:	W10325-01
Scale: 1"=300'	Date: 2/7/19

Sheet Title:

OVERALL EXHIBITS

Sheet Number
2

S:\JOB\W10325\01\Hazlewood Farms #3 xrefs\Plans\Master Planning\Exhibits for ID #\Master\W10325-01-Overall Exhibit.dwg, 2/8/2019 2:58:56 PM, mlevins

STA 295+00

STA 300+00

STA 305+00

STA 310+00

STA 315+00

STA 320+00

STA 325+00

STA 330+00

STA 335+00

MOSS CREEK ENTRANCE #2

ENTRANCE #1

MOSS CREEK

FIELDSTONE PKWY
STATE ROUTE 1531

OLD STAGE ROAD
STATE ROUTE 30

NORTH #1 ENTRANCE

NORTH #2 ENTRANCE

OVERPASS ROAD

BARNES ROAD
STATE ROUTE 801

RAMP A

RAMP B

RAMP C

INTERSTATE 64

WEST BOUND

EAST BOUND

NORTH BOUND

SOUTH BOUND

N/F
MOSS CREEK MARKET PLACE LLC
9686 OLD STAGE RD
PARCEL ID:
0440100034

N/F
ASSOCIATION AT STONEHOUSE INC (THE)
9330 FIELDSTONE PARKWAY
PARCEL ID:
0440100024B
ZONED PR PUD RESIDENTIAL

N/F
ASSOCIATION AT STONEHOUSE INC
9300 FIELDSTONE PARKWAY
PARCEL ID:
0440100027
ZONED PC PUD RESIDENTIAL

STONEHOUSE

N/F
EVELAND, JOSEPH ROGER
9595 BARNES RD
PARCEL ID:
0430100006A
ZONED A-1

N/F
STEWART, LOIS W & JAMES E
9593 BARNES RD
PARCEL ID:
0430100008
ZONED A-1

N/F
STEWART, LOIS W & JAMES E
9591 BARNES RD
PARCEL ID:
0430100009
ZONED A-1

N/F
STEWART, LOIS W & JAMES E
9583 BARNES RD
PARCEL ID:
0430100010
ZONED A-1

N/F
NEFF, BARRY F JR
9567 BARNES RD
PARCEL ID:
0430200005
ZONED A-1

N/F
SHAVE, NORRIS L
9563 BARNES RD
PARCEL ID:
0430200004
ZONED A-1

N/F
STAVROU COMPANY LLC C/O
CHARITA STAVROU
9557 BARNES RD
PARCEL ID:
0430200003
ZONED A-1

N/F
STAVROU COMPANY LLC C/O
CHARITA STAVROU
9551 BARNES RD
PARCEL ID:
0430200002
ZONED A-1

N/F
STAVROU COMPANY LLC C/O
9547 BARNES RD
PARCEL ID:
0430200001
ZONED A-1

50' LANDSCAPE BUFFER

AREA 1

AREA 2

AREA 3

AREA 4

PROPOSED TRAFFIC SIGNAL

PEDESTRIAN CROSSING

200' TAPER

200' RTL

RIGHT IN/RIGHT OUT

LIMITS OF WETLANDS

100' RPA BUFFER

WETLANDS 9.31 AC.

RPA BUFFER

100' LANDSCAPE BUFFER

GRAPHIC SCALE
100' 0' 100' 200'
SCALE: 1" = 100'

N

Rev.	Date	Description	Revised

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NORTH HAZELWOOD FARM
LAND USE PLAN

JAMES CITY COUNTY VIRGINIA

STONEHOUSE DISTRICT

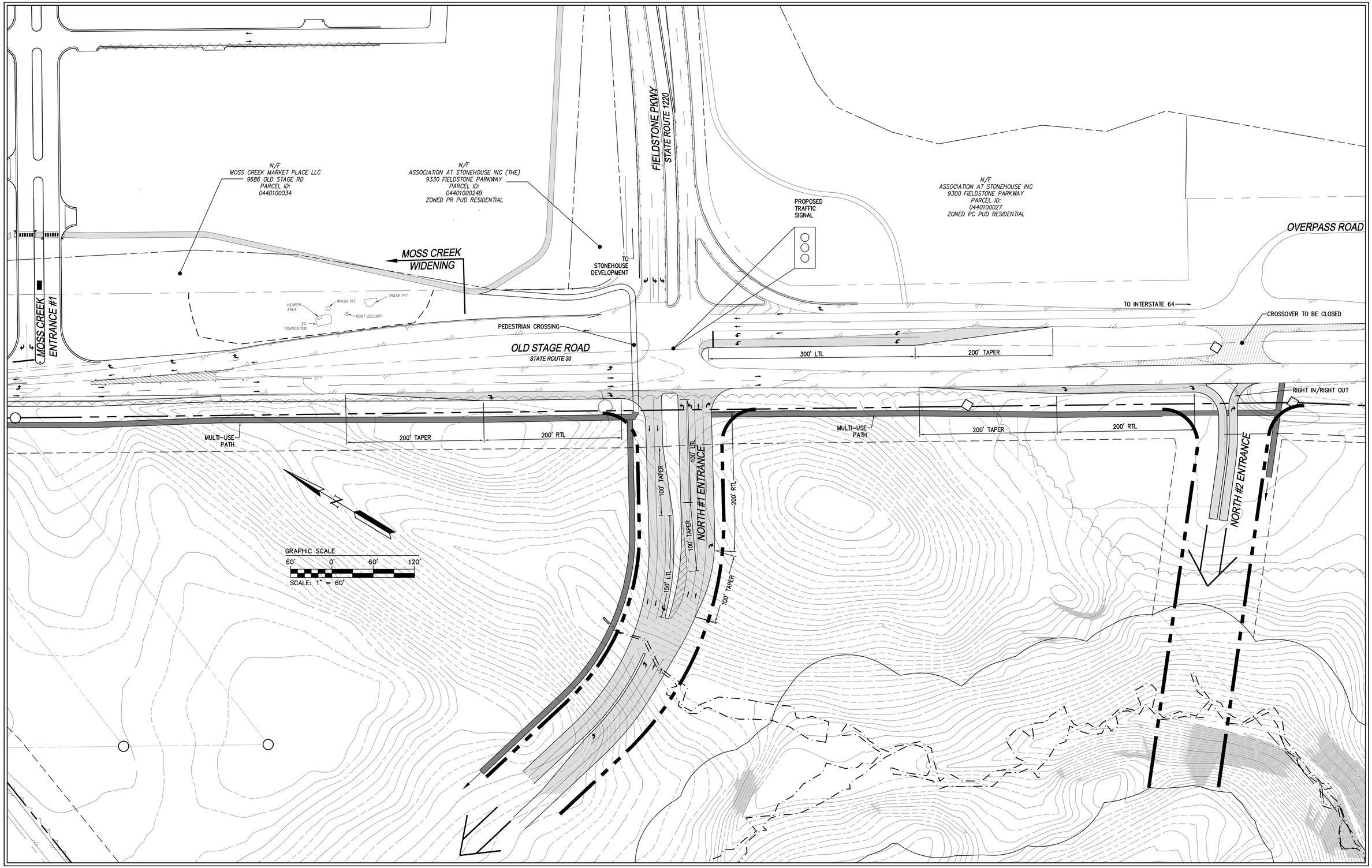
Project Contacts:	JAG
Project Number:	W10325-01
Scale: 1"=100'	Date: 2/7/19

Sheet Title:

NORTH EXHIBIT

Sheet Number
2a

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NORTH HAZELWOOD FARM
ACCESS PLAN

STONEHOUSE DISTRICT JAMES CITY COUNTY VIRGINIA

Project Contacts:	JAG
Project Number:	W10325-01
Scale: 1"=60'	Date: 2/7/19
Sheet Number	NORTH EXHIBIT 2b

WEST BOUND
INTERSTATE 64
EAST BOUND
RAMP B
RAMP A
LOOP A
RAMP D
STA 345+00
STA 350+00
STA 355+00
STA 360+00
STA 365+00
STA 370+00
PROPOSED TRAFFIC SIGNAL
PROPOSED TRAFFIC SIGNAL
C-STORE ACCESS
BARNES ROAD
STATE ROUTE 601
BARHAMSVILLE ROAD
STATE ROUTE 30
OLD STAGE ROAD
LEISURE ROAD
AREA 1
AREA 2
AREA 3
AREA 4
AREA 5
AREA 6
AREA 7
SOUTH #1 ENTRANCE
SOUTH #2 ENTRANCE
SECONDARY ACCESS
100' LANDSCAPE BUFFER
100' RPA BUFFER
50' BUFFER
50' LANDSCAPE BUFFER
LIMITS OF WETLANDS
MULTI-USE PATH
MULTI-USE PATH TO BARNES ROAD
PROPOSED ACCESS ROAD
PEDESTRIAN ACCESS
N/F LOEBS, STEPHANIE M. 101 RACEFIELD DR. PARCEL ID: 0430500010 ZONED A-1
N/F NESS, MICHAEL REID & BONNIE BREEDEN 9427 BARNES RD PARCEL ID: 0430500009 ZONED A-1
N/F GRAHAM, MARDINE 9409 BARNES RD PARCEL ID: 0430500002 ZONED A-1
N/F HILL, JAMES H. & DAPHNE P. 9403 BARNES RD PARCEL ID: 0430500005 ZONED A-1
N/F SMITH, WILLIAM E. & BETTY A. PARCEL ID: 0430500004 ZONED A-1
N/F DILLARD, ROBERT S & HELEN HOPE 9337 BARNES RD PARCEL ID: 0430500002 ZONED A-1
N/F WALLS, RICHARD R & SHARON PARCEL ID: 0430500001 ZONED A-1
N/F STUPPY, DAVID W 9341 BARNES RD PARCEL ID: 0430500003 ZONED A-1
PAMAKA, LLC PARCEL ID: 0430100016 39.2± AC
N/F KELLEY, DANNY L & R CATHERINE 217 SKILLMAN DR PARCEL ID: 0430400011 ZONED A-1
N/F WHEELER, GEORGE L & S DIANE W 219 SKILLMAN DR PARCEL ID: 0430400018 ZONED A-1
N/F LEIGHTON-HERRMANN, MICHAEL R & MARSH 216 SKILLMAN DR PARCEL ID: 1110200009 ZONED A-1
N/F TYRER, DAVID D & CAROL D 475 BURNHAM RD PARCEL ID: 1110200007 ZONED A-1
N/F JAMES CITY COUNTY 180 LEISURE RD PARCEL ID: 1120100001 ZONED PUBLIC LANDS
JAMES CITY COUNTY UPPER COUNTY PARK
N/F PAUL, ROBERT H 136 LEISURE RD PARCEL ID: 1120100002 ZONED A-1
N/F RUTHERFORD, ROBIN C 129 LEISURE RD PARCEL ID: 1120100005 ZONED A-1
N/F MCCREA, RONDA S TRUSTEE 223 OLD STAGE RD PARCEL ID: 1120100008 ZONED A-1
N/F HUGHES, JACK & HELEN 137 LEISURE RD PARCEL ID: 1120100004 ZONED A-1
N/F LACKS, BENNY L. SR & RACHAEL B 101 LEISURE RD PARCEL ID: 1120100007 ZONED A-1
N/F HAMILTON, FORREST W III ESTATE C/O CLIFTON R MARTIN EXECUTOR 121 LEISURE RD PARCEL ID: 1120100006 ZONED A-1
N/F KIRKLAND, RAYMOND O & KING, SUNI T 210 OLD STAGE RD PARCEL ID: 11201000010A ZONED A-1
N/F HORNSBY INVESTMENT CO. DOUGLAS L. HORNSBY 244 OLD STAGE RD PARCEL ID: 1120100009 ZONED B-1
N/F HORNSBY INVESTMENT CO. DOUGLAS L. HORNSBY 9131 BARHAMSVILLE RD PARCEL ID: 0530100002 ZONED B-1
N/F MCDONALDS CORPORATION C/O DOKO ENTERPRISES 9193 BARHAMSVILLE RD PARCEL ID: 0440100020 ZONED B-1
N/F SMG, INCORPORATED 9201 BARHAMSVILLE RD PARCEL ID: 0440100019 ZONED B-1
N/F HORNSBY OIL CO. 9200 BARHAMSVILLE RD PARCEL ID: 0440100018 ZONED B-1
N/F AMERICAN DYNC HOLDINGS TOANO LLC 9210 OLD STATE RD PARCEL ID: 0440100032 ZONED B-1
N/F AMERICAN DYNC HOLDINGS TOANO LLC 9220 OLD STAGE RD PARCEL ID: 0440100016 ZONED B-1
GRAPHIC SCALE
200' 0' 200' 400'
SCALE: 1" = 200'

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SOUTH HAZELWOOD FARM
LAND USE PLAN

JAMES CITY COUNTY VIRGINIA
STONEHOUSE DISTRICT

Project Contacts:	JAG
Project Number:	W10325-01
Scale: 1"=200'	Date: 2/7/19

Sheet Title: SOUTH EXHIBIT

Sheet Number 2c

S:\JOBS\W10325\01 Hazelwood Farms #3\Land Planning\Master Planning\Exhibits for 3-19\Hazelw10325-Overall-Exhibit.dwg, 2/8/2019 3:32:08 PM, Chase Laney

RAMP D

C-STORE ACCESS

350+00 351+00 352+00 353+00 354+00 355+00 356+00 357+00 358+00 359+00 360+00 361+00 362+00 363+00 364+00 365+00 366+00 367+00 368+00 369+00 370+00 371+00 372+00 373+00 374+00 375+00

BARHAMSVILLE ROAD

LIMITED ACCESS BREAK

RAMP A

N/F
SMO, INCORPORATED
9201 BARHAMSVILLE RD
PARCEL ID:
0440100019
ZONED B-1

N/F
MCDONALDS CORPORATION C/O
DOHO ENTERPRISES
9193 BARHAMSVILLE RD
PARCEL ID:
0440100020
ZONED B-1

HAZELWOOD FARMS, LLC
PARCEL ID:
0440100014
1.5± AC
ZONED B-1

GRAPHIC SCALE
80' 0' 80' 160'
SCALE: 1" = 80'

N/F
HORNSBY INVESTMENT CO.
DOUGLAS L HORNSBY
9131 BARHAMSVILLE RD
PARCEL ID:
0530100002
ZONED B-1

SINGLE LANE ROUNDABOUT
(150' OUTSIDE DIAMETER
TO PAVEMENT EDGE)

SOUTH #2 ENTRANCE

EXISTING RIGHT OF WAY

N/F
HORNSBY INVESTMENT CO.
DOUGLAS L HORNSBY
244 OLD STAGE RD
PARCEL ID:
1120100009
ZONED B-1

EXISTING PROPERTY LINE
AND RIGHT OF WAY

MULTI-USE PATH

OLD STAGE ROAD

SOUTH #1 ENTRANCE

SINGLE LANE ROUNDABOUT
(150' OUTSIDE DIAMETER
TO PAVEMENT EDGE)

MULTI-USE PATH

N/F
KIRKLAND, RAYMOND O & KING, SUN T
210 OLD STAGE RD
PARCEL ID:
1120100010A
ZONED A-1

LEISURE ROAD

Rev.	Date	Description	Revised By

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SOUTH HAZELWOOD FARM ACCESS PLAN

STONEHOUSE DISTRICT JAMES CITY COUNTY VIRGINIA

Project Contacts:	JAG
Project Number:	W10325-01
Scale: 1"=80'	Date: 2/7/19

Sheet Title:
SOUTH EXHIBIT

Sheet Number
2d

GRAPHIC SCALE
60' 0' 60' 120'
SCALE: 1" = 60'

N/F
AMERICAN DYNC HOLDINGS
TOANO LLC
9220 OLD STAGE RD
PARCEL ID:
0440100016
ZONED B-1

N/F
AMERICAN DYNC HOLDINGS
TOANO LLC
9210 OLD STAGE RD
PARCEL ID:
0440100032
ZONED B-1

N/F
HORNSBY OIL CO.
DOUGLAS L HORNSBY
9200 BARHAMSVILLE RD
PARCEL ID:
0440100018
ZONED B-1

SIGNALIZED
INTERSECTION
STA 359+58

C-STORE
ACCESS

BEGIN LANE
STA 370+06

1000' ADD ON LANE

660' TAPER

BEGIN TAPER
STA 376+67

358+00 359+00 360+00 361+00 362+00 363+00 364+00 365+00 366+00 367+00 368+00 369+00 370+00 371+00 372+00 373+00 374+00 375+00 376+00 377+00

BARHAMSVILLE ROAD STATE ROUTE 30

EXISTING SIGNAL

N/F
SMO, INCORPORATED
9201 BARHAMSVILLE RD
PARCEL ID:
0440100019
ZONED B-1

N/F
MCDONALDS CORPORATION C/O
DOHO ENTERPRISES
9193 BARHAMSVILLE RD
PARCEL ID:
0440100020
ZONED B-1

HAZELWOOD FARMS, LLC
PARCEL ID:
0440100014
1.5± AC
ZONED B-1

MULTI-USE PATH

N/F
HORNSBY INVESTMENT CO.
DOUGLAS L HORNSBY
9131 BARHAMSVILLE RD
PARCEL ID:
0530100002
ZONED B-1

OLD STAGE ROAD

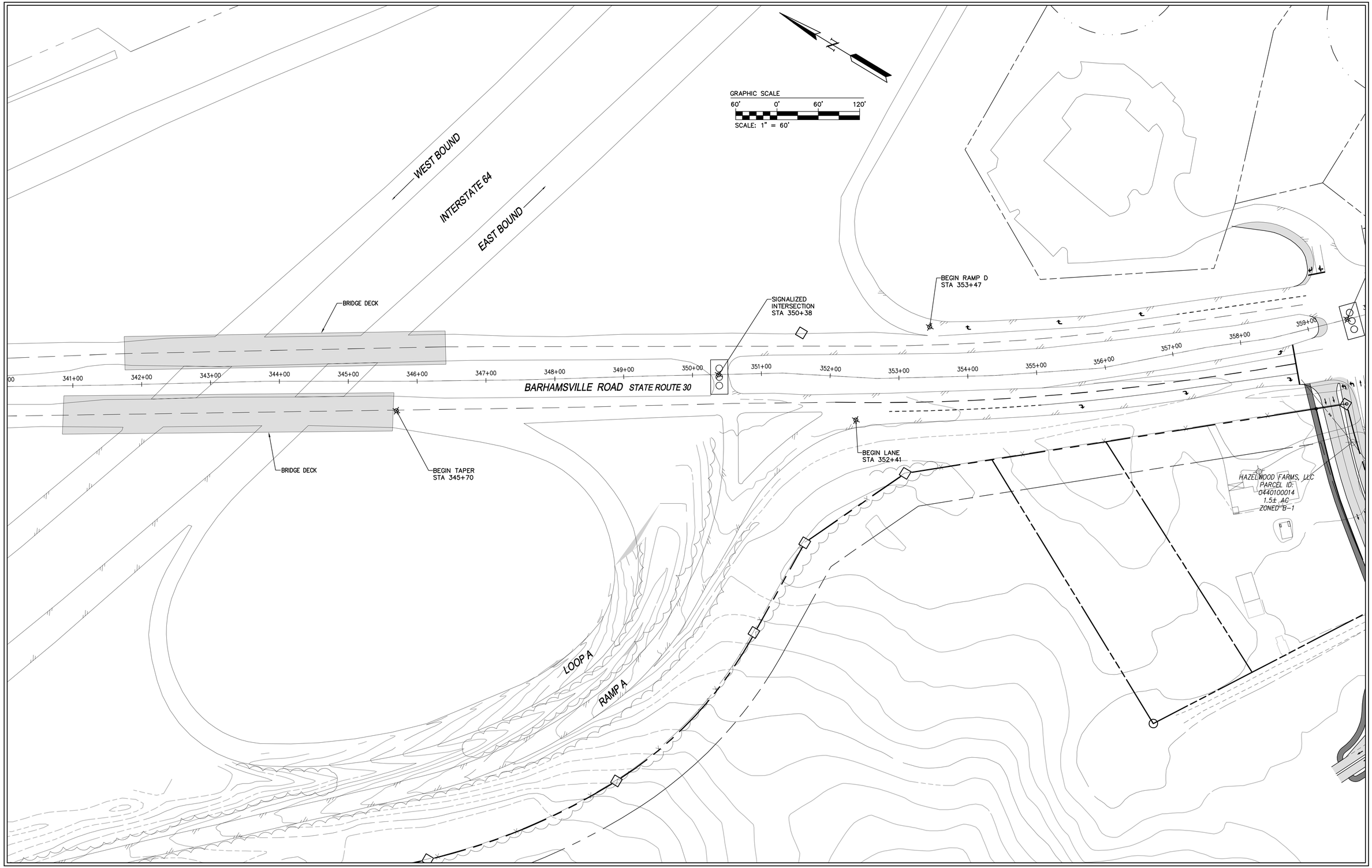
Rev.	Date	Description	Revised By

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SOUTH HAZELWOOD FARM
ACCESS PLAN

STONEHOUSE DISTRICT JAMES CITY COUNTY VIRGINIA

Project Contacts:	JAG
Project Number:	W10325-01
Scale: 1"=60'	Date: 2/7/19
Sheet Number	SOUTH EXHIBIT 2e



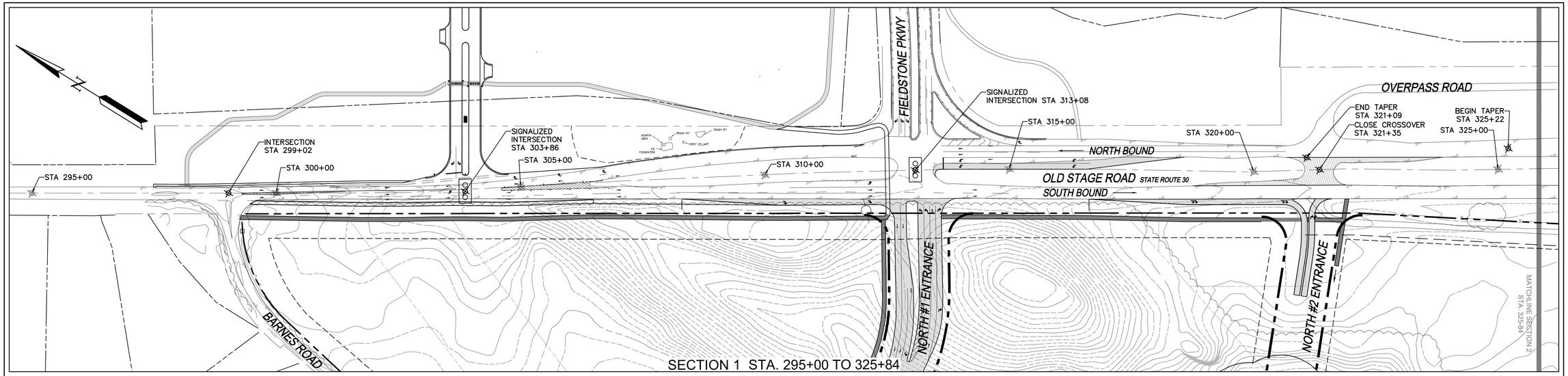
Rev.	Date	Description	Revised By

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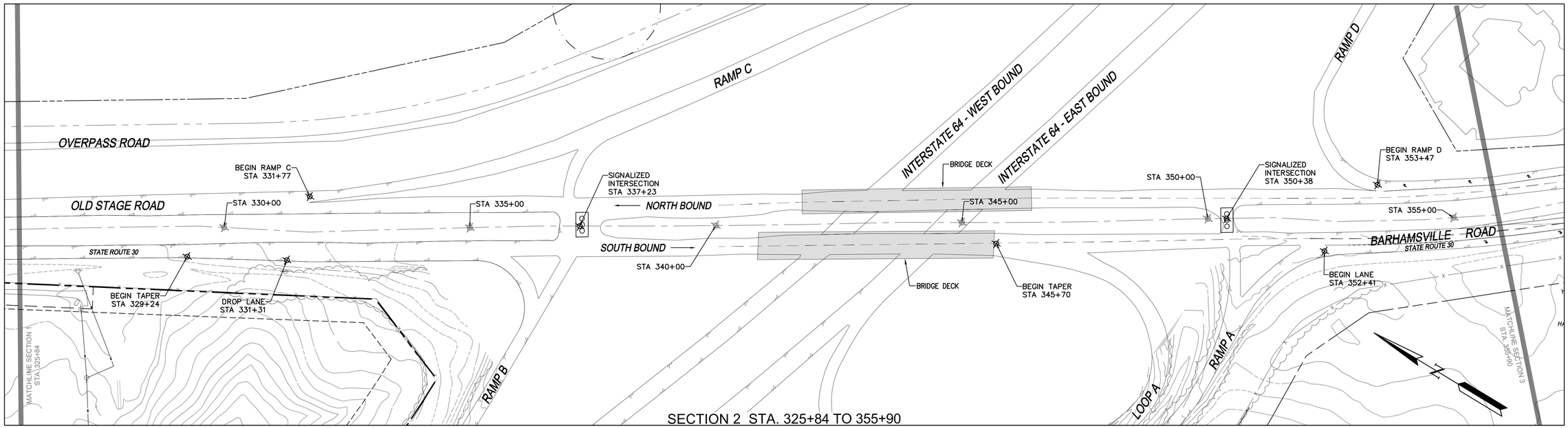
SOUTH HAZELWOOD FARM
ACCESS PLAN

STONEHOUSE DISTRICT JAMES CITY COUNTY VIRGINIA

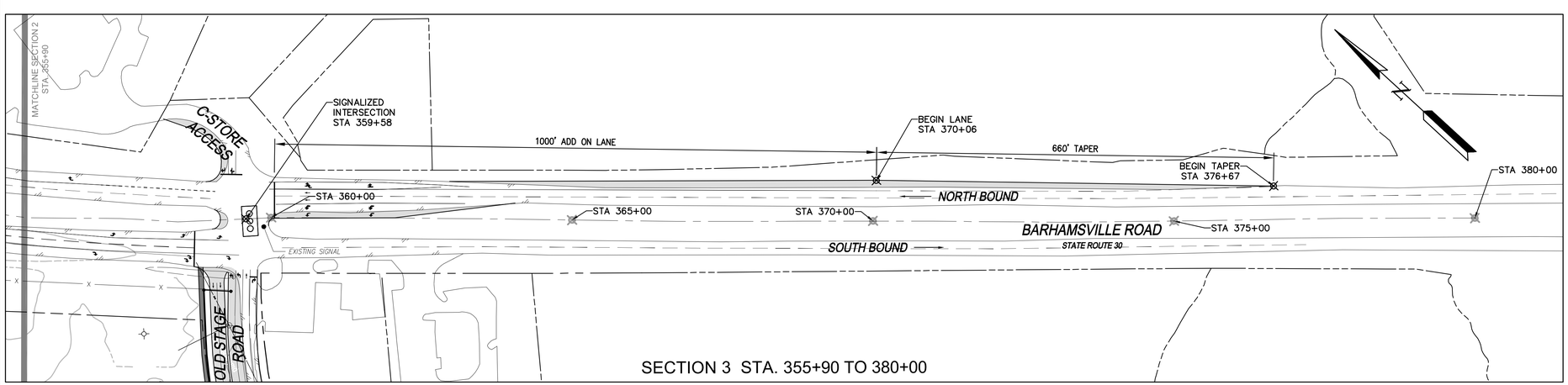
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Project Number:	W10325-01
Scale: 1"=60'	Date: 2/7/19
Sheet Number	SOUTH EXHIBIT 2f



SECTION 1 STA. 295+00 TO 325+84



SECTION 2 STA. 325+84 TO 355+90



SECTION 3 STA. 355+90 TO 380+00

GRAPHIC SCALE
100' 0' 100' 200'
SCALE: 1" = 100'

Revised By	Description	Date
Rev.		

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HAZELWOOD FARM
RT. 30 STATIONING

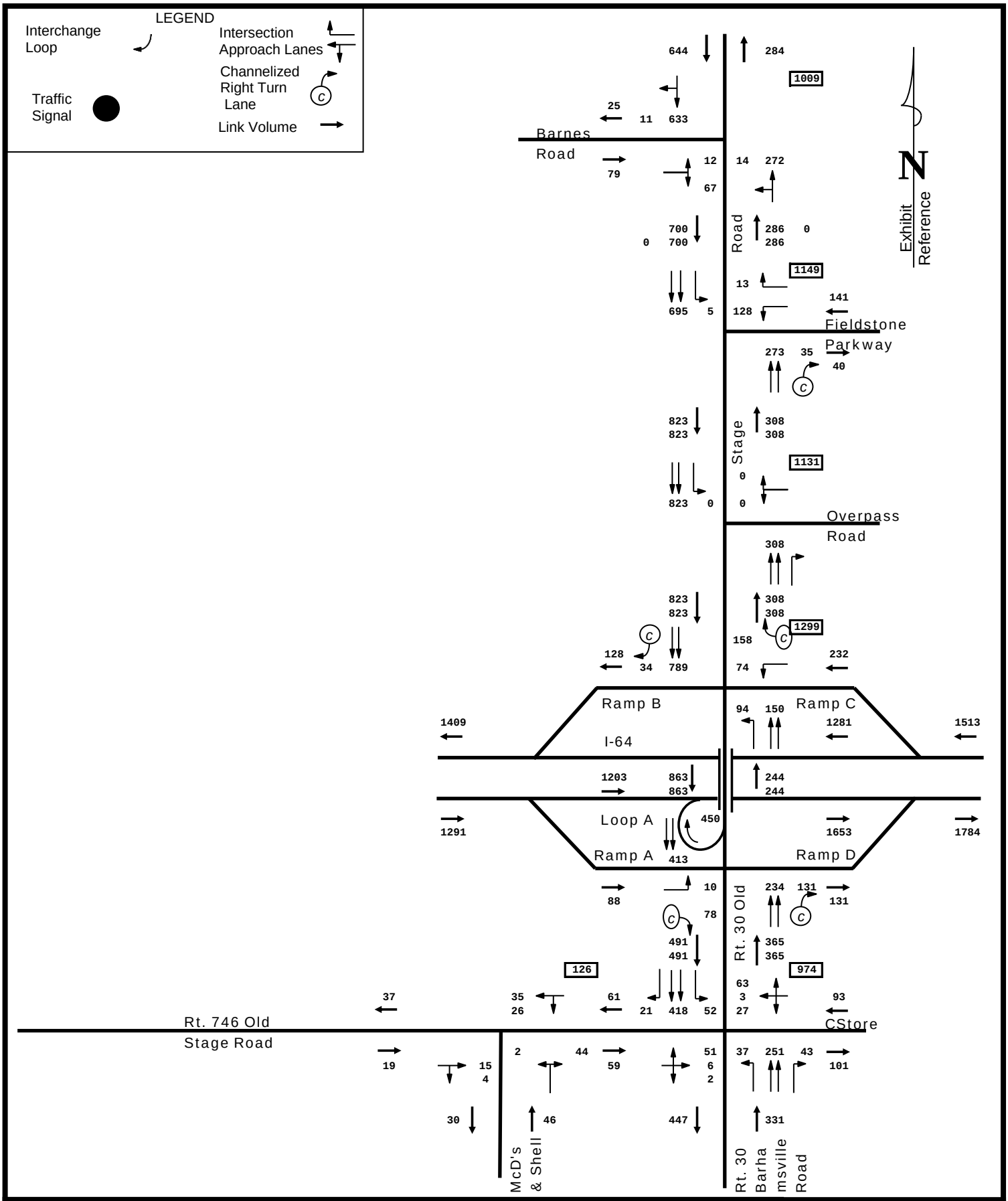
JAMES CITY COUNTY
STONEHOUSE DISTRICT
VIRGINIA

Project Contacts:	JAG
Project Number:	W10325-01
Scale: 1"=100'	Date: 2/7/19

Sheet Title:

ROUTE 30 EXHIBIT

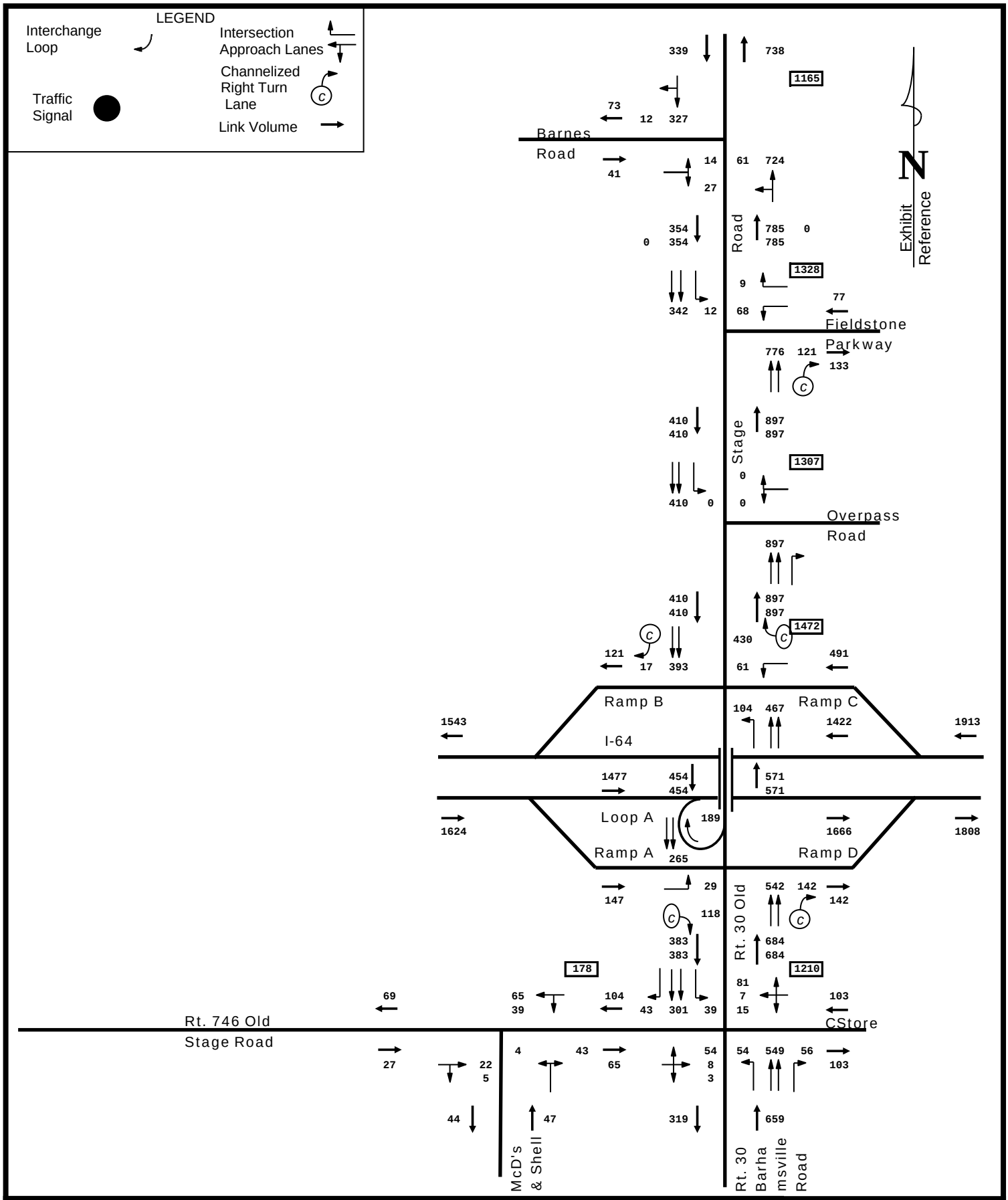
Sheet Number
2g



2017 AM PEAK HOUR COUNTS WITH BALANCE

DRW Consultants, LLC
804-794-7312

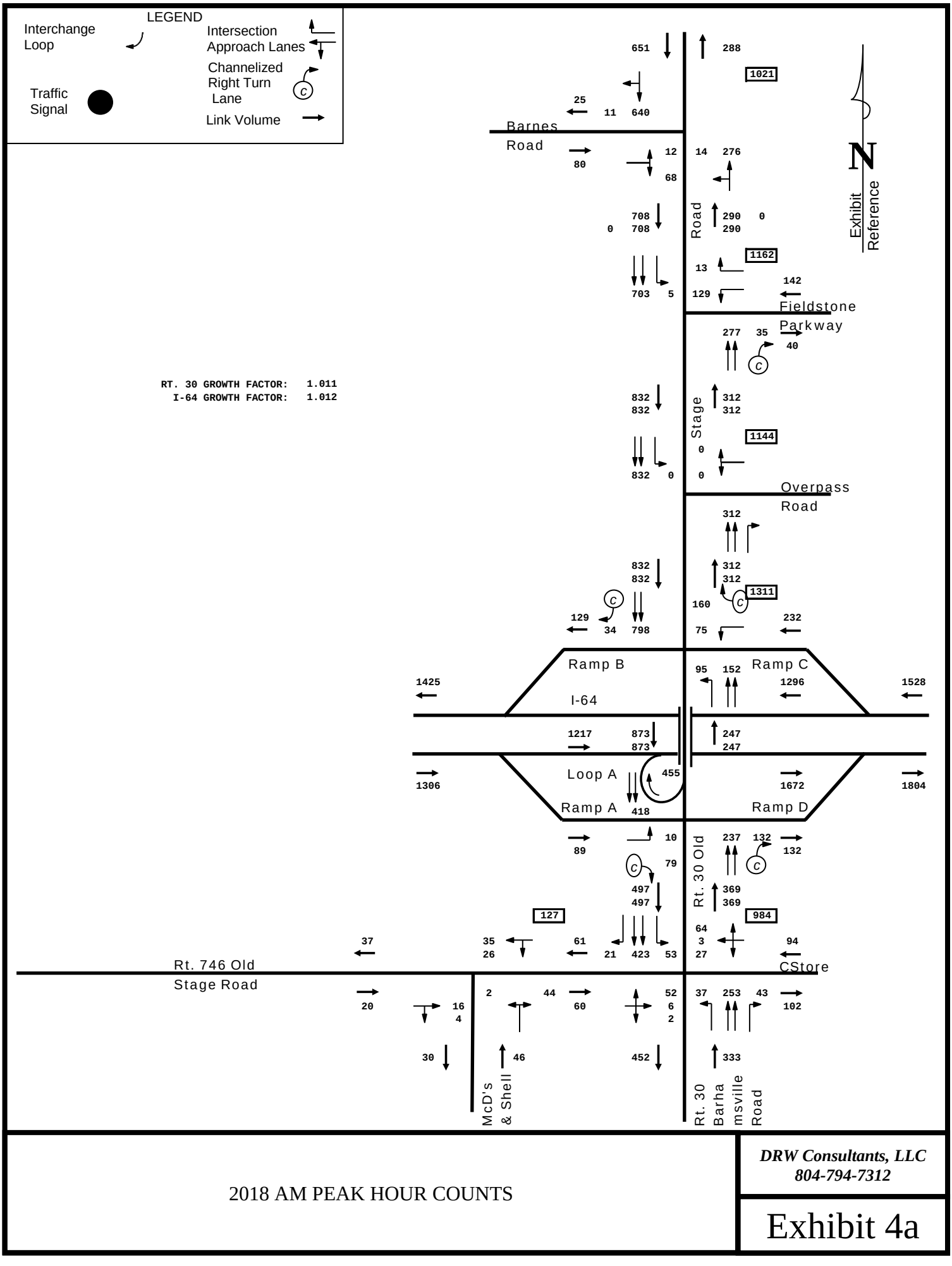
Exhibit 3a



2017 PM PEAK HOUR COUNTS WITH BALANCE

DRW Consultants, LLC
804-794-7312

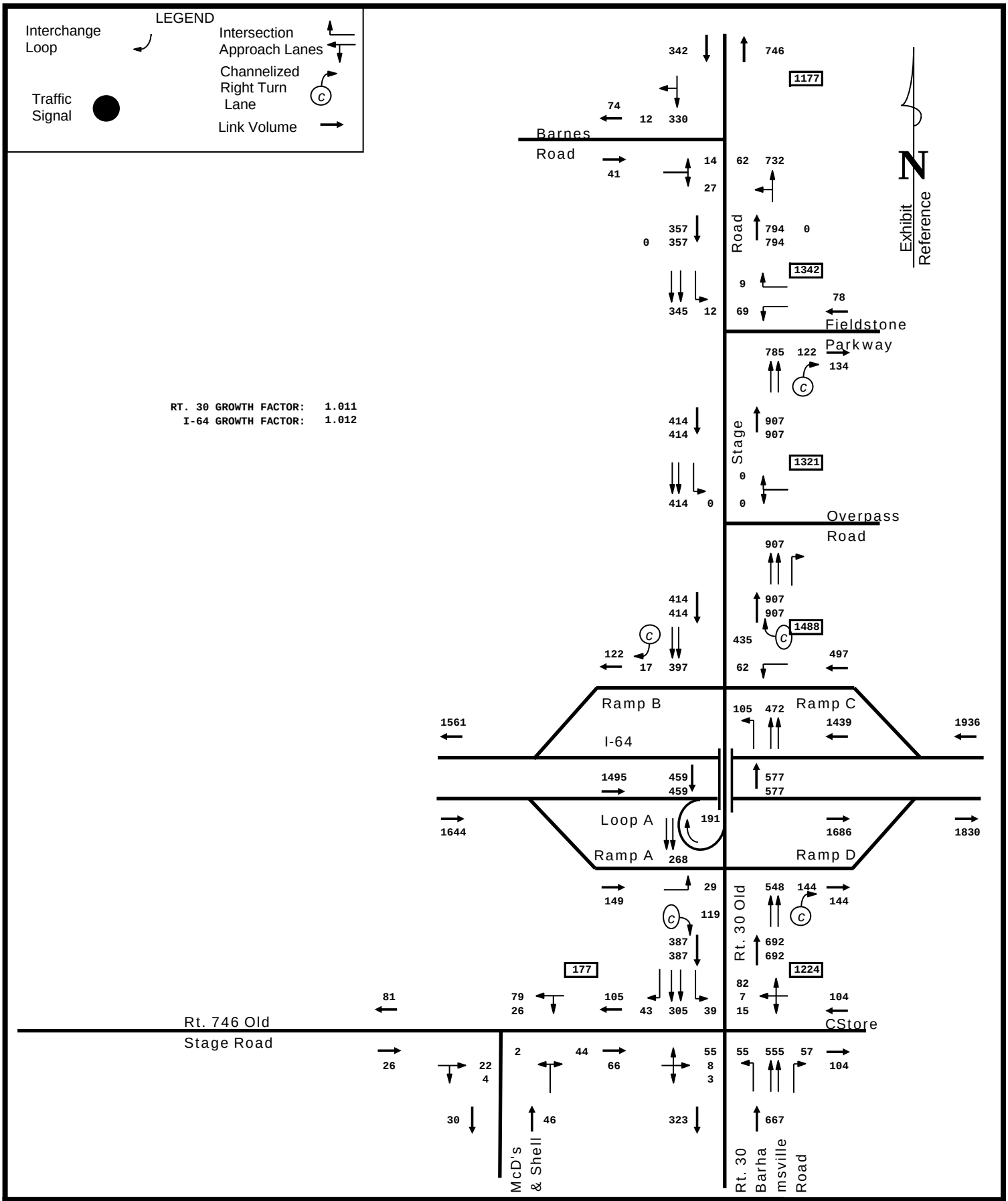
Exhibit 3b



2018 AM PEAK HOUR COUNTS

DRW Consultants, LLC
804-794-7312

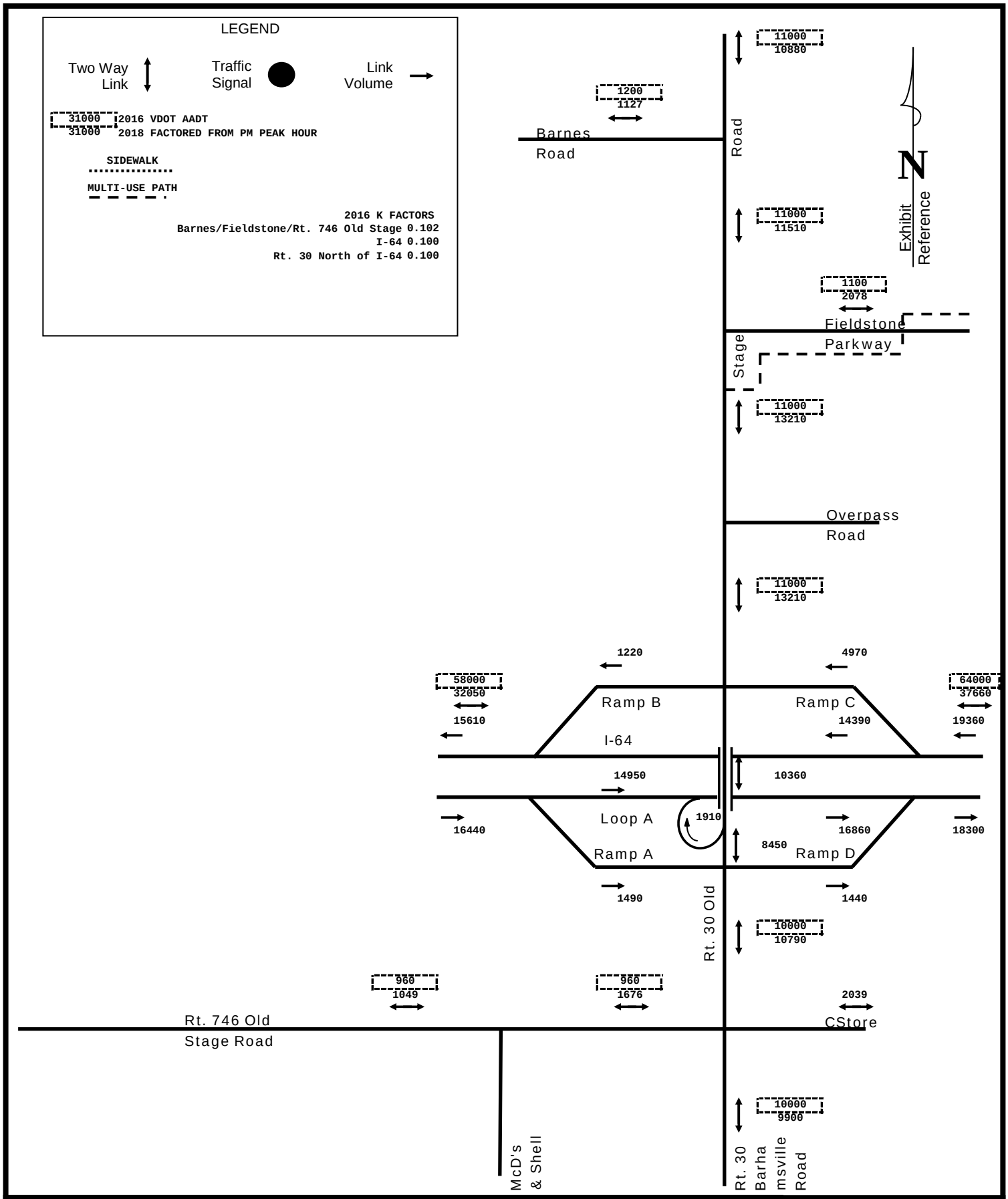
Exhibit 4a



2018 PM PEAK HOUR COUNTS

DRW Consultants, LLC
804-794-7312

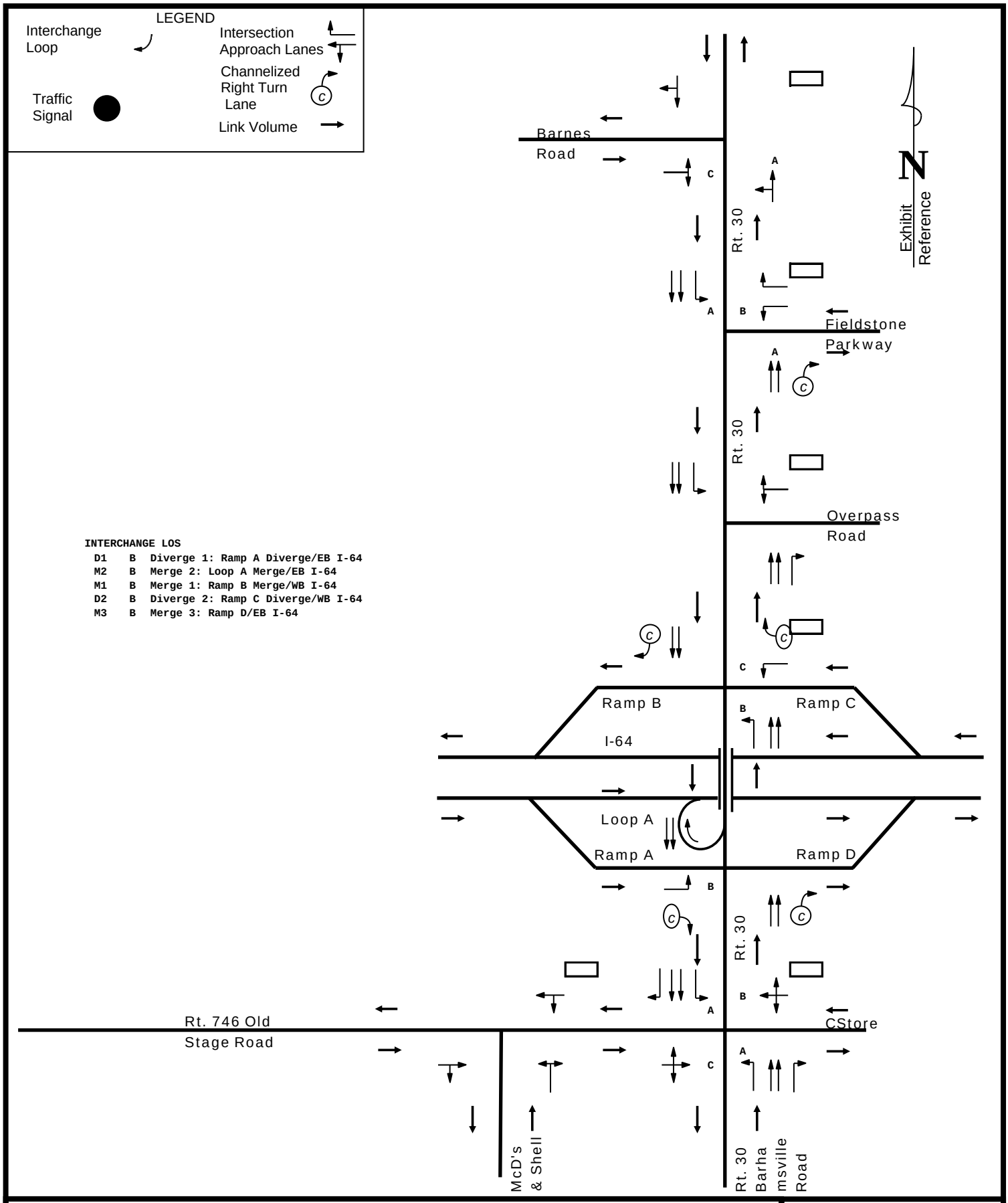
Exhibit 4b



2018 DAILY TRAFFIC
EXISTING SIDEWALKS, MULTI-USE (VDOT SHARED USE PATH), TRANSIT

DRW Consultants, LLC
804-794-7312

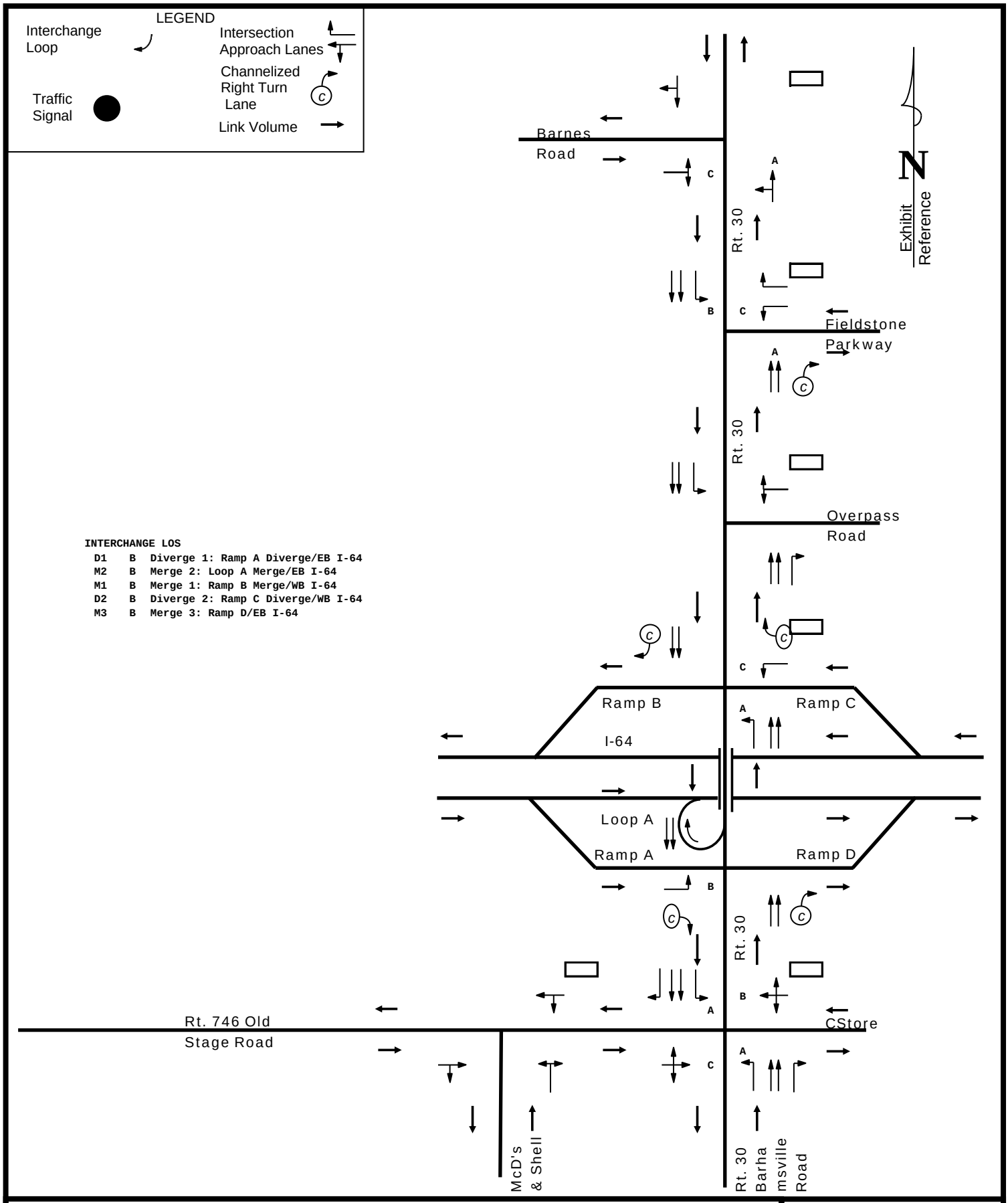
Exhibit 4c



2018 AM PEAK HOUR LEVEL OF SERVICE

DRW Consultants, LLC
804-794-7312

Exhibit 4d



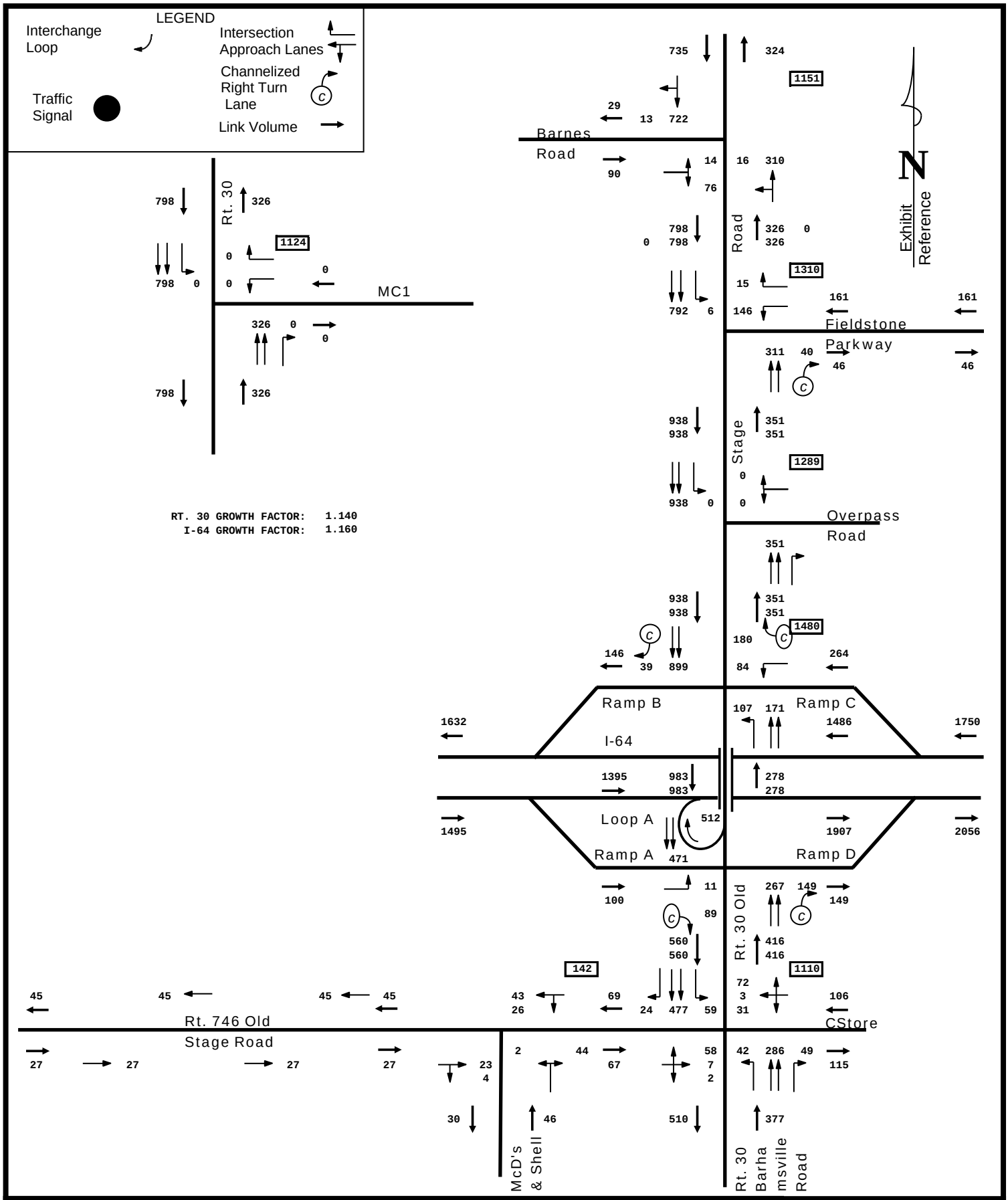
INTERCHANGE LOS

D1	B	Diverge 1: Ramp A Diverge/EB I-64
M2	B	Merge 2: Loop A Merge/EB I-64
M1	B	Merge 1: Ramp B Merge/WB I-64
D2	B	Diverge 2: Ramp C Diverge/WB I-64
M3	B	Merge 3: Ramp D/EB I-64

2018 PM PEAK HOUR LEVEL OF SERVICE

DRW Consultants, LLC
804-794-7312

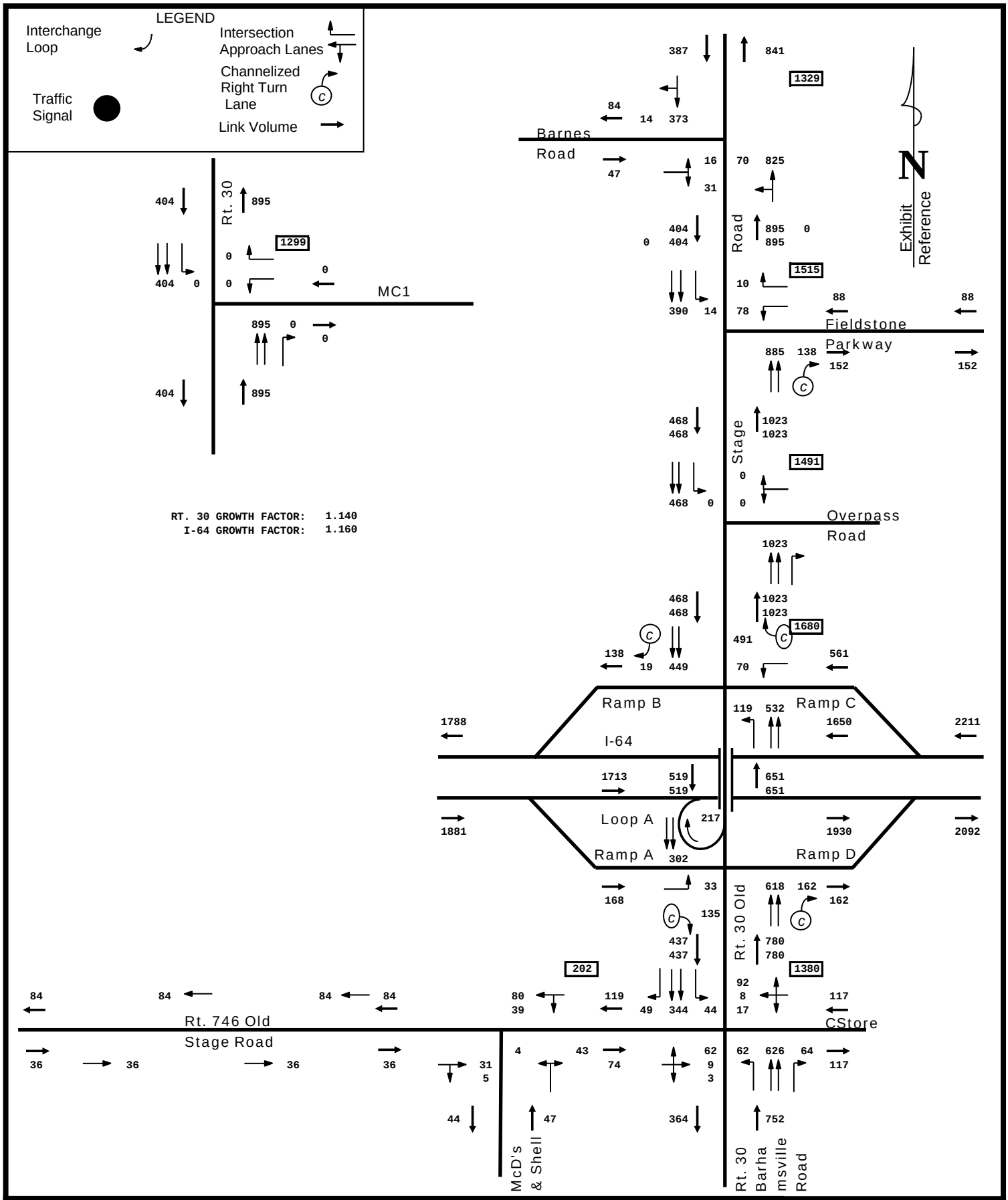
Exhibit 4e



2030 AM PEAK HOUR BACKGROUND TRAFFIC
GROWTH FACTOR ONLY

DRW Consultants, LLC
804-794-7312

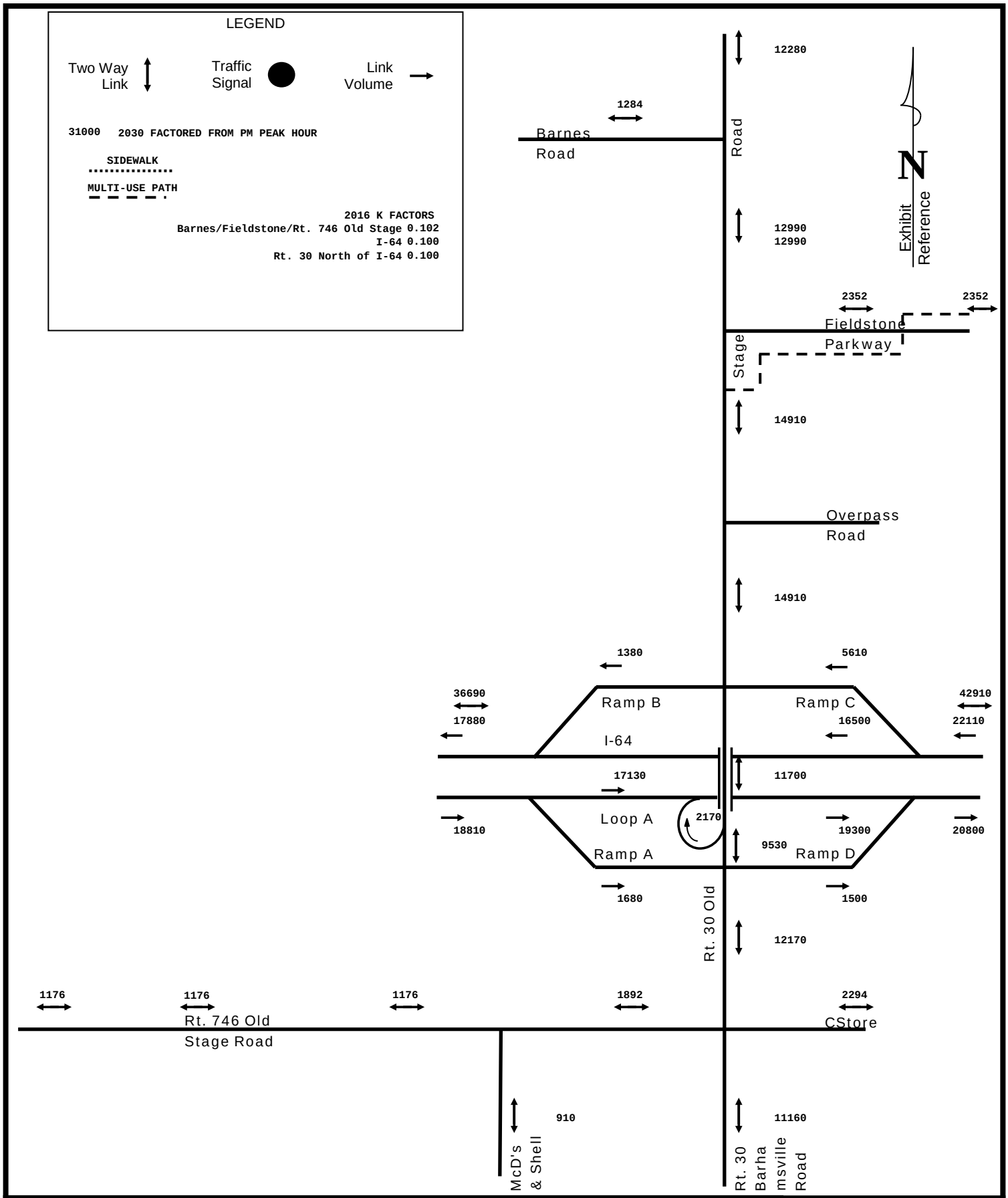
Exhibit 5a



2030 PM PEAK HOUR BACKGROUND TRAFFIC
GROWTH FACTOR ONLY

DRW Consultants, LLC
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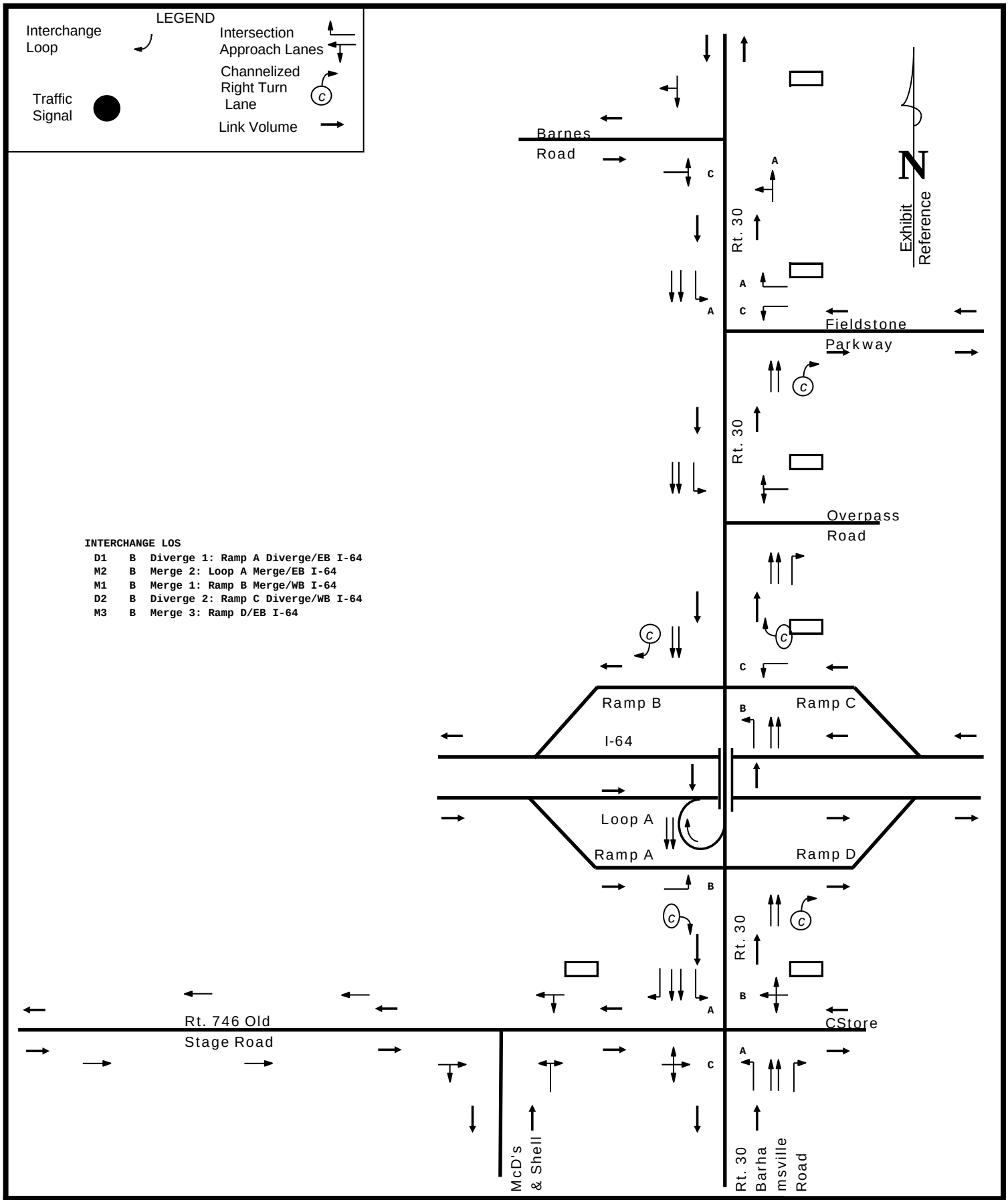
Exhibit 5b



2030 DAILY TRAFFIC GROWTH FACTOR ONLY
EXISTING SIDEWALKS, MULTI-USE (VDOT SHARED USE PATH), TRANSIT

DRW Consultants, LLC
804-794-7312

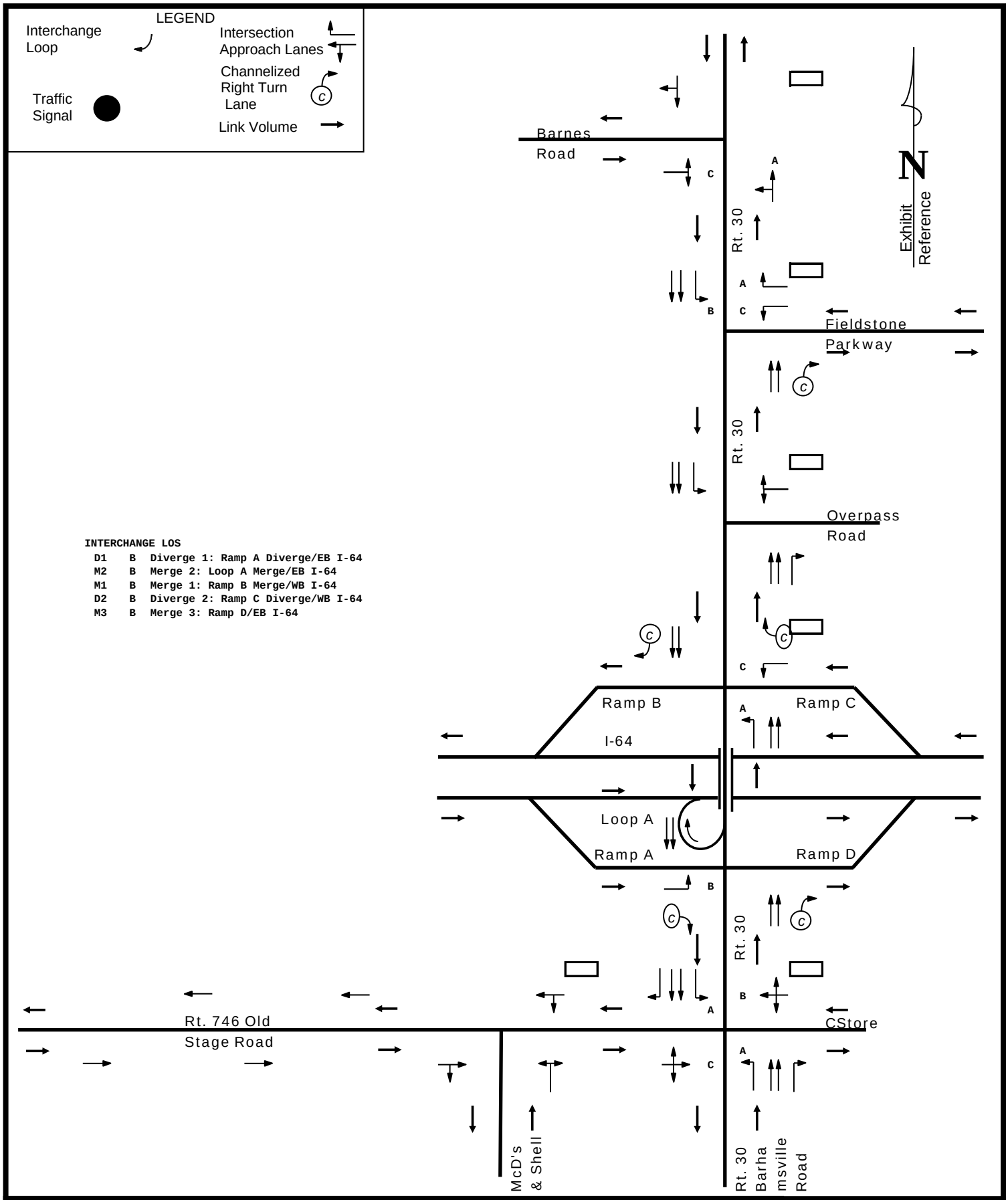
Exhibit 5c



2030 AM PEAK HOUR LEVEL OF SERVICE
BACKGROUND GROWTH FACTOR ONLY

DRW Consultants, LLC
804-794-7312

Exhibit 5d



2030 PM PEAK HOUR LEVEL OF SERVICE
BACKGROUND GROWTH FACTOR ONLY

DRW Consultants, LLC
804-794-7312

Exhibit 5e

VALUE	LAND USE	LAND USE CODE	SQ.FT., OTHER UNITS	WEEKDAY TRIP GENERATION AM PEAK HOUR Enter	Exit	Total	PM PEAK HOUR Enter	Exit	Total	DAILY
Table 1: North Hazelwood Farms Trip Generation										
eq.-adj. st.	Shopping Center	820	375,000 sq. ft.	210	129	339	694	751	1445	14769
eq.-adj. st.	Gen. Office Building	710	135,000 sq. ft.	132	21	153	24	127	151	1420
TOTAL TRIPS				342	150	492	718	878	1596	16189
	Internal Capture Trips (PM on Exhibit 8-4)		2.63%	7	7	14	21	21	42	426
	% Shopping Center Pass By Trips:		27 %	34	34	68	187	187	374	3987
	All Primary Trips			301	109	410	510	670	1180	11776

Table 2: North Hazelwood Farms Primary Trip Distribution K Factor: 0.09859

	AM Peak Hour Entering Traffic		AM Peak Hour Exiting Traffic		PM Peak Hour Entering Traffic		PM Peak Hour Exiting Traffic	
Direction	% Dist.	Trips	% Dist.	Trips	% Dist.	Trips	% Dist.	Trips
North Rt. 30	15%	46	15%	16	15%	77	15%	101
East I-64	30%	90	30%	33	30%	153	30%	201
South Rt. 30	25%	75	25%	27	25%	128	25%	168
West I-64	30%	90	30%	33	30%	152	30%	200
	100%	301	100%	109	100%	510	100%	670

Table 3: North Hazelwood Farms Pass By Trip Distribution

	AM Peak Hour Entering Traffic		AM Peak Hour Exiting Traffic		PM Peak Hour Entering Traffic		PM Peak Hour Exiting Traffic	
Direction	% Dist.	Trips	% Dist.	Trips	% Dist.	Trips	% Dist.	Trips
North Rt. 30	798	21	326	8	404	50	895	110
East Fieldstone	161	4	46	1	88	11	152	19
South Rt. 30	351	9	938	25	1023	126	468	58
	1310	34	1310	34	1515	187	1515	187

VALUE	LAND USE	LAND USE CODE	SQ.FT., OTHER UNITS	WEEKDAY TRIP GENERATION AM PEAK HOUR Enter	Exit	Total	PM PEAK HOUR Enter	Exit	Total	DAILY
Table 4: South Hazelwood Farms Trip Generation										
eq.-adj. st.	Warehousing	150	2,920,000 sq. ft.	290	86	376	102	276	378	4659
eq.-adj. st.	Shopping Center	820	75,000 sq. ft.	117	72	189	211	228	439	4944
eq.-adj. st.	Multifamily Mid Rise	221	300 units	26	74	100	77	50	127	1633
TOTAL TRIPS				433	232	665	390	554	944	11236
	Internal Capture Trips (PM on Exhibit 8-5)		11.86%	40	40	80	56	56	112	1333
	% Shopping Center Pass By Trips:		42 %	30	30	60	88	88	176	2076
	All Primary Trips			363	162	525	246	410	656	7827

Table 5: South Hazelwood Farms Primary Trip Distribution K Factor: 0.08402

	AM Peak Hour Entering Traffic		AM Peak Hour Exiting Traffic		PM Peak Hour Entering Traffic		PM Peak Hour Exiting Traffic	
Direction	% Dist.	Trips	% Dist.	Trips	% Dist.	Trips	% Dist.	Trips
North Rt. 30	10%	36	10%	16	10%	25	10%	41
East I-64	25%	91	25%	41	25%	62	25%	103
South Rt. 30	37%	134	37%	60	37%	91	37%	152
West Rt. 746	3%	11	3%	5	3%	7	3%	12
West I-64	25%	91	25%	40	25%	61	25%	102
	100%	363	100%	162	100%	246	100%	410

Table 6: South Hazelwood Farms Pass By Trip Distribution

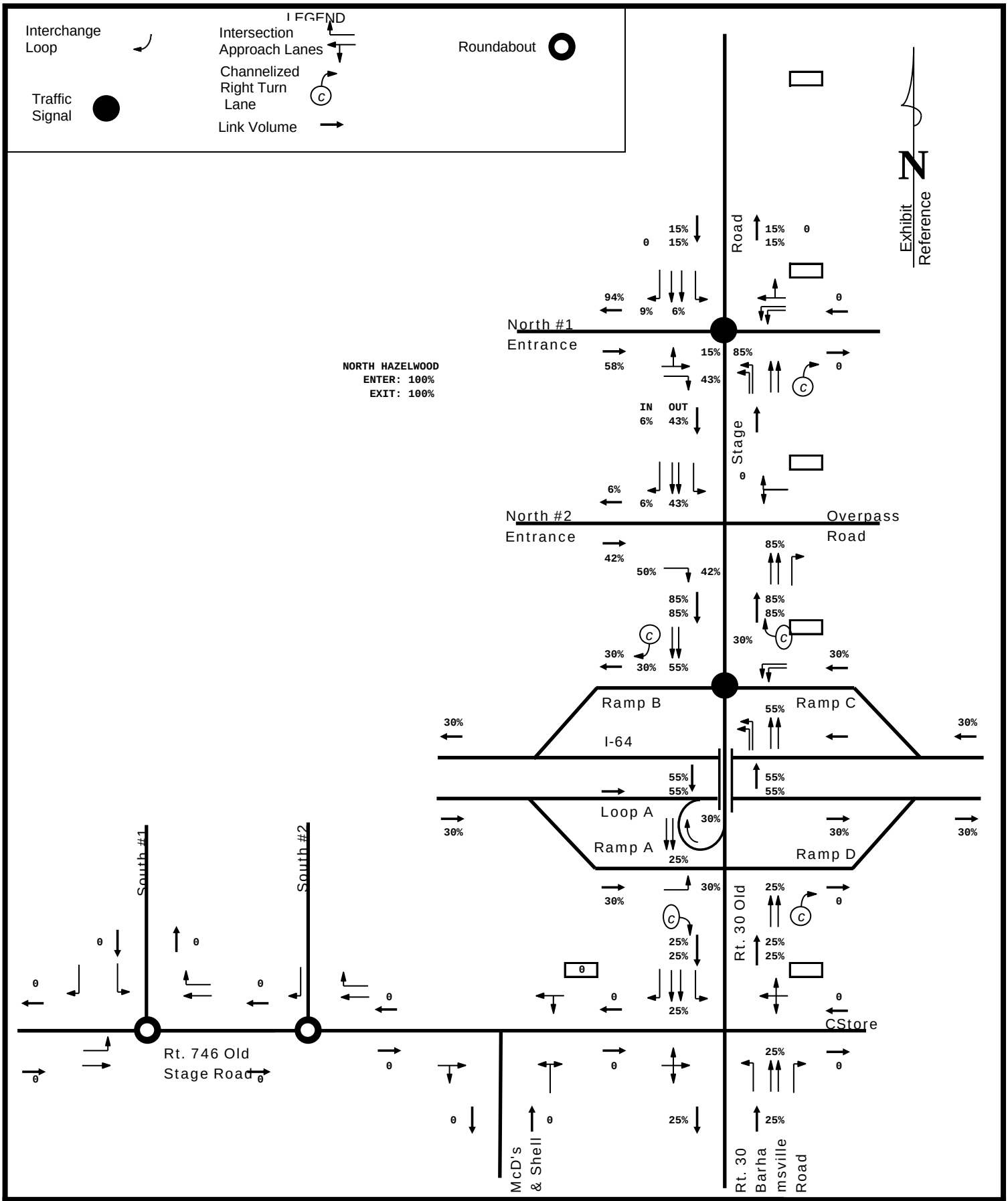
	AM Peak Hour Entering Traffic		AM Peak Hour Exiting Traffic		PM Peak Hour Entering Traffic		PM Peak Hour Exiting Traffic	
Direction	% Dist.	Trips	% Dist.	Trips	% Dist.	Trips	% Dist.	Trips
North Rt. 30	477	19		11	344	31		57
South Rt. 30	286	11		19	626	57		31
	763	30		30	970	88		88

HAZELWOOD FARMS
TRIP GENERATION AND DISTRIBUTION

DRW Consultants, LLC
804-794-7312

Trip generation rates from Trip Generation Manual, 10th Edition (TGM10) by the Institute of Transportation Engineers (ITE)

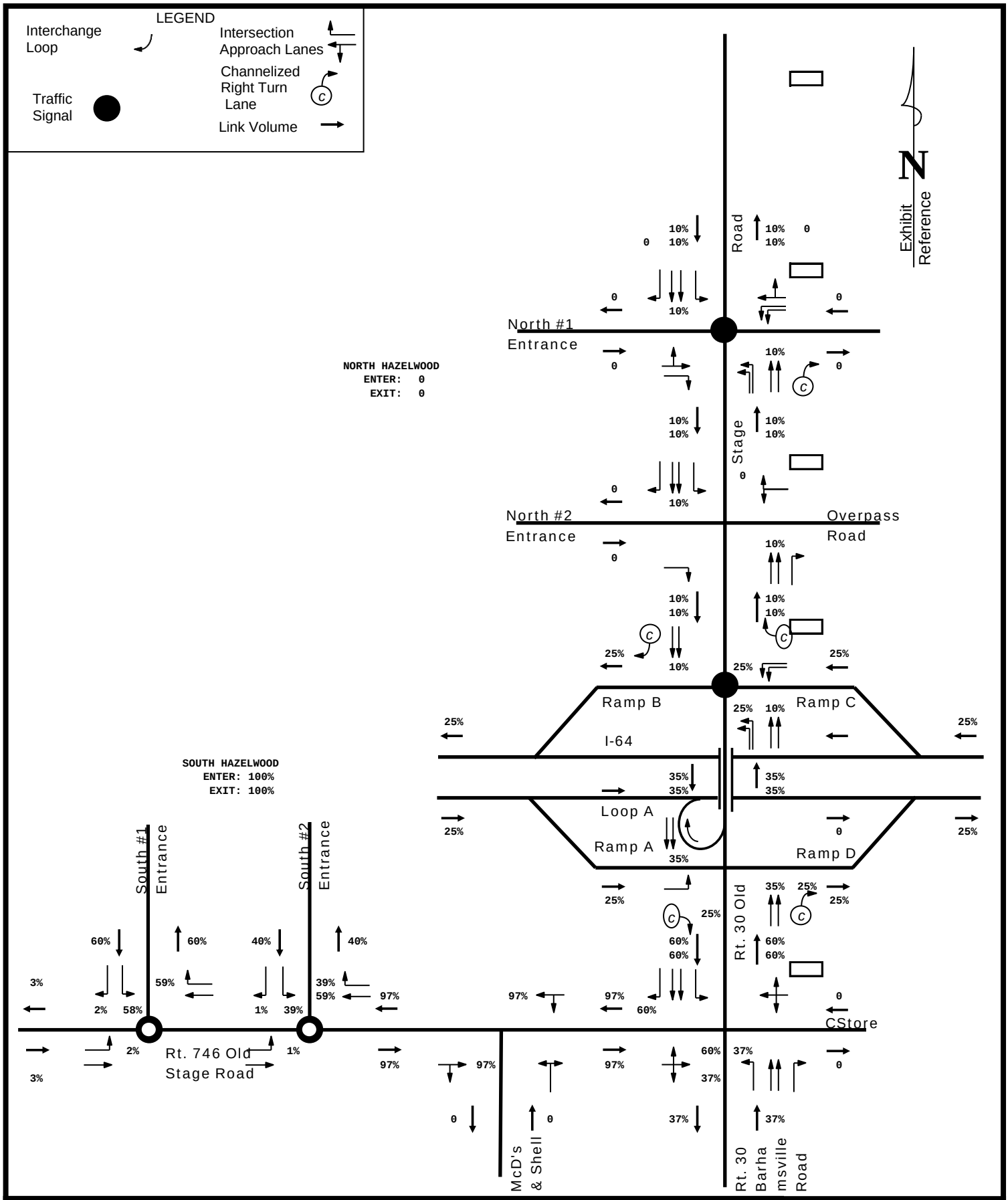
Exhibit 6-1



NORTH HAZELWOOD FARMS
PRIMARY TRIP DISTRIBUTION PERCENTAGES

DRW Consultants, LLC
804-794-7312

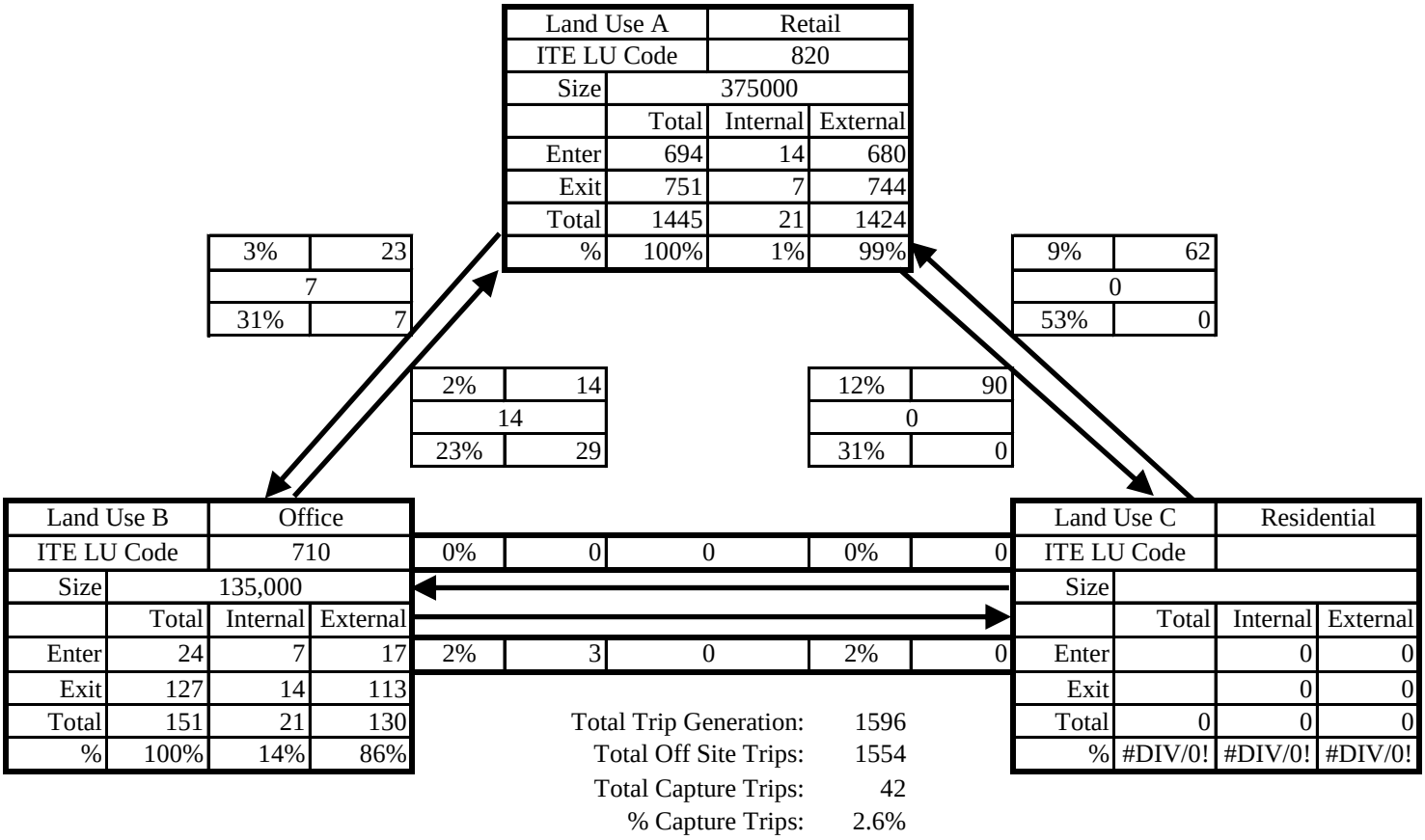
Exhibit 6-2



SOUTH HAZELWOOD FARMS
PRIMARY TRIP DISTRIBUTION PERCENTAGES

DRW Consultants, LLC
804-794-7312

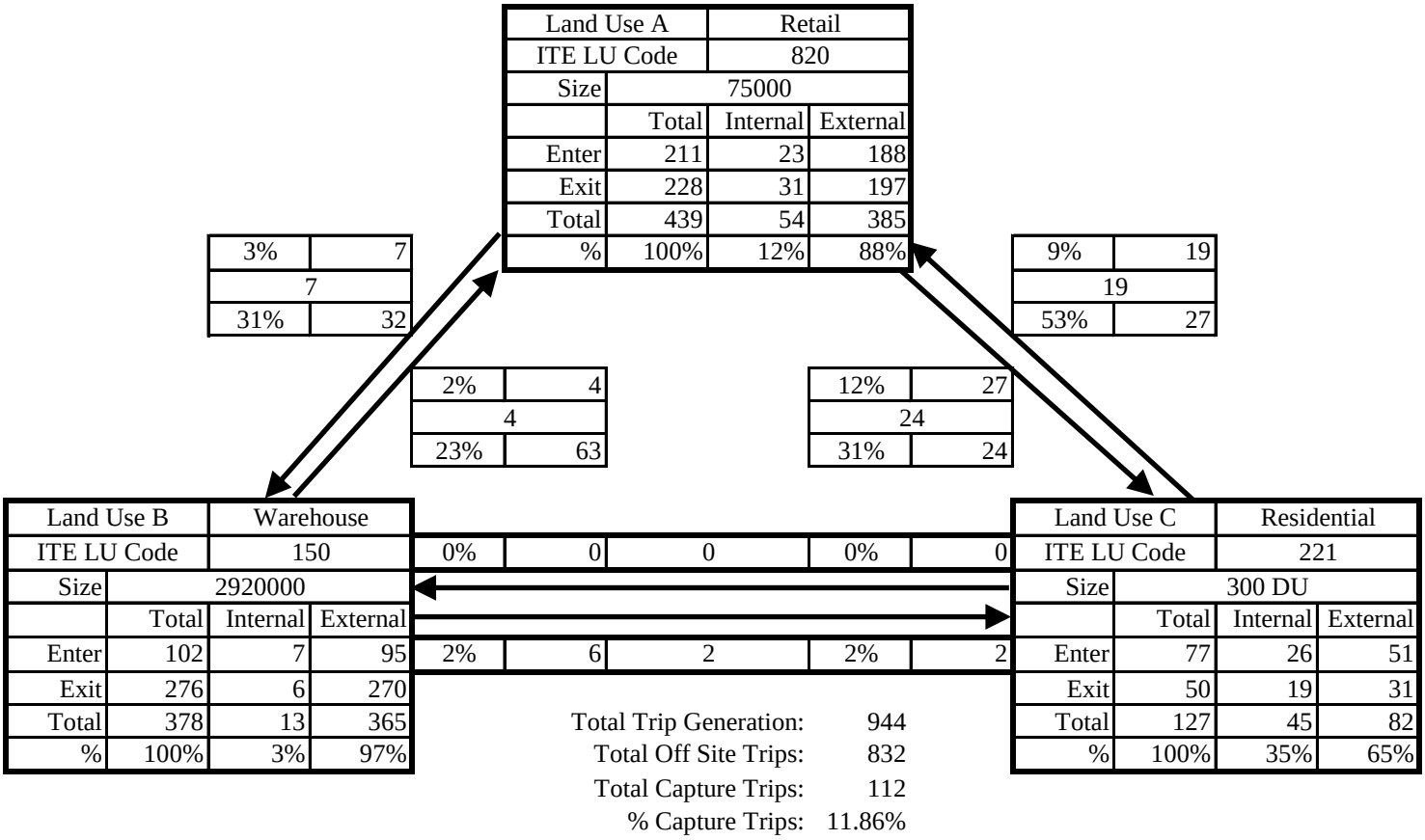
Exhibit 6-3



TRIP GENERATION HANDBOOK, SECOND EDITION
PM PEAK HOUR INTERNAL CAPTURE CALCULATION
NORTH HAZELWOOD FARMS

DRW Consultants, LLC
804-794-7312

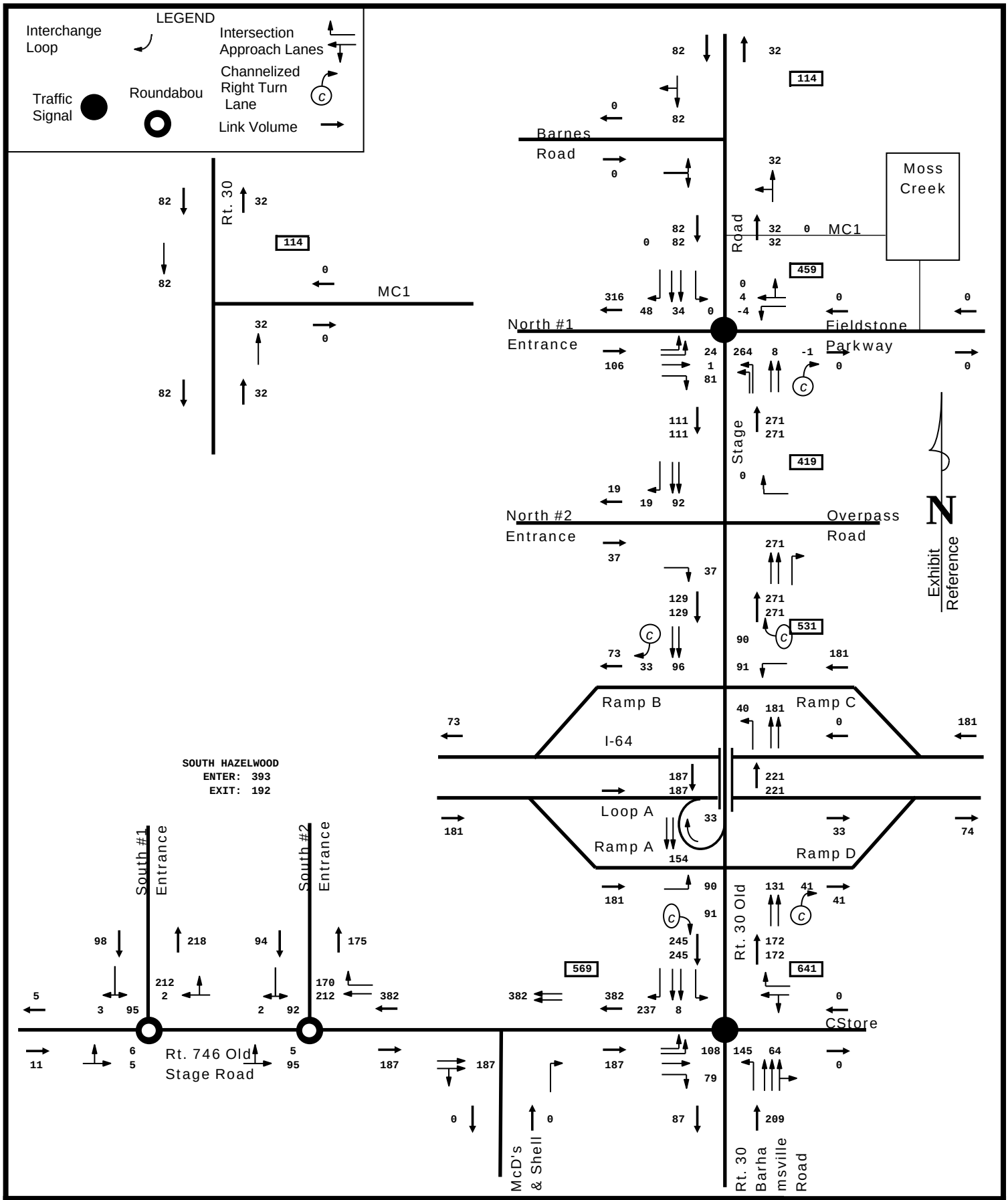
Exhibit 6-4



TRIP GENERATION HANDBOOK, SECOND EDITION
PM PEAK HOUR INTERNAL CAPTURE CALCULATION
SOUTH HAZELWOOD FARMS

DRW Consultants, LLC
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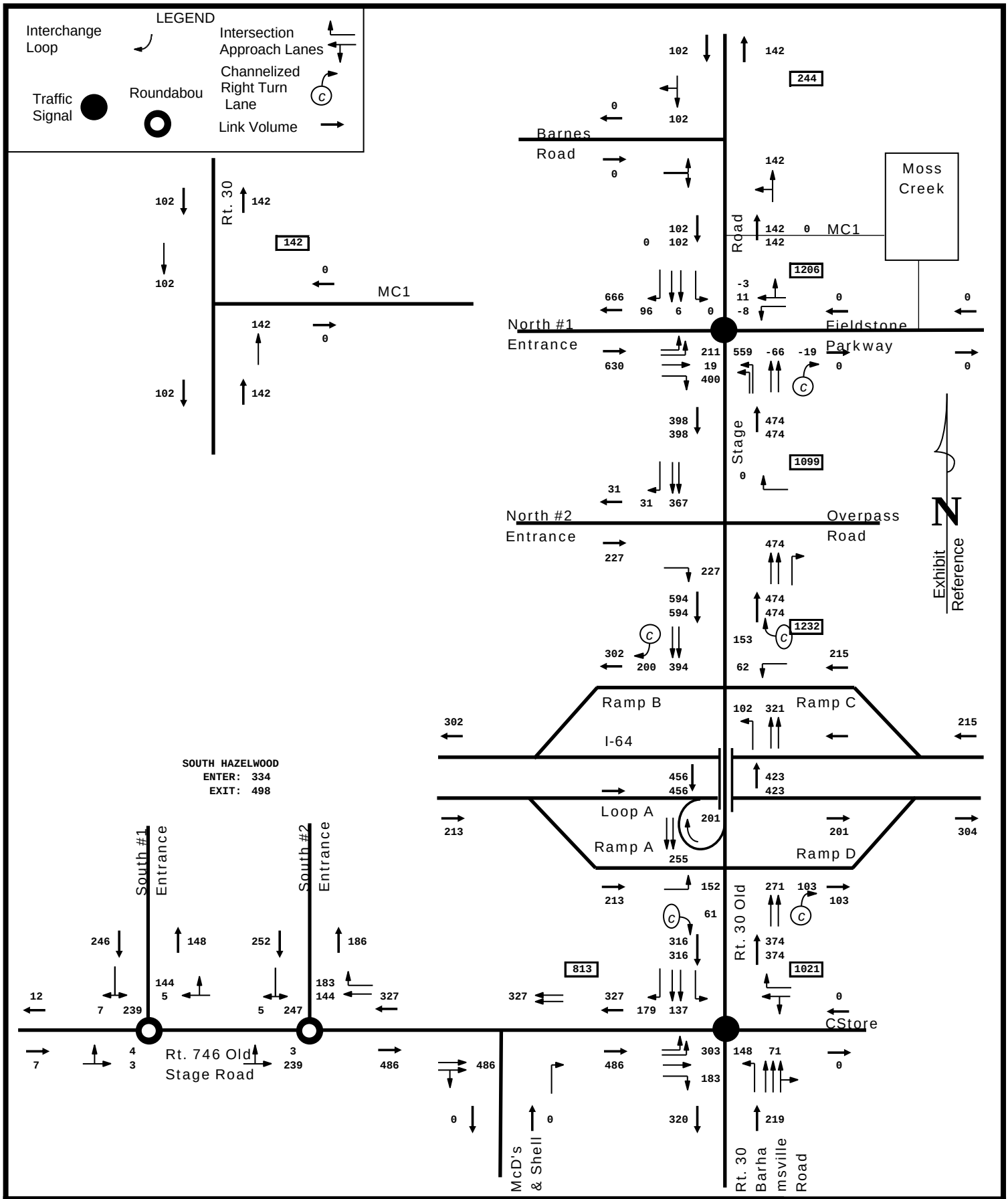
Exhibit 6-5



NORTH AND SOUTH HAZELWOOD FARMS
AM PEAK HOUR TRIPS

DRW Consultants, LLC
804-794-7312

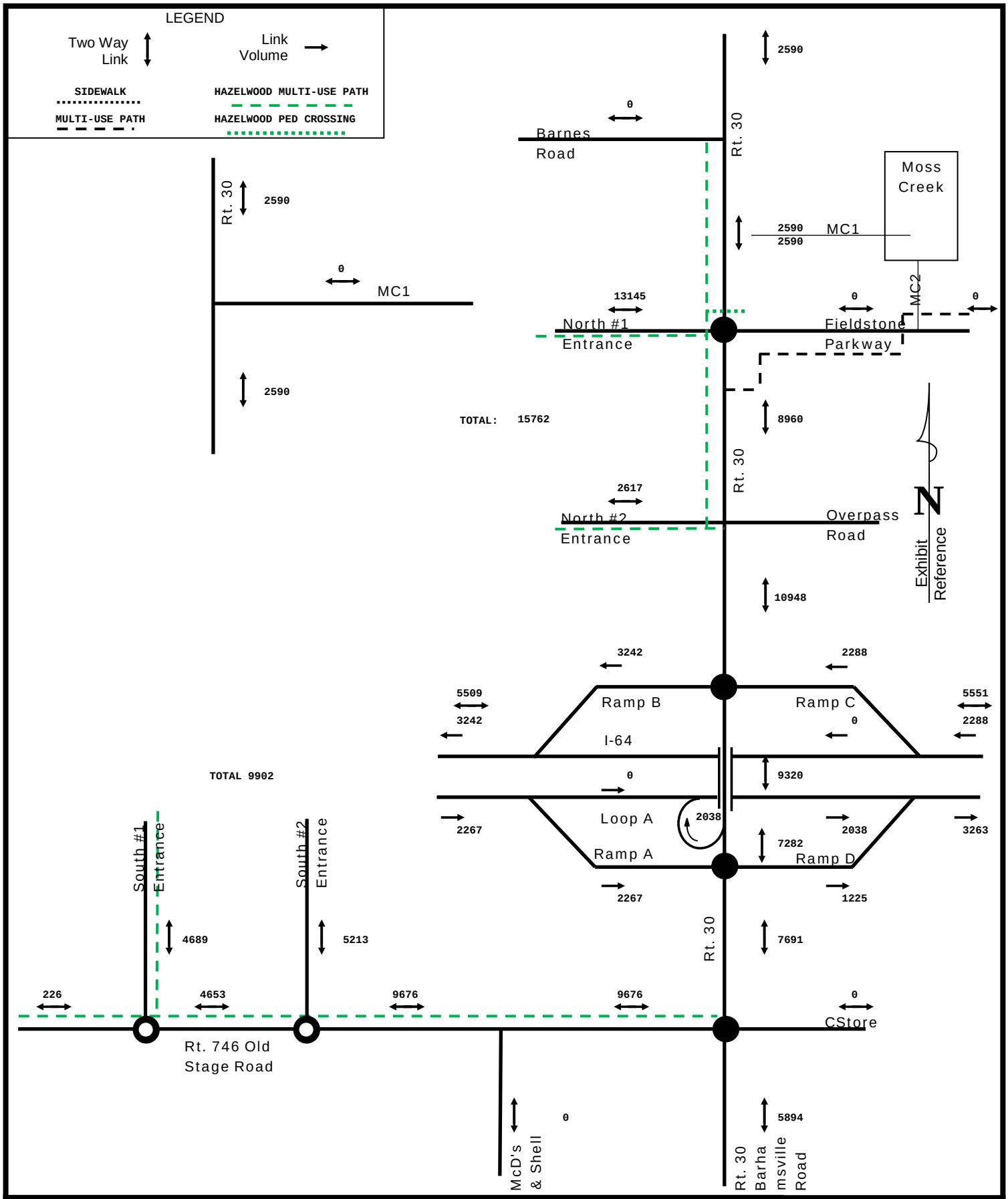
Exhibit 7a



NORTH AND SOUTH HAZELWOOD FARMS
PM PEAK HOUR TRIPS

DRW Consultants, LLC
804-794-7312

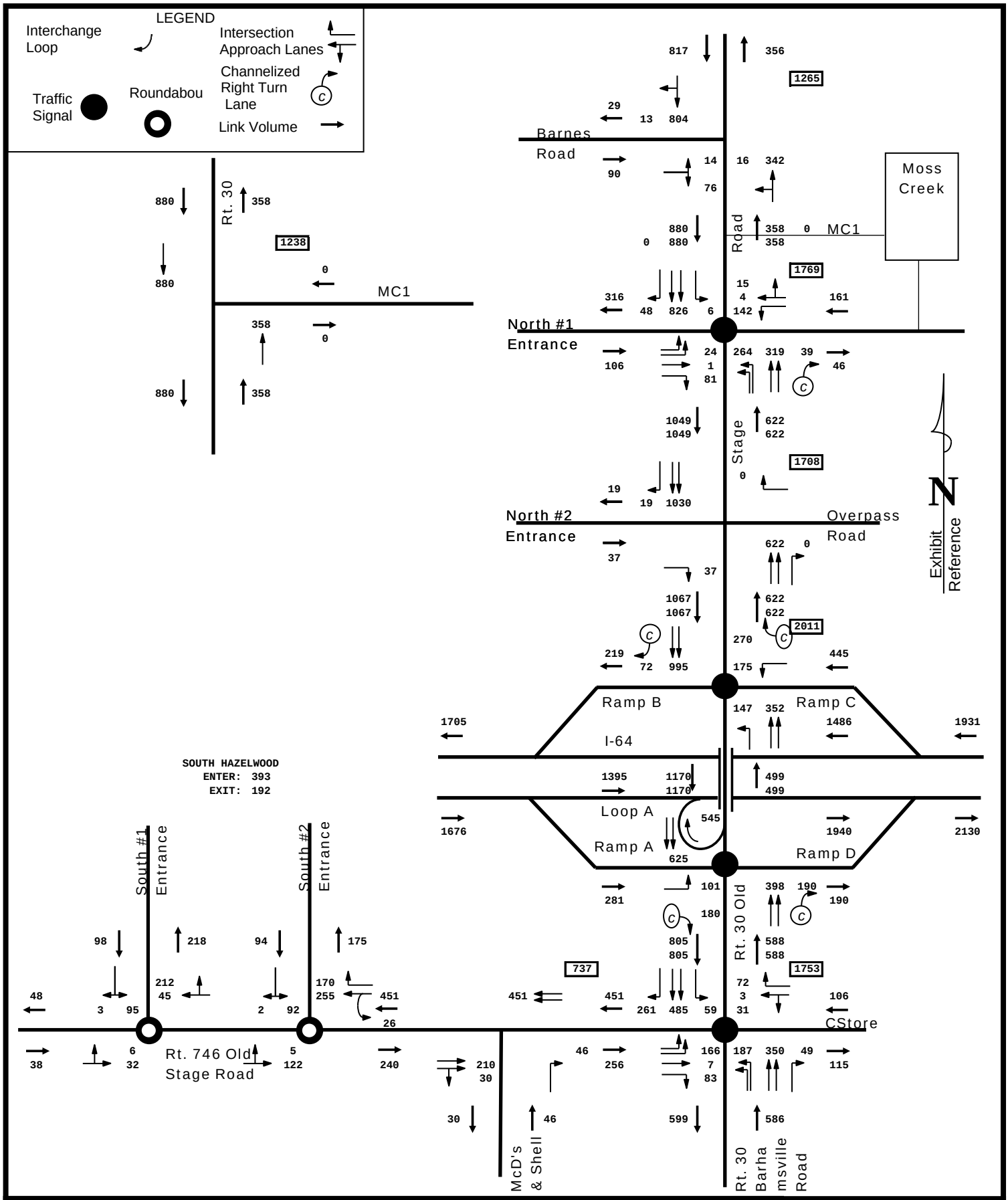
Exhibit 7b



NORTH AND SOUTH HAZELWOOD FARMS DAILY TRAFFIC
SIDEWALKS, MULTI-USE (VDOT SHARED USE PATH), TRANSIT

DRW Consultants, LLC
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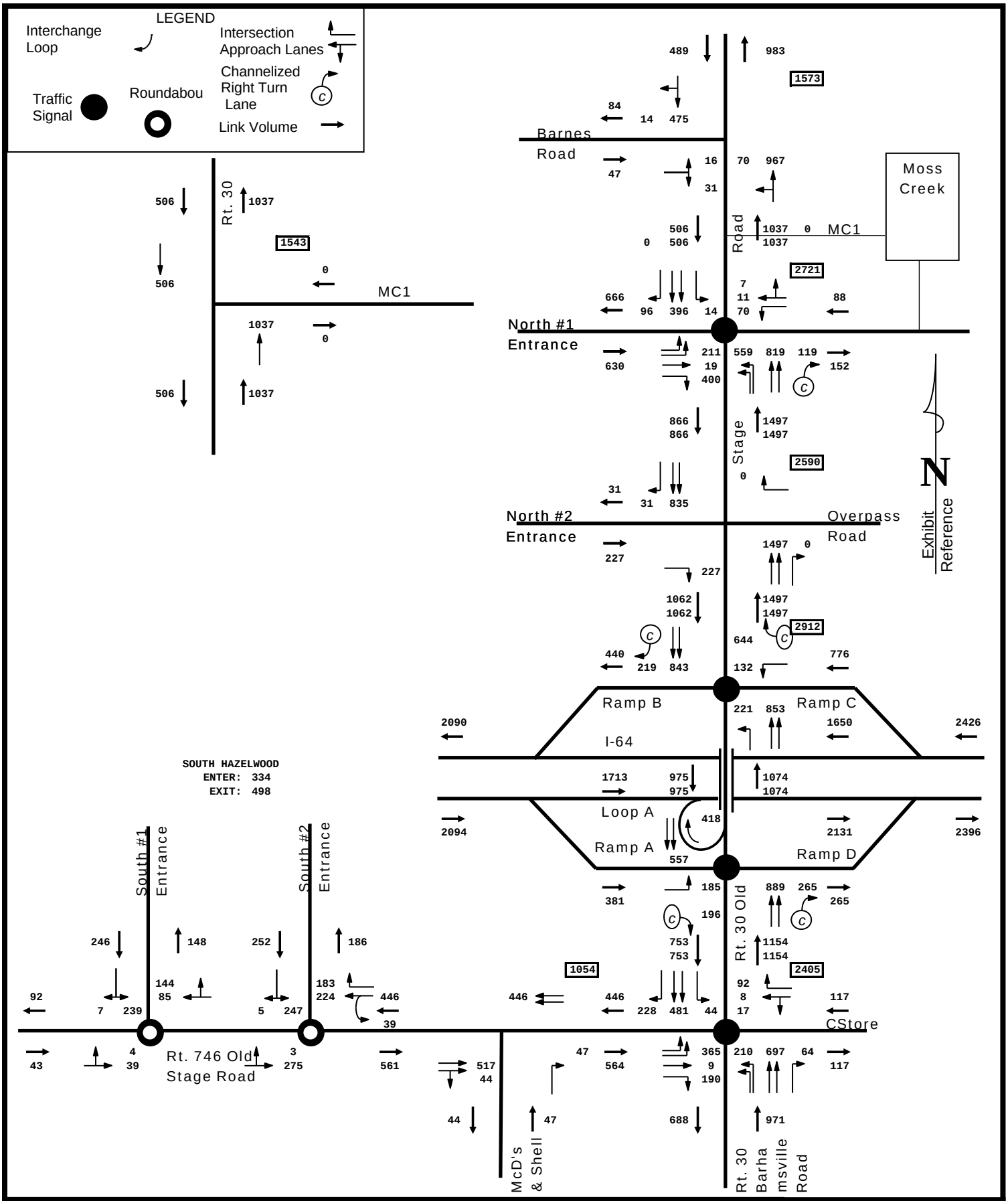
Exhibit 7c



2030 AM PEAK HOUR TOTAL TRAFFIC WITH HAZELWOOD FARMS

DRW Consultants, LLC
804-794-7312

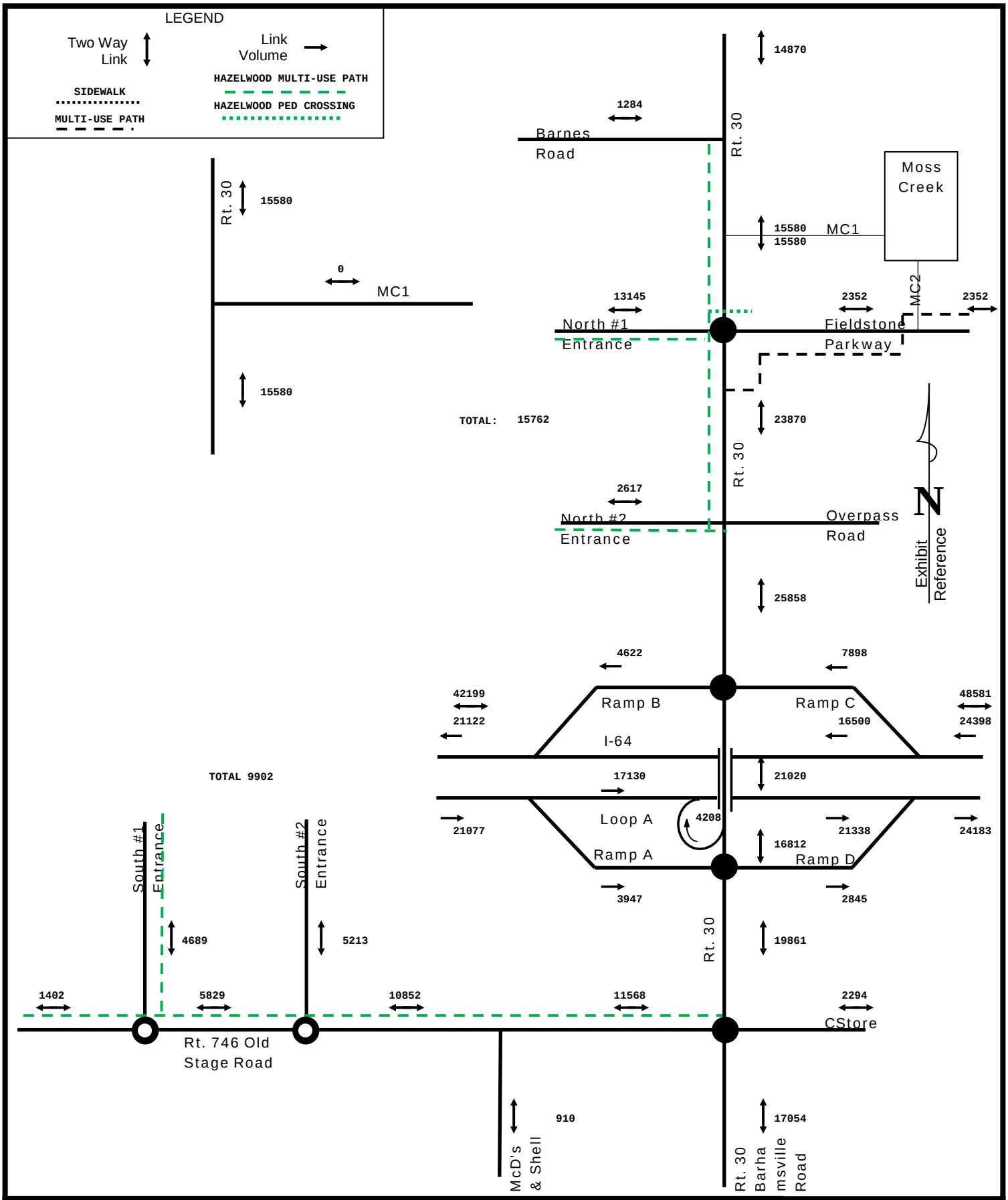
Exhibit 8a



2030 PM PEAK HOUR TOTAL TRAFFIC WITH HAZELWOOD FARMS

DRW Consultants, LLC
804-794-7312

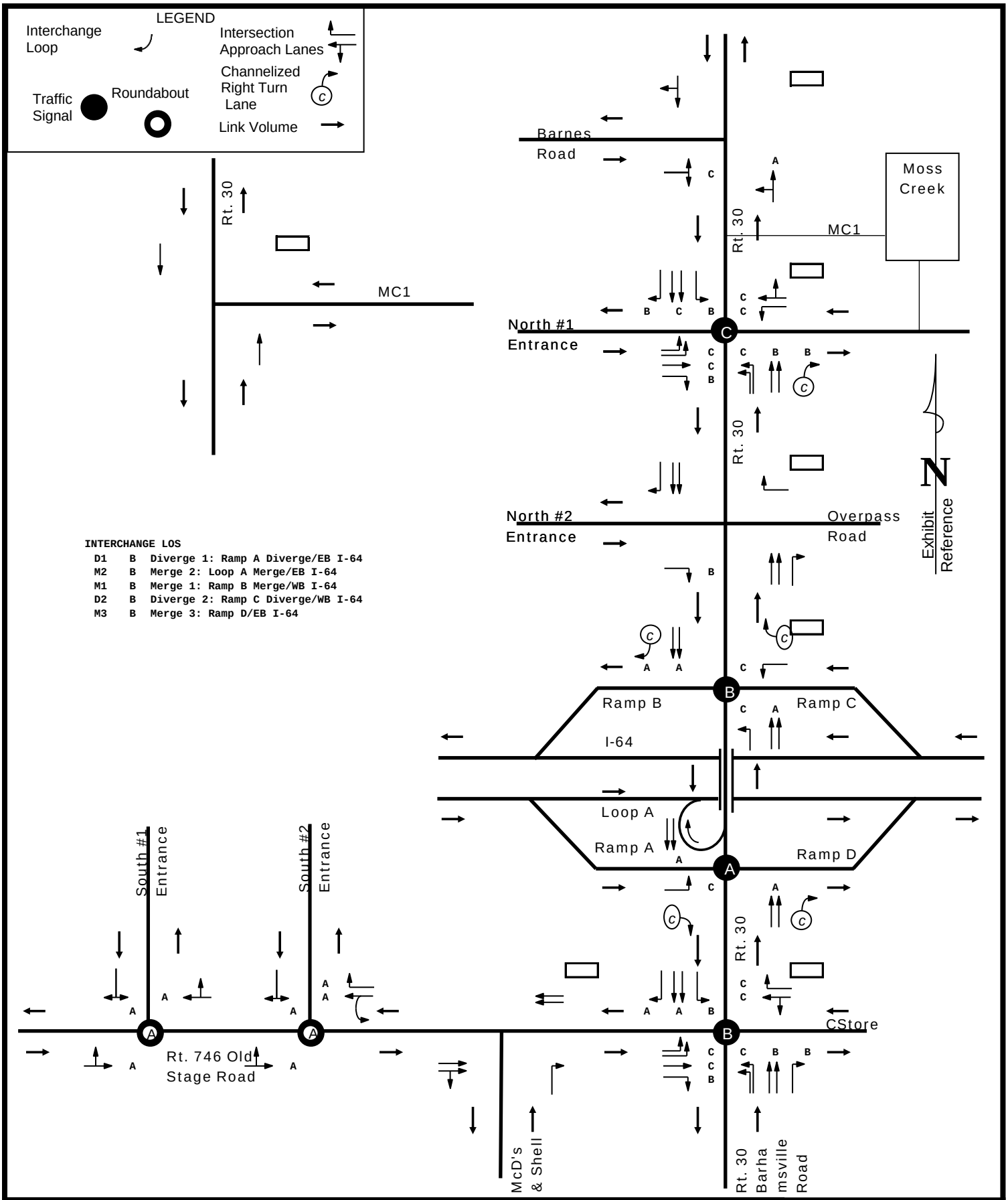
Exhibit 8b



2030 TOTAL DAILY TRAFFIC WITH HAZELWOOD FARMS SIDEWALKS, MULTI-USE (VDOT SHARED USE PATH), TRANSIT

DRW Consultants, LLC
804-794-7312

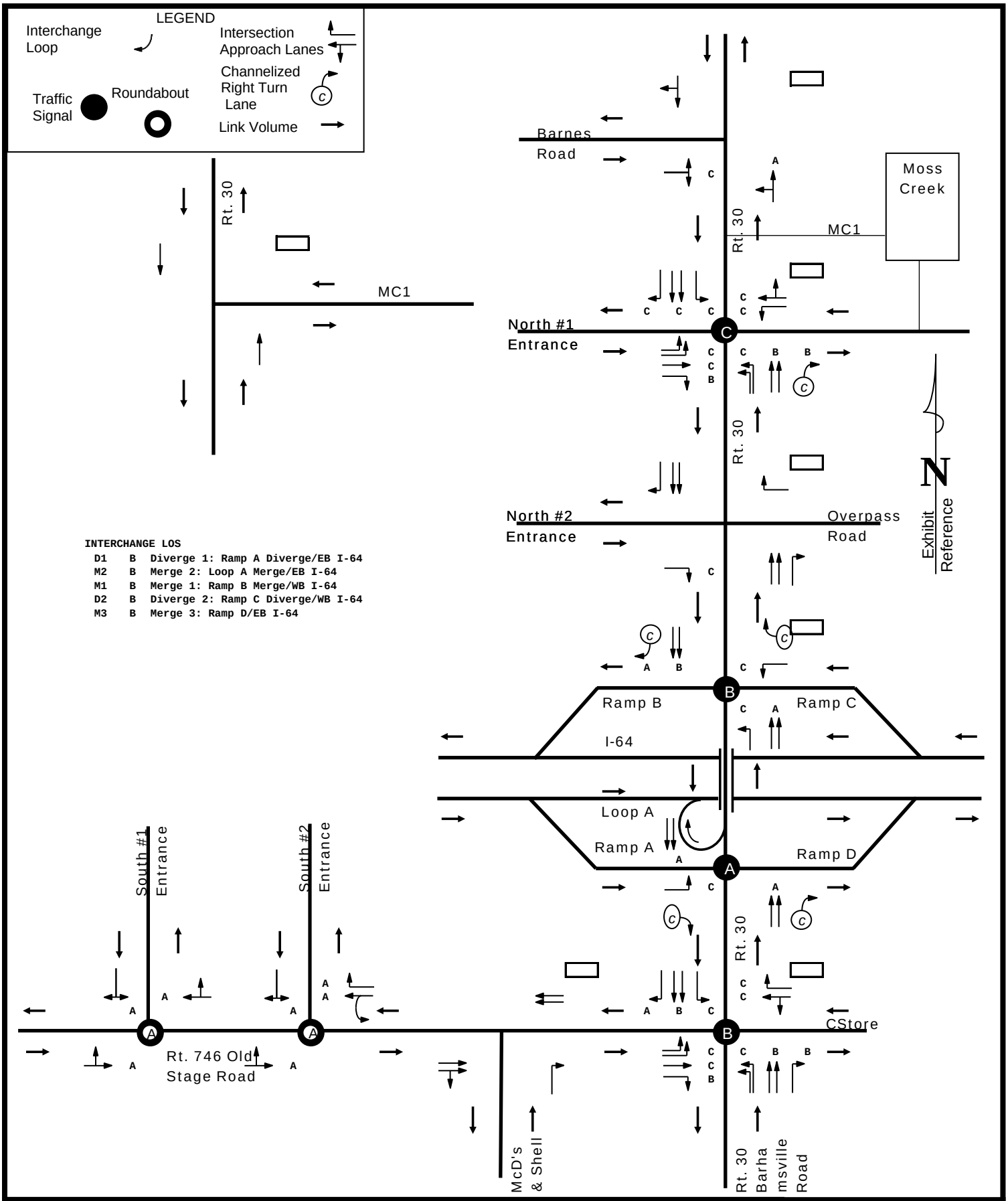
Exhibit 8c



2030 AM PEAK HOUR LEVEL OF SERVICE: 70 SECOND CYCLE
HAZELWOOD FARMS ONLY

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Exhibit 8d



INTERCHANGE LOS

D1	B	Diverge 1: Ramp A Diverge/EB I-64
M2	B	Merge 2: Loop A Merge/EB I-64
M1	B	Merge 1: Ramp B Merge/WB I-64
D2	B	Diverge 2: Ramp C Diverge/WB I-64
M3	B	Merge 3: Ramp D/EB I-64

2030 PM PEAK HOUR LEVEL OF SERVICE: 70 SECOND CYCLE
HAZELWOOD FARMS ONLY

DRW Consultants, LLC
804-794-7312

Exhibit 8e

VALUE	LAND USE	LAND USE CODE	SQ.FT., OTHER UNITS	WEEKDAY TRIP GENERATION						
				AM PEAK HOUR			PM PEAK HOUR			
				Enter	Exit	Total	Enter	Exit	Total	DAILY
Table 1: Moss Creek Trip Generation - LandMark Traffic Study March 2006										
			TOTAL TRIPS	204	142	346	317	341	658	7167
			PASS BY TRIPS	28	28	56	52	52	104	1278
			PRIMARY TRIPS	176	114	290	265	289	554	5889

Table 2: Moss Creek Primary Trip Distribution k factor: 0.09181

	AM Peak Hour					PM Peak Hour			
	Entering Traffic		Exiting Traffic			Entering Traffic		Exiting Traffic	
Direction	% Dist.	Trips	% Dist.	Trips		% Dist.	Trips	% Dist.	Trips
North Rt. 30	20%	35	20%	23		20%	53	20%	58
East Fieldstone	10%	18	10%	11		10%	27	10%	29
East I-64	25%	44	25%	29		25%	66	25%	72
South Rt. 30	20%	35	20%	23		20%	53	20%	58
West I-64	25%	44	25%	28		25%	66	25%	72
	100%	176	100%	114		100%	265	100%	289

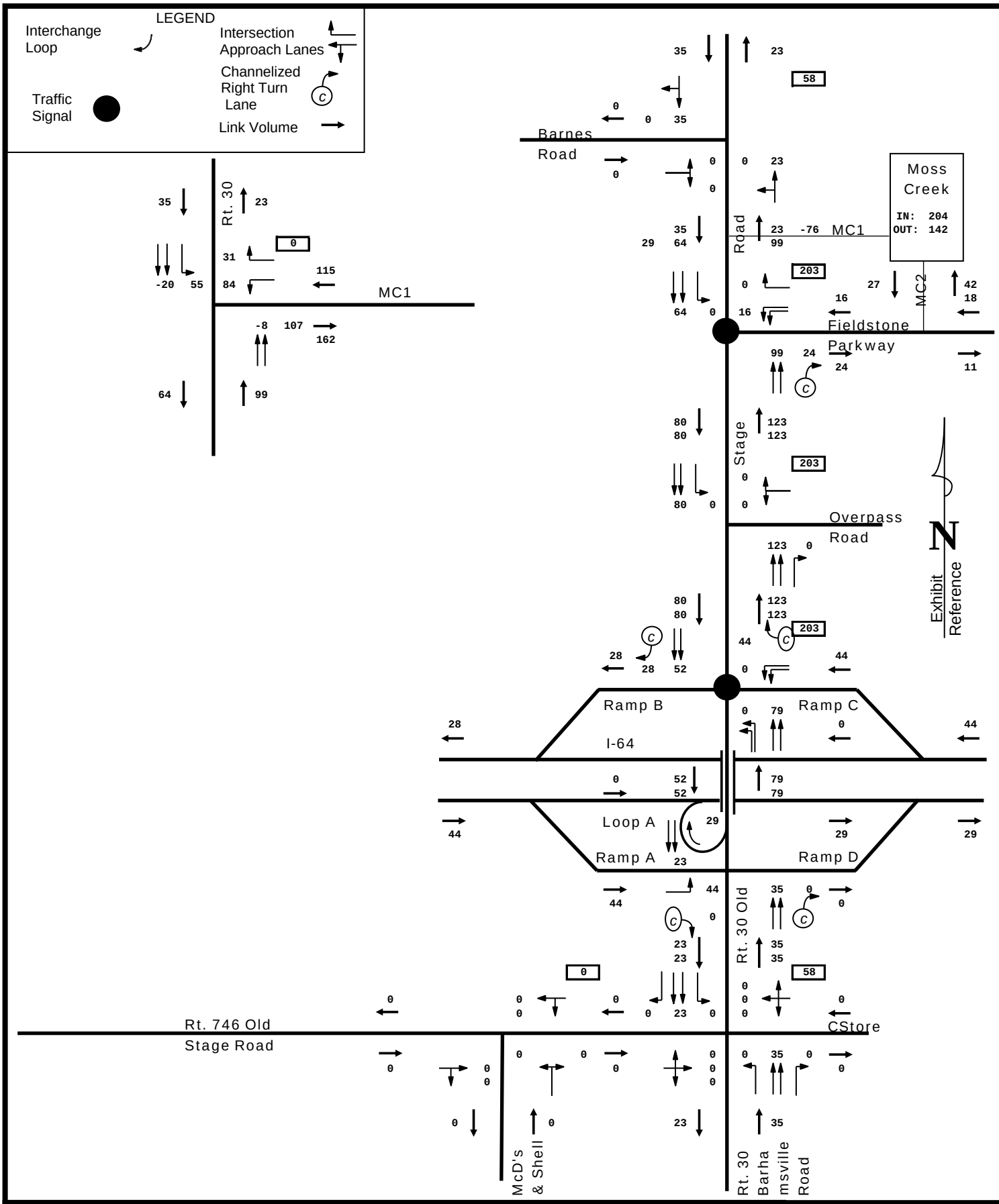
Table 3: Moss Creek Pass By Trip Distribution

	AM Peak Hour					PM Peak Hour			
	Entering Traffic		Exiting Traffic			Entering Traffic		Exiting Traffic	
Direction	% Dist.	Trips	% Dist.	Trips		% Dist.	Trips	% Dist.	Trips
North Rt. 30	798	20	326	8		404	16	895	36
South Rt. 30	326	8	798	20		895	36	404	16
	1124	28	1124	28		1299	52	1299	52

MOSS CREEK TRIP GENERATION AND DISTRIBUTION

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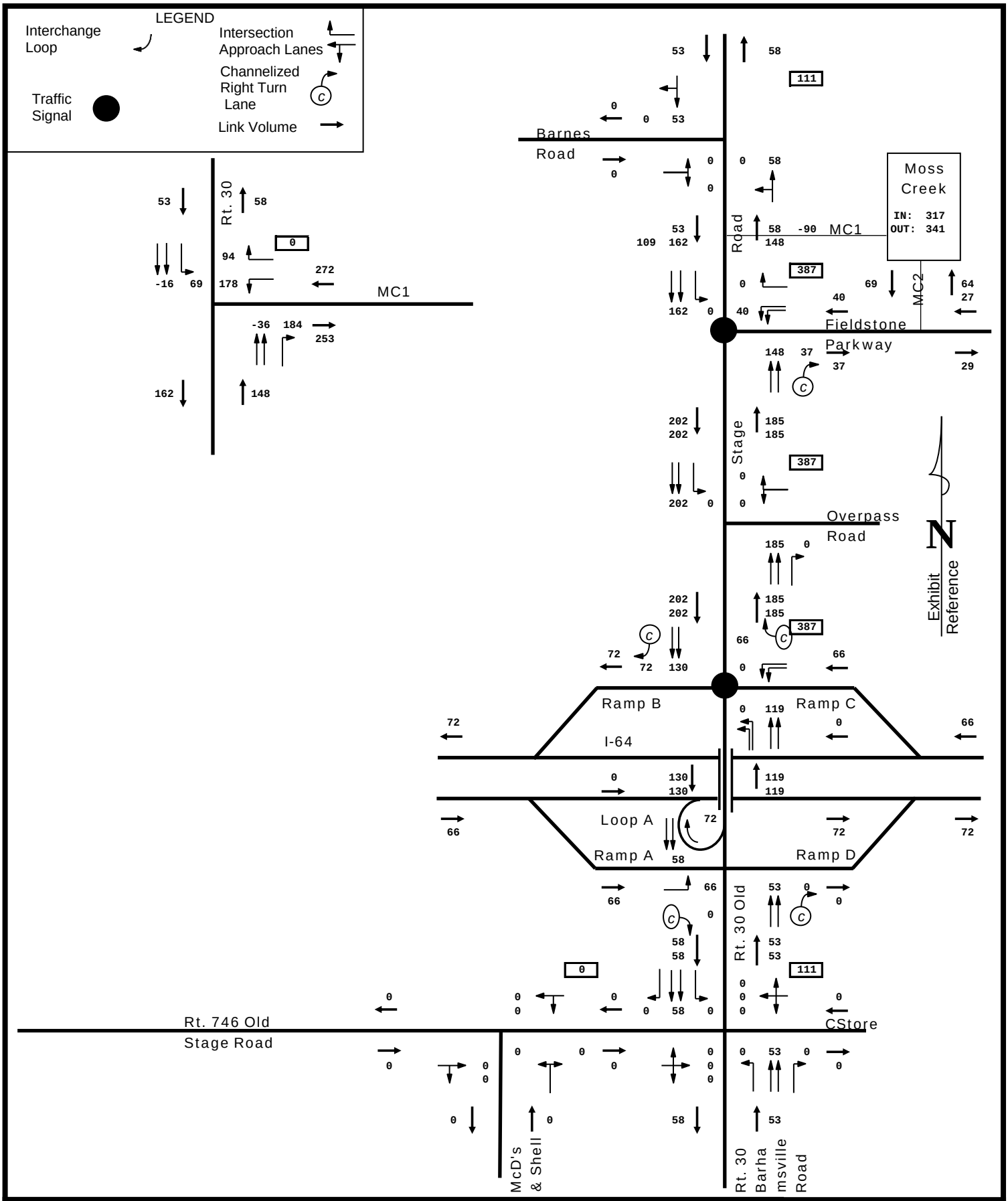
Exhibit 9



MOSS CREEK AM PEAK HOUR TRAFFIC

DRW Consultants, LLC
804-794-7312

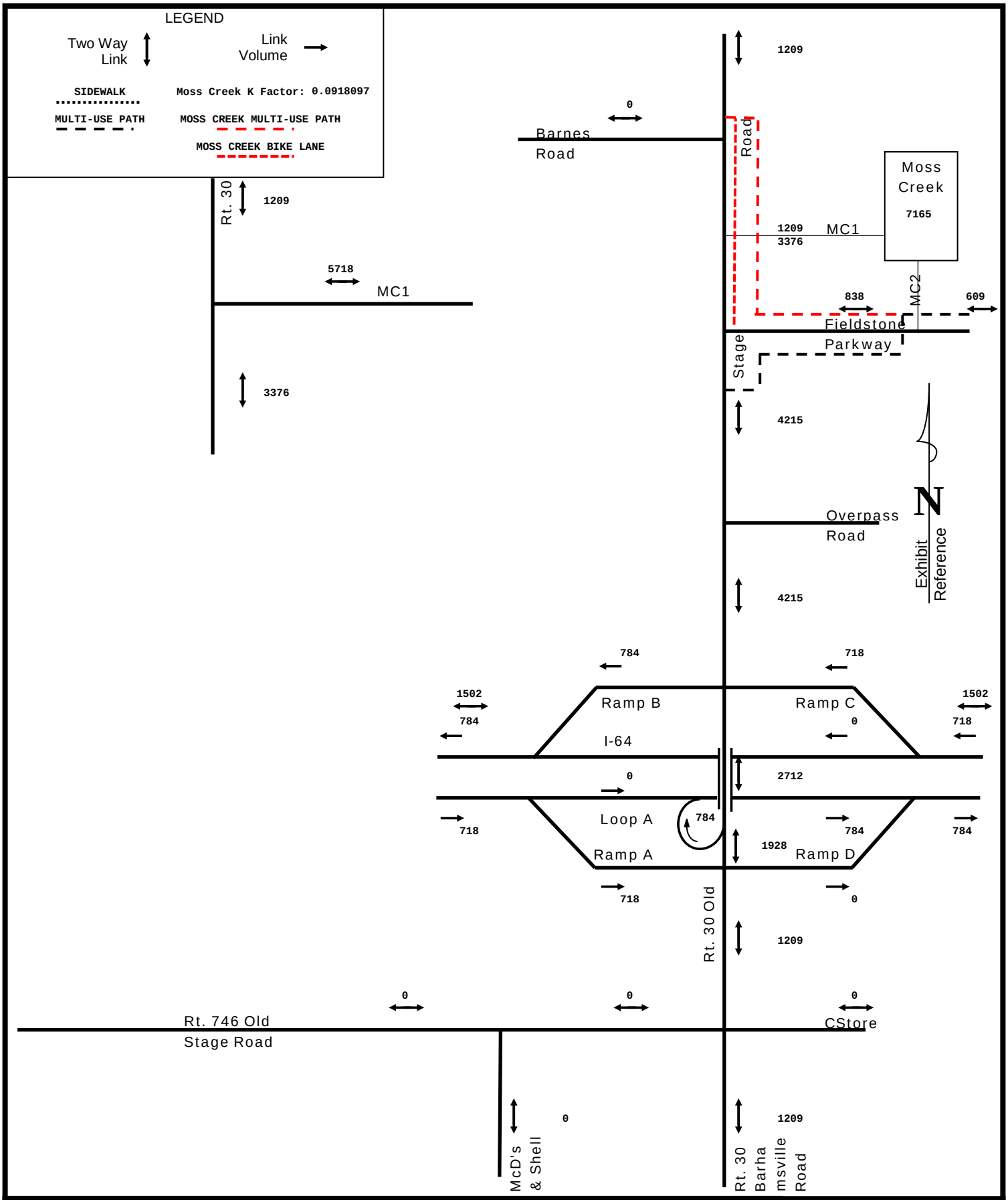
Exhibit 9a



MOSS CREEK PM PEAK HOUR TRAFFIC

DRW Consultants, LLC
804-794-7312

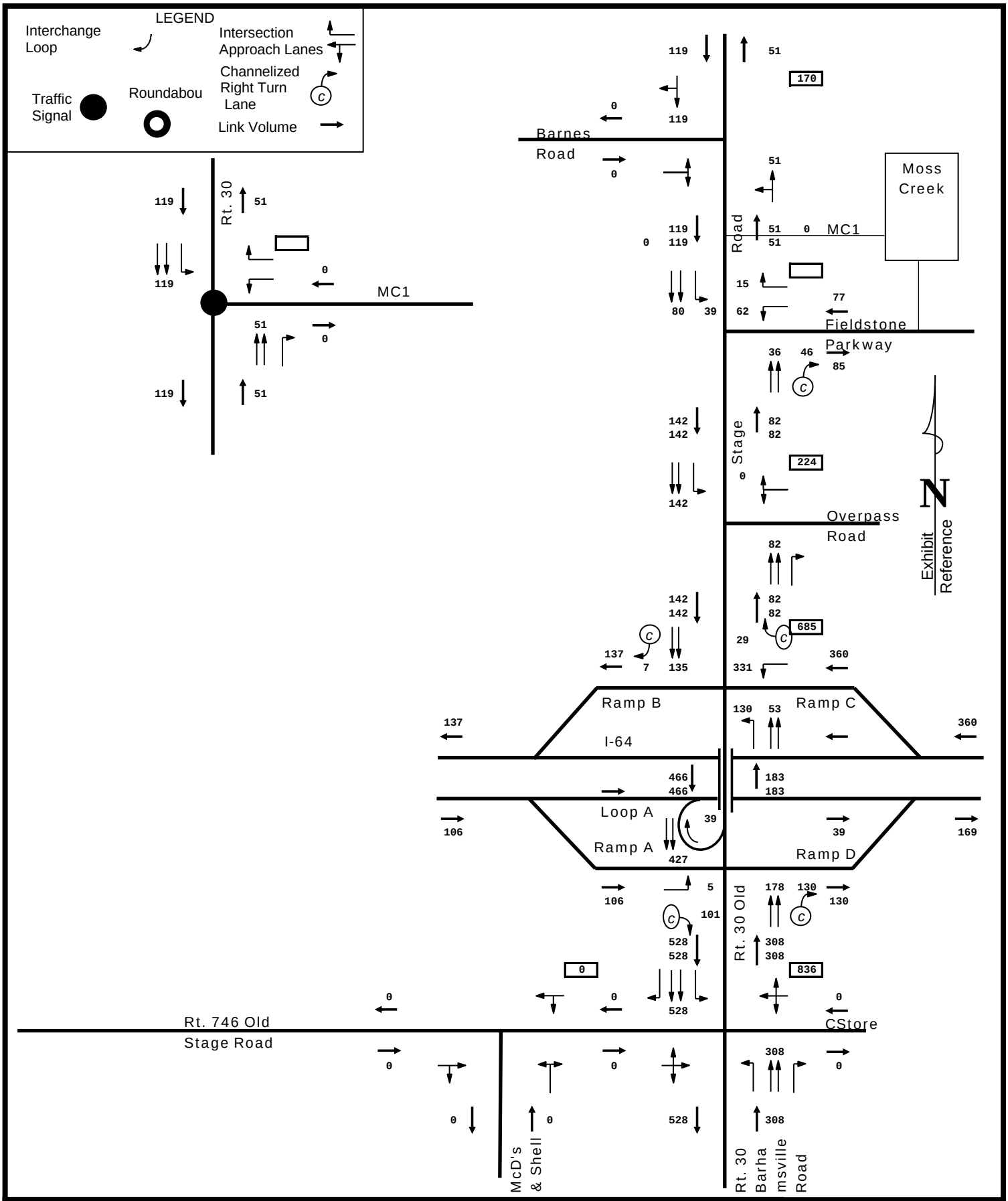
Exhibit 9b



MOSS CREEK DAILY TRAFFIC
SIDEWALKS, MULTI-USE (VDOT SHARED USE PATH), TRANSIT

DRW Consultants, LLC
804-794-7312

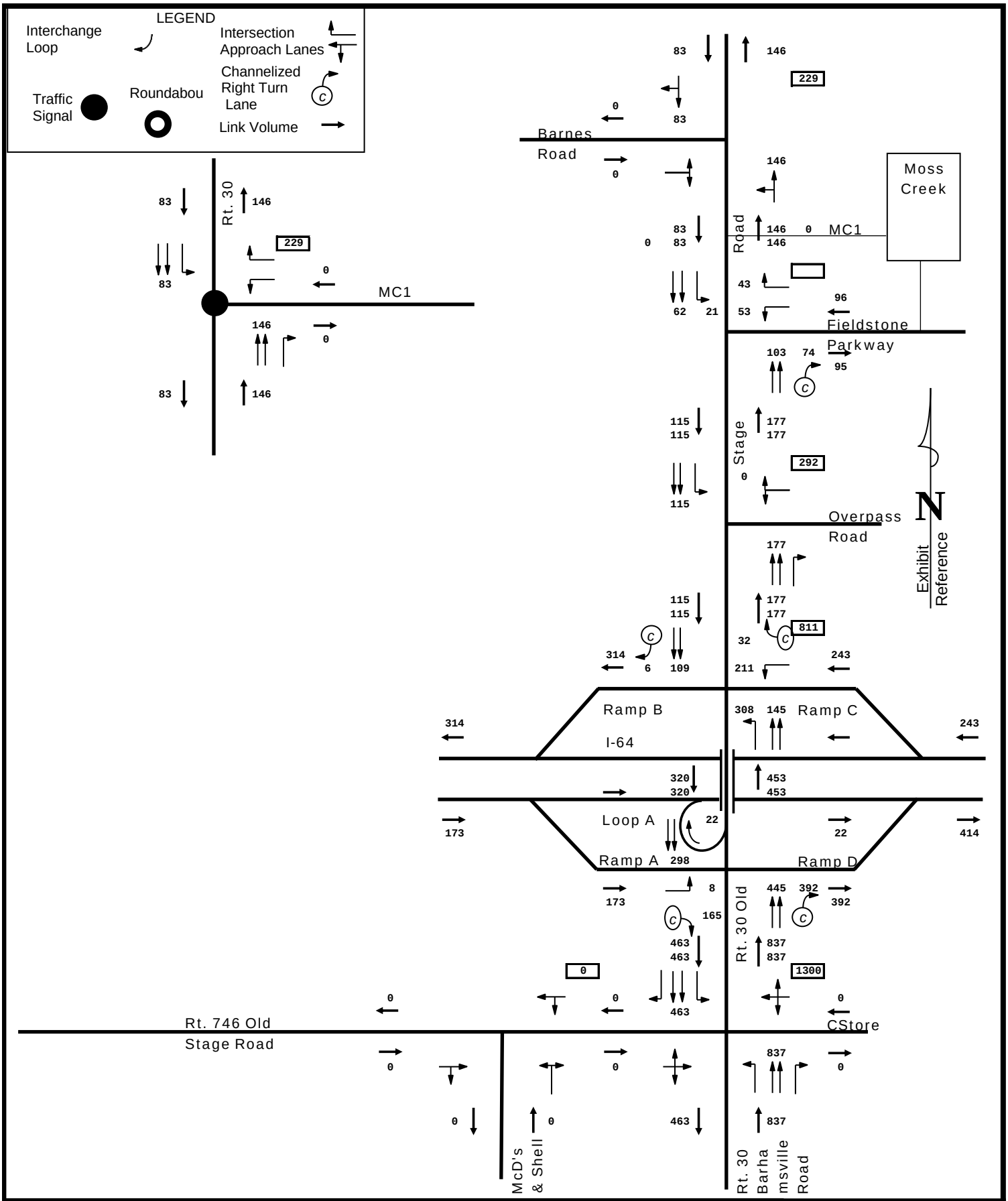
Exhibit 9c



STONEHOUSE PHASE 1 & 100% PHASE 2
AM PEAK HOUR

DRW Consultants, LLC
804-794-7312

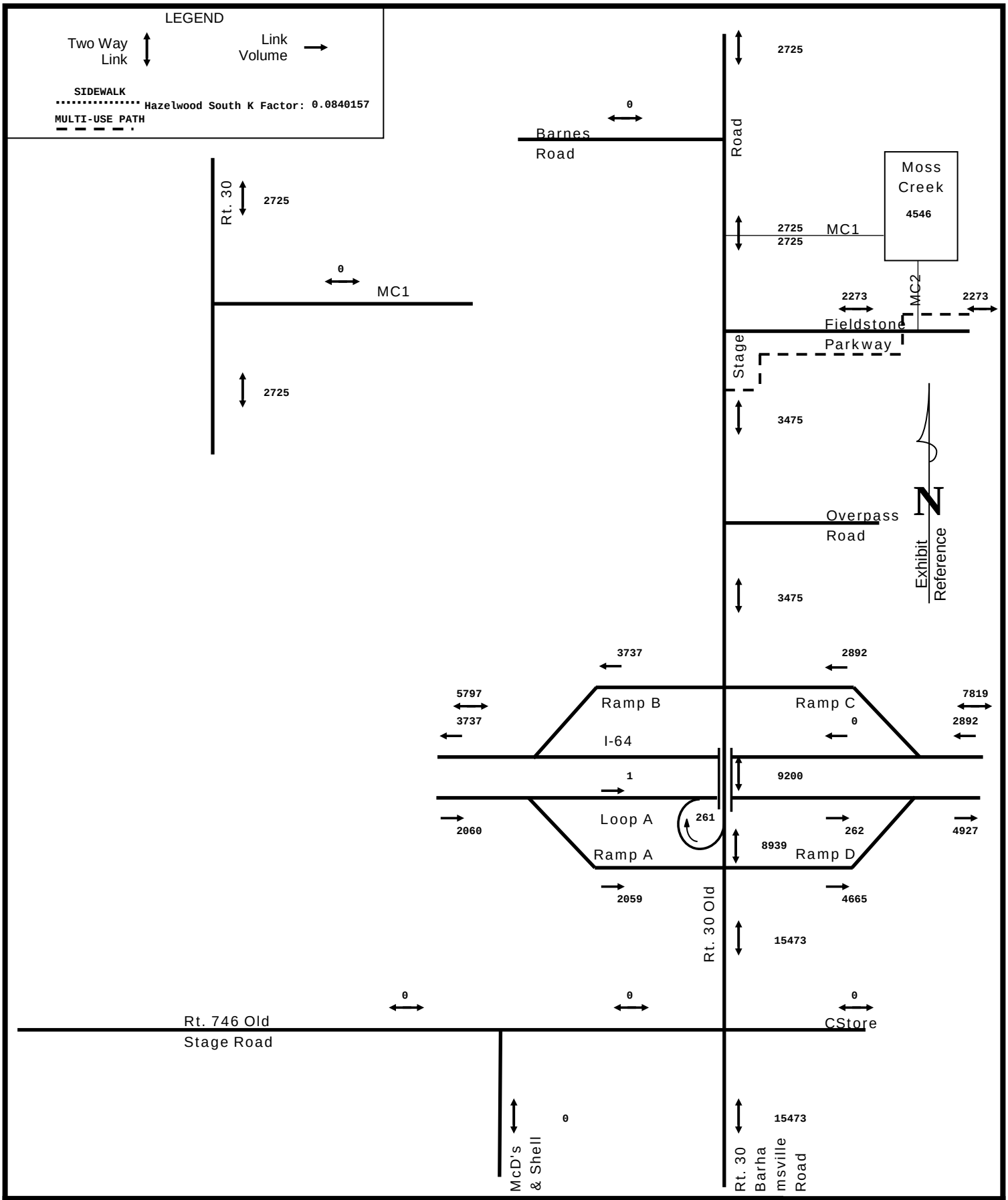
Exhibit 10a



STONEHOUSE PHASE 1 & 100% PHASE 2
PM PEAK HOUR

DRW Consultants, LLC
804-794-7312

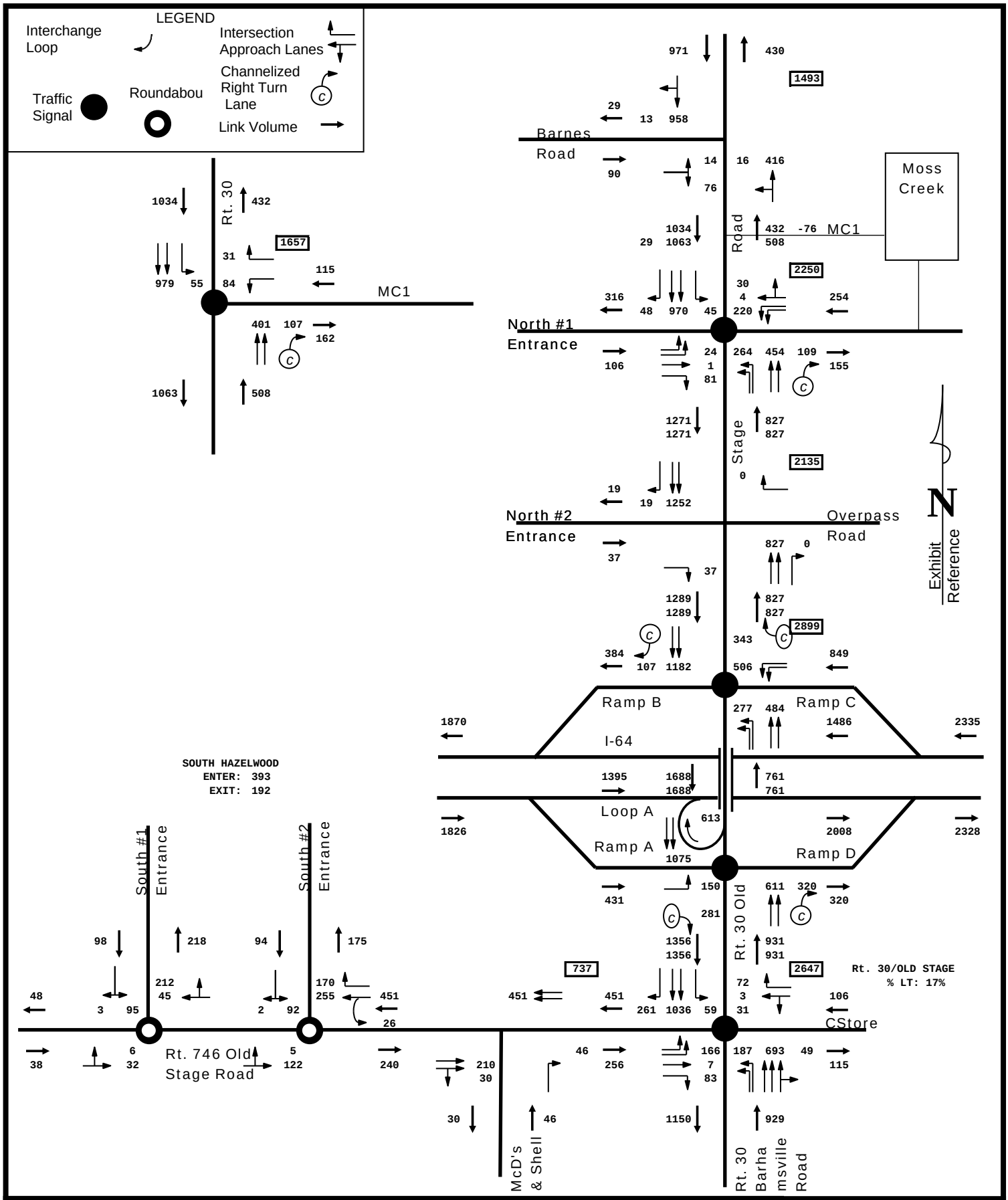
Exhibit 10b



STONEHOUSE PHASE 1 AND 100% PHASE 2 DAILY TRAFFIC
SIDEWALKS, MULTI-USE (VDOT SHARED USE PATH), TRANSIT

DRW Consultants, LLC
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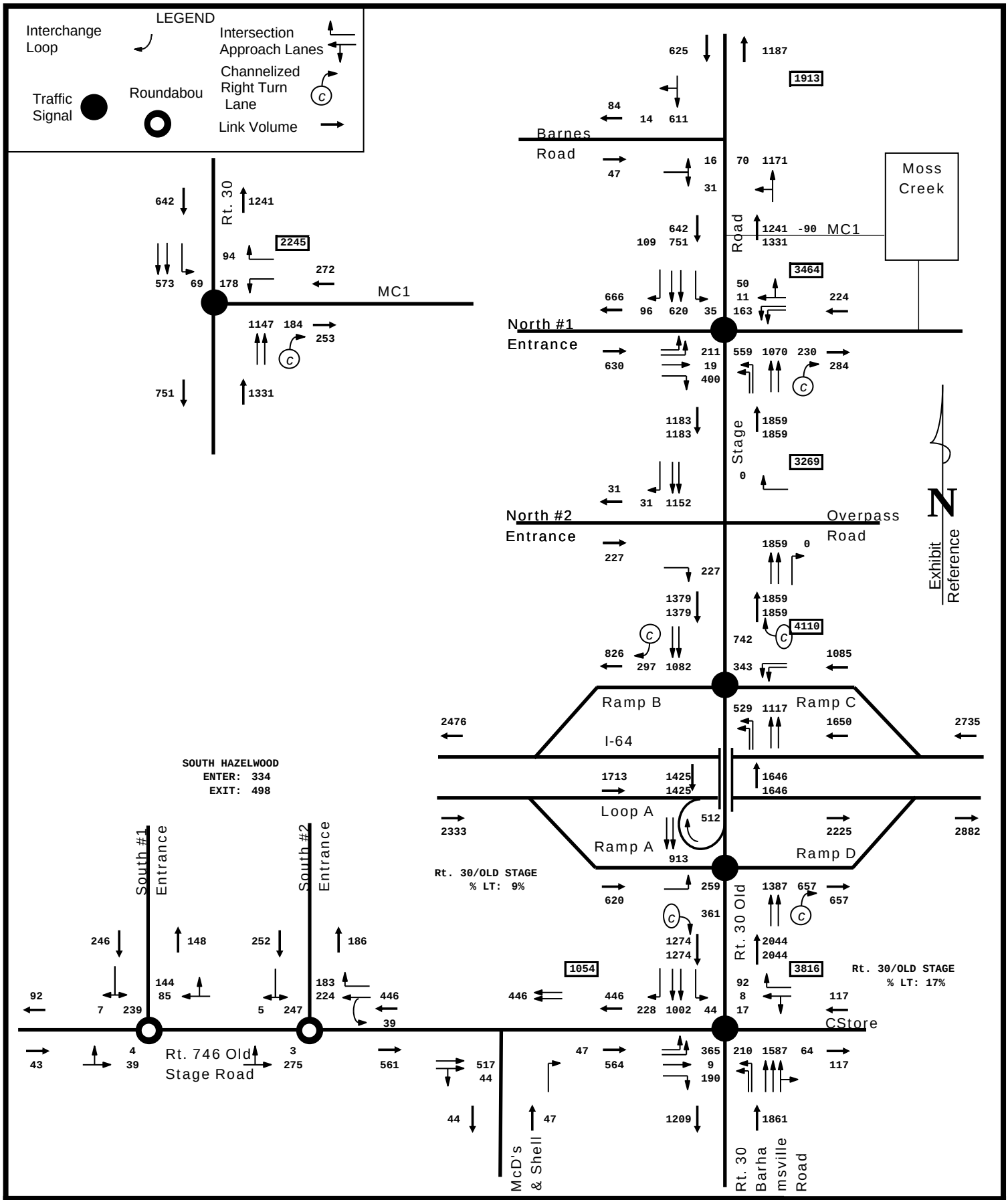
Exhibit 10c



2030 AM PEAK HOUR FORECAST
HAZELWOOD FARMS, STONEHOUSE & MOSS CREEK

DRW Consultants, LLC
804-794-7312

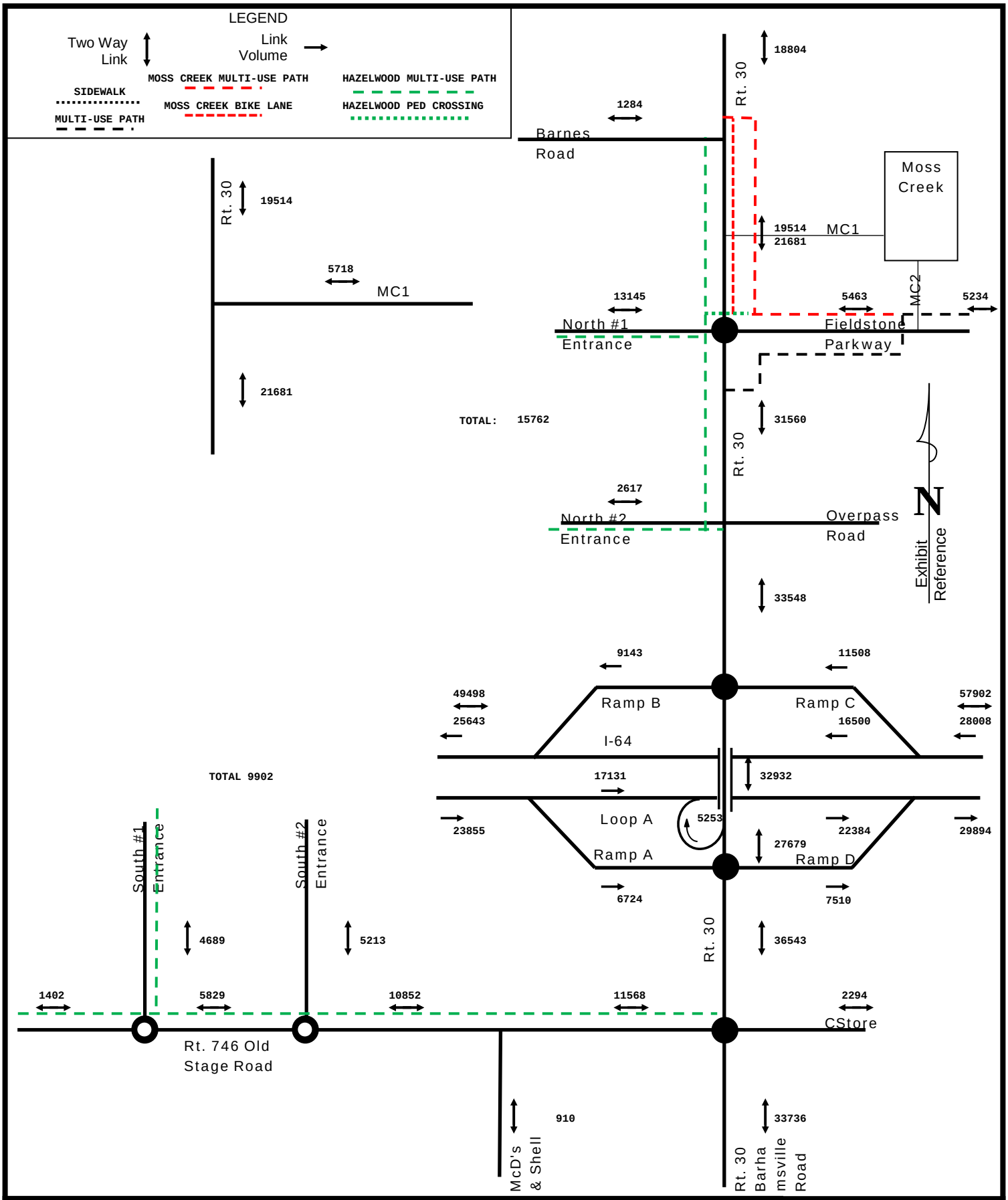
Exhibit 11a



2030 PM PEAK HOUR FORECAST
HAZELWOOD, STONE HOUSE AND MOSS CREEK

DRW Consultants, LLC
804-794-7312

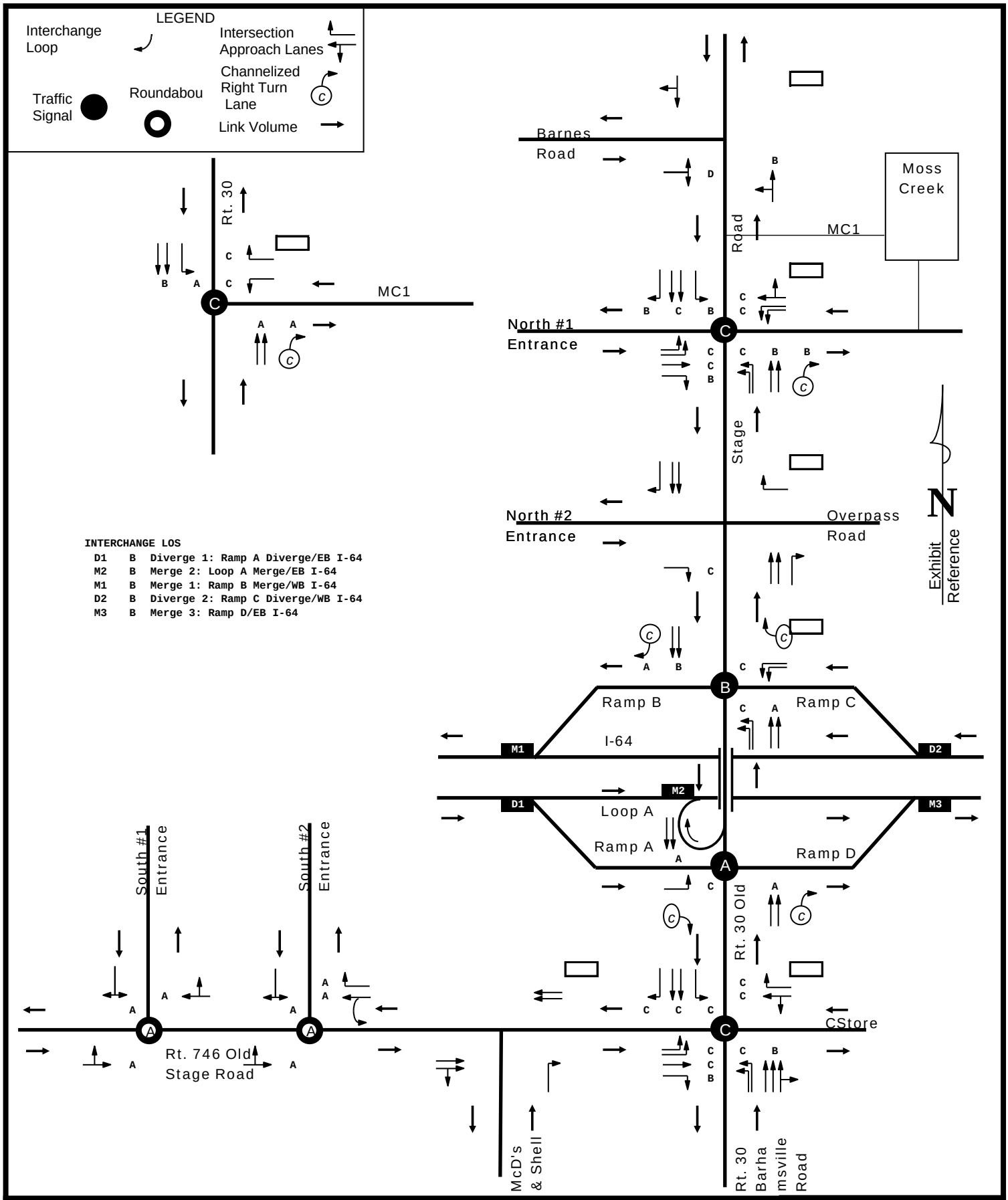
Exhibit 11b



2030 TOTAL DAILY TRAFFIC WITH HAZELWOOD FARMS AND STONEHOUSE
SIDEWALKS, MULTI-USE (VDOT SHARED USE PATH), TRANSIT

DRW Consultants, LLC
804-794-7312

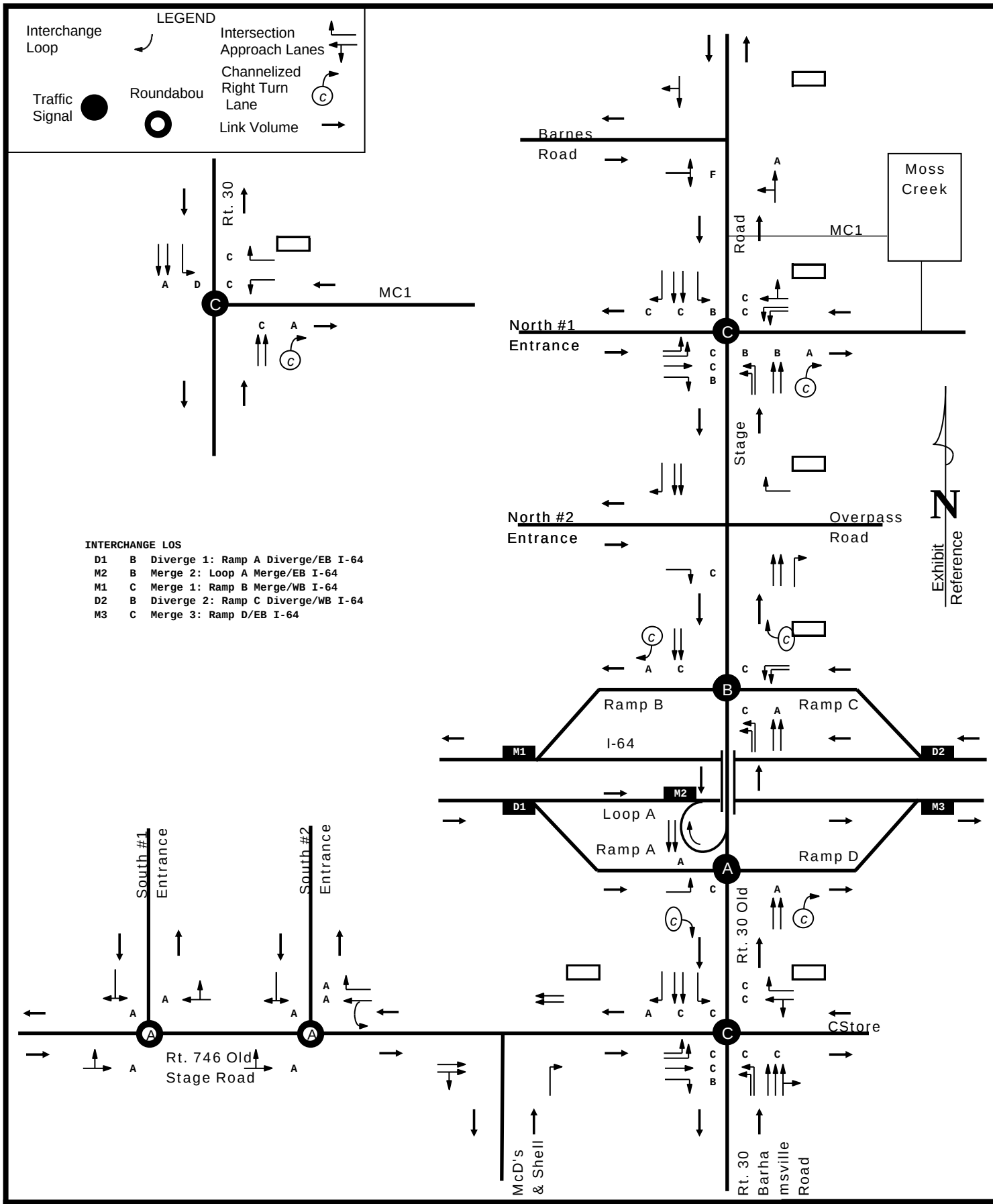
Exhibit 11c



2030 AM PEAK HOUR LEVEL OF SERVICE: 70 SECOND CYCLE
HAZELWOOD, STONEHOUSE AND MOSS CREEK

DRW Consultants, LLC
804-794-7312

Exhibit 11d



2030 PM PEAK HOUR LEVEL OF SERVICE: 70 SECOND CYCLE
HAZELWOOD, STONEHOUSE AND MOSS CREEK

DRW Consultants, LLC
804-794-7312

Exhibit 11e

DRW Consultants, LLC
Traffic Impact Studies
Development Access
Condemnation Damages

TO: Tim Trant, Esq.
FROM: Dexter R. Williams, P. E.
SUBJECT: Barnes Road Access Alternatives At Rt. 30
Response To Kimley-Horn & Assc. Inc. Letter Dated June 7, 2019, Comment 12
DATE: January 14, 2020

The existing Rt. 30/Barnes Road intersection is on a two-lane section of Rt. 30 with stop sign control for the single lane approach on Barnes Road. As traffic increases on Rt. 30, the level of service experience for the stop sign control on Barnes Road will decline.

The LOS F for Barnes Road at Rt. 30 shown in the January 2019 traffic study occurs in the PM peak hour with all development (Stonehouse, Moss Creek, Hazelwood Farms North and South) in place. Given the pace of development in Stonehouse to date, this extent of development will likely require decades for full development (e.g., Stonehouse was originally zoned in 1991 [29 years ago], has been rezoned three times, and to date there still is not enough traffic at the Fieldstone Drive and LaGrange Parkway intersections with Rt. 30 to warrant the envisioned traffic signals). At some point with all this development in place and if Barnes Road approach traffic at Rt. 30 is unchanged, then the result will be LOS F (73.7 seconds delay) primarily due to the 16 vehicles per hour (VPH), ~one vehicle every four minutes, continuing to make a left turn from Barnes Road to northbound Rt. 30.

With increasing traffic and improvements to the road network, the 16 VPH from Barnes Road to northbound Rt. 30 have an alternative route. The 16 VPH can avoid the forecast 1.2-minute delay at the Barnes Road stop sign by:

1. Turning right onto southbound Rt. 30.
2. Traveling approximately ¼ mile to U-turn at Fieldstone Parkway.
3. Continuing northbound on Rt. 30

With full development, there will be a signal at Rt. 30/Fieldstone Parkway to provide a safe and convenient, southbound to northbound U-turn on Rt. 30. With the 16 VPH utilizing this U-turn, the Barnes Road approach to Rt. 30 has a LOS B. Overall level of service at Rt. 30/Fieldstone Parkway/Hazelwood North Entrance #1 is unchanged by the Barnes Road diversion U-turn.

The Moss Creek development and its current access plan may change. The Moss Creek plan was zoned in 2006, with no development is the fourteen years since. The current Moss Creek plan signalized entrance on Rt. 30 is 920 feet from Fieldstone Parkway. This is less than the 1320 feet

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Midlothian, VA 23113

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fax 804-379-3810

required by VDOT Minimum Spacing Standards for signalized intersections. Any new Moss Creek plan with a Rt. 30 signal will invariably prompt VDOT to require minimum spacing, which in turn puts any revised plan signal aligned at Barnes Road, which automatically relieves the inherent unsignalized intersection LOS problem.

DRW Consultants, LLC
Traffic Impact Studies
Development Access
Condemnation Damages

TO: Tim Trant, Esq.
FROM: Dexter R. Williams, P. E.
SUBJECT: Hazelwood Farms Rt. 30 Shared Use Path
Response To Kimley-Horn & Assc. Inc. Letter Dated June 7, 2019, Comment 13
DATE: January 29, 2020

COMMENT 13 AND PRESUMED IMPROVEMENTS TO RT. 30 BRIDGE OVER I-64

Regarding the Rt. 30 bridge over I-64, Comment 13 included the following: "accommodation of dedicated bike lanes and a shared-use path across the overpass" in accordance with Exhibit 1g-3 in the 2019 Ch. 527 study for Hazelwood Farms. Exhibit 1g-3 is a section of the Regional Bikeway Plan for the I-64/Rt. 30 area. Exhibit 1g-4 in the 2019 Ch. 527 study is a section of the JCC Draft 2011 Pedestrian Accommodation Master Plan.

Following are the designations on the Regional Bikeway Plan and the JCC Draft 2011 Pedestrian Accommodation Master Plan plans for Rt. 30 from Barnes Road to Old Stage Road:

- Regional Bikeway Plan
  - Proposed Multi-Purpose Path
  - Proposed Bike Lane
- JCC Draft 2011 Pedestrian Accommodation Master Plan
  - Multi-Use on the west (Hazelwood) side of Rt. 30.

It is one thing for government to adopt a ped/bike facility showing facilities on one side of a road. It is something else entirely for Comment 13 to go beyond government master planning and imply some unconceivable presumptions of cost responsibility for property owners:

1. That property owners located the one side of road designated by a government plan for a shared use path should have to pay the cost for all of the shared use path.
2. That Hazelwood Farms should have to pay for both the multi-use path designated on its side of Rt. 30 in the Draft 2011 Plan and also pay for a bike lane on the Regional Bikeway Plan which doesn't have a designated side.
3. That any property owners, and one property owner in particular, should have to pay for Interstate bridge deck modifications for all users to correct a perceived lack of connectivity that was created by State condemnation of Hazelwood Farms for construction of I-64.

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For the record, KHA provided a preliminary plan for the VDOT Longhill Road Shared Use Path project. The "Shared Use Path" plan on the Longhill Road bridge over Rt. 199 has 7 feet 10 inches clearance from bridge parapet wall to wall divider from vehicle traffic. The VDOT specification for a shared use path lateral wall clearance on a bridge is 14 feet. On the preliminary drawing, the "Shared Use Path" is designated as a sidewalk.

The multi-use path and bike lane referenced above for the Rt. 30 bridge over I-64 would require ~20 feet clearance. The construction estimate to the Longhill project is $3.6 million, and I estimate the bridge deck at $2.5 million. Even if the inferior 7 feet 10-inch clearance is applied to the Rt. 30 bridge, the resulting cost is approximately $5 million.

PROPOSED SHARE USED PATH SYSTEM – HAZELWOOD FARMS

The Hazelwood Farms plans have been revised to include shared use paths along the west side Rt. 30 as follows:

- Village Center At Hazelwood Farms (North)
    - Barnes Road (Sta. 299+30) south to end of limited access fence (Sta 321+95): 2,300 feet
    - End of limited access fence (Sta 321+95) to south of Ramp B (Sta 337+25) located inside of limited access fence: 1,500 feet
    - Shared use path at Sta 337+25 connects to 10-foot shoulder along Rt. 30 north of I-64 bridge
    - Total: 3,800 feet
- Enterprise Center At Hazelwood Farms (South)
    - Old Stage Road (Sta 358+70) to north of Ramp A (Sta 348+10) located inside limited access fence: 1,000 feet
    - Shared use path at Sta 348+10 connects to 10-foot shoulder along Rt. 30 south of I-64 bridge

The total length of shared use path by Hazelwood Farms along the west side of Rt. 30 is 4,800 feet. Of the total, 2,500 feet is located within the limited access fence on Rt. 30. The Rt. 30 shared use paths on both sides of I-64 were deliberately designed to tie into the existing 10 foot paved shoulder lane that extends from the Village Center shared use path tie in (Sta 337+25) across the bridge to the Enterprise Center shared use path tie in (348+10). The Hazelwood Farms shared use path are located mostly in areas where there is little or no paved shoulder lane. With the Hazelwood Farms shared use paths, there is 10 feet of continuous pavement width outside of vehicular travel lanes to accommodate non-vehicular traffic from Barnes Road to Old Stage Road.

It should also be noted that shared use paths are provided along the Old Stage Road frontage for

Enterprise Center from Rt. 30 to Leisure Road (~1600 feet) and on Leisure Road from Old Stage Road to the Enterprise Center property limits near Upper County Park (~1400 feet). This is a total of approximately 7,800 feet of shared use path to be built along existing roads.

The shared use path system also includes a connection across Rt. 30 at Fieldstone Parkway to Moss Creek and by connection to Stonehouse. Given the total lack of pedestrian/bike accommodations along the Stonehouse frontage on Rt. 30 and south to the I-64 interchange, the shared use path system proposed by Hazelwood Farms provides a means to compensate for this oversight on the east side of Rt. 30.

HAZELWOOD FARMS MEASURES OF SEPARATION

KHA Comment 13 references a lack of "account for no connection between Hazelwood North and South". The two projects (Village Center and Enterprise Center) are just that: two separate projects with I-64 creating a vast chasm between the two separate projects. Following are dimensional measures of separation between the two developments:

- The distance from the end of limited access line at Village Center (North) to the end of limited access lane at Enterprise Center (South) is 3,675 feet, 0.7 miles.
- The walking/biking distance from the center of Village Center to the main access to Enterprise Center (South Entrance #2) on Old State Road is 6400 feet, 1.2 miles.
- Enterprise Center is approximately 1 mile deep, so the center to center distance between Village Center and Enterprise Center is 1.7 miles.

In summary, the two separate projects are well over 0.5 miles apart by the closest measure, and well over 1.5 miles apart measured by center of development.

EFFECTIVE CONNECTIVITY BETWEEN VILLAGE CENTER AND ENTERPRISE CENTER AND TRANSIT

These measures of separation between Village Center and Enterprise Center are far in excess of common planning standards for walking limits:

- "The transit industry widely applies the 400-meter (0.25-mile) and 800-meter (0.5-mile) rules of thumb when estimating service areas around bus and rail stations." — El-Geneidy et al. (2014)
- A 10-minute walk (0.5 mile) is also considered a reasonable distance for accessing public parks. This is the distance that The Trust for Public Land applies in their rating system developed to measure how well the 100 largest U.S. cities are meeting the need for parks.

Even the shortest measure of separation (0.7 mile) is in excess of the longer range of walking limits (0.5 mile). For non-automobile connectivity between these two separate developments and in fact the rest of James City County and the Williamsburg area, transit is the effective strategy.

The existing WATA 9 Purple 2 line currently terminates at Stonehouse Industrial Park. An extension of this line to Hazelwood Farms provides connectivity between the two separate developments and the balance of Williamsburg. Transit can provide effective connectivity for all income and health ranges. To this end, Hazelwood Farms proffers include a commitment to provide at least two bus stops within the development or on public road frontages and may be determined as feasible by WATA.

DRW Consultants, LLC
Traffic Impact Studies
Development Access
Condemnation Damages

TO: Tim Trant, Esq.
FROM: Dexter R. Williams, P. E.
SUBJECT: Analysis Of 2030 traffic with Hazelwood Farms – 90/100 Second cycles
DATE: January 9, 2020

This memo and enclosed exhibits are provided as a supplement to the January 2019 Ch. 527 Traffic Impact Statement For Village Center And Enterprise Center At Hazelwood Farms (2019 study). This memo presents another scenario for the 2030 forecast year: background growth with Hazelwood Farms only using 90 cycle lengths for AM peak hour and 100 second cycle lengths for PM peak hour.

Total 2030 AM peak hour traffic with Hazelwood Farms is shown on enclosed Exhibit 1a. Total 2030 PM peak hour traffic with Hazelwood Farms is shown on enclosed Exhibit 1b. Also shown on Exhibits 1a and 1b are intersection lane configurations used in this analysis. Traffic analysis reports are enclosed as follows:

- HCM Signalized Intersection Capacity Analysis: ExJ7 for AM, Ex J8 for PM
- HCM 6th Two Way Stop: ExK7 for AM, Ex K8 for PM
- Synchro Queues: ExL7 for AM, ExL8 for PM
- SimTraffic Queuing and Blocking Report: ExM7 for AM, ExM8 for PM

Following are analysis results for each intersection:

RT. 30/FIELDSTONE PARKWAY- 2030 WITH HAZELWOOD FARMS

The following table shows signalized intersection LOS results at Rt. 30/Fieldstone Parkway:

TABLE 6-1 Rt. 30/FIELDSTONE PARKWAY
2030 HAZELWOOD ONLY 90/100 SECOND CYCLE

SIGNALIZED LOS And Seconds Delay					95th Percentile Queues By Lane Group				
	AM		PM		Storage	Synchro		SimTraffic Q&B	
Overall	C	23.4	C	21.9	Length	AM	PM	AM	PM
EBL2	C	28.5	C	32.4	150	31	172	46	193
EBT	D	39.6	D	35.6		5	30	6	94
EBR	C	22.8	C	20.8	200	0	86	90	236
WBL	D	36.5	D	46.8	250	122	65	156	100
WBT/R	D	43.0	D	50.1		24	31	38	42
NBL2	C	34.3	C	30.4	300	109	210	145	286
NBT2	A	9.9	B	10.1		107	148	106	427
NBR	A	8.6	A	1.4	350	1	2		
SBL	B	16.0	C	25.9	150	11	25	20	40
SBT2	C	23.5	C	28.6		276	183	182	169
SBR	B	16.1	C	24.4	200	0	0	41	64

SimTraffic queue shown is maximum report value for multi-lane groups

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Overall intersection LOS C and all lane groups are LOS C or better for Rt. 30 major streets and LOS D or better for minor street movements. Note: a single left turn lane is used on eastbound North #1 Entrance vs. two lane left turns used in previous analysis. All auxiliary lane queues are within storage length.

RT. 30/I-64 WESTBOUND RAMPS - 2030 WITH HAZELWOOD FARMS

The following table shows signalized intersection LOS results at Rt. 30/I-64 westbound ramps:

TABLE 6-2 Rt. 30/I-64 WESTBOUND RAMPS
2030 HAZELWOOD ONLY 90/100 SECOND CYCLE

SIGNALIZED LOS And Seconds Delay					95th Percentile Queues By Lane Group				
	AM		PM		Storage	Synchro		SimTraffic Q&B	
Overall	B	11.0	A	9.7	Length	AM	PM	AM	PM
WBL	D	42.3	D	46.1		166	144	112	111
NBL	C	32.3	A	9.9	200	141	93	169	165
NBT2	B	11.1	A	7.5		37	227	119	1536
SBT2	A	6.2	A	8.8		101	168	221	210
SBR	A	0.1	A	0.2	300	0	0		

SimTraffic queue shown is maximum report value for multi-lane groups

Overall intersection LOS A and B and all lane groups are LOS C or better for Rt. 30 major streets and LOS D or better for minor street movements. All auxiliary lane queues are within storage length.

RT. 30/I-64 EASTBOUND RAMP A - 2030 WITH HAZELWOOD FARMS

The following table shows signalized intersection LOS results at Rt. 30/I-64 eastbound ramp A:

TABLE 6-3 Rt. 30/I-64 EASTBOUND RAMP
2030 HAZELWOOD ONLY 90/100 SECOND CYCLE

SIGNALIZED LOS And Seconds Delay					95th Percentile Queues By Lane Group				
	AM		PM		Storage	Synchro		SimTraffic Q&B	
Overall	A	4.3	A	8.9	Length	AM	PM	AM	PM
EBL	D	42.9	D	45.5		106	183	101	168
NBT2	A	0.4	A	1.5		5	14	48	84
SBT2	A	0.5	A	8.4		0	157	68	95

SimTraffic queue shown is maximum report value for multi-lane groups

Overall intersection LOS A and B and all lane groups are LOS C or better for Rt. 30 major streets and LOS D or better for minor street movements.

RT. 30/OLD STAGE ROAD - 2030 WITH HAZELWOOD FARMS

The following table shows signalized intersection LOS results at Rt. 30/Old Stage Road:

TABLE 6-4 Rt. 30/OLD STAGE ROAD 2030 HAZELWOOD ONLY 90/100 SECOND CYCLE									
SIGNALIZED LOS And Seconds Delay					95th Percentile Queues By Lane Group				
	AM		PM		Storage	Synchro		SimTraffic Q&B	
Overall	B	19.0	C	23.0	Length	AM	PM	AM	PM
EBL2	D	38.0	D	40.1	200	80	162	119	192
EBT	D	35.2	C	33.2		17	19	26	29
EBR	C	22.8	C	23.4	200	0	29	99	167
WBL/T	D	40.9	D	45.9		49	43	63	51
WBR	D	39.2	D	44.4		0	22	61	69
NBL2	D	38.3	D	39.8	200	87	105	123	109
NBT2	B	17.0	B	17.5		129	257	101	166
NBR	B	15.2	B	13.5		0	3	19	14
SBL	C	20.4	D	46.7	200	51	68	83	61
SBT2	A	7.5	B	13.8		87	127	95	106
SBR	A	7.5	A	2.7		3	6	96	91

SimTraffic queue shown is maximum report value for multi-lane groups

Overall intersection LOS is LOS B and C and all lane groups are LOS D or better. All auxiliary lane queues are within storage length.

RT. 30/BARNES ROAD – 2030 WITH HAZELWOOD FARMS

The following table shows unsignalized intersection LOS results at Rt. 30/Barnes Road:

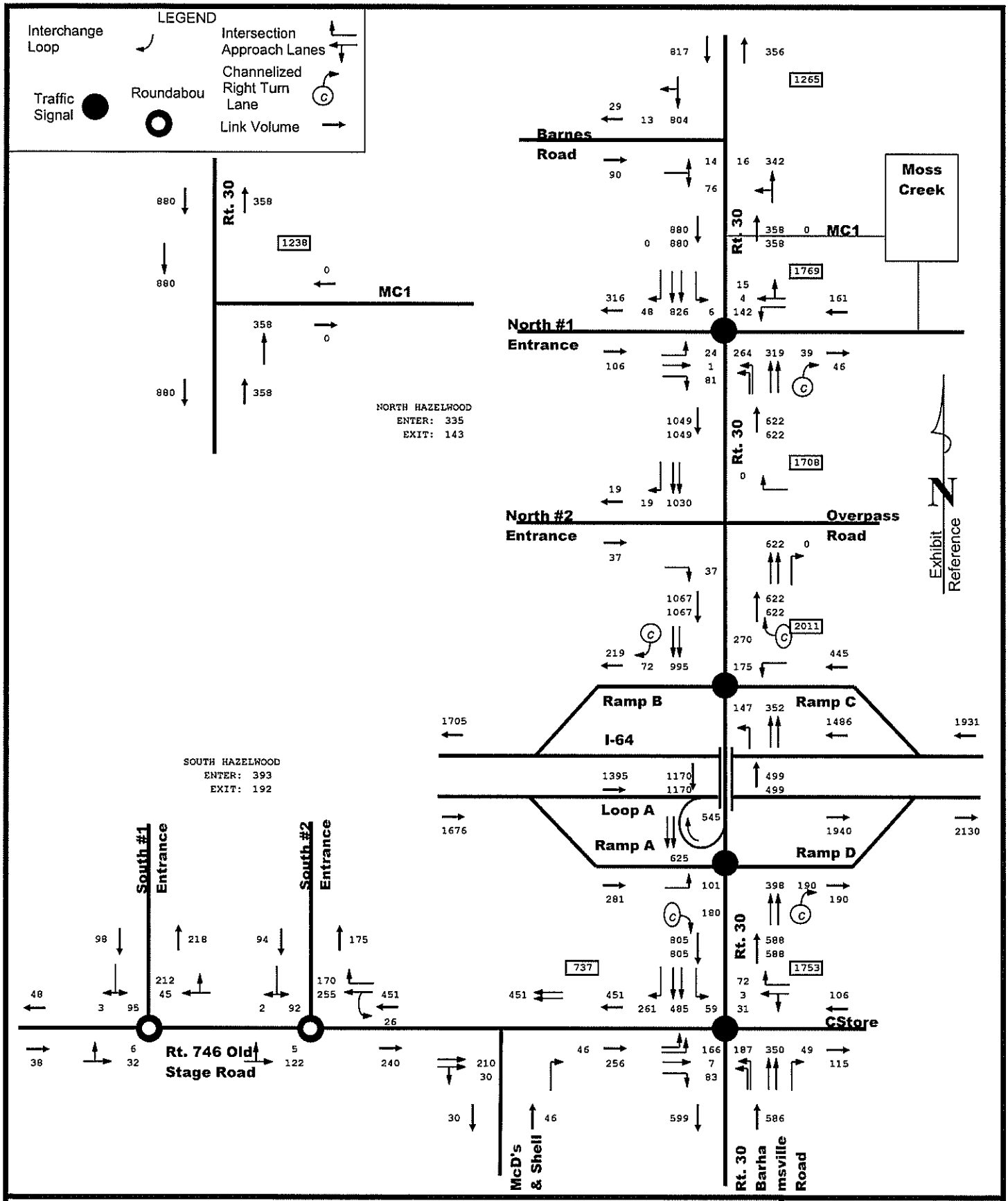
TABLE 6-5 RT. 30/BARNES ROAD 2030 HAZELWOOD ONLY UNSIGNALIZED									
UNSIGNALIZED LOS And Seconds Delay					95th Percentile Queues By Lane Group				
	AM		PM		Storage	HCM 6th		SimTraffic Q&B	
					Length	AM	PM	AM	PM
EBL/R	C	23.1	D	32.7		35	30	89	82
NBL/T	A	9.9	A	8.8		3	10		169

All lanes have LOS D or better.

SUMMARY COMMENTS - 2030 WITH HAZELWOOD FARMS

All signalized intersections have LOS C or better overall and LOS D or better for each turning movement. For unsignalized Barnes Road, eastbound AM was LOS C and PM is LOS D. All auxiliary lane queues are within storage length.

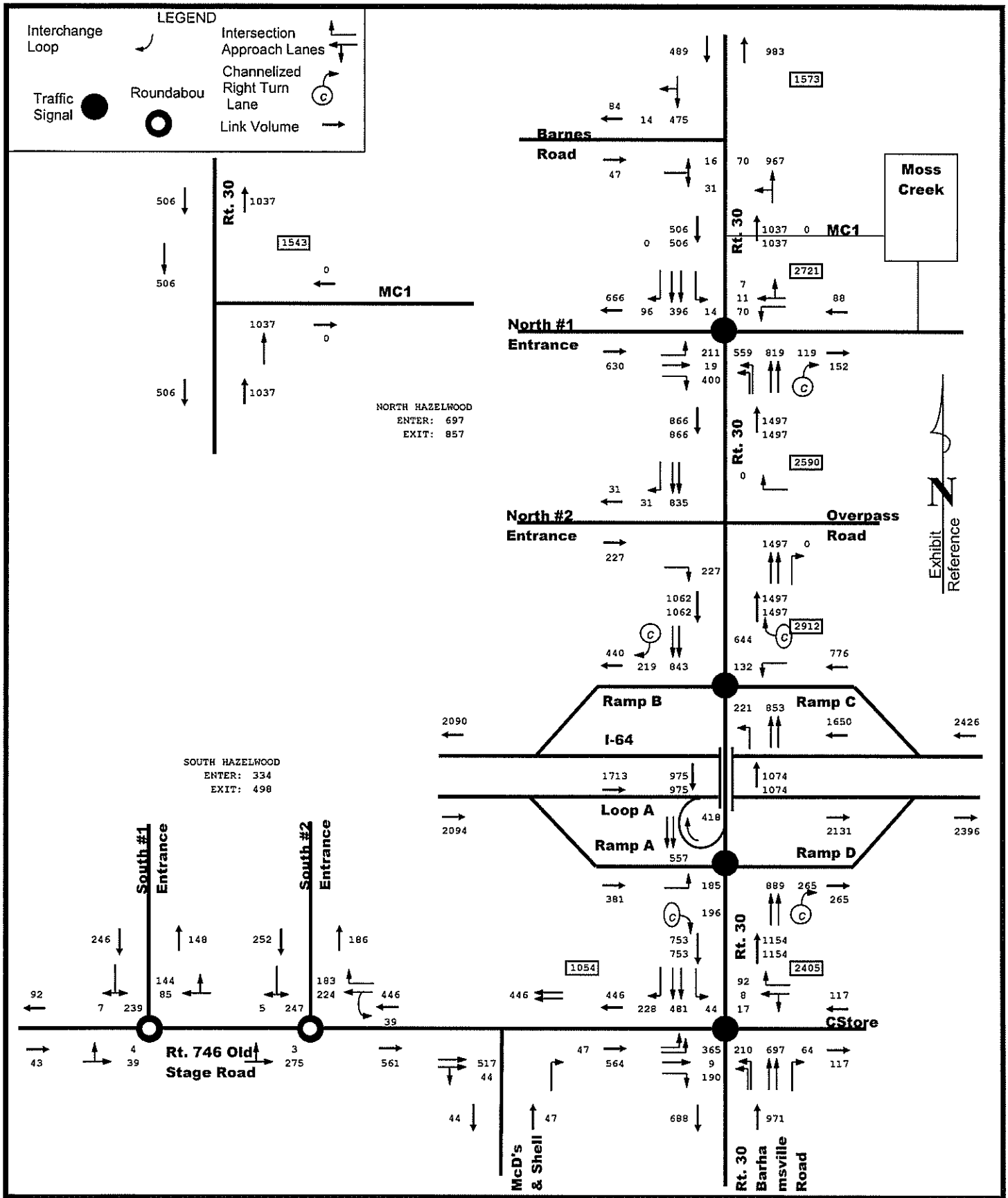
Exhibits 1c and 1d show LOS results on the network diagram.



2030 AM PEAK HOUR TOTAL TRAFFIC WITH HAZELWOOD FARMS
90 SECOND CYCLE ANALYSIS

DRW Consultants, LLC
804-794-7312

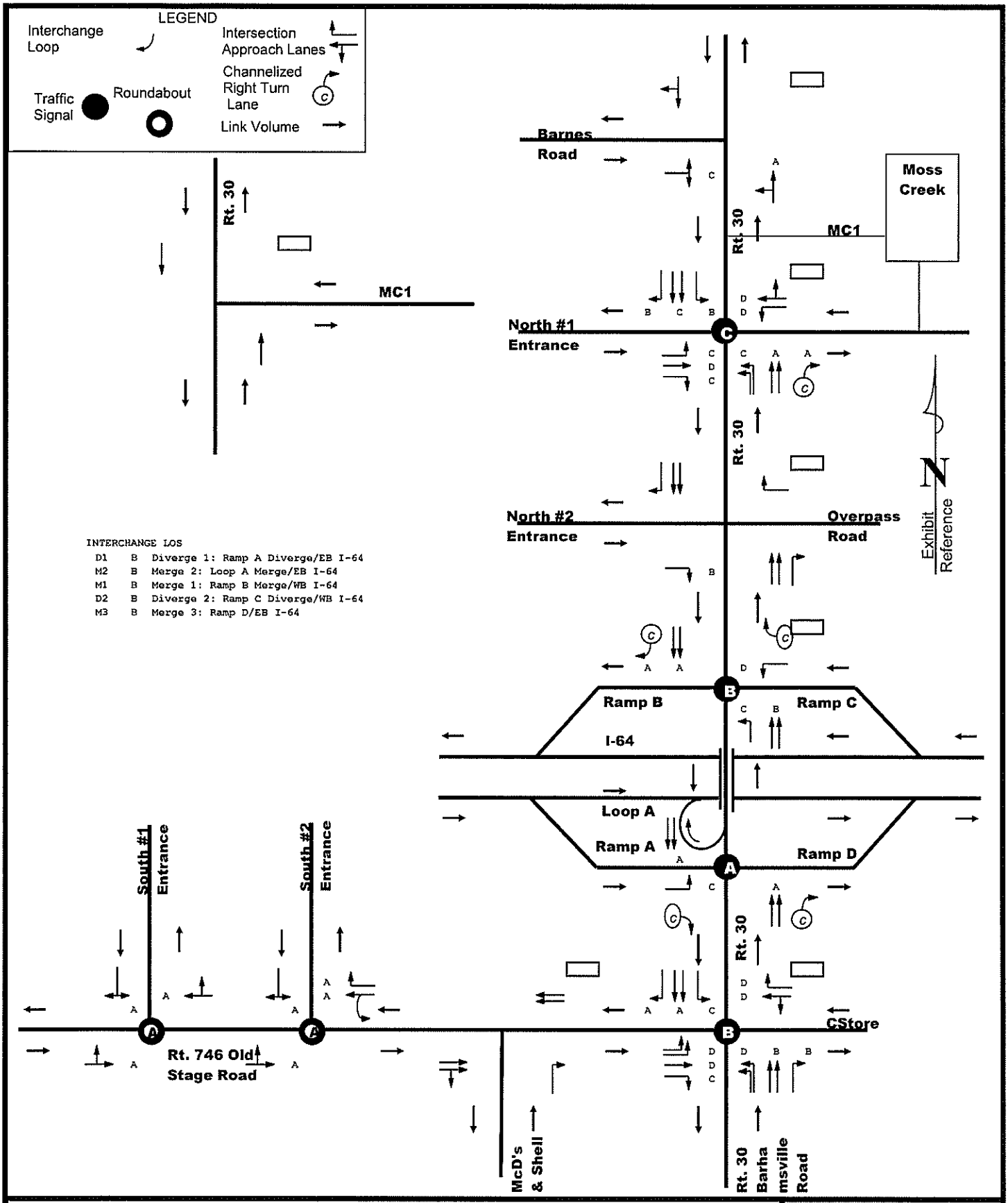
Exhibit 1a



2030 PM PEAK HOUR TOTAL TRAFFIC WITH HAZELWOOD FARMS
100 SECOND CYCLE ANALYSIS

DRW Consultants, LLC
804-794-7312

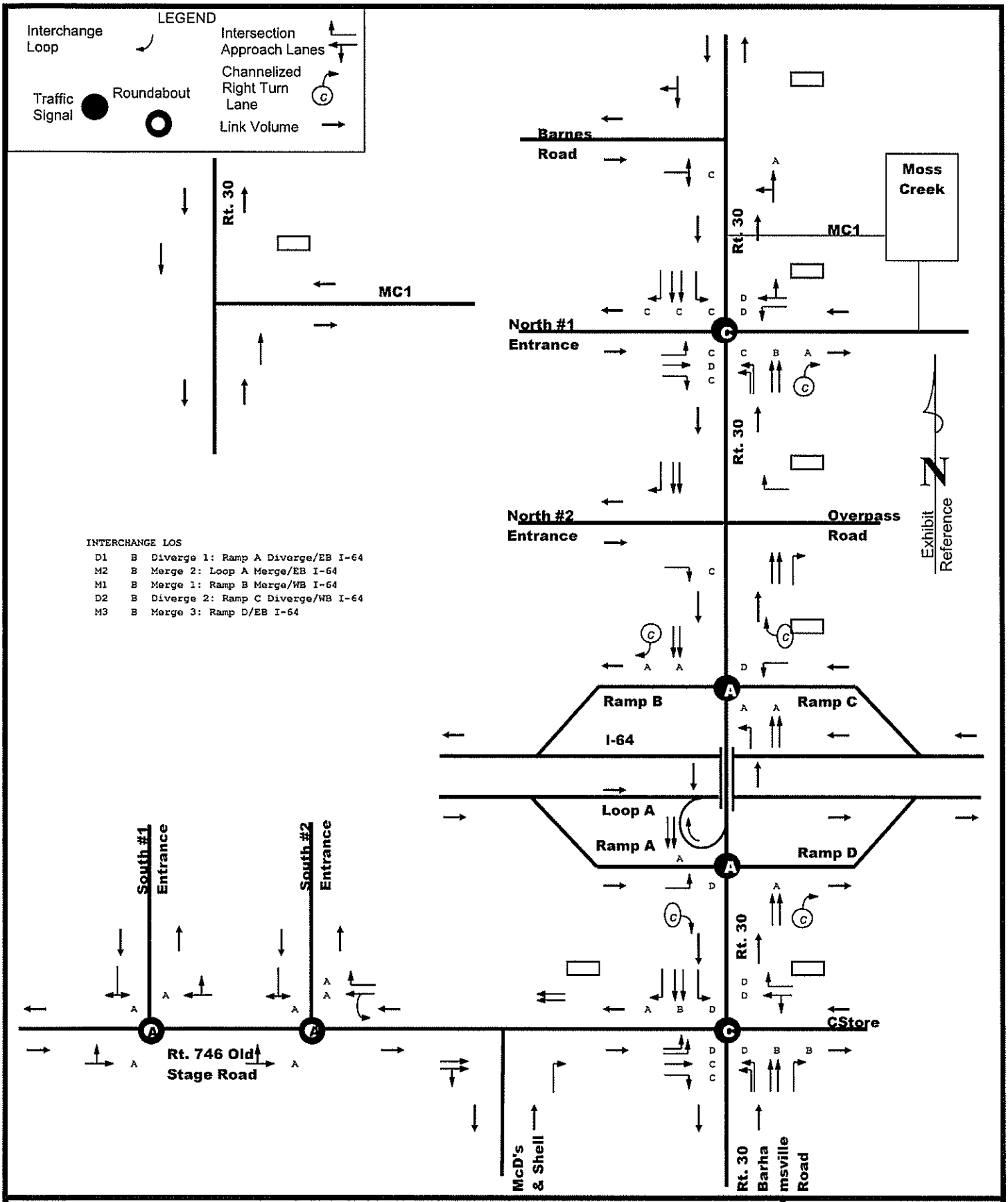
Exhibit 1b



2030 AM PEAK HOUR LEVEL OF SERVICE: 90 SECOND CYCLE
HAZELWOOD FARMS ONLY

DRW Consultants, LLC
804-794-7312

Exhibit 1c



2030 PM PEAK HOUR LEVEL OF SERVICE: 100 SECOND CYCLE
HAZELWOOD FARMS ONLY

DRW Consultants, LLC
804-794-7312

Exhibit 1d

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	1	81	142	4	15	264	319	39	6	826	48
Future Volume (vph)	24	1	81	142	4	15	264	319	39	6	826	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0		5.0	6.0	6.0	5.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.97	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.88		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	1900	1568	1805	1672		3433	3406	1538	1543	3471	1583
Flt Permitted	0.74	1.00	1.00	1.00	1.00		0.95	1.00	1.00	0.47	1.00	1.00
Satd. Flow (perm)	1414	1900	1568	1900	1672		3433	3406	1538	758	3471	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	26	1	88	154	4	16	287	347	42	7	898	52
RTOR Reduction (vph)	0	0	62	0	15	0	0	0	18	0	0	31
Lane Group Flow (vph)	26	1	26	154	5	0	287	347	24	7	898	21
Heavy Vehicles (%)	0%	0%	3%	0%	0%	0%	2%	6%	5%	17%	4%	2%
Turn Type	pm+pt	NA	pt+ov	pm+pt	NA		Prot	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4	4 5	3	8		5	2		1	6	
Permitted Phases	4			8					2	6		6
Actuated Green, G (s)	19.1	5.6	26.5	13.7	2.9		15.9	51.2	51.2	36.7	36.7	36.7
Effective Green, g (s)	19.1	5.6	26.5	13.7	2.9		15.9	51.2	51.2	36.7	36.7	36.7
Actuated g/C Ratio	0.21	0.06	0.29	0.15	0.03		0.18	0.57	0.57	0.41	0.41	0.41
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	6.0	6.0	5.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	358	118	461	277	53		606	1937	874	321	1415	645
v/s Ratio Prot	c0.01	0.00	0.02	c0.07	0.00		c0.08	0.10		0.00	c0.26	
v/s Ratio Perm	0.00			c0.02					0.02	0.01		0.01
v/c Ratio	0.07	0.01	0.06	0.56	0.09		0.47	0.18	0.03	0.02	0.63	0.03
Uniform Delay, d1	28.4	39.6	22.8	34.1	42.3		33.3	9.3	8.5	16.0	21.3	16.0
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.01	1.04	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.0	0.1	2.4	0.7		0.6	0.2	0.1	0.0	2.2	0.1
Delay (s)	28.5	39.6	22.8	36.5	43.0		34.3	9.9	8.6	16.0	23.5	16.1
Level of Service	C	D	C	D	D		C	A	A	B	C	B
Approach Delay (s)		24.3			37.2			20.2			23.0	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	23.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	58.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	175	0	0	147	352	0	0	995	72
Future Volume (vph)	0	0	0	175	0	0	147	352	0	0	995	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.0			5.0	6.0			6.0	4.0
Lane Util. Factor				1.00			1.00	0.95			0.95	1.00
Frt				1.00			1.00	1.00			1.00	0.85
Flt Protected				0.95			0.95	1.00			1.00	1.00
Satd. Flow (prot)				1656			1719	3505			3471	1599
Flt Permitted				0.95			0.95	1.00			1.00	1.00
Satd. Flow (perm)				1656			1719	3505			3471	1599
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	190	0	0	160	383	0	0	1082	78
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	190	0	0	160	383	0	0	1082	78
Heavy Vehicles (%)	2%	2%	2%	9%	0%	0%	5%	3%	2%	2%	4%	1%
Turn Type				Perm			Prot	NA			NA	Free
Protected Phases							5	2			6	
Permitted Phases				8								Free
Actuated Green, G (s)				15.0			13.0	64.0			46.0	90.0
Effective Green, g (s)				15.0			13.0	64.0			46.0	90.0
Actuated g/C Ratio				0.17			0.14	0.71			0.51	1.00
Clearance Time (s)				5.0			5.0	6.0			6.0	
Vehicle Extension (s)				3.0			3.0	3.0			3.0	
Lane Grp Cap (vph)				276			248	2492			1774	1599
v/s Ratio Prot							c0.09	0.11			c0.31	
v/s Ratio Perm				c0.11								0.05
v/c Ratio				0.69			0.65	0.15			0.61	0.05
Uniform Delay, d1				35.3			36.3	4.2			15.6	0.0
Progression Factor				1.00			0.73	0.52			0.31	1.00
Incremental Delay, d2				7.0			5.6	0.1			1.4	0.1
Delay (s)				42.3			32.3	2.3			6.2	0.1
Level of Service				D			C	A			A	A
Approach Delay (s)		0.0			42.3			11.1			5.8	
Approach LOS		A			D			B			A	

Intersection Summary			
HCM 2000 Control Delay	11.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	57.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	101	0	0	398	625	0
Future Volume (vph)	101	0	0	398	625	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0			6.0	6.0	
Lane Util. Factor	1.00			0.95	0.95	
Frt	1.00			1.00	1.00	
Flt Protected	0.95			1.00	1.00	
Satd. Flow (prot)	1770			3438	3438	
Flt Permitted	0.95			1.00	1.00	
Satd. Flow (perm)	1770			3438	3438	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	110	0	0	433	679	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	110	0	0	433	679	0
Heavy Vehicles (%)	2%	2%	2%	5%	5%	0%
Turn Type	Prot			NA	NA	
Protected Phases	7			2	6	
Permitted Phases						
Actuated Green, G (s)	9.6			69.4	69.4	
Effective Green, g (s)	9.6			69.4	69.4	
Actuated g/C Ratio	0.11			0.77	0.77	
Clearance Time (s)	5.0			6.0	6.0	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	188			2651	2651	
v/s Ratio Prot	c0.06			0.13	c0.20	
v/s Ratio Perm						
v/c Ratio	0.59			0.16	0.26	
Uniform Delay, d1	38.3			2.7	2.9	
Progression Factor	1.00			0.11	0.10	
Incremental Delay, d2	4.6			0.1	0.2	
Delay (s)	42.9			0.4	0.5	
Level of Service	D			A	A	
Approach Delay (s)	42.9			0.4	0.5	
Approach LOS	D			A	A	

Intersection Summary			
HCM 2000 Control Delay	4.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	37.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	166	7	83	31	3	72	187	350	49	59	485	261
Future Volume (vph)	166	7	83	31	3	72	187	350	49	59	485	261
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0		5.0	5.0	5.0	6.0	6.0	5.0	6.0	6.0
Lane Util. Factor	0.97	1.00	1.00		1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3242	1900	1509		1817	1429	3183	3471	1392	1719	3406	1442
Flt Permitted	0.95	1.00	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3242	1900	1509		1817	1429	3183	3471	1392	1719	3406	1442
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	180	8	90	34	3	78	203	380	53	64	527	284
RTOR Reduction (vph)	0	0	63	0	0	72	0	0	30	0	0	121
Lane Group Flow (vph)	180	8	27	0	37	6	203	380	23	64	527	163
Heavy Vehicles (%)	8%	0%	7%	0%	0%	13%	10%	4%	16%	5%	6%	12%
Turn Type	Split	NA	pt+ov	Split	NA	Perm	Prot	NA	Perm	Prot	NA	pt+ov
Protected Phases	8	8	8 5	4	4		5	2		1	6	6 8
Permitted Phases						4			2			
Actuated Green, G (s)	10.6	10.6	26.6		6.4	6.4	11.0	38.4	38.4	13.6	41.0	51.6
Effective Green, g (s)	10.6	10.6	26.6		6.4	6.4	11.0	38.4	38.4	13.6	41.0	51.6
Actuated g/C Ratio	0.12	0.12	0.30		0.07	0.07	0.12	0.43	0.43	0.15	0.46	0.57
Clearance Time (s)	5.0	5.0			5.0	5.0	5.0	6.0	6.0	5.0	6.0	
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	381	223	445		129	101	389	1480	593	259	1551	826
v/s Ratio Prot	c0.06	0.00	0.02		c0.02		c0.06	0.11		0.04	c0.15	0.11
v/s Ratio Perm						0.00			0.02			
v/c Ratio	0.47	0.04	0.06		0.29	0.05	0.52	0.26	0.04	0.25	0.34	0.20
Uniform Delay, d1	37.1	35.2	22.7		39.6	39.0	37.0	16.6	15.0	33.7	15.8	9.2
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	0.59	0.44	0.81
Incremental Delay, d2	0.9	0.1	0.1		1.2	0.2	1.3	0.4	0.1	0.5	0.6	0.1
Delay (s)	38.0	35.2	22.8		40.9	39.2	38.3	17.0	15.2	20.4	7.5	7.6
Level of Service	D	D	C		D	D	D	B	B	C	A	A
Approach Delay (s)		33.0			39.7			23.7			8.5	
Approach LOS		C			D			C			A	

Intersection Summary			
HCM 2000 Control Delay	19.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	44.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

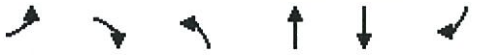
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	211	19	400	70	11	7	559	819	119	14	396	96
Future Volume (vph)	211	19	400	70	11	7	559	819	119	14	396	96
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0		5.0	6.0	6.0	5.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.97	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.94		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1787	1900	1583	1752	1786		3433	3471	1615	1805	3471	1599
Flt Permitted	0.51	1.00	1.00	1.00	1.00		0.95	1.00	1.00	0.15	1.00	1.00
Satd. Flow (perm)	965	1900	1583	1845	1786		3433	3471	1615	279	3471	1599
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	229	21	435	76	12	8	608	890	129	15	430	104
RTOR Reduction (vph)	0	0	127	0	8	0	0	0	59	0	0	72
Lane Group Flow (vph)	229	21	308	76	12	0	608	890	70	15	430	32
Heavy Vehicles (%)	1%	0%	2%	3%	0%	0%	2%	4%	0%	0%	4%	1%
Turn Type	pm+pt	NA	pt+ov	pm+pt	NA		Prot	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4	4 5	3	8		5	2		1	6	
Permitted Phases	4			8					2	6		6
Actuated Green, G (s)	26.8	16.2	42.8	8.4	2.8		26.6	54.4	54.4	30.6	30.6	30.6
Effective Green, g (s)	26.8	16.2	42.8	8.4	2.8		26.6	54.4	54.4	30.6	30.6	30.6
Actuated g/C Ratio	0.27	0.16	0.43	0.08	0.03		0.27	0.54	0.54	0.31	0.31	0.31
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	6.0	6.0	5.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	414	307	677	149	50		913	1888	878	128	1062	489
v/s Ratio Prot	c0.10	0.01	0.19	0.03	0.01		c0.18	c0.26		0.00	c0.12	
v/s Ratio Perm	c0.04			0.01					0.04	0.03		0.02
v/c Ratio	0.55	0.07	0.45	0.51	0.24		0.67	0.47	0.08	0.12	0.40	0.07
Uniform Delay, d1	30.8	35.5	20.3	43.9	47.6		32.7	14.0	10.9	25.4	27.5	24.6
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.87	0.66	0.11	1.00	1.00	1.00
Incremental Delay, d2	1.6	0.1	0.5	2.9	2.5		1.8	0.8	0.2	0.4	1.1	0.3
Delay (s)	32.4	35.6	20.8	46.8	50.1		30.4	10.1	1.4	25.9	28.6	24.8
Level of Service	C	D	C	D	D		C	B	A	C	C	C
Approach Delay (s)		25.1			47.5			17.0			27.8	
Approach LOS		C			D			B			C	

Intersection Summary			
HCM 2000 Control Delay	21.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	60.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	132	0	0	221	853	0	0	843	219
Future Volume (vph)	0	0	0	132	0	0	221	853	0	0	843	219
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.0			5.0	6.0			6.0	4.0
Lane Util. Factor				1.00			1.00	0.95			0.95	1.00
Frt				1.00			1.00	1.00			1.00	0.85
Flt Protected				0.95			0.95	1.00			1.00	1.00
Satd. Flow (prot)				1719			1703	3505			3505	1583
Flt Permitted				0.95			0.25	1.00			1.00	1.00
Satd. Flow (perm)				1719			445	3505			3505	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	143	0	0	240	927	0	0	916	238
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	143	0	0	240	927	0	0	916	238
Heavy Vehicles (%)	2%	2%	2%	5%	0%	0%	6%	3%	2%	2%	3%	2%
Turn Type				Perm			pm+pt	NA			NA	Free
Protected Phases							5	2			6	
Permitted Phases				8			2					Free
Actuated Green, G (s)				13.4			75.6	75.6			60.7	100.0
Effective Green, g (s)				13.4			75.6	75.6			60.7	100.0
Actuated g/C Ratio				0.13			0.76	0.76			0.61	1.00
Clearance Time (s)				5.0			5.0	6.0			6.0	
Vehicle Extension (s)				3.0			3.0	3.0			3.0	
Lane Grp Cap (vph)				230			460	2649			2127	1583
v/s Ratio Prot							c0.05	0.26			0.26	
v/s Ratio Perm				c0.08			c0.34					0.15
v/c Ratio				0.62			0.52	0.35			0.43	0.15
Uniform Delay, d1				40.9			5.0	4.0			10.5	0.0
Progression Factor				1.00			1.77	1.77			0.78	1.00
Incremental Delay, d2				5.1			1.0	0.3			0.6	0.2
Delay (s)				46.1			9.9	7.5			8.8	0.2
Level of Service				D			A	A			A	A
Approach Delay (s)		0.0			46.1			8.0			7.0	
Approach LOS		A			D			A			A	

Intersection Summary			
HCM 2000 Control Delay	9.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	55.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	185	0	0	889	557	0
Future Volume (vph)	185	0	0	889	557	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0			6.0	6.0	
Lane Util. Factor	1.00			0.95	0.95	
Frt	1.00			1.00	1.00	
Flt Protected	0.95			1.00	1.00	
Satd. Flow (prot)	1752			3505	3471	
Flt Permitted	0.95			1.00	1.00	
Satd. Flow (perm)	1752			3505	3471	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	201	0	0	966	605	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	201	0	0	966	605	0
Heavy Vehicles (%)	3%	2%	2%	3%	4%	0%
Turn Type	Prot			NA	NA	
Protected Phases	7			2	6	
Permitted Phases						
Actuated Green, G (s)	16.8			72.2	72.2	
Effective Green, g (s)	16.8			72.2	72.2	
Actuated g/C Ratio	0.17			0.72	0.72	
Clearance Time (s)	5.0			6.0	6.0	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	294			2530	2506	
v/s Ratio Prot	c0.11			c0.28	0.17	
v/s Ratio Perm						
v/c Ratio	0.68			0.38	0.24	
Uniform Delay, d1	39.1			5.3	4.7	
Progression Factor	1.00			0.22	1.75	
Incremental Delay, d2	6.4			0.4	0.2	
Delay (s)	45.5			1.5	8.4	
Level of Service	D			A	A	
Approach Delay (s)	45.5			1.5	8.4	
Approach LOS	D			A	A	

Intersection Summary			
HCM 2000 Control Delay	8.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	44.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	365	9	190	17	8	92	210	697	64	44	481	228
Future Volume (vph)	365	9	190	17	8	92	210	697	64	44	481	228
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0		5.0	5.0	5.0	6.0	6.0	5.0	6.0	6.0
Lane Util. Factor	0.97	1.00	1.00		1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3242	1712	1482		1762	1583	3367	3539	1538	1770	3505	1538
Flt Permitted	0.95	1.00	1.00		0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3242	1712	1482		1762	1583	3367	3539	1538	1770	3505	1538
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	397	10	207	18	9	100	228	758	70	48	523	248
RTOR Reduction (vph)	0	0	138	0	0	94	0	0	36	0	0	104
Lane Group Flow (vph)	397	10	69	0	27	6	228	758	34	48	523	144
Heavy Vehicles (%)	8%	11%	9%	0%	13%	2%	4%	2%	5%	2%	3%	5%
Turn Type	Split	NA	pt+ov	Split	NA	Perm	Prot	NA	Perm	Prot	NA	pt+ov
Protected Phases	8	8	8 5	4	4		5	2		1	6	6 8
Permitted Phases						4			2			
Actuated Green, G (s)	18.8	18.8	33.4		6.2	6.2	14.6	48.8	48.8	5.2	39.4	63.2
Effective Green, g (s)	18.8	18.8	33.4		6.2	6.2	14.6	48.8	48.8	5.2	39.4	58.2
Actuated g/C Ratio	0.19	0.19	0.33		0.06	0.06	0.15	0.49	0.49	0.05	0.39	0.58
Clearance Time (s)	5.0	5.0			5.0	5.0	5.0	6.0	6.0	5.0	6.0	
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	609	321	494		109	98	491	1727	750	92	1380	895
v/s Ratio Prot	c0.12	0.01	0.05		c0.02		c0.07	c0.21		0.03	0.15	0.09
v/s Ratio Perm						0.00			0.02			
v/c Ratio	0.65	0.03	0.14		0.25	0.06	0.46	0.44	0.05	0.52	0.38	0.16
Uniform Delay, d1	37.6	33.2	23.3		44.7	44.2	39.1	16.7	13.4	46.2	21.6	9.6
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	0.90	0.60	0.27
Incremental Delay, d2	2.5	0.0	0.1		1.2	0.3	0.7	0.8	0.1	5.2	0.8	0.1
Delay (s)	40.1	33.2	23.4		45.9	44.4	39.8	17.5	13.5	46.7	13.8	2.7
Level of Service	D	C	C		D	D	D	B	B	D	B	A
Approach Delay (s)		34.3			44.7			22.0			12.3	
Approach LOS		C			D			C			B	

Intersection Summary			
HCM 2000 Control Delay	23.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	55.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	14	76	16	342	804	13
Future Vol, veh/h	14	76	16	342	804	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	8	6	6	4	0
Mvmt Flow	15	83	17	372	874	14

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1287	881	888	0	-	0
Stage 1	881	-	-	-	-	-
Stage 2	406	-	-	-	-	-
Critical Hdwy	6.4	6.28	4.16	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.372	2.254	-	-	-
Pot Cap-1 Maneuver	183	337	746	-	-	-
Stage 1	408	-	-	-	-	-
Stage 2	677	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	178	337	746	-	-	-
Mov Cap-2 Maneuver	178	-	-	-	-	-
Stage 1	396	-	-	-	-	-
Stage 2	677	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	23.1	0.4	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	746	-	296	-	-
HCM Lane V/C Ratio	0.023	-	0.33	-	-
HCM Control Delay (s)	9.9	0	23.1	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.1	-	1.4	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	37	0	622	1030	19
Future Vol, veh/h	0	37	0	622	1030	19
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
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	3	3	3	3
Mvmt Flow	0	40	0	676	1120	21

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	560	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	472	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	472	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.3	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	472	-	-
HCM Lane V/C Ratio	-	0.085	-	-
HCM Control Delay (s)	-	13.3	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.3	-	-

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	16	31	70	967	475	14
Future Vol, veh/h	16	31	70	967	475	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	6	3	6	3	4	0
Mvmt Flow	17	34	76	1051	516	15

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1727	524	531	0	-	0
Stage 1	524	-	-	-	-	-
Stage 2	1203	-	-	-	-	-
Critical Hdwy	6.46	6.23	4.16	-	-	-
Critical Hdwy Stg 1	5.46	-	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-	-
Follow-up Hdwy	3.554	3.327	2.254	-	-	-
Pot Cap-1 Maneuver	95	551	1016	-	-	-
Stage 1	586	-	-	-	-	-
Stage 2	279	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	78	551	1016	-	-	-
Mov Cap-2 Maneuver	78	-	-	-	-	-
Stage 1	481	-	-	-	-	-
Stage 2	279	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	32.7	0.6	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1016	-	180	-	-
HCM Lane V/C Ratio	0.075	-	0.284	-	-
HCM Control Delay (s)	8.8	0	32.7	-	-
HCM Lane LOS	A	A	D	-	-
HCM 95th %tile Q(veh)	0.2	-	1.1	-	-

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↱		↑↑	↑↑	↱
Traffic Vol, veh/h	0	227	0	1497	778	31
Future Vol, veh/h	0	227	0	1497	778	31
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
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	3	3	3	3
Mvmt Flow	0	247	0	1627	846	34

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	423	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	579	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	579	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.8	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	579	-	-
HCM Lane V/C Ratio	-	0.426	-	-
HCM Control Delay (s)	-	15.8	-	-
HCM Lane LOS	-	C	-	-
HCM 95th %tile Q(veh)	-	2.1	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	26	1	88	154	20	287	347	42	7	898	52
v/c Ratio	0.12	0.01	0.15	0.55	0.14	0.63	0.16	0.04	0.02	0.56	0.06
Control Delay	30.1	38.0	0.6	39.9	22.9	44.1	9.3	0.1	15.2	20.5	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.1	38.0	0.6	39.9	22.9	44.1	9.3	0.1	15.2	20.5	0.1
Queue Length 50th (ft)	14	1	0	83	2	70	36	0	2	212	0
Queue Length 95th (ft)	31	5	0	122	24	109	107	1	11	276	0
Internal Link Dist (ft)		808			693		749			365	
Turn Bay Length (ft)			200			300		350	150		200
Base Capacity (vph)	214	147	548	342	273	495	2125	1037	420	1608	850
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.01	0.16	0.45	0.07	0.58	0.16	0.04	0.02	0.56	0.06

Intersection Summary



Lane Group	WBL	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	190	160	383	1082	78
v/c Ratio	0.69	0.65	0.15	0.61	0.05
Control Delay	47.9	38.6	2.5	6.8	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	47.9	38.6	2.5	6.8	0.1
Queue Length 50th (ft)	102	92	14	38	0
Queue Length 95th (ft)	166	141	37	101	m0
Internal Link Dist (ft)			858	722	
Turn Bay Length (ft)		200			300
Base Capacity (vph)	349	305	2491	1773	1599
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.54	0.52	0.15	0.61	0.05

Intersection Summary

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

Lane Group	EBL	NBT	SBT
Lane Group Flow (vph)	110	433	679
v/c Ratio	0.51	0.16	0.25
Control Delay	44.6	0.5	0.5
Queue Delay	0.0	0.0	0.0
Total Delay	44.6	0.5	0.5
Queue Length 50th (ft)	60	3	1
Queue Length 95th (ft)	106	5	0
Internal Link Dist (ft)	181	207	319
Turn Bay Length (ft)			
Base Capacity (vph)	472	2735	2735
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.23	0.16	0.25

Intersection Summary

Lane Group	EBL	EBT	EBR	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	180	8	90	37	78	203	380	53	64	527	284
v/c Ratio	0.47	0.04	0.16	0.24	0.23	0.52	0.24	0.07	0.22	0.33	0.29
Control Delay	40.8	34.0	0.6	41.7	1.6	41.7	19.9	0.2	19.8	8.1	1.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.8	34.0	0.6	41.7	1.6	41.7	19.9	0.2	19.8	8.1	1.5
Queue Length 50th (ft)	49	4	0	20	0	56	77	0	29	61	0
Queue Length 95th (ft)	80	17	0	49	0	87	129	0	51	87	3
Internal Link Dist (ft)		584		306			932			541	
Turn Bay Length (ft)	200		200			200		200	200		
Base Capacity (vph)	468	274	584	201	363	495	1627	736	310	1590	994
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.03	0.15	0.18	0.21	0.41	0.23	0.07	0.21	0.33	0.29

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	229	21	435	76	20	608	890	129	15	430	104
v/c Ratio	0.59	0.08	0.58	0.44	0.15	0.75	0.42	0.12	0.07	0.34	0.15
Control Delay	38.1	34.5	9.5	40.3	34.9	36.9	9.8	0.3	28.0	27.2	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.1	34.5	9.5	40.3	34.9	36.9	9.8	0.3	28.0	27.2	0.4
Queue Length 50th (ft)	133	13	77	48	7	194	91	1	6	99	0
Queue Length 95th (ft)	172	30	86	65	31	210	148	2	25	183	0
Internal Link Dist (ft)		808			693		749			365	
Turn Bay Length (ft)			200			300		350	150		200
Base Capacity (vph)	492	494	941	174	132	961	2095	1048	211	1269	709
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.04	0.46	0.44	0.15	0.63	0.42	0.12	0.07	0.34	0.15

Intersection Summary



Lane Group	WBL	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	143	240	927	916	238
v/c Ratio	0.62	0.52	0.35	0.43	0.15
Control Delay	52.3	10.3	8.2	9.7	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	52.3	10.3	8.2	9.7	0.2
Queue Length 50th (ft)	87	38	138	124	0
Queue Length 95th (ft)	144	93	227	168	0
Internal Link Dist (ft)			858	722	
Turn Bay Length (ft)		200			300
Base Capacity (vph)	309	630	2649	2126	1583
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.46	0.38	0.35	0.43	0.15

Intersection Summary

Lane Group	EBL	NBT	SBT
Lane Group Flow (vph)	201	966	605
v/c Ratio	0.68	0.38	0.24
Control Delay	50.5	1.7	9.3
Queue Delay	0.0	0.0	0.0
Total Delay	50.5	1.7	9.3
Queue Length 50th (ft)	122	6	147
Queue Length 95th (ft)	183	14	157
Internal Link Dist (ft)	181	207	319
Turn Bay Length (ft)			
Base Capacity (vph)	543	2529	2505
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.37	0.38	0.24

Intersection Summary

Lane Group	EBL	EBT	EBR	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	397	10	207	27	100	228	758	70	48	523	248
v/c Ratio	0.65	0.03	0.33	0.20	0.40	0.54	0.41	0.08	0.34	0.35	0.23
Control Delay	42.3	30.8	3.2	46.8	7.7	45.3	18.9	0.3	45.5	14.0	0.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.3	30.8	3.2	46.8	7.7	45.3	18.9	0.3	45.5	14.0	0.8
Queue Length 50th (ft)	121	5	0	17	0	70	173	0	32	48	2
Queue Length 95th (ft)	162	19	29	43	22	105	257	3	68	127	6
Internal Link Dist (ft)		584		306			932			541	
Turn Bay Length (ft)	200		200			200		200	200		
Base Capacity (vph)	745	393	683	158	271	486	1832	859	159	1496	1085
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.03	0.30	0.17	0.37	0.47	0.41	0.08	0.30	0.35	0.23

Intersection Summary

Intersection: 1: Route 30 & North #1/Fieldstone Pkwy

Movement	EB	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	TR	L	L	T	T	L	T	T
Maximum Queue (ft)	63	12	108	189	45	139	162	148	20	37	170	216
Average Queue (ft)	17	1	44	94	14	73	97	44	1	3	85	116
95th Queue (ft)	46	6	90	156	38	122	145	106	10	20	147	182
Link Distance (ft)	808	808		675	675			748	748		365	365
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)			200			300	300			150		
Storage Blk Time (%)											0	0
Queuing Penalty (veh)											0	0

Intersection: 1: Route 30 & North #1/Fieldstone Pkwy

Movement	SB
Directions Served	R
Maximum Queue (ft)	49
Average Queue (ft)	14
95th Queue (ft)	41
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	200
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 2: Route 30 & Ramp B To I-64 WB/Ramp From I-64 WB

Movement	WB	NB	NB	NB	SB	SB
Directions Served	L	L	T	T	T	T
Maximum Queue (ft)	106	198	167	80	145	265
Average Queue (ft)	88	96	45	13	42	119
95th Queue (ft)	112	169	119	49	105	221
Link Distance (ft)	89		869	869	700	700
Upstream Blk Time (%)	29					
Queuing Penalty (veh)	51					
Storage Bay Dist (ft)		200				
Storage Blk Time (%)		1	0		0	
Queuing Penalty (veh)		1	0		0	

Intersection: 3: Route 30 & Ramp From I-64 EB

Movement	EB	NB	NB	SB	SB
Directions Served	L	T	T	T	T
Maximum Queue (ft)	141	66	58	62	89
Average Queue (ft)	59	14	10	14	23
95th Queue (ft)	110	48	40	45	68
Link Distance (ft)	151	179	179	309	309
Upstream Blk Time (%)	0				
Queuing Penalty (veh)	0				
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 4: Route 30 & Old Stage Road/Convenience Store

Movement	EB	EB	EB	EB	WB	WB	NB	NB	NB	NB	NB	SB
Directions Served	L	L	T	R	LT	R	L	L	T	T	R	L
Maximum Queue (ft)	111	145	44	124	79	79	156	143	130	140	39	118
Average Queue (ft)	46	68	5	46	27	29	59	56	41	40	3	34
95th Queue (ft)	92	119	26	99	63	61	123	112	96	101	19	83
Link Distance (ft)		482	482		305	305			914	914		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	200			200			200	200			200	200
Storage Blk Time (%)		0					0		0			
Queuing Penalty (veh)		0					0		0			

Intersection: 4: Route 30 & Old Stage Road/Convenience Store

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	106	130	131
Average Queue (ft)	33	41	38
95th Queue (ft)	81	95	96
Link Distance (ft)	551	551	551
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: Route 30 & Ramp From I-64 EB/Ramp D To I-64 EB

Movement	EB
Directions Served	R
Maximum Queue (ft)	3
Average Queue (ft)	0
95th Queue (ft)	3
Link Distance (ft)	271
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 6: Route 30 & Loop A to I-64 EB

Movement	SB
Directions Served	R
Maximum Queue (ft)	67
Average Queue (ft)	10
95th Queue (ft)	41
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	50
Storage Blk Time (%)	0
Queuing Penalty (veh)	0

Intersection: 7: Route 30 & Barnes Road

Movement	EB	NB	B16	SB
Directions Served	LR	LT	T	TR
Maximum Queue (ft)	110	145	6	3
Average Queue (ft)	47	22	0	0
95th Queue (ft)	89	87	6	3
Link Distance (ft)	936	112	329	1180
Upstream Blk Time (%)		1		
Queuing Penalty (veh)		2		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: Route 30

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 13: Ramp C From I-64 WB & Ramp From I-64 WB

Movement	NW
Directions Served	L
Maximum Queue (ft)	188
Average Queue (ft)	59
95th Queue (ft)	162
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	400
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 14: Route 30 & Ramp From I-64 WB

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 17: Ramp From I-64 EB & Ramp A From I-64 EB

Movement	EB
Directions Served	TR
Maximum Queue (ft)	24
Average Queue (ft)	1
95th Queue (ft)	20
Link Distance (ft)	1148
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 27: Route 30 & North #2

Movement	EB
Directions Served	R
Maximum Queue (ft)	49
Average Queue (ft)	18
95th Queue (ft)	40
Link Distance (ft)	811
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 28: Old Stage Road & South #2

Movement	EB	WB	WB	SB
Directions Served	LT	UT	R	LR
Maximum Queue (ft)	65	34	5	56
Average Queue (ft)	11	2	0	15
95th Queue (ft)	42	16	5	42
Link Distance (ft)	385	482	482	916
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 34: Old Stage Road & South #1

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	42	20	49
Average Queue (ft)	3	1	4
95th Queue (ft)	21	9	24
Link Distance (ft)	403	385	895
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 55

Intersection: 1: Route 30 & North #1/Fieldstone Pkwy

Movement	EB	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	TR	L	L	T	T	L	T	T
Maximum Queue (ft)	211	160	274	115	56	229	395	508	434	50	166	195
Average Queue (ft)	115	18	138	53	14	133	165	237	36	13	80	103
95th Queue (ft)	193	94	236	100	42	204	286	427	215	40	136	169
Link Distance (ft)	808	808		675	675			748	748		365	365
Upstream Blk Time (%)								0	0			
Queuing Penalty (veh)								1	0			
Storage Bay Dist (ft)			200			300	300			150		
Storage Blk Time (%)			3					5	0		0	0
Queuing Penalty (veh)			1					30	0		0	0

Intersection: 1: Route 30 & North #1/Fieldstone Pkwy

Movement	SB
Directions Served	R
Maximum Queue (ft)	75
Average Queue (ft)	33
95th Queue (ft)	64
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	200
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 2: Route 30 & Ramp B To I-64 WB/Ramp From I-64 WB

Movement	WB	NB	NB	NB	SB	SB
Directions Served	L	L	T	T	T	T
Maximum Queue (ft)	100	197	193	136	141	252
Average Queue (ft)	79	91	74	39	51	117
95th Queue (ft)	111	165	153	99	114	210
Link Distance (ft)	89		869	869	700	700
Upstream Blk Time (%)	18					
Queuing Penalty (veh)	24					
Storage Bay Dist (ft)		200				
Storage Blk Time (%)		0	0		0	
Queuing Penalty (veh)		2	0		0	

Intersection: 3: Route 30 & Ramp From I-64 EB

Movement	EB	NB	NB	SB	SB
Directions Served	L	T	T	T	T
Maximum Queue (ft)	161	117	101	96	121
Average Queue (ft)	110	30	22	35	41
95th Queue (ft)	168	84	68	80	95
Link Distance (ft)	151	179	179	309	309
Upstream Blk Time (%)	4				
Queuing Penalty (veh)	7				
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 4: Route 30 & Old Stage Road/Convenience Store

Movement	EB	EB	EB	EB	WB	WB	NB	NB	NB	NB	NB	SB
Directions Served	L	L	T	R	LT	R	L	L	T	T	R	L
Maximum Queue (ft)	200	227	41	206	62	90	129	114	192	207	27	78
Average Queue (ft)	108	122	7	90	20	36	56	52	82	84	2	25
95th Queue (ft)	175	192	29	167	51	69	109	100	158	166	14	62
Link Distance (ft)		482	482		305	305			914	914		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	200			200			200	200			200	200
Storage Blk Time (%)	1	1		1					0	0		
Queuing Penalty (veh)	1	1		0					0	0		

Intersection: 4: Route 30 & Old Stage Road/Convenience Store

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	120	122	122
Average Queue (ft)	50	53	36
95th Queue (ft)	101	106	91
Link Distance (ft)	551	551	551
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: Route 30 & Ramp From I-64 EB/Ramp D To I-64 EB

Movement	SB
Directions Served	T
Maximum Queue (ft)	3
Average Queue (ft)	0
95th Queue (ft)	3
Link Distance (ft)	179
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 6: Route 30 & Loop A to I-64 EB

Movement	SB
Directions Served	R
Maximum Queue (ft)	40
Average Queue (ft)	2
95th Queue (ft)	17
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	50
Storage Blk Time (%)	0
Queuing Penalty (veh)	0

Intersection: 7: Route 30 & Barnes Road

Movement	EB	NB	B16	B8	SB
Directions Served	LR	LT	T	T	TR
Maximum Queue (ft)	109	184	139	10	6
Average Queue (ft)	36	70	7	0	0
95th Queue (ft)	82	169	71	10	6
Link Distance (ft)	936	112	317	539	1180
Upstream Blk Time (%)		2	0		
Queuing Penalty (veh)		25	1		
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 13: Ramp C From I-64 WB & Ramp From I-64 WB

Movement	NW
Directions Served	L
Maximum Queue (ft)	148
Average Queue (ft)	30
95th Queue (ft)	103
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	400
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 14: Route 30 & Ramp From I-64 WB

Movement	NB	NB	NW
Directions Served	T	T	R
Maximum Queue (ft)	47	16	57
Average Queue (ft)	2	1	3
95th Queue (ft)	23	10	32
Link Distance (ft)	700	700	773
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 17: Ramp From I-64 EB & Ramp A From I-64 EB

Movement	EB
Directions Served	TR
Maximum Queue (ft)	100
Average Queue (ft)	9
95th Queue (ft)	53
Link Distance (ft)	1148
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 27: Route 30 & North #2

Movement	EB	NB	NB	B9	B9	B9
Directions Served	R	T	T	T	T	
Maximum Queue (ft)	156	34	17	474	517	333
Average Queue (ft)	61	2	1	34	42	22
95th Queue (ft)	116	28	17	245	270	199
Link Distance (ft)	811	170	170	511	511	511
Upstream Blk Time (%)		0	0	0	0	0
Queuing Penalty (veh)		1	0	1	1	1
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 28: Old Stage Road & South #2

Movement	EB	WB	SB
Directions Served	LT	UT	LR
Maximum Queue (ft)	111	16	106
Average Queue (ft)	42	1	36
95th Queue (ft)	87	10	82
Link Distance (ft)	385	482	916
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 34: Old Stage Road & South #1

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	38	3	78
Average Queue (ft)	7	0	19
95th Queue (ft)	30	3	59
Link Distance (ft)	403	385	895
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 97

Version FY2022
(Last Updated 7/19/2021)

Please use the accompanying Excel spreadsheet to calculate the numbers below.

FISCAL IMPACT WORKSHEET AND ASSUMPTIONS

Please complete all *applicable* sections. Please use the provided spreadsheet to perform calculations. If space provided is insufficient, please feel free to include additional pages. If you have any questions please contact the Planning Office at 757-253-6685 or planning@jamescitycountyva.gov

1a) PROPOSAL NAME: Hazelwood Enterprise Center

1b) Does this project propose residential units? Yes ☐x No ☐ (if no, skip Sec. 2)

1c) Does this project include commercial or industrial uses? Yes ☐x No☐ (If no skip Sec. 3)

Fiscal Impact Worksheet Section 2: Residential Developments

2a) TOTAL NEW DWELLING UNITS. Please indicate the total number of each type of proposed dwelling unit. Then, *add* the total number of new dwelling units.

Single-Family Detached	0	Apartment	250
Townhome/Condominium/Single-Family	0	Manufactured Home	0
Total Dwelling Units	250		

Are any units affordable? Yes ☐ No ☐ (If yes, how many?)_____

Residential Expenses – School Expenses

2b) TOTAL NEW STUDENTS GENERATED. *Multiply* the number of each type of proposed unit from (2a) its corresponding Student Generation Rate below. Then, *add* the total number of students generated by the proposal.

Unit Type	Number of Proposed Units (from 2a)	Student Generation Rate	Students Generated
Single-Family Detached		0.4	
Townhome/Condo/Attached		0.17	
Apartment	250	0.31	77.5

Manufactured Home		0.46	
Total			77.5

2c) TOTAL SCHOOL EXPENSES. *Multiply* the total number of students generated from (2b) by the Per-Student Total Expenses below.

Total Students Generated	Per-Student Operating Expenses	Per-Student Capital Expenses	**Per-Student Total Expenses**	**Total School Expenses**
77.5	*$8,762.38*	*$1,948.32*	***$10,710.70***	$ 830,079.25

Residential Expenses - Non-School Expenses

2d) TOTAL POPULATION GENERATED. *Multiply* the number of proposed units from (2a) and multiply by the Average Household Size number below.

Total Units Proposed	**Average Household Size**	**Total Population Generated**
250	**2.49**	612.5

2e) TOTAL NON-SCHOOL EXPENSES. *Multiply* the population generated from (2d) by the Per Capita Non-School Expenses below.

Total Population Generated	**Per-Capita Non-School Expenses**	**Total Non-School Expenses**
612.5	***$680.24***	$ 416,647.00

2f) TOTAL RESIDENTIAL EXPENSES. *Add* school expenses from (2c) and non-school expenses (2e) to determine total residential expenses.

Total School Expenses	**Non-School Expenses**	**Total Residential Expenses**
$ 830,079.25	$ 416,647.00	$ 1,246,726.25

Residential Revenues

2g) TOTAL REAL ESTATE EXPECTED MARKET VALUE. Write the number of each type of units proposed from (2a). Then *determine the average* expected market value for each type of unit. Then, *multiply* the number of unit proposed by their average expected market value. Finally, *add* the total expected market value of the proposed units.

Unit Type:	**Number of Units:**	**Average Expected Market Value:**	**Total Expected Market Value:**
Single-Family Detached	0	$	$
Townhome/Condo/Multi-family	250	$ 100,000	$ 25,000,000

Total:	0	N/A	$ 25,000,000

2h) TOTAL REAL ESTATE TAXES PAID. *Multiply* the total market value from (2g) by the real estate tax rate blow.

Total Market Value	Real Estate Tax Rate	Total Real Estate Taxes Paid
$ 25,000,000.00	**.0084**	$ 210,000.00

2i) TOTAL PERSONAL PROPERTY TAXES PAID. *Multiply* the total real estate taxes paid (2h) by the property tax average below.

Real Estate Tax Paid	Personal Property Tax Average	Personal Property Taxes Paid
$ 210,000.00	**0.15**	$ 31,500.00

2j) TOTAL SALES & MEALS TAXES PAID. *Multiply* the total real estate taxes paid (2h) by the sales and meals tax average below:

Real Estate Tax Paid	Sales and Meals Tax Average	Total Sales & Meals Taxes Paid
$ 210,000.00	**.09**	$ 18,900.00

2k) TOTAL CONSERVATION EASEMENT TAXES PAID. If the proposal contains a conservation easement, *multiply* the size of the proposed conservation easement by the conservation easement assessment rate.

Proposed Conservation Easement Size	Assessment Rate	Conservation Easement Taxes Paid
10	**$2000/acre** (prorated)	$ 20,000.00

2l) TOTAL HOA TAXES PAID. If the HOA will own any property that will be rented to non- HOA members, *multiply* the expected assessed value of those rentable facilities by the real estate tax rate below.

HOA Property Type	Total Assessed Value	Real Estate Tax Rate	Total HOA Taxes Paid
0	0	**.0084**	$ 0

2m) TOTAL RESIDENTIAL REVENUES. *Add* all residential taxes paid to the County from (2h) through (2l).

Total Residential Revenues	**$280,400.00**

2n) RESIDENTIAL FISCAL IMPACT. Subtract total residential revenues (2m) from total residential expenses (2f).

Total Residential Ex	Total Residential Revenues	Total Residential Fiscal Impact
	280,400.00	$ - 966,326.25

Fiscal Impact Analysis Worksheet Section 3: Commercial and Industrial Developments

Commercial and Industrial Expenses

3a) TOTAL NEW BUSINESSES. How many new businesses are proposed? _____
(Include all businesses that will rent or lease space at the location as part of the proposal, including probable tenants of an office park or strip mall).

3b) TOTAL COMMERCIAL EXPENSES. *Multiply* the total business real estate expected assessment value from (3c) below by the Commercial Expenses Rate below.

Total Expected Assessment Value	Commercial Expense Rate	Total Commercial Expenses
$1	**0.00468**	**$** 120,000,000.00

Commercial & Industrial Revenues

3c) TOTAL REAL ESTATE EXPECTED ASSESSMENT VALUE. E*stimate* the expected real estate assessment value, at buildout, of all proposed commercial element properties below.

Proposed Business Properties (by use and location)	Expected Assessment Value
Warehouse	30,000,000.00
Manufacturing	30,000,000.00
Commercial	50,000,000.00
Office	10,000,000.00
Total:	$ 120,000,000.00

3d) TOTAL REAL ESTATE TAXES PAID. *Multiply* the total expected market property value from (3c) by the real estate tax rate below.

Expected Market Value	Real Estate Tax Rate	Real Estate Taxes Paid
120,000,000.00	**.0084**	$ 1,008,000.00

3e) TOTAL BUSINESS PERSONAL PROPERTY TAXES PAID. *Multiply* the total business capitalization for each proposed commercial element by the business personal property tax rate below. Then *add* the total personal property taxes paid.

Proposed Business Name	Total Business Capitalization	Personal Property Tax Rate	Total Business Property Taxes Paid

Industrial Warehouse	10,500,000.00	**0.01**	105,000.00
Commercial	24,375,000.00	**0.01**	243,750.00
Office	16,500,000.00	**0.01**	165,000.00
Total:		N/A	$ 513,750.00

3f) TOTAL BUSINESS MACHINERY AND TOOLS TAXES PAID. If any manufacturing is proposed, *multiply* the total business capitalization for each proposed manufacturing element by the business machinery and tools tax rate below. Then, *add* the machinery and tools tax paid.

Proposed Business Name	**Total Business Capitalization**	**Machinery and Tools Tax Rate**	**Total Business Property Taxes Paid**
Manufacturing	10,500,000.00	**0.01**	105,000.00
		0.01	
Total:	10,500,000.00	N/A	$ 105,000.00

3g) TOTAL SALES TAXES PAID. *Estimate* the applicable total gross retail sales, prepared meals sales, and hotel/motel room sales for proposal's commercial elements below. Then, *multiply* the projected commercial gross sales by the applicable sales tax rates. Then, *add* the total sales taxes paid.

Tax Type	**Projected Gross Sales**	**Sales Tax Rates**	**Sales Taxes Paid**
Retail Sales	10,000,000.00	**0.015 of Gross Retail Sales**	100,000.00
Prepared Meals	10,000,000.00	**0.04 of Prepared Sales**	400,000.00
Hotel, Motel		**0.02 of Gross Sales***	
Total:	**N/A**	**N/A**	$ 500,000.00

*Actual Occupancy Tax is 5% of Gross Sales; however, 60% of those funds are targeted to tourism.

3h) TOTAL BUSINESS LICENSES FEES PAID. Estimate each business element's total gross sales. Multiply each business element's projected gross sales by the Annual Business License rate to determine annual business licenses fee paid.

Proposed Business Name(s)	**Business Type* (see exhibit sheet)**	**Projected Total Gross Sales**	**Business License Rate**	**Annual Business License Fees Paid**
	Professional Services	0.00	**0.0058**	
	Retail Services	10,000,000.00	**0.0020**	20,000.00
	Contractors	0.00	**0.0016**	

	Wholesalers	100,000,000.00	**0.0005**	50,000.00
	Exempt*	0.00	**No fee due**	
	Other Services	5,000,000.00	**0.0036**	18,000.00
	Total	N/A	N/A	$ 70,000.00

3i) TOTAL COMMERCIAL AND INDUSTRIAL REVENUES. *Add* the total taxes and fees paid by all of the business elements from (3d) through (3h).

Total Commercial and Industrial Revenues	$ 2,214,750.00

3j) COMMERCIAL FISCAL IMPACT. *Subtract* total commercial and industrial revenues (3i) from total commercial and industrial expenses (3b).

Total Commercial	Total Commercial Revenues	Total Commercial Fiscal Impact
	2,214.750.00	$ 1,653,150.00

3k) TOTAL PROPOSED FISCAL IMPACT. *Add* residential fiscal impacts (2n) and commercial fiscal impacts (3j).

Residential Fiscal Impact	Commercial Fiscal Impact	Total Proposed Fiscal Impact
	1,653,150.00	$ 643,869.35

Fiscal Impact Analysis Worksheet Section 4: Current Land Use

Current Residential Use (If there are no existing residential units, skip to (4g)).

4a) TOTAL CURRENT DWELLING UNITS. Please indicate the total number of each type of existing dwelling unit. Then, *add* the total number of existing dwelling units.

Single-Family Detached	1	Apartment	
Townhome/Condominium/Single-Family Attached		Manufactured Home	
Total Dwelling Units	1		

Residential Expenses - School Expenses

4b) TOTAL CURRENT STUDENTS. *Multiply* the number of existing units from (4a) by its corresponding Student Generation Rate below. Then, *add* the total number of existing students.

Unit Type	Number of Existing Units	Student Generation Rate	Existing Students
Single-Family Detached	0.4	0.4	0.4
Townhome/Condo/Attached	0	0.17	
Apartment	0	0.31	

Manufactured Home	0	0.46	
Total		**N/A**	0.4

4c) TOTAL CURRENT SCHOOL EXPENSES. *Multiply* the total number of current students from (4b) by the per-student school cost below.

Number of Existing Students	Per-Student School Cost	Current School Expenses
0.4	***$11,828***	$ 4,731.20

Residential Expenses - Non-School Expenses

4d) TOTAL CURRENT POPULATION. *Multiply* the total number of existing units from (4a) by average household size below.

Total Existing Units	Average Household Size	Total Current Population
1	**2.45**	2.45

4e) TOTAL CURRENT NON-SCHOOL EXPENSES. *Multiply* the current population from (4d) by per-capita non-school expenses below.

Total Current Population	Per-Capita Non-School Expenses	Current Non-School Expenses
2.45	***$1,284.00***	$ 3145.80

4f) TOTAL RESIDENTIAL EXPENSES. *Add* school expenses from (4c) and non-school expenses from (4e).

School Expenses	Non-School Expenses	Residential Expenses
$ 4,731.20	$ 3145.80	$ 7,877.00

Residential Revenues

4g) TOTAL CURRENT ASSESSMENT VALUE. *Search* for each residential property included in the proposal on the Parcel Viewer at http://property.jccegov.com/parcelviewer/Search.aspx . *Indicate* each property's total assessment value below. Then, *add* total assessment values.

Property Address and Description	Assessment Value
9400 Barnes	$ 1,954,600.00
275 Old Stage	$ 2,554,700.00
301 Old Stage	$ 333,800.00

Total:	$ 4,843,100.00

4h) TOTAL CURRENT REAL ESTATE TAXES PAID. *Multiply* the total assessment value from (4g) by the real estate tax rate below.

Total Assessment Value	Real Estate Tax Rate	Real Estate Taxes Paid
4,843,100.00	**.0084**	$ 40,682.04

4i) TOTAL CURRENT PERSONAL PROPERTY TAXES PAID. *Multiply* total real estate taxes paid from (4h) by the personal property tax average below.

Real Estate Tax Paid	Personal Property Tax Average	Personal Property Paid
40,682.04	**0.15**	$ 6,102.31

4j) TOTAL CURRENT SALES AND MEALS TAXES PAID. *Multiply* the total real estate taxes paid from (4h) by the sales and meals tax average below.

Real Estate Tax Paid	Sales and Meals Tax Average	Average Excise Tax Paid
40,682.04	**.09**	$ 3,661.38

4k) TOTAL CURRENT RESIDENTIAL REVENUES. *Add* all current residential taxes paid to the County from (4h) through (4j).

Total Current Residential Revenues	$ 50,445.73

4l) CURRENT RESIDENTIAL FISCAL IMPACT. *Subtract* total residential revenues (4k) from total residential expenses (4f).

Total Residential	Total Residential Revenues	Total Residential Fiscal Impact
42,568.73	50,445.73	$ 42,568.73

4m) FINAL RESIDENTIAL FISCAL IMPACT. *Subtract* current residential fiscal impact from (4l) from proposed residential fiscal impact from (2n).

Proposed Residential Impact	Current Residential Impact	Final Residential Fiscal Impact
(966,326.25)	42,568.73	$ (1,008,894.98)

Current Commercial Use

Current Commercial Expenses (if there are no current businesses or commercial properties, skip to (5k).

5a) TOTAL CURRENT BUSINESSES. How many businesses exist on the proposal properties? 0 (Include all businesses that rent or lease space at the location).

5b) TOTAL CURRENT COMMERCIAL EXPENSES. *Multiply* the current number of businesses operating on the proposal properties by the per-business expense rate below.

Total Expected Assessment Value	Commercial Expense Rate	Total Commercial Expenses
	0.00468	$

Current Commercial Revenues

5c) TOTAL CURRENT ASSESSMENT VALUE. *Search* for each commercial property included in the proposal on the Parcel Viewer at http://property.jccegov.com/parcelviewer/Search.aspx . *Indicate* each property's total assessment value below. Then, *add* total assessment values.

Addresses	Assessment Value	Real Estate Tax Rate	Real Estate Tax Paid
		.0084	
		.0084	
Total:			$

5d) TOTAL CURRENT BUSINESS PERSONAL PROPERTY TAXES PAID. *Multiply* the total business capitalization for each current commercial element by the business personal property tax rate below. Then *add* the total personal property taxes paid.

Current Business	Total Business	Personal Property Tax Rate	Business Property Taxes Paid
		0.01	
		0.01	
		0.01	
Total:		N/A	$

5e) TOTAL CURRENT MACHINERY AND TOOLS TAX PAID. If any manufacturing exists, *multiply* the total capitalization for manufacturing equipment by the business machinery and tools tax rate below.

Current Business	Total Business Capitalization	Personal Property Tax Rate	Machinery and Tools Tax Paid
0		**0.01**	$ 0

5f) TOTAL CURRENT SALES TAXES PAID. *Estimate* the applicable total gross retail sales, prepared meals sales, and hotel/motel sales for existing commercial elements below. Then, *multiply* the projected commercial gross sales by the applicable sales tax rates. Then, *add* the total sales taxes paid.

Activity	Projected Gross Sales	Tax Rate	Sales Taxes Paid
Retail Sales	0	**0.01 of Gross Retail Sales**	0
Prepared Meals	0	**0.04 of Prepared Sales**	0
Hotel, Motel	0	**0.02 of Gross Sales***	0
Total:	**N/A**	**N/A**	$ 0

*Actual Occupancy Tax is 5% of Gross Sales; however, 60% of those funds are targeted to tourism.

5g) TOTAL CURRENT BUSINESS LICENSES FEES PAID. *Estimate* each current business element's total gross sales. Then, *multiply* each business element's projected gross sales by the Annual Business License rate to determine annual business licenses fee paid. Then, *add* the total business license fees paid.

Business Type	Gross Sales	Business License Rate	Annual Business License Fees Paid
Professional Services	0	**$0.0058**	
Retail Sales	0	**$0.0020**	
Contractors	0	**$0.0016**	
Wholesalers	0	**$0.0005**	
Manufacturers	0	**No tax**	
Other Services	0	**$0.0036**	

5h) TOTAL CURRENT COMMERCIAL REVENUES. *Add* all current commercial revenues paid by existing businesses from (5c) through (5g).

Total Current Commercial Revenues	$ 0.00

5i) CURRENT COMMERCIAL FISCAL IMPACT. *Subtract* total commercial revenues (5h) from total residential expenses (5b).

Total Commercial Expenses	Total Commercial Revenues	Total Commercial Fiscal Impact
		$ 0.00

5j) FINAL COMMERCIAL FISCAL IMPACT. *Subtract* current commercial fiscal impact from (5i) from proposed commercial fiscal impact from (3j).

Proposed Commercial Impact	Current Commercial Impact	Final Commercial Fiscal Impact
		$ 1,653,150.00

5k) FINAL FISCAL IMPACT. *Subtract* the final commercial fiscal impact from (5i) from final residential fiscal impact from (4m).

Final Residential Impact	Final Commercial Impact	Final Fiscal Impact
(1,008,894.98)	1,653,150.00	$ 644,255.02

Fiscal Impact Worksheet Section 6: Phasing

Residential Phasing

6a) Copy *and paste* the residential phasing template from the accompanying Excel sheet to the page below.

Commercial Phasing

6b) *Copy* and *paste* the commercial phasing template from the accompanying Excel sheet to the page below.

Final Phasing Projections

6c) *Copy* and *paste* the final phasing projection from the accompanying Excel sheet to the page below.

Fiscal Impact Worksheet Section 7: Employment

7a) *Copy and paste* the employment projections from the accompanying Excel sheet to the page below.

DEFINITIONS AND ASSUMPTIONS

Apartment – A building used, or intended to be used as the residence of three or more families living independently of each other. Tenants have no equity in the dwelling.

Assessment Value – Assessment value is assumed to be within 1% of market value. Market value drives assessment value.

Buildout – All data and assumptions reflect the fiscal impact of the proposal at buildout.

Commercial Expense Rate – The commercial expense rate uses the proportional valuation method to determine individual business expenses. Under that method businesses are collectively responsible for impact related to the commercial property valuation.

This rate assumes that the costs of providing County services to a business are directly correlated with that business's property assessment. This assumes more valuable properties have generally more intense uses incurring greater County expenses.

Condominium – A building, or group of buildings, in which units are owned individually and the structure, common areas and common facilities are owned by all the owners on a proportional, undivided basis.

Contractor – Any person, firm or corporation accepting or offering to accept orders or contracts for doing any work on or in any building or structure, any paving, curbing or other work on sidewalks, streets, alleys or highways, any excavation of earth, rock or other materials, any construction of sewers and any installation of interior building components.

Direct Impact – The worksheet only calculates direct financial impacts on the County budget. The worksheet is only one of many development management tools and as such, does not make a determination whether any type of development "should" happen based solely on that proposal's fiscal impact. The tool is not designed to measure non-budget impacts, such as increased traffic or nonbudget benefits, such as forwarding the goals of the Comprehensive Plan. Costs incurred by other entities, such as other localities or the state, remain uncounted.

Dwelling – Any structure which is designed for use for residential purposes, except hotels, motels, boardinghouses, lodging houses and tourist cabins.

Exempt – Certain types of business activities or products are exempted from annual County business licenses. These include manufacturers, insurance agencies, apartment complexes and gasoline sales.

Fees & Licenses – All fees collected by the County, including business and professional licenses, planning fees, building permit fees, stormwater fees, environmental inspection fees, septic tank fees, dog licenses and motor vehicle licenses, are deducted from the per-capita and per-business budgetary costs of each department that collects them.

Fiscal Impact Analysis – The County has created a set of standardized data and assumptions to streamline both the creation and review of fiscal impact studies. The County had no itemized list of questions for fiscal impact study creators to answer, resulting in portions of fiscal impact studies with no bearing on the County's budgetary bottom line. The guesswork is removed from the creation of these documents. The data used by fiscal impact study authors also came from myriad sources, often within the County, which were difficult to verify. The fiscal impact worksheet allows consistency across multiple fiscal impact studies.

Fiscal Impact Worksheet – The worksheet helps the applicant present relevant data to the County, using data verified by the County. The worksheet provides consistency across all fiscal impact analyses.

Non-School Expenses – Non-school expenses include all non-school budget spending. Non-school expenses are calculated using the Proportional Variation method. Using the Proportional Variation method, residents and businesses are assumed to be responsible for differing percentages of the County's non-school spending.

Manufacturing – Assembly of components, pieces, or subassemblies, or the process of converting raw, unfinished materials into different products, substances or purposes.

Market Value – Market value is assumed to be within 1% of assessment value. Market value drives assessment value.

Manufactured Home – A manufactured home is a structure not meeting the specifications or requirements or a manufactured home, designed for transportation after fabrication. The only manufactured homes counted in the Student Generation figure are those in designated manufactured home parks. Manufactured homes on individual lots are indistinguishable from single-family detached dwellings for the purposes of the worksheet.

Phasing – All residential developments are assumed to have an absorption rate of 20% per annum. All commercial development are assumed to have an absorption rate of 20% per annum. The date stamp Year 1 in the phasing template represents 365 days after the Board of Supervisors approval.

Professional Services – Work performed by an independent contractor within the scope of the practice of accounting, actuarial services, architecture, land surveying, landscape architecture, law, dentistry, medicine, optometry, pharmacy or professional engineering. Professional services shall also include the services of an economist procured by the State Corporation Commission.

Proportional Valuation Impact – Proportional valuation impact assumes that a proposed residential or commercial project's fiscal impact is proportional to the percentage of the total tax base that is either residential or commercial. James City's proportional valuation is calculated using the County's Real Estate Mapping GIS program.

Furthermore, individual business expenses to the County are calculated using the proportional valuation impact method. (See Commercial Expense Rate)

Per-Business Expense Rate – The per-business expense rate assumes that the County incurs non-school expenses equal to 0.04% of the commercial real estate assessment of any given business.

Per Capita Evaluation Method – This worksheet uses the Per Capita Evaluation method to assign per-capita and per-business costs to non-school expenses. This method assumes that current per-capita and per-business expenditures and service levels are consistent with future per-capita and per-business expenditures and service levels.

Per Capita – Per capita calculations divide each department's spending, minus fees and state contributions, by the current County population. This number excludes institutional residents in detention at correctional facilities and mental institutions. Total population is determined from James City County Planning Division figures.

Per Student – Per student calculations divide County contributions to WJCC Schools by the total number of K-12 students living in James City and also attending WJCC Schools. Total students are determined from Williamsburg-James City County Schools enrollment reports.

Per Business – Per business calculations divide each departments spending, minus fees and state contributions, by the total number of County businesses. Total businesses are determined by the number of business licenses issued.

Total Number of JCC Businesses	**5490***
Percentage of Property Tax Assessments	**13%****

*James City County Commissioner of the Revenue

**Commercial impacts are calculated on a proportional variation process

Proffer – Proffers paid for schools can only be applied toward the capital expense portion of per-student school expenses. (See Board of Supervisors' Proffer Policy.)

Retail Services – Display and sale of merchandise at retail or the rendering of personal services, such as food, drugs, clothing, furniture, hardware, appliances, barber and beauty, antiques, and household uses and other uses.

Single-Family Detached Dwelling – A detached structure arranged or designed to be occupied by one family, the structure only having one dwelling unit.

State Contributions – The state contributes both targeted and unspecified funds to the James City County budget.

Student Generation Rate – The student generation rate the number of students produced by an individual dwelling unit per year. Different domestic units produce students are different rates. Using WJCC enrollment figures, an address was found for WJCC students residing in James City County. Using the James City County Real Estate Division's Property Information map on the James City County website, the number of students from each subdivision was determined. Using the Real Estate Division's Real Estate Parcel Count, the number of improved lots in each neighborhood was determined. Total students from each neighborhood were divided by the total number of units from that neighborhood to determine the average number of students per housing unit. The student generation numbers for 256 subdivisions were determined this way, along with the same method for counting students from apartments and manufactured home parks.

Townhome –In a structure containing three or more dwelling units, a dwelling unit for single-family occupancy, not more than three stories in height, attached by one or more vertical party walls extending to the roof sheathing without passageway openings to one or more additional such dwelling units, each of which is served by an individual exterior entrance or entrances.

FutureThink
PLAN TO EMPOWER

FINAL REPORT

Enrollment Projections Update
October 27, 2020

ACKNOWLEDGEMENTS

FutureThink would like to extend our appreciation to the Williamsburg-James City County Public Schools for selecting us to assist them in developing these enrollment projections. In addition, thank you to Rene Ewing for providing information necessary in the completion of this report.

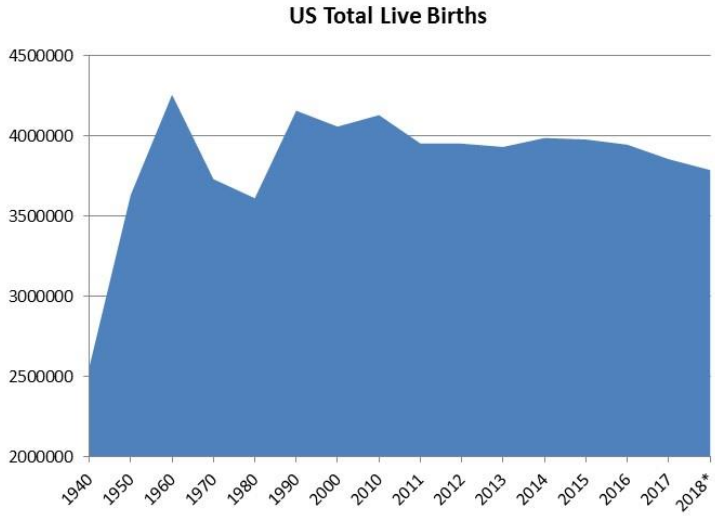
As a consulting team, we appreciate this opportunity to serve your school community as you embark on your vision for the future of education in the Williamsburg-James City County Public Schools.

Tracy Healy

President

ENROLLMENT PROJECTION INTRODUCTION

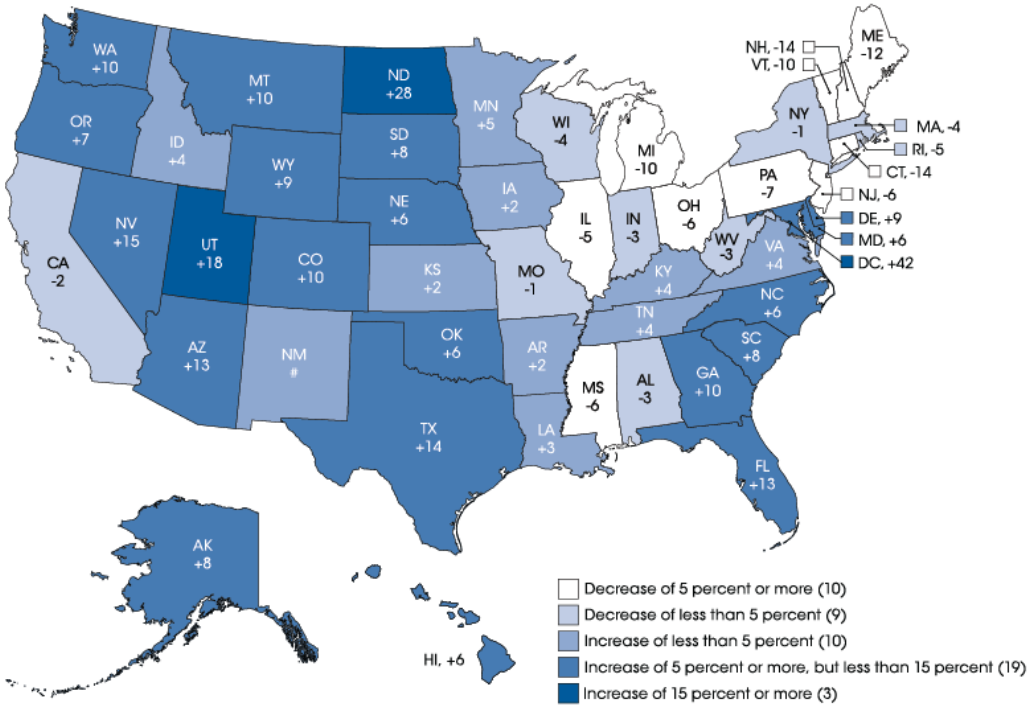
Tracing the landscape of the country's public school enrollment back over the past 70+ years reveals demographic, economic, and social changes. The United States as a whole continues to undergo major shifts in public student enrollment. The baby boom of the late 1940s and 50s was followed by the baby bust of the 1960s and 70s. An "echo" baby boom occurred in the 1980s, which then was followed by the echo baby bust from 1990 to 2000. There was a slight uptick from 2000 to 2010. Since 2011, the total number of births has been relatively flat with decline in 2017 and 2018.



Source: CDC, National Vital Statistics Reports, Rapid Release, Report 007, May 2019
*provisional

In 2014-15, approximately 56 million students were enrolled in grades Pre-K-12 in the United States, an increase of 3% since the 2011-12 school year. Overall, enrollment is projected to increase by approximately 3% by the 2026-27 school year.

The figure below illustrates the projected change in Pre-K-12 public school enrollment from the 2014-15 to the 2026-27 school year. Growth is expected to continue primarily in the southeast and west. Washington, D.C.; North Dakota; and Utah are projected to experience the most growth. Virginia is projected to experience an increase of 4 percent.



SOURCE: U.S. Department of Education, National Center for Education Statistics, Common Core of Data CCD),"State Nonfiscal Survey of Public Elementary/Secondary Education," 2014-15; and Public State Elementary and Secondary Enrollment Model: 1980–2026. See *Digest of Education Statistics 2016*, table 203.20.

ENROLLMENT PROJECTION METHODOLOGIES

When projecting future enrollments, it is vital to track the number of births, the patterns of enrollment, the amount of new housing activity, and the change in household composition.

In addition, any of the following factors could cause a significant change in projected student enrollments:

- Boundary adjustments
- New school openings
- Changes/additions in program offerings
- Preschool programs
- Change in grade configuration
- Interest rates/unemployment shifts
- Magnet/charter/private school opening or closure
- Zoning changes
- Unplanned new housing activity
- Planned, but not built, housing

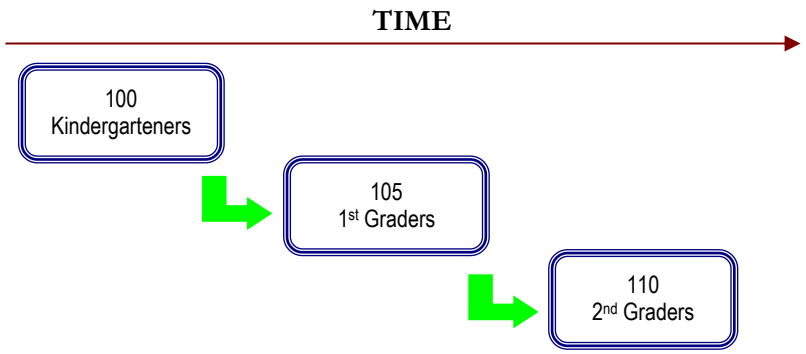
Obviously, certain factors can be gauged and planned for far better than others. For instance, it may be relatively straightforward to gather housing data from local builders regarding the total number of lots in a planned subdivision and calculate the potential student yield. However, planning for changes in the unemployment rate, and how these may either boost or reduce public school enrollment, proves more difficult. In any case, it is essential to gather a wide variety of information in preparation for producing enrollment projections.

When looking ahead at a school Division's enrollment over the next two, five, or ten years, it is helpful to approach the process from a global perspective. For example: How many new homes have been constructed each year? How many births have occurred each year in relation to the resident population? Is housing experiencing a turnover – if so, what is the composition of families moving in/out? Are more or less students attending private school or being home-schooled? What has the unemployment rate trend been over the past ten years? What new educational policies are in place now that could affect student enrollment figures?

The data sets generated from questions such as these have led to the development of general methodologies to project future student enrollments. They are as follows:

Cohort Survival Method

A cohort is a group of persons [in this case, students]. The cohort survival projection methodology uses previous live birth data and historical student enrollments to "age" a known population or cohort throughout the school grades. For instance, a cohort begins when a group of kindergarteners enrolls in grade K and moves to first grade the following year, second grade the next year, and so on.



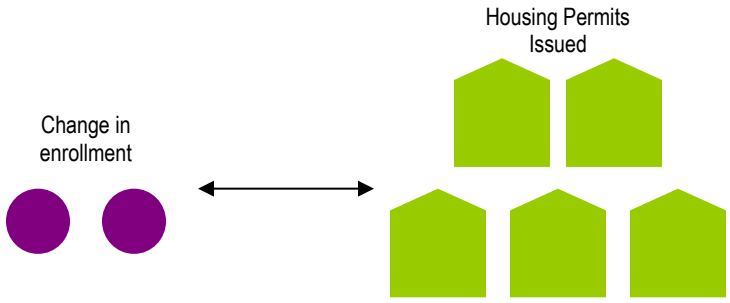
A "survival ratio" is developed to track how this group of students grew or shrunk in number as they moved through the grade levels. By developing survival ratios for each grade transition [i.e., 2nd to 3rd grade] over a ten-year period of time, patterns emerge and can be folded into projections by using the survival ratios as a multiplier.

For example, if student enrollment has consistently increased from the 8th to the 9th grade over the past ten years, the survival ratio would be greater than 100% and could be multiplied by the current 8th grade to develop a projection for next year's 9th grade. This methodology can be carried through to develop ten years of projection figures. Because there is not a grade cohort to follow for students coming into kindergarten, live birth counts are used to develop a survival ratio. Babies born five years previous to the kindergarten class are compared in number, and a ratio can be developed to project future kindergarten enrollments.

The cohort survival method is useful in areas where population is stable [relatively flat, growing steadily, or declining steadily], and where there have been no significant fluctuations in enrollment, births, and housing patterns from year to year.

Housing

Enrollment projections can also be determined by analyzing the housing data for the areas that make up a school Division. Yield factors can be established by comparing the historic change in enrollment from year to year divided by the total number of building or occupancy permits issued. For example, if student enrollment has increased by approximately 100 students each year and approximately 200 building permits have been issued each year for the past ten years, then the yield factor would be approximately .5 students per building permit.

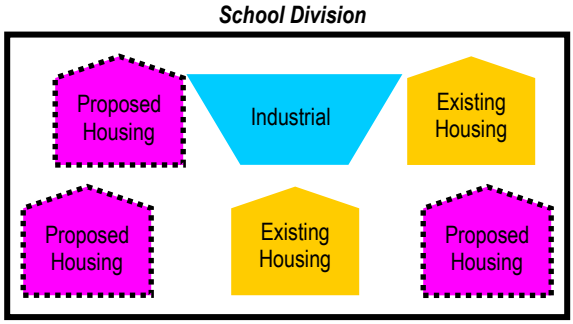


Once yield factors are established, the number of new students per year can be estimated by multiplying the yield factor by the number of projected new housing units. This method is effective when the rate of student enrollment far exceeds the live birth rate.

If housing demolitions are occurring in a Division, these must also be taken into account. For instance, if housing demolitions/withdrawals have increased rapidly over recent years while new housing starts have remained relatively constant over many years, the conclusion may be that some of the new housing starts will simply be replacements for the families displaced by the demolitions. Of course, housing value and household composition would need to be further analyzed to confirm that this is indeed the case. It is possible that enrollment may remain flat or even decline even though there is new housing occurring in the area.

Land-Saturation Analysis

Housing data also drives the land-saturation analysis enrollment methodology. In areas where there is a high rate of development and the future development patterns in the area are clear, a "build-out" scenario can be developed. The scenario takes into consideration the remaining acreage to be developed, planned rate of completion, zoning policies, density per acre, type of housing, and ratios of school-age children per household type. This method is particularly useful in areas experiencing rapid growth.



HISTORICAL ENROLLMENT

Over the past ten years, student enrollment in the Williamsburg-James City County Public Schools has increased by 187 students in grades K–12. Total enrollment for the 2020-21 school year is 10,858, a decrease of 590 students (or approximately 5%) from the previous school year.

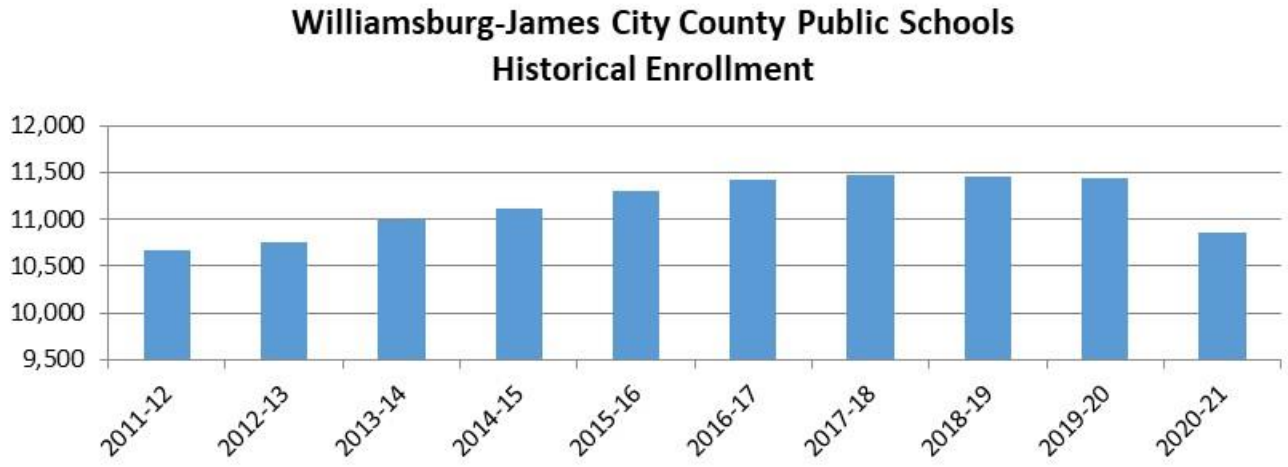
The following table and graphs illustrate the Division's enrollment history from 2011-12 through 2020-21.

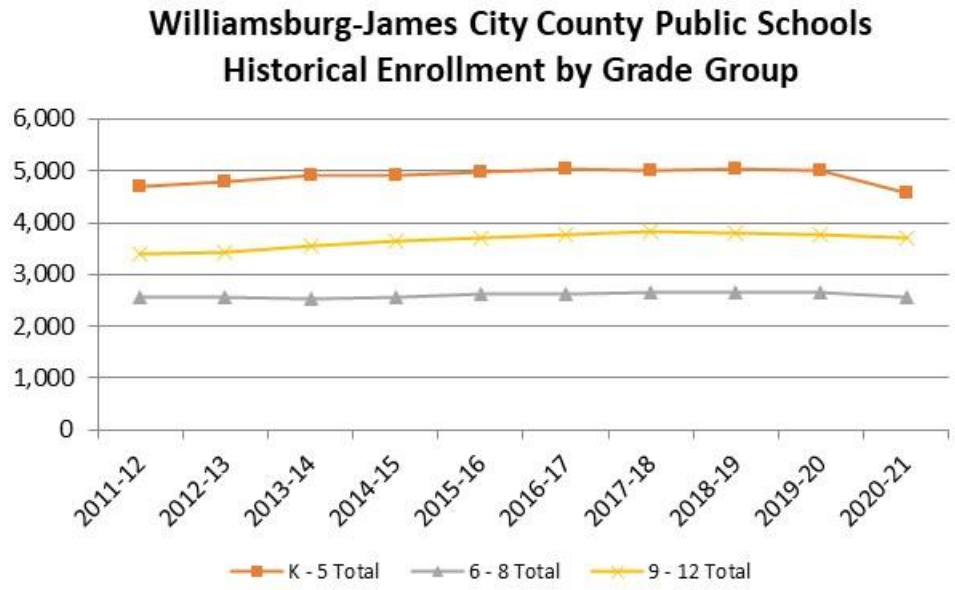
Williamsburg-James City County Public Schools
Historical Enrollment

Grade	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
K	797	770	778	751	760	813	770	807	788	670
1	747	796	831	809	810	792	863	791	811	765
2	771	786	828	851	832	808	808	886	832	747
3	793	795	804	839	865	860	828	825	902	762
4	795	816	821	824	871	868	868	840	833	843
5	809	815	841	838	841	887	881	875	853	796
K - 5 Total	**4,712**	**4,778**	**4,903**	**4,912**	**4,979**	**5,028**	**5,018**	**5,024**	**5,019**	**4,583**
6	845	821	853	852	887	879	857	897	884	824
7	880	826	839	860	859	886	876	872	892	864
8	835	905	854	855	873	863	907	872	879	867
6 - 8 Total	**2,560**	**2,552**	**2,546**	**2,567**	**2,619**	**2,628**	**2,640**	**2,641**	**2,655**	**2,555**
9	850	923	1,021	980	953	1,008	931	989	940	958
10	871	851	908	986	976	965	1,035	948	1,005	912
11	833	828	806	875	939	918	959	958	897	964
12	845	816	814	796	837	884	894	901	932	886
9 - 12 Total	**3,399**	**3,418**	**3,549**	**3,637**	**3,705**	**3,775**	**3,819**	**3,796**	**3,774**	**3,720**
K - 12 Total	**10,671**	**10,748**	**10,998**	**11,116**	**11,303**	**11,431**	**11,477**	**11,461**	**11,448**	**10,858**

Source: Williamsburg-James City County Public Schools, 9/30/20 Count

Williamsburg-James City County Public Schools





Williamsburg-James City County Public Schools

The following table illustrates the Division's enrollment history by school from 2011-12 through 2020-21. During that time, one new school opened.

Williamsburg-James City County Public Schools
Historical Enrollment by School

School	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Baker Elementary	509	500	500	524	536	528	513	515	491	443
Laurel Lane Elementary	461	447	432	429	482	487	486	465	464	430
Montague Elementary	431	423	443	445	438	461	482	503	506	464
Norge Elementary	535	561	572	578	610	591	583	583	593	553
Whaley Elementary	471	472	532	521	512	489	480	541	500	429
James River Elementary	493	550	512	503	492	502	498	448	454	428
Stonehouse Elementary	647	665	720	719	714	727	723	745	764	718
Matoaka Elementary	732	711	745	723	721	730	754	745	760	674
Blayton Elementary	433	449	447	470	474	513	499	479	487	444
Berkeley Middle	936	942	902	908	880	860	881	596	633	599
Toano Middle	705	693	733	756	803	826	816	701	678	628
Hornsby Middle	919	917	911	903	936	942	943	794	809	795
James Blair Middle								550	535	533
Lafayette High	1,077	1,098	1,158	1,160	1,209	1,152	1,130	1,112	1,113	1,123
Jamestown High	1,186	1,211	1,263	1,313	1,308	1,328	1,317	1,296	1,289	1,257
Warhill High	1,136	1,109	1,128	1,164	1,188	1,295	1,372	1,388	1,372	1,340
Total	**10,671**	**10,748**	**10,998**	**11,116**	**11,303**	**11,431**	**11,477**	**11,461**	**11,448**	**10,858**

Source: Williamsburg-James City County Public Schools, 9/30/20 Count

ACTUAL VERSUS PROJECTED ENROLLMENT

The following chart compares the previously developed low enrollment projections, by grade, versus the actual enrollments for the 2020-21 school year. Actual vs. projected enrollment for the 2020-21 school year was within 531 students or 4.89 percent.

Williamsburg-James City County Public Schools
Actual vs. Projected Enrollment - Low

Grade	2020-21 Actual	2020-21 Low Projection	Difference	Percentage
K	670	790	-120	-17.91%
1	765	806	-41	-5.36%
2	747	831	-84	-11.24%
3	762	849	-87	-11.42%
4	843	911	-68	-8.07%
5	796	844	-48	-6.03%
6	824	855	-31	-3.76%
7	864	886	-22	-2.55%
8	867	899	-32	-3.69%
9	958	951	7	0.73%
10	912	954	-42	-4.61%
11	964	949	15	1.56%
12	886	864	22	2.48%
Total	**10,858**	**11,389**	**-531**	**-4.89%**

Source: Williamsburg-James City County Public Schools, FutureThink

This year, the actual enrollments at James Blair Middle and Lafayette High School were higher than projected. The rest of the schools' enrollments were all under their projected enrollment.

Williamsburg-James City County Public Schools
Actual vs. Projected Enrollment - Low

School	2020-21 Actual	2020-21 Low Projection	Difference	Percentage
Baker Elementary	443	492	-49	-11.06%
Laurel Lane Elementary	430	465	-35	-8.14%
Montague Elementary	464	508	-44	-9.48%
Norge Elementary	553	594	-41	-7.41%
Whaley Elementary	429	502	-73	-17.02%
James River Elementary	428	454	-26	-6.07%
Stonehouse Elementary	718	765	-47	-6.55%
Matoaka Elementary	674	763	-89	-13.20%
Blayton Elementary	444	488	-44	-9.91%
Berkeley Middle	599	629	-30	-5.01%
Toano Middle	628	674	-46	-7.32%
Hornsby Middle	795	805	-10	-1.26%
James Blair Middle	533	532	1	0.19%
Lafayette High	1,123	1,096	27	2.40%
Jamestown High	1,257	1,270	-13	-1.03%
Warhill High	1,340	1,352	-12	-0.90%

Source: Williamsburg-James City County Public Schools, FutureThink

LIVE BIRTH DATA

Utilization of live birth data is recommended when projecting future kindergarten enrollments. This data provides a helpful overall trend. Large bubbles in birth counts, both up or down, can also be planned for and anticipated by the Division.

In addition, the live birth counts are used in determining a birth-to-kindergarten survival ratio. This ratio identifies the percentage of children born in a representative area who attend kindergarten in the Division five years later. The survival ratios for birth-to-kindergarten as well as grades 1-12 can be found later in this report.

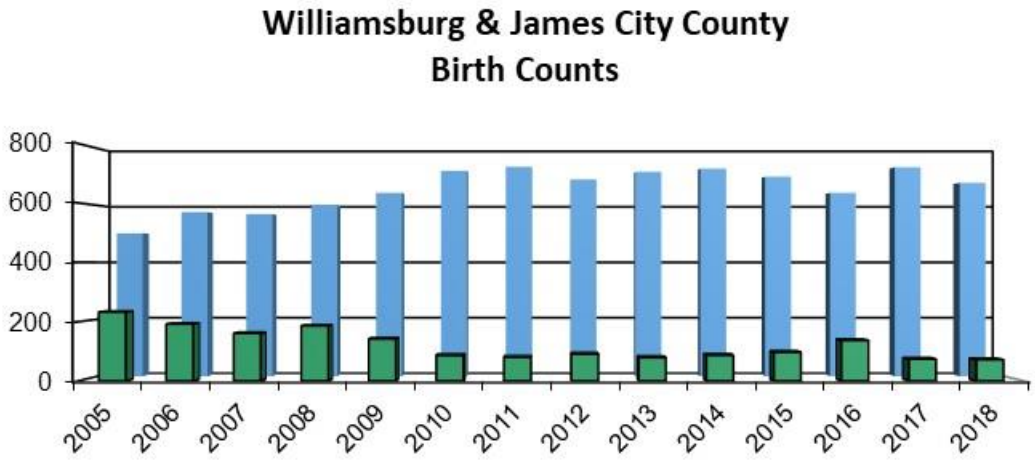
The chart and graph that follow illustrate live birth counts in Williamsburg and James City County.

Williamsburg & James City County
Live Birth Count
2005-2018

Year	Williamsburg	James City County	Total
2005	233	502	735
2006	192	576	768
2007	161	569	730
2008	186	602	788
2009	142	644	786
2010	86	721	807
2011	80	735	815
2012	91	691	782
2013	79	718	797
2014	87	729	816
2015	97	701	798
2016	137	644	781
2017	74	734	808
2018	72	679	751

Source: Virginia Department of Health, Office of Vital Records and Health Statistics

Williamsburg-James City County Public Schools



DEMOGRAPHICS

The Williamsburg-James City County Public Schools is comprised of Williamsburg City and James City County, Virginia. General demographic information follows.

General Demographic Information

	James City County	Virginia
Per Capita Income	$43,815	$37,763
Median Household Income	$83,048	$71,564
Persons Below Poverty	7.0%	9.9%

Source: US Census, American Community Survey 2018, 5-year estimates

Total Population

	2000	2010
Williamsburg City	11,988	14,068
James City County	48,102	67,009

Source: US Census 2010

Following are block group estimates and projections provided by ESRI Business Information Solutions (ESRI BIS). ESRI BIS uses a time series of estimates from the U.S. Census Bureau that includes the latest estimates and intercensal estimates adjusted for error of closure. The Census Bureau's time series is consistent, but testing has revealed improved accuracy by using a variety of sources to track county population trends.

ESRI BIS also employs a time series of building permits and housing starts plus residential deliveries. Finally, local data sources that tested well against Census 2000 are reviewed. Data sources are integrated and then analyzed by Census Block Groups.

Sources of data include:

- Supplementary Surveys of the Census Bureau
- Bureau of Labor Statistics' (BLS) Local Area Unemployment Statistics
- BLS Occupational Employment Statistics
- *Info*USA
- U.S. Bureau of the Census' Current Population Survey
- National Planning Association Data Service

Below is a list of definitions as they appear on the U.S. Census Bureau website, to aid in interpretation of the following tables and maps.

Household:
A household includes all the people who occupy a housing unit as their usual place of residence.

Average family size:
A measure obtained by dividing the number of members of families by the total number of families (or family householders).

Family household (Family):
A family includes a householder and one or more people living in the same household who are related to the householder by birth, marriage, or adoption. All people who are related to the householder are regarded as members of his or her family. A family household may contain people not related to the householder, but those people are not included as part of the householder's family in census tabulations. Thus, the number of family households is equal to the number of families, but family households may include more members than do families. A household can contain only one family for purposes of census tabulations. Not all households contain families since a household may comprise a group of unrelated people or one person living alone.

Householder:
The person, or one of the people, in whose name the home is owned, being bought, or rented. If there is no such person present, any household member 15 years old and over can serve as the householder for the purposes of the census. Two types of householders are distinguished: a family householder and a nonfamily householder. A family householder is a householder living with one or more people related to him or her by birth, marriage, or adoption. The householder and all people in the household related to him are family members. A nonfamily householder is a householder living alone or with nonrelatives only.

Williamsburg-James City County Public Schools

The following tables illustrate the current estimates and 5-year population projections based on block groups that comprise the Division, indicating areas of current and projected growth. The tables have been developed to determine selected age group projections and projections for household income, family size, and family income.

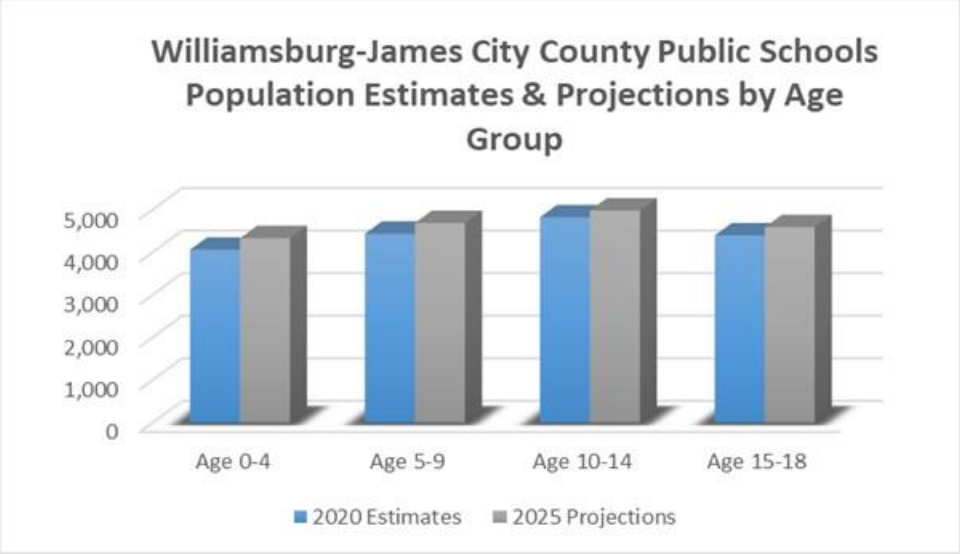
The total population in the Division is 94,329. This population is projected to increase by 6,860 people, or approximately 7% over a 5-year period.

The 0-18 year-old population in the Division currently totals 17,717. This population is projected to increase by 874 children, or approximately 5 percent.

The median age is projected to increase by 2% from 44.6 to 45.5 years of age.

Williamsburg-James City County Public Schools	2020 Estimates	2025 Projections	Change 2020-25	Change 2020-25 (%)
Total Population	94,329	101,189	6,860	7.3%
Age 0-4	4,062	4,332	270	6.6%
Age 5-9	4,436	4,689	253	5.7%
Age 10-14	4,821	4,982	161	3.3%
Age 15-18	4,398	4,588	190	4.3%
Total Age 0-18	17,717	18,591	874	4.9%
Median Age	44.6	45.5	0.9	2.0%

Source: ESRI



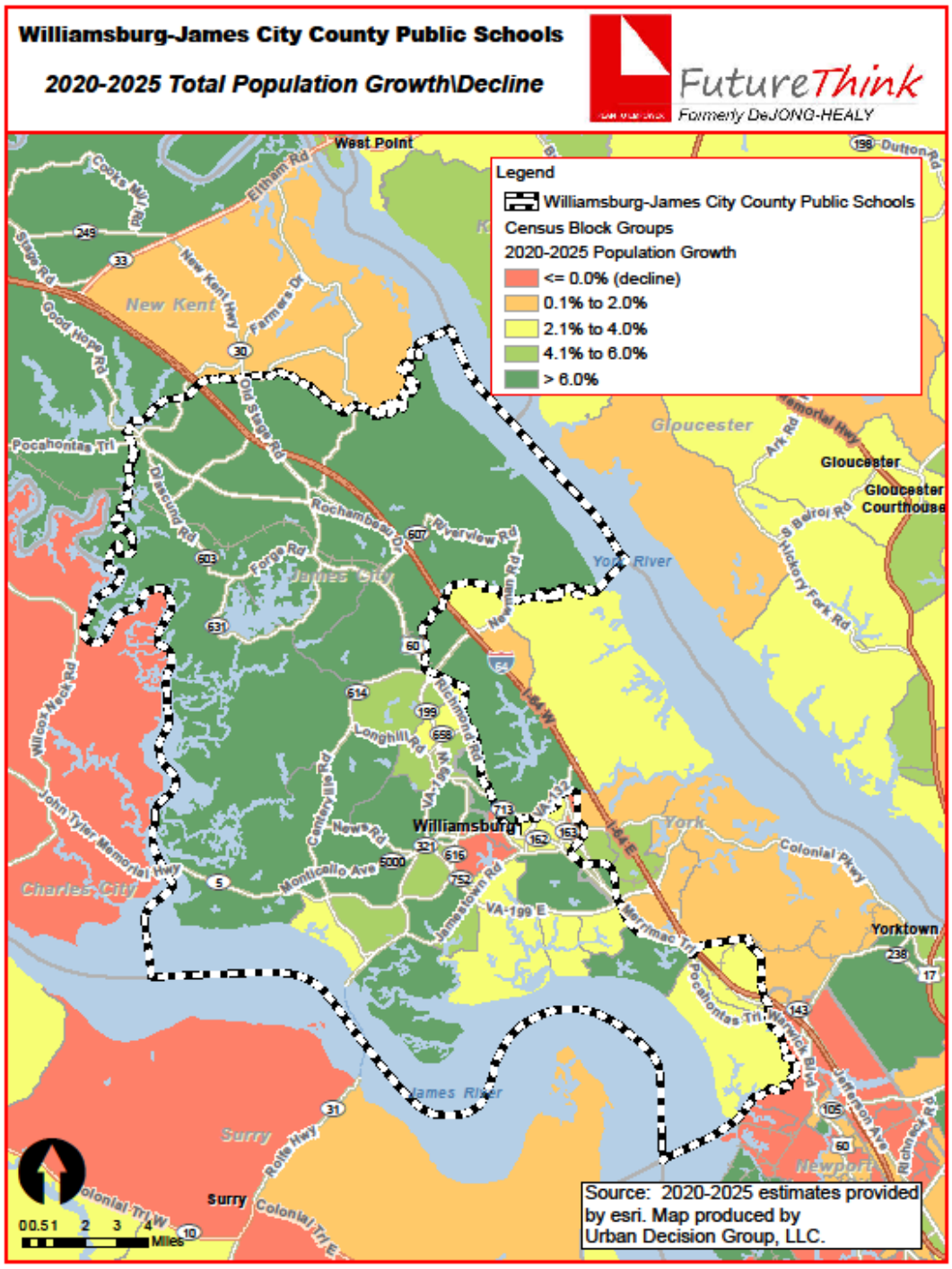
Williamsburg-James City County Public Schools

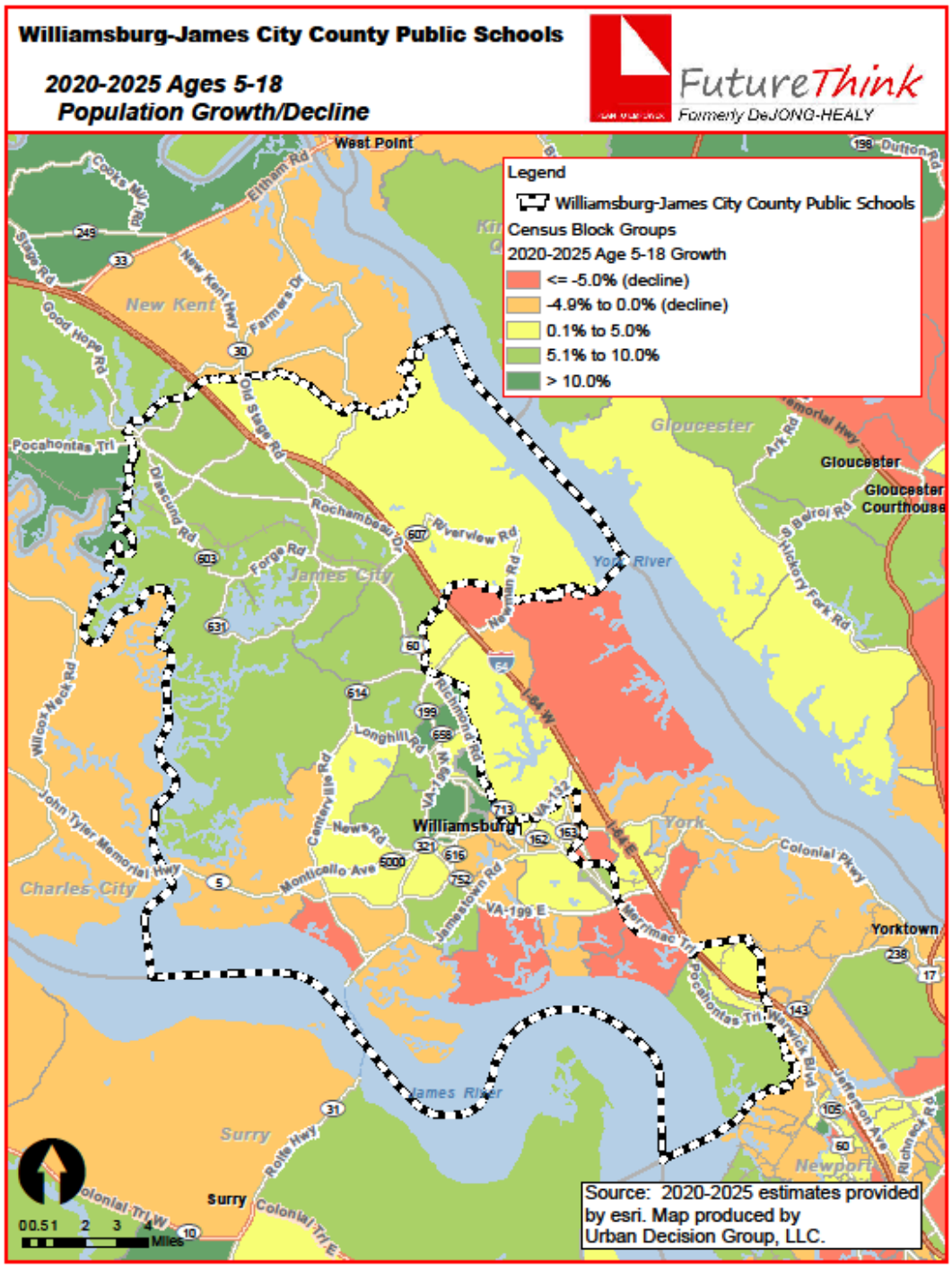
Median and average household incomes in the Division are projected to increase by approximately 6% and 9%, respectively, over a 5-year period. The average family size is projected to increase slightly, and the number of family households is projected to increase by 7 percent.

Williamsburg-James City County Public Schools	2020 Estimates	2025 Projections	Change 2020-25	Change 2020-25 (%)
Median Household Income	$80,499	$85,347	$4,848	6.0%
Average Household Income	$114,860	$125,624	$10,764	9.4%
Average Family Size	2.87	2.88	0.01	0.3%
Total Family Households	24,999	26,757	1,758	7.0%

Source: ESRI

The maps on the following pages illustrate the data identified in the tables. The color coding identifies areas within the Division that may be increasing or decreasing at different rates than others.


Williamsburg-James City County Public Schools
2020-2025 Total Population Growth\Decline
FutureThink
Formerly DeJONG-HEALY
Legend
Williamsburg-James City County Public Schools
Census Block Groups
2020-2025 Population Growth
<= 0.0% (decline)
0.1% to 2.0%
2.1% to 4.0%
4.1% to 6.0%
> 6.0%
West Point
New Kent
Gloucester
Gloucester Courthouse
James City
Williamsburg
York
Yorktown
Charles City
Surry
Newport
York River
James River
Source: 2020-2025 estimates provided by esri. Map produced by Urban Decision Group, LLC.
0 0.5 1 2 3 4 Miles


Williamsburg-James City County Public Schools
2020-2025 Ages 5-18
Population Growth/Decline
FutureThink
Formerly DeJONG-HEALY
Legend
Williamsburg-James City County Public Schools
Census Block Groups
2020-2025 Age 5-18 Growth
<= -5.0% (decline)
-4.9% to 0.0% (decline)
0.1% to 5.0%
5.1% to 10.0%
> 10.0%
West Point
New Kent
Gloucester
Gloucester Courthouse
James City
Williamsburg
York
Yorktown
Charles City
Surry
York River
James River
Source: 2020-2025 estimates provided by esri. Map produced by Urban Decision Group, LLC.
0 0.5 1 2 3 4 Miles

HOUSING INFORMATION

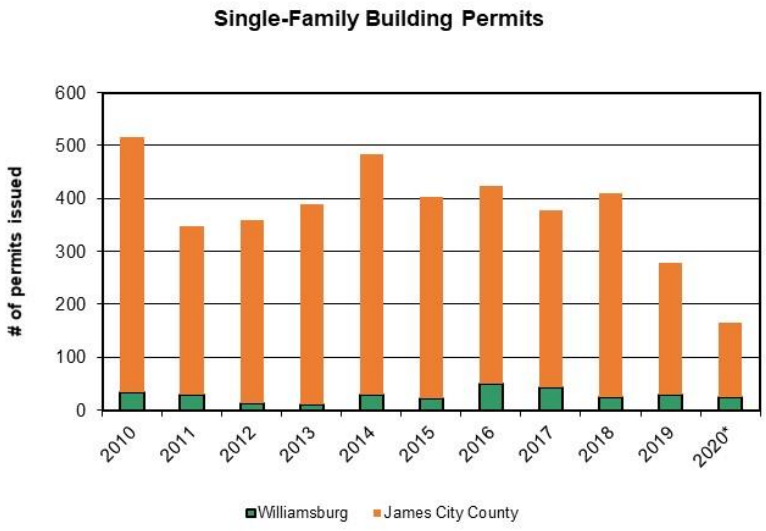
The total number of new single-family dwellings in Williamsburg and James City County has fluctuated between 347 and 516 units over the last 10 years with the exception of last year. In 2019, the total was only 279.

# of Single-Family Building Permits Issued

Year	Williamsburg	James City County
2010	34	482
2011	29	318
2012	13	345
2013	11	378
2014	30	454
2015	21	381
2016	49	374
2017	43	335
2018	25	386
2019	29	250
2020*	24	141

Source: City of Williamsburg, SOCDS Building Permits Database

* through September 27 for Williamsburg & August 2020 for James City County



SURVIVAL RATIOS

The chart below demonstrates the changes in enrollment as students move through the system. Percentages greater than 100 indicate that there are more students than there were in the previous grade the previous year. In other words, there was growth and new students were added to the system. Percentages less than 100 indicate that there was decline or students left the system.

- Birth to Kindergarten: This ratio indicates the number of children born in the area who attend kindergarten in the Division 5 years later. Percentages less than 100% result from movement out of the Division, attendance at a non-public or charter school, or residence in another Division within the same area. Percentages greater than 100% represent people moving into the Division with children of Kindergarten age.

- Grades 8-9: The higher than usual percentage often is a result of Division promotion policies. Often in school Divisions, students are promoted from 8th to 9th grade and after one year in 9th grade do not have sufficient credits to be classified as 10th graders and are counted again as 9th graders the following year. There may also be students who are attending private or charter schools or are home schooled through grade 8 and then attend public schools for high school education.

The following table illustrates the survival ratios for the Williamsburg-James City County Public Schools.

from	to	birth -> K	K->1	1->2	2->3	3->4	4->5	5->6	6->7	7->8	8->9	9->10	10->11	11->12
2011	2012	105.5%	99.9%	105.2%	103.1%	102.9%	102.5%	101.5%	97.8%	102.8%	110.5%	100.1%	95.1%	98.0%
2012	2013	98.7%	107.9%	104.0%	102.3%	103.3%	103.1%	104.7%	102.2%	103.4%	112.8%	98.4%	94.7%	98.3%
2013	2014	95.5%	104.0%	102.4%	101.3%	102.5%	102.1%	101.3%	100.8%	101.9%	114.8%	96.6%	96.4%	98.8%
2014	2015	94.2%	107.9%	102.8%	101.6%	103.8%	102.1%	105.8%	100.8%	101.5%	111.5%	99.6%	95.2%	95.7%
2015	2016	99.8%	104.2%	99.8%	103.4%	100.3%	101.8%	104.5%	99.9%	100.5%	115.5%	101.3%	94.1%	94.1%
2016	2017	98.5%	106.2%	102.0%	102.5%	100.9%	101.5%	96.6%	99.7%	102.4%	107.9%	102.7%	99.4%	97.4%
2017	2018	101.3%	102.7%	102.7%	102.1%	101.4%	100.8%	101.8%	101.8%	99.5%	109.0%	101.8%	92.6%	94.0%
2018	2019	96.6%	100.5%	105.2%	101.8%	101.0%	101.5%	101.0%	99.4%	100.8%	107.8%	101.6%	94.6%	97.3%
2019	2020	84.0%	97.1%	92.1%	91.6%	93.5%	95.6%	96.6%	97.7%	97.2%	109.0%	97.0%	95.9%	98.8%
	average	97.10%	103.367%	101.80%	101.1%	101.07%	101.2%	101.5%	100.0%	101.1%	110.971%	99.895%	95.323%	96.914%
	standard deviation	5.607%	3.498%	3.778%	3.413%	2.913%	2.090%	3.095%	1.484%	1.790%	2.700%	2.056%	1.766%	1.773%

ENROLLMENT PROJECTIONS

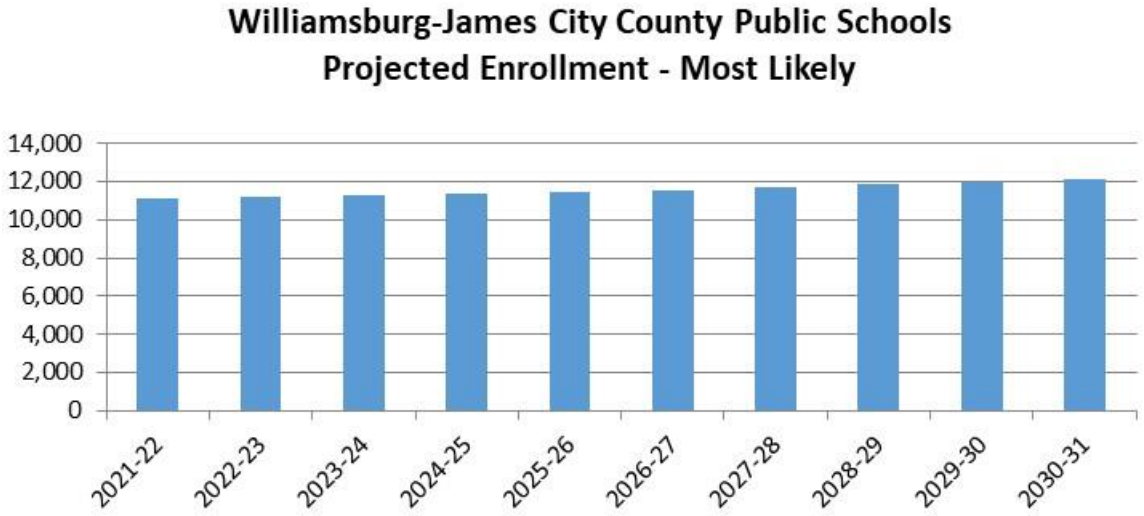
Following is the most likely ten-year projected enrollment. According to this projection, enrollment would increase 1,211 students in grades K–12 from the current 2020-21 enrollment of 10,858 to the 2030-31 projected enrollment of 12,069, an increase of approximately 11% percent.

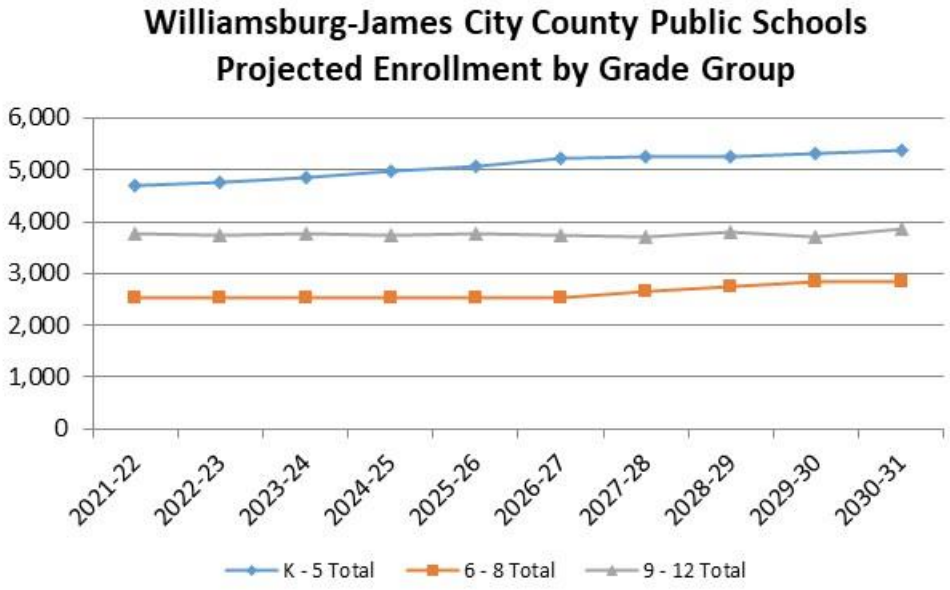
Williamsburg-James City County Public Schools
Projected Enrollment - Most Likely

Grade	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
K	787	813	756	784	808	810	811	814	817	818
1	705	829	856	797	828	850	855	856	859	861
2	795	735	861	891	829	860	887	887	889	891
3	768	816	754	884	915	850	883	909	910	914
4	780	784	836	771	905	937	869	902	930	930
5	861	797	803	853	788	924	956	888	922	951
K - 5 Total	**4,696**	**4,774**	**4,866**	**4,980**	**5,073**	**5,231**	**5,261**	**5,256**	**5,327**	**5,365**
6	814	882	815	820	874	806	946	977	909	944
7	829	819	885	819	824	878	810	951	983	914
8	874	837	827	895	829	833	887	819	960	993
6 - 8 Total	**2,517**	**2,538**	**2,527**	**2,534**	**2,527**	**2,517**	**2,643**	**2,747**	**2,853**	**2,852**
9	966	973	932	922	997	922	928	988	912	1,070
10	974	983	991	949	938	1,014	938	944	1,005	928
11	876	938	944	951	912	901	974	901	908	966
12	944	858	917	925	932	894	882	955	883	888
9 - 12 Total	**3,760**	**3,752**	**3,784**	**3,747**	**3,779**	**3,731**	**3,722**	**3,788**	**3,708**	**3,852**
K - 12 Total	**10,973**	**11,064**	**11,177**	**11,261**	**11,379**	**11,479**	**11,626**	**11,791**	**11,888**	**12,069**

Source: FutureThink

Williamsburg-James City County Public Schools





Historical & Projected Enrollment by School

The following charts illustrate the historical and most likely projected enrollment of each school in the Division.

Baker Elementary School

Historical Enrollment

Grade	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
K	84	74	78	84	71	83	79	86	72	55
1	82	86	77	82	88	79	94	78	86	70
2	75	91	89	87	97	91	76	96	83	78
3	71	77	98	95	84	95	89	74	91	86
4	97	73	78	94	93	80	96	84	74	85
5	100	99	80	82	103	100	79	97	85	69
Total	**509**	**500**	**500**	**524**	**536**	**528**	**513**	**515**	**491**	**443**

Source: Williamsburg-James City County Public Schools, 9/30/20 Count

Baker Elementary School

Projected Enrollment - Most Likely

Grade	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
K	76	79	73	76	78	78	78	79	79	79
1	68	80	83	77	80	82	83	83	83	83
2	77	71	83	86	80	83	86	86	86	86
3	74	79	73	85	88	82	85	88	88	88
4	75	76	81	75	87	90	84	87	90	90
5	83	77	78	82	76	89	92	86	89	92
Total	**453**	**462**	**471**	**481**	**489**	**504**	**508**	**509**	**515**	**518**

Source: FutureThink

Laurel Lane Elementary School

Historical Enrollment

Grade	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
K	78	73	73	75	85	79	84	77	81	66
1	84	83	78	70	82	87	88	81	80	77
2	65	72	81	81	78	75	90	72	74	69
3	79	73	63	80	86	80	74	88	83	68
4	76	69	61	60	84	79	71	72	76	71
5	79	77	76	63	67	87	79	75	70	79
Total	**461**	**447**	**432**	**429**	**482**	**487**	**486**	**465**	**464**	**430**

Source: Williamsburg-James City County Public Schools, 9/30/20 Count

Laurel Lane Elementary School

Projected Enrollment - Most Likely

Grade	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
K	74	76	71	74	76	76	76	76	77	77
1	66	78	80	75	78	80	80	80	81	81
2	75	69	81	84	78	81	83	83	84	84
3	72	77	71	83	86	80	83	85	85	86
4	73	74	78	72	85	88	82	85	87	87
5	81	75	75	80	74	87	90	83	87	89
Total	**441**	**449**	**456**	**468**	**477**	**492**	**494**	**492**	**501**	**504**

Source: FutureThink

Montague Elementary School

Historical Enrollment

Grade	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
K	72	81	75	61	75	91	72	80	71	75
1	61	64	89	79	63	73	87	77	84	73
2	78	63	72	80	72	75	81	90	84	82
3	77	74	56	81	76	68	74	91	91	68
4	70	81	74	66	88	79	82	81	92	87
5	73	60	77	78	64	75	86	84	84	79
Total	**431**	**423**	**443**	**445**	**438**	**461**	**482**	**503**	**506**	**464**

Source: Williamsburg-James City County Public Schools, 9/30/20 Count

Montague Elementary School

Projected Enrollment - Most Likely

Grade	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
K	80	82	77	79	82	82	82	82	83	83
1	71	84	87	81	84	86	86	87	87	87
2	80	74	87	90	84	87	90	90	90	90
3	78	83	76	89	93	86	89	92	92	93
4	79	79	85	78	92	95	88	91	94	94
5	87	81	81	86	80	94	97	90	93	96
Total	**475**	**483**	**493**	**503**	**515**	**530**	**532**	**532**	**539**	**543**

Source: FutureThink

Williamsburg-James City County Public Schools

Norge Elementary School

Historical Enrollment

Grade	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
K	91	94	102	94	99	102	105	102	92	88
1	92	88	93	102	96	109	91	96	101	91
2	84	103	96	102	104	91	97	96	108	93
3	89	92	104	95	97	100	95	99	95	94
4	95	88	86	103	100	92	100	98	109	84
5	84	96	91	82	114	97	95	92	88	103
Total	**535**	**561**	**572**	**578**	**610**	**591**	**583**	**583**	**593**	**553**

Source: Williamsburg-James City County Public Schools, 9/30/20 Count

Norge Elementary School

Projected Enrollment - Most Likely

Grade	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
K	95	98	91	95	97	98	98	98	99	99
1	85	100	103	96	100	103	103	103	104	104
2	96	89	104	108	100	104	107	107	107	108
3	93	98	91	107	110	103	107	110	110	110
4	94	95	101	93	109	113	105	109	112	112
5	104	96	97	103	95	111	115	107	111	115
Total	**567**	**576**	**587**	**602**	**611**	**632**	**635**	**634**	**643**	**648**

Source: FutureThink

Whaley Elementary School

Historical Enrollment

Grade	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
K	89	78	89	86	76	69	74	105	73	59
1	68	86	90	101	99	71	85	87	104	59
2	77	79	100	82	102	86	68	91	89	89
3	93	77	83	89	81	108	81	74	81	75
4	56	84	87	73	84	77	95	86	62	81
5	88	68	83	90	70	78	77	98	91	66
Total	**471**	**472**	**532**	**521**	**512**	**489**	**480**	**541**	**500**	**429**

Source: Williamsburg-James City County Public Schools, 9/30/20 Count

Whaley Elementary School

Projected Enrollment - Most Likely

Grade	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
K	74	76	71	73	76	76	76	76	76	77
1	66	78	80	75	77	80	80	80	80	81
2	74	69	81	83	78	81	83	83	83	83
3	72	76	71	83	86	80	83	85	85	86
4	73	73	78	72	85	88	81	85	87	87
5	81	75	75	80	74	86	89	83	86	89
Total	**440**	**447**	**456**	**466**	**476**	**491**	**492**	**492**	**497**	**503**

Source: FutureThink

Williamsburg-James City County Public Schools

James River Elementary School

Historical Enrollment

Grade	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
K	94	100	79	66	75	80	68	70	72	67
1	81	96	90	77	74	77	85	57	69	76
2	90	88	89	96	70	74	75	94	62	63
3	64	94	91	83	99	78	83	75	93	61
4	88	80	88	93	87	103	80	79	74	88
5	76	92	75	88	87	90	107	73	84	73
Total	**493**	**550**	**512**	**503**	**492**	**502**	**498**	**448**	**454**	**428**

Source: Williamsburg-James City County Public Schools, 9/30/20 Count

James River Elementary School

Projected Enrollment - Most Likely

Grade	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
K	73	76	71	73	75	76	76	76	76	76
1	66	77	80	74	77	79	80	80	80	80
2	74	69	80	83	77	80	83	83	83	83
3	72	76	70	83	85	79	82	85	85	85
4	73	73	78	72	84	87	81	84	87	87
5	80	74	75	80	74	86	89	83	86	89
Total	**438**	**445**	**454**	**465**	**472**	**487**	**491**	**491**	**497**	**500**

Source: FutureThink

Stonehouse Elementary School

Historical Enrollment

Grade	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
K	90	93	108	97	104	119	97	116	133	106
1	95	99	115	116	115	110	129	106	113	127
2	104	102	106	123	115	112	126	140	112	113
3	133	115	111	113	126	117	118	129	141	111
4	109	141	137	126	133	132	119	126	137	134
5	116	115	143	144	121	137	134	128	128	127
Total	**647**	**665**	**720**	**719**	**714**	**727**	**723**	**745**	**764**	**718**

Source: Williamsburg-James City County Public Schools, 9/30/20 Count

Stonehouse Elementary School

Projected Enrollment - Most Likely

Grade	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
K	123	127	118	123	127	127	127	128	128	128
1	111	130	134	125	130	133	134	134	135	135
2	125	115	135	140	130	135	139	139	139	140
3	120	128	118	138	143	133	138	142	143	143
4	122	123	131	121	142	147	136	141	146	146
5	135	125	126	134	123	145	150	139	145	149
Total	**736**	**748**	**762**	**781**	**795**	**820**	**824**	**823**	**836**	**841**

Source: FutureThink

Williamsburg-James City County Public Schools

Matoaka Elementary School

Historical Enrollment

Grade	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
K	122	98	104	109	106	103	115	107	111	84
1	118	118	116	107	116	117	112	132	109	113
2	124	118	117	120	117	123	127	117	135	103
3	126	119	130	115	126	133	127	124	133	125
4	128	130	133	134	118	131	141	125	133	122
5	114	128	145	138	138	123	132	140	139	127
Total	**732**	**711**	**745**	**723**	**721**	**730**	**754**	**745**	**760**	**674**

Source: Williamsburg-James City County Public Schools, 9/30/20 Count

Matoaka Elementary School

Projected Enrollment - Most Likely

Grade	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
K	116	120	111	115	119	119	119	120	120	120
1	104	122	126	117	122	125	126	126	126	127
2	117	108	127	131	122	126	130	130	131	131
3	113	120	111	130	135	125	130	134	134	134
4	115	115	123	113	133	138	128	133	137	137
5	127	117	118	125	116	136	141	131	136	140
Total	**692**	**702**	**716**	**731**	**747**	**769**	**774**	**774**	**784**	**789**

Source: FutureThink

Blayton Elementary School

Historical Enrollment

Grade	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
K	77	79	70	79	69	87	76	64	83	70
1	66	76	83	75	77	69	92	77	65	79
2	74	70	78	80	77	81	68	90	85	57
3	61	74	68	88	90	81	87	71	94	74
4	76	70	77	75	84	95	84	89	76	91
5	79	80	71	73	77	100	92	88	84	73
Total	**433**	**449**	**447**	**470**	**474**	**513**	**499**	**479**	**487**	**444**

Source: Williamsburg-James City County Public Schools, 9/30/20 Count

Blayton Elementary School

Projected Enrollment - Most Likely

Grade	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
K	76	79	73	76	78	78	79	79	79	79
1	68	80	83	77	80	82	83	83	83	83
2	77	71	83	86	80	83	86	86	86	86
3	74	79	73	86	89	82	86	88	88	89
4	76	76	81	75	88	91	84	87	90	90
5	83	77	78	83	76	90	93	86	89	92
Total	**454**	**462**	**471**	**483**	**491**	**506**	**511**	**509**	**515**	**519**

Source: FutureThink

Williamsburg-James City County Public Schools

Berkeley Middle School

Historical Enrollment

Grade	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
6	300	325	290	306	290	288	313	192	232	202
7	326	294	321	282	293	280	283	216	194	210
8	310	323	291	320	297	292	285	188	207	187
Total	**936**	**942**	**902**	**908**	**880**	**860**	**881**	**596**	**633**	**599**

Source: Williamsburg-James City County Public Schools, 9/30/20 Count

Berkeley Middle School

Projected Enrollment - Most Likely

Grade	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
6	191	207	191	192	205	189	222	229	213	221
7	194	192	207	192	193	206	190	223	230	214
8	205	196	194	210	194	195	208	192	225	233
Total	**590**	**595**	**592**	**594**	**592**	**590**	**620**	**644**	**669**	**669**

Source: FutureThink

Toano Middle School

Historical Enrollment

Grade	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
6	244	219	262	264	268	275	262	232	207	190
7	233	225	232	259	276	275	276	230	245	195
8	228	249	239	233	259	276	278	239	226	243
Total	**705**	**693**	**733**	**756**	**803**	**826**	**816**	**701**	**678**	**628**

Source: Williamsburg-James City County Public Schools, 9/30/20 Count

Toano Middle School

Projected Enrollment - Most Likely

Grade	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
6	200	217	200	202	215	198	233	240	223	232
7	204	201	218	201	203	216	199	234	242	225
8	215	206	203	220	204	205	218	201	236	244
Total	**619**	**624**	**621**	**623**	**622**	**619**	**650**	**675**	**701**	**701**

Source: FutureThink

Williamsburg-James City County Public Schools

Hornsby Middle School

Historical Enrollment

Grade	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
6	301	277	301	282	329	316	282	270	279	262
7	321	307	286	319	290	331	317	244	262	279
8	297	333	324	302	317	295	344	280	268	254
Total	**919**	**917**	**911**	**903**	**936**	**942**	**943**	**794**	**809**	**795**

Source: Williamsburg-James City County Public Schools, 9/30/20 Count

Hornsby Middle School

Projected Enrollment - Most Likely

Grade	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
6	253	274	254	255	272	251	294	304	283	294
7	258	255	275	255	256	273	252	296	306	284
8	272	260	257	278	258	259	276	255	299	309
Total	**783**	**789**	**786**	**788**	**786**	**783**	**822**	**855**	**888**	**887**

Source: FutureThink

James Blair Middle School

Historical Enrollment

Grade	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
6								203	166	170
7								182	191	180
8								165	178	183
Total								**550**	**535**	**533**

Source: Williamsburg-James City County Public Schools, 9/30/20 Count

James Blair Middle School

Projected Enrollment - Most Likely

Grade	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
6	170	184	170	171	182	168	197	204	190	197
7	173	171	185	171	172	183	169	198	205	191
8	182	175	173	187	173	174	185	171	200	207
Total	**525**	**530**	**528**	**529**	**527**	**525**	**551**	**573**	**595**	**595**

Source: FutureThink

Williamsburg-James City County Public Schools

Lafayette High School

Historical Enrollment

Grade	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
9	255	311	340	312	310	290	284	287	273	283
10	288	271	306	308	319	318	287	295	306	258
11	265	258	256	303	297	291	289	263	285	310
12	269	258	256	237	283	253	270	267	249	272
Total	**1,077**	**1,098**	**1,158**	**1,160**	**1,209**	**1,152**	**1,130**	**1,112**	**1,113**	**1,123**

Source: Williamsburg-James City County Public Schools, 9/30/20 Count

Lafayette High School

Projected Enrollment - Most Likely

Grade	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
9	292	294	281	278	301	278	280	298	275	323
10	294	297	299	286	283	306	283	285	303	280
11	264	283	285	287	275	272	294	272	274	292
12	285	259	277	279	281	270	266	288	267	268
Total	**1,135**	**1,133**	**1,142**	**1,130**	**1,140**	**1,126**	**1,123**	**1,143**	**1,119**	**1,163**

Source: FutureThink

Jamestown High School

Historical Enrollment

Grade	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
9	306	318	356	347	331	346	307	336	324	330
10	297	307	320	356	337	321	362	307	339	320
11	295	301	292	311	344	323	333	330	296	311
12	288	285	295	299	296	338	315	323	330	296
Total	**1,186**	**1,211**	**1,263**	**1,313**	**1,308**	**1,328**	**1,317**	**1,296**	**1,289**	**1,257**

Source: Williamsburg-James City County Public Schools, 9/30/20 Count

Jamestown High School

Projected Enrollment - Most Likely

Grade	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
9	326	329	315	312	337	312	314	334	308	362
10	329	332	335	321	317	343	317	319	340	314
11	296	317	319	321	308	304	329	304	307	326
12	319	290	310	313	315	302	298	323	298	300
Total	**1,270**	**1,268**	**1,279**	**1,267**	**1,277**	**1,261**	**1,258**	**1,280**	**1,253**	**1,302**

Source: FutureThink

Warhill High School

Historical Enrollment

Grade	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
9	289	294	325	321	312	372	340	366	343	345
10	286	273	282	322	320	326	386	346	360	334
11	273	269	258	261	298	304	337	365	316	343
12	288	273	263	260	258	293	309	311	353	318
Total	**1,136**	**1,109**	**1,128**	**1,164**	**1,188**	**1,295**	**1,372**	**1,388**	**1,372**	**1,340**

Source: Williamsburg-James City County Public Schools, 9/30/20 Count

Warhill High School

Projected Enrollment - Most Likely

Grade	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
9	348	350	336	332	359	332	334	356	329	385
10	351	354	357	342	338	365	338	340	362	334
11	316	338	340	343	329	325	351	325	327	348
12	340	309	330	333	336	322	318	344	318	320
Total	**1,355**	**1,351**	**1,363**	**1,350**	**1,362**	**1,344**	**1,341**	**1,365**	**1,336**	**1,387**

Source: FutureThink

In addition to the most likely enrollment projection presented in this report, following are low, moderate, and high enrollment projections developed based on the cohort survival method. Historically, the most likely projections have fallen between the moderate and high projections. The following defines, in terms of economy and housing, the differences between the projections.

Low Projection

- Higher inflation/interest rates
- Decline in new housing and births
- Pandemic continues into the 2021-22 school year and has significant impact on enrollment

Moderate Projection

- Moderate inflation/interest rates
- Moderate level of new housing & births remain steady
- Pandemic is under reasonable control moving into the 2021-22 school year and has some impact on enrollment

High Projection

- Low inflation/interest rates
- High level of new housing & increase in births
- Pandemic is under control by the end of the 2020-21 school year and has little impact on enrollment

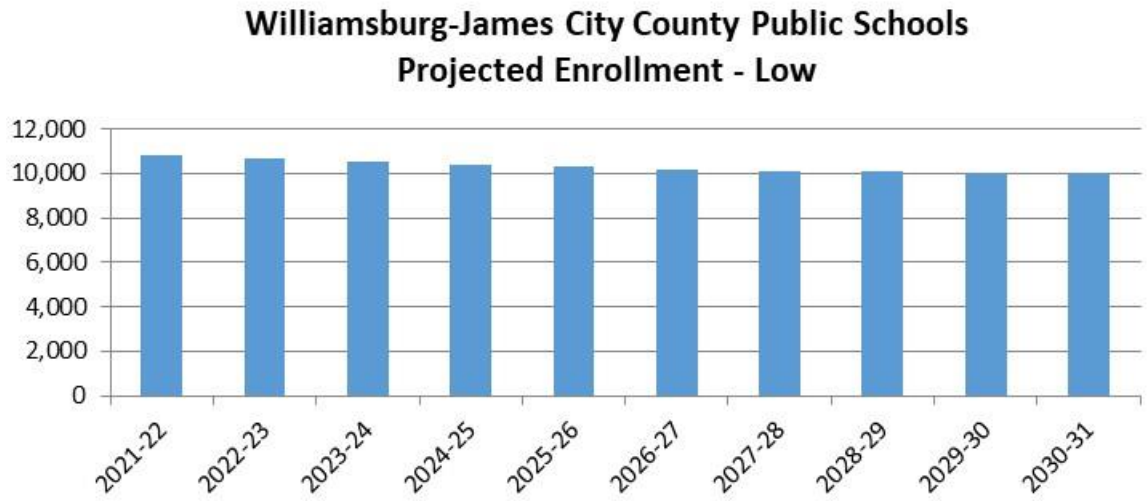
The most likely projection falls fairly equally between the moderate and high projections. The projections range from a low of 10,012 students to a high of 12,470 students in the 2030-31 school year.

Low Projection

Williamsburg-James City County Public Schools
Projected Enrollment - Low

Grade	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
K	755	780	727	754	777	778	780	782	784	787
1	678	763	789	735	761	784	787	789	790	793
2	765	678	763	789	735	761	784	787	789	790
3	743	761	673	760	784	729	757	780	782	784
4	756	736	755	670	753	779	723	753	773	777
5	843	755	736	754	666	753	778	723	751	773
K - 5 Total	**4,540**	**4,473**	**4,443**	**4,462**	**4,476**	**4,584**	**4,609**	**4,614**	**4,669**	**4,704**
6	794	839	754	735	753	666	752	777	722	749
7	820	792	838	752	733	749	665	748	773	720
8	864	820	792	838	752	733	749	665	748	773
6 - 8 Total	**2,478**	**2,451**	**2,384**	**2,325**	**2,238**	**2,148**	**2,166**	**2,190**	**2,243**	**2,242**
9	941	938	891	861	910	816	796	815	722	813
10	966	949	947	899	867	917	822	802	821	727
11	872	923	907	904	858	829	877	786	767	785
12	932	843	894	877	874	831	802	848	760	741
9 - 12 Total	**3,711**	**3,653**	**3,639**	**3,541**	**3,509**	**3,393**	**3,297**	**3,251**	**3,070**	**3,066**
K - 12 Total	**10,729**	**10,577**	**10,466**	**10,328**	**10,223**	**10,125**	**10,072**	**10,055**	**9,982**	**10,012**

Source: FutureThink



Baker Elementary School

Projected Enrollment - Low

Grade	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
K	73	75	70	73	75	75	75	76	76	76
1	65	74	76	71	74	76	76	76	76	77
2	74	65	74	76	71	74	76	76	76	76
3	72	74	65	73	76	71	73	75	76	76
4	73	71	73	65	73	75	70	73	75	75
5	81	73	71	73	64	73	75	70	73	75
Total	**438**	**432**	**429**	**431**	**433**	**444**	**445**	**446**	**452**	**455**

Source: FutureThink

Laurel Lane Elementary School

Projected Enrollment - Low

Grade	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
K	71	73	68	71	73	73	73	73	74	74
1	64	72	74	69	71	74	74	74	74	74
2	72	64	72	74	69	71	74	74	74	74
3	70	71	63	71	74	68	71	73	73	74
4	71	69	71	63	71	73	68	71	73	73
5	79	71	69	71	63	71	73	68	70	73
Total	**427**	**420**	**417**	**419**	**421**	**430**	**433**	**433**	**438**	**442**

Source: FutureThink

Montague Elementary School

Projected Enrollment - Low

Grade	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
K	76	79	74	76	79	79	79	79	79	80
1	69	77	80	74	77	79	80	80	80	80
2	77	69	77	80	74	77	79	80	80	80
3	75	77	68	77	79	74	77	79	79	79
4	77	75	76	68	76	79	73	76	78	79
5	85	76	75	76	68	76	79	73	76	78
Total	**459**	**453**	**450**	**451**	**453**	**464**	**467**	**467**	**472**	**476**

Source: FutureThink

Norge Elementary School

Projected Enrollment - Low

Grade	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
K	91	94	88	91	94	94	94	94	95	95
1	82	92	95	89	92	95	95	95	95	96
2	92	82	92	95	89	92	95	95	95	95
3	90	92	81	92	95	88	91	94	94	95
4	91	89	91	81	91	94	87	91	93	94
5	102	91	89	91	80	91	94	87	91	93
Total	**548**	**540**	**536**	**539**	**541**	**554**	**556**	**556**	**563**	**568**

Source: FutureThink

Whaley Elementary School

Projected Enrollment - Low

Grade	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
K	71	73	68	71	73	73	73	73	73	74
1	63	71	74	69	71	73	74	74	74	74
2	72	63	71	74	69	71	73	74	74	74
3	70	71	63	71	73	68	71	73	73	73
4	71	69	71	63	70	73	68	70	72	73
5	79	71	69	71	62	70	73	68	70	72
Total	**426**	**418**	**416**	**419**	**418**	**428**	**432**	**432**	**436**	**440**

Source: FutureThink

James River Elementary School

Projected Enrollment - Low

Grade	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
K	71	73	68	70	72	73	73	73	73	73
1	63	71	74	69	71	73	73	74	74	74
2	71	63	71	74	69	71	73	73	74	74
3	69	71	63	71	73	68	71	73	73	73
4	71	69	71	62	70	73	68	70	72	72
5	79	71	69	70	62	70	73	68	70	72
Total	**424**	**418**	**416**	**416**	**417**	**428**	**431**	**431**	**436**	**438**

Source: FutureThink

Stonehouse Elementary School

Projected Enrollment - Low

Grade	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
K	118	122	114	118	122	122	122	123	123	123
1	106	120	124	115	119	123	123	124	124	124
2	120	106	120	124	115	119	123	123	124	124
3	116	119	106	119	123	114	119	122	123	123
4	118	115	118	105	118	122	113	118	121	122
5	132	118	115	118	104	118	122	113	118	121
Total	**710**	**700**	**697**	**699**	**701**	**718**	**722**	**723**	**733**	**737**

Source: FutureThink

Matoaka Elementary School

Projected Enrollment - Low

Grade	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
K	111	115	107	111	114	114	115	115	115	116
1	100	112	116	108	112	115	116	116	116	117
2	113	100	112	116	108	112	115	116	116	116
3	109	112	99	112	115	107	111	115	115	115
4	111	108	111	98	111	115	106	111	114	114
5	124	111	108	111	98	111	114	106	110	114
Total	**668**	**658**	**653**	**656**	**658**	**674**	**677**	**679**	**686**	**692**

Source: FutureThink

Blayton Elementary School

Projected Enrollment - Low

Grade	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
K	73	76	70	73	75	75	76	76	76	76
1	66	74	76	71	74	76	76	76	77	77
2	74	66	74	76	71	74	76	76	76	77
3	72	74	65	74	76	71	73	76	76	76
4	73	71	73	65	73	75	70	73	75	75
5	82	73	71	73	65	73	75	70	73	75
Total	**440**	**434**	**429**	**432**	**434**	**444**	**446**	**447**	**453**	**456**

Source: FutureThink

Berkeley Middle School

Projected Enrollment - Low

Grade	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
6	186	197	177	172	177	156	176	182	169	176
7	192	186	196	176	172	176	156	175	181	169
8	203	192	186	196	176	172	176	156	175	181
Total	**581**	**575**	**559**	**544**	**525**	**504**	**508**	**513**	**525**	**526**

Source: FutureThink

Toano Middle School

Projected Enrollment - Low

Grade	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
6	195	206	185	181	185	164	185	191	177	184
7	202	195	206	185	180	184	163	184	190	177
8	212	202	195	206	185	180	184	163	184	190
Total	**609**	**603**	**586**	**572**	**550**	**528**	**532**	**538**	**551**	**551**

Source: FutureThink

Hornsby Middle School

Projected Enrollment - Low

Grade	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
6	247	261	235	229	234	207	234	242	225	233
7	255	246	261	234	228	233	207	233	241	224
8	269	255	246	261	234	228	233	207	233	241
Total	**771**	**762**	**742**	**724**	**696**	**668**	**674**	**682**	**699**	**698**

Source: FutureThink

James Blair Middle School

Projected Enrollment - Low

Grade	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
6	166	175	157	153	157	139	157	162	151	156
7	171	165	175	157	153	156	139	156	161	150
8	180	171	165	175	157	153	156	139	156	161
Total	**517**	**511**	**497**	**485**	**467**	**448**	**452**	**457**	**468**	**467**

Source: FutureThink

Lafayette High School

Projected Enrollment - Low

Grade	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
9	284	283	269	260	275	246	240	246	218	245
10	292	286	286	271	262	277	248	242	248	219
11	263	279	274	273	259	250	265	237	232	237
12	281	254	270	265	264	251	242	256	229	224
Total	**1,120**	**1,102**	**1,099**	**1,069**	**1,060**	**1,024**	**995**	**981**	**927**	**925**

Source: FutureThink

Jamestown High School

Projected Enrollment - Low

Grade	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
9	318	317	301	291	307	276	269	275	244	275
10	326	321	320	304	293	310	278	271	277	246
11	295	312	306	305	290	280	296	266	259	265
12	315	285	302	296	295	281	271	287	257	250
Total	**1,254**	**1,235**	**1,229**	**1,196**	**1,185**	**1,147**	**1,114**	**1,099**	**1,037**	**1,036**

Source: FutureThink

Warhill High School

Projected Enrollment - Low

Grade	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
9	339	338	321	310	328	294	287	294	260	293
10	348	342	341	324	312	330	296	289	296	262
11	314	332	327	326	309	299	316	283	276	283
12	336	304	322	316	315	299	289	305	274	267
Total	**1,337**	**1,316**	**1,311**	**1,276**	**1,264**	**1,222**	**1,188**	**1,171**	**1,106**	**1,105**

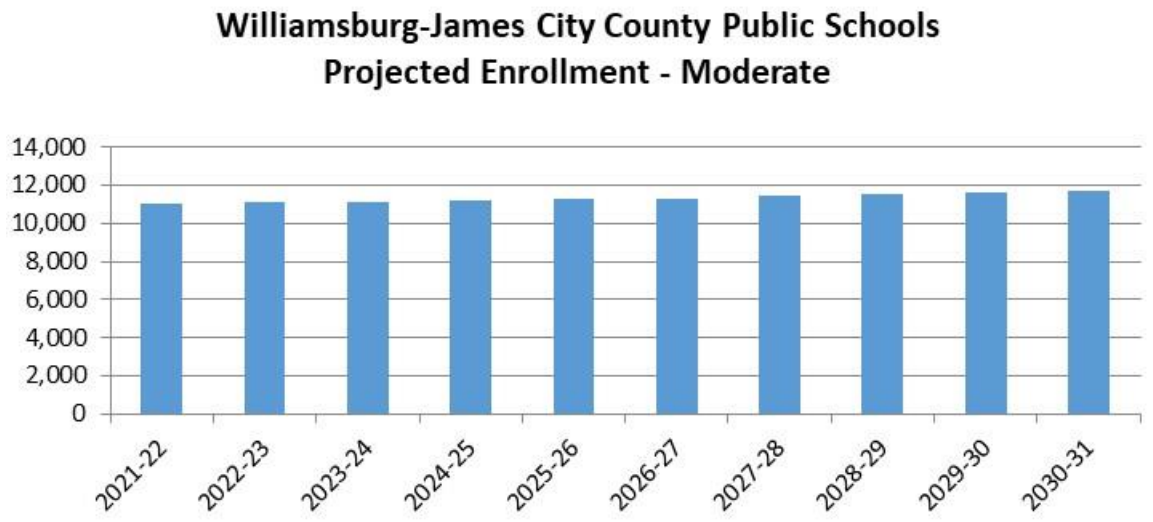
Source: FutureThink

Moderate Projection

Williamsburg-James City County Public Schools
Projected Enrollment - Moderate

Grade	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
K	780	807	748	779	803	803	806	810	811	813
1	703	818	846	787	816	840	843	845	847	850
2	788	723	843	870	810	841	866	868	870	873
3	767	810	742	864	894	831	863	888	891	893
4	778	782	825	757	881	911	848	879	907	909
5	859	792	797	841	772	898	930	864	898	922
K - 5 Total	**4,675**	**4,732**	**4,801**	**4,898**	**4,976**	**5,124**	**5,156**	**5,154**	**5,224**	**5,260**
6	812	878	808	814	858	787	916	948	882	916
7	825	814	878	810	814	858	788	919	951	883
8	871	832	820	885	816	820	866	794	925	957
6 - 8 Total	**2,508**	**2,524**	**2,506**	**2,509**	**2,488**	**2,465**	**2,570**	**2,661**	**2,758**	**2,756**
9	959	963	920	906	977	902	907	957	879	1,024
10	973	974	977	934	921	994	917	922	971	891
11	876	934	935	938	897	884	954	880	885	933
12	938	852	908	910	914	873	861	928	855	861
9 - 12 Total	**3,746**	**3,723**	**3,740**	**3,688**	**3,709**	**3,653**	**3,639**	**3,687**	**3,590**	**3,709**
K - 12 Total	**10,929**	**10,979**	**11,047**	**11,095**	**11,173**	**11,242**	**11,365**	**11,502**	**11,572**	**11,725**

Source: FutureThink



Baker Elementary School

Projected Enrollment - Moderate

Grade	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
K	75	78	72	75	78	78	78	78	78	79
1	68	79	82	76	79	81	81	82	82	82
2	76	70	81	84	78	81	84	84	84	84
3	74	78	72	84	86	80	83	86	86	86
4	75	76	80	73	85	88	82	85	88	88
5	83	77	77	81	75	87	90	84	87	89
Total	**451**	**458**	**464**	**473**	**481**	**495**	**498**	**499**	**505**	**508**

Source: FutureThink

Laurel Lane Elementary School

Projected Enrollment - Moderate

Grade	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
K	73	76	70	73	75	75	76	76	76	76
1	66	77	79	74	77	79	79	79	79	80
2	74	68	79	82	76	79	81	81	82	82
3	72	76	70	81	84	78	81	83	84	84
4	73	73	77	71	83	86	80	83	85	85
5	81	74	75	79	72	84	87	81	84	87
Total	**439**	**444**	**450**	**460**	**467**	**481**	**484**	**483**	**490**	**494**

Source: FutureThink

Montague Elementary School

Projected Enrollment - Moderate

Grade	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
K	79	82	76	79	81	81	82	82	82	82
1	71	83	86	80	83	85	85	86	86	86
2	80	73	85	88	82	85	88	88	88	88
3	78	82	75	87	91	84	87	90	90	90
4	79	79	84	77	89	92	86	89	92	92
5	87	80	81	85	78	91	94	87	91	93
Total	**474**	**479**	**487**	**496**	**504**	**518**	**522**	**522**	**529**	**531**

Source: FutureThink

Norge Elementary School

Projected Enrollment - Moderate

Grade	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
K	94	97	90	94	97	97	97	98	98	98
1	85	99	102	95	98	101	102	102	102	103
2	95	87	102	105	98	101	104	105	105	105
3	92	98	90	104	108	100	104	107	108	108
4	94	94	100	91	106	110	102	106	109	110
5	104	96	96	101	93	108	112	104	108	111
Total	**564**	**571**	**580**	**590**	**600**	**617**	**621**	**622**	**630**	**635**

Source: FutureThink

Whaley Elementary School

Projected Enrollment - Moderate

Grade	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
K	73	76	70	73	75	75	75	76	76	76
1	66	77	79	74	76	79	79	79	79	80
2	74	68	79	82	76	79	81	81	82	82
3	72	76	69	81	84	78	81	83	83	84
4	73	73	77	71	83	85	79	82	85	85
5	80	74	75	79	72	84	87	81	84	86
Total	**438**	**444**	**449**	**460**	**466**	**480**	**482**	**482**	**489**	**493**

Source: FutureThink

James River Elementary School

Projected Enrollment - Moderate

Grade	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
K	73	75	70	73	75	75	75	76	76	76
1	66	76	79	73	76	78	79	79	79	79
2	74	68	79	81	76	79	81	81	81	82
3	72	76	69	81	83	78	81	83	83	83
4	73	73	77	71	82	85	79	82	85	85
5	80	74	74	79	72	84	87	81	84	86
Total	**438**	**442**	**448**	**458**	**464**	**479**	**482**	**482**	**488**	**491**

Source: FutureThink

Stonehouse Elementary School

Projected Enrollment - Moderate

Grade	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
K	122	126	117	122	126	126	126	127	127	127
1	110	128	133	123	128	132	132	132	133	133
2	123	113	132	136	127	132	136	136	136	137
3	120	127	116	135	140	130	135	139	140	140
4	122	123	129	119	138	143	133	138	142	142
5	135	124	125	132	121	141	146	135	141	145
Total	**732**	**741**	**752**	**767**	**780**	**804**	**808**	**807**	**819**	**824**

Source: FutureThink

Matoaka Elementary School

Projected Enrollment - Moderate

Grade	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
K	115	119	110	115	118	118	119	119	119	120
1	103	120	124	116	120	124	124	124	125	125
2	116	106	124	128	119	124	127	128	128	128
3	113	119	109	127	131	122	127	131	131	131
4	114	115	121	111	130	134	125	129	133	134
5	126	116	117	124	114	132	137	127	132	136
Total	**687**	**695**	**705**	**721**	**732**	**754**	**759**	**758**	**768**	**774**

Source: FutureThink

Blayton Elementary School

Projected Enrollment - Moderate

Grade	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
K	76	78	73	75	78	78	78	78	79	79
1	68	79	82	76	79	81	82	82	82	82
2	76	70	82	84	78	81	84	84	84	85
3	74	78	72	84	87	81	84	86	86	87
4	75	76	80	73	85	88	82	85	88	88
5	83	77	77	81	75	87	90	84	87	89
Total	**452**	**458**	**466**	**473**	**482**	**496**	**500**	**499**	**506**	**510**

Source: FutureThink

Berkeley Middle School

Projected Enrollment - Moderate

Grade	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
6	190	206	189	191	201	185	215	222	207	215
7	193	191	206	190	191	201	185	215	223	207
8	204	195	192	207	191	192	203	186	217	224
Total	**587**	**592**	**587**	**588**	**583**	**578**	**603**	**623**	**647**	**646**

Source: FutureThink

Toano Middle School

Projected Enrollment - Moderate

Grade	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
6	200	216	199	200	211	193	225	233	217	225
7	203	200	216	199	200	211	194	226	234	217
8	214	204	202	218	201	202	213	195	227	235
Total	**617**	**620**	**617**	**617**	**612**	**606**	**632**	**654**	**678**	**677**

Source: FutureThink

Hornsby Middle School

Projected Enrollment - Moderate

Grade	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
6	253	273	251	253	267	245	285	295	274	285
7	257	253	273	252	253	267	245	286	296	275
8	271	259	255	275	254	255	269	247	288	298
Total	**781**	**785**	**779**	**780**	**774**	**767**	**799**	**828**	**858**	**858**

Source: FutureThink

James Blair Middle School

Projected Enrollment - Moderate

Grade	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
6	169	183	169	170	179	164	191	198	184	191
7	172	170	183	169	170	179	164	192	198	184
8	182	174	171	185	170	171	181	166	193	200
Total	**523**	**527**	**523**	**524**	**519**	**514**	**536**	**556**	**575**	**575**

Source: FutureThink

Lafayette High School

Projected Enrollment - Moderate

Grade	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
9	290	291	278	274	295	272	274	289	265	309
10	294	294	295	282	278	300	277	278	293	269
11	264	282	282	283	271	267	288	266	267	282
12	283	257	274	275	276	264	260	280	258	260
Total	**1,131**	**1,124**	**1,129**	**1,114**	**1,120**	**1,103**	**1,099**	**1,113**	**1,083**	**1,120**

Source: FutureThink

Jamestown High School

Projected Enrollment - Moderate

Grade	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
9	324	325	311	306	330	305	306	323	297	346
10	329	329	330	316	311	336	310	312	328	301
11	296	316	316	317	303	299	322	297	299	315
12	317	288	307	307	309	295	291	314	289	291
Total	**1,266**	**1,258**	**1,264**	**1,246**	**1,253**	**1,235**	**1,229**	**1,246**	**1,213**	**1,253**

Source: FutureThink

Warhill High School

Projected Enrollment - Moderate

Grade	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
9	345	347	331	326	352	325	327	345	317	369
10	350	351	352	336	332	358	330	332	350	321
11	316	336	337	338	323	318	344	317	319	336
12	338	307	327	328	329	314	310	334	308	310
Total	**1,349**	**1,341**	**1,347**	**1,328**	**1,336**	**1,315**	**1,311**	**1,328**	**1,294**	**1,336**

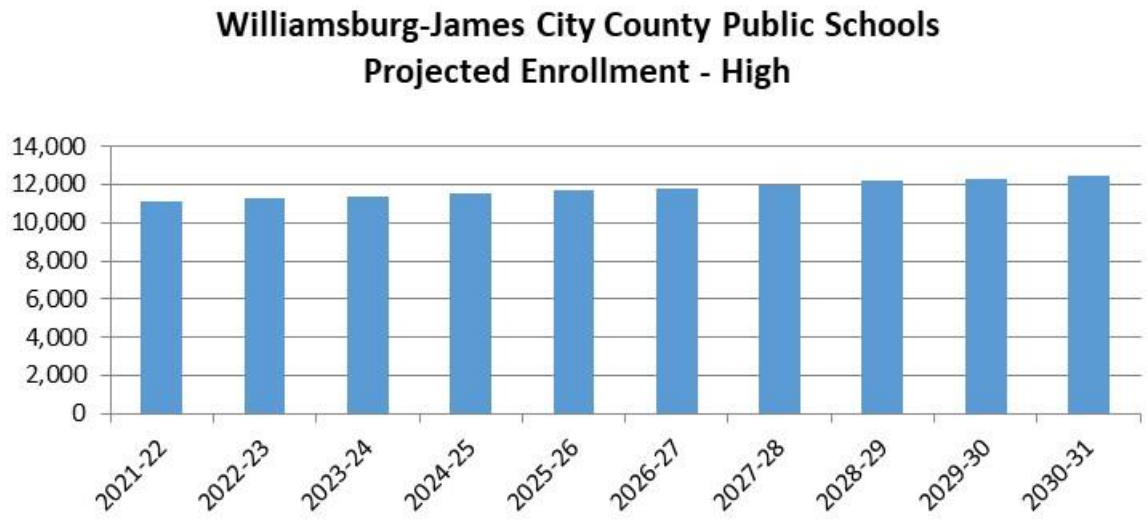
Source: FutureThink

High Projection

Williamsburg-James City County Public Schools
Projected Enrollment - High

Grade	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
K	790	818	761	790	813	815	818	820	822	825
1	712	838	868	807	837	863	866	868	869	873
2	803	746	879	910	846	878	905	907	909	911
3	768	823	767	906	937	869	902	930	930	936
4	787	792	850	790	932	964	898	930	960	961
5	863	805	811	870	810	955	988	919	953	981
K - 5 Total	**4,723**	**4,822**	**4,936**	**5,073**	**5,175**	**5,344**	**5,377**	**5,374**	**5,443**	**5,487**
6	817	887	826	832	892	830	980	1,015	943	980
7	831	823	892	833	839	900	837	988	1,022	951
8	876	842	835	906	844	852	912	849	1,002	1,037
6 - 8 Total	**2,524**	**2,552**	**2,553**	**2,571**	**2,575**	**2,582**	**2,729**	**2,852**	**2,967**	**2,968**
9	971	983	944	936	1,016	947	954	1,024	952	1,124
10	977	991	1,001	963	954	1,035	965	971	1,044	970
11	877	938	953	963	927	918	997	928	935	1,004
12	944	858	919	933	944	907	897	974	908	917
9 - 12 Total	**3,769**	**3,770**	**3,817**	**3,795**	**3,841**	**3,807**	**3,813**	**3,897**	**3,839**	**4,015**
K - 12 Total	**11,016**	**11,144**	**11,306**	**11,439**	**11,591**	**11,733**	**11,919**	**12,123**	**12,249**	**12,470**

Source: FutureThink



Baker Elementary School

Projected Enrollment - High

Grade	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
K	76	79	74	76	79	79	79	79	79	80
1	69	81	84	78	81	83	84	84	84	84
2	78	72	85	88	82	85	87	88	88	88
3	74	80	74	87	90	84	87	90	90	90
4	76	77	82	76	90	93	87	90	93	93
5	83	78	78	84	78	92	96	89	92	95
Total	**456**	**467**	**477**	**489**	**500**	**516**	**520**	**520**	**526**	**530**

Source: FutureThink

Laurel Lane Elementary School

Projected Enrollment - High

Grade	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
K	74	77	71	74	76	76	77	77	77	77
1	67	79	81	76	79	81	81	81	82	82
2	75	70	83	85	79	82	85	85	85	86
3	72	77	72	85	88	82	85	87	87	88
4	74	74	80	74	88	91	84	87	90	90
5	81	76	76	82	76	90	93	86	90	92
Total	**443**	**453**	**463**	**476**	**486**	**502**	**505**	**503**	**511**	**515**

Source: FutureThink

Montague Elementary School

Projected Enrollment - High

Grade	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
K	80	83	77	80	82	83	83	83	83	84
1	72	85	88	82	85	87	88	88	88	88
2	81	75	89	92	86	89	92	92	92	92
3	78	83	78	92	95	88	91	94	94	95
4	80	80	86	80	94	98	91	94	97	97
5	87	82	82	88	82	97	100	93	97	99
Total	**478**	**488**	**500**	**514**	**524**	**542**	**545**	**544**	**551**	**555**

Source: FutureThink

Norge Elementary School

Projected Enrollment - High

Grade	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
K	95	99	92	95	98	98	99	99	99	100
1	86	101	105	97	101	104	104	105	105	105
2	97	90	106	110	102	106	109	109	110	110
3	93	99	92	109	113	105	109	112	112	113
4	95	96	103	95	113	116	108	112	116	116
5	104	97	98	105	98	115	119	111	115	118
Total	**570**	**582**	**596**	**611**	**625**	**644**	**648**	**648**	**657**	**662**

Source: FutureThink

Whaley Elementary School

Projected Enrollment - High

Grade	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
K	74	77	71	74	76	76	77	77	77	77
1	67	79	81	76	78	81	81	81	81	82
2	75	70	82	85	79	82	85	85	85	85
3	72	77	72	85	88	81	85	87	87	88
4	74	74	80	74	87	90	84	87	90	90
5	81	75	76	82	76	89	92	86	89	92
Total	**443**	**452**	**462**	**476**	**484**	**499**	**504**	**503**	**509**	**514**

Source: FutureThink

James River Elementary School

Projected Enrollment - High

Grade	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
K	74	76	71	74	76	76	76	77	77	77
1	66	78	81	75	78	81	81	81	81	82
2	75	70	82	85	79	82	84	85	85	85
3	72	77	72	85	87	81	84	87	87	87
4	73	74	79	74	87	90	84	87	90	90
5	81	75	76	81	76	89	92	86	89	92
Total	**441**	**450**	**461**	**474**	**483**	**499**	**501**	**503**	**509**	**513**

Source: FutureThink

Stonehouse Elementary School

Projected Enrollment - High

Grade	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
K	124	128	119	124	127	128	128	128	129	129
1	111	131	136	126	131	135	136	136	136	137
2	126	117	138	143	133	138	142	142	142	143
3	120	129	120	142	147	136	141	146	146	146
4	123	124	133	124	146	151	141	146	150	151
5	135	126	127	136	127	150	155	144	149	154
Total	**739**	**755**	**773**	**795**	**811**	**838**	**843**	**842**	**852**	**860**

Source: FutureThink

Matoaka Elementary School

Projected Enrollment - High

Grade	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
K	116	120	112	116	120	120	120	121	121	121
1	105	123	128	119	123	127	127	128	128	128
2	118	110	129	134	124	129	133	133	134	134
3	113	121	113	133	138	128	133	137	137	138
4	116	116	125	116	137	142	132	137	141	141
5	127	118	119	128	119	140	145	135	140	144
Total	**695**	**708**	**726**	**746**	**761**	**786**	**790**	**791**	**801**	**806**

Source: FutureThink

Blayton Elementary School

Projected Enrollment - High

Grade	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
K	77	79	74	77	79	79	79	79	80	80
1	69	81	84	78	81	84	84	84	84	85
2	78	72	85	88	82	85	88	88	88	88
3	74	80	74	88	91	84	87	90	90	91
4	76	77	82	77	90	93	87	90	93	93
5	84	78	79	84	78	93	96	89	92	95
Total	**458**	**467**	**478**	**492**	**501**	**518**	**521**	**520**	**527**	**532**

Source: FutureThink

Berkeley Middle School

Projected Enrollment - High

Grade	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
6	192	208	194	195	209	195	230	238	221	230
7	195	193	209	195	197	211	196	232	240	223
8	205	197	196	212	198	200	214	199	235	243
Total	**592**	**598**	**599**	**602**	**604**	**606**	**640**	**669**	**696**	**696**

Source: FutureThink

Toano Middle School

Projected Enrollment - High

Grade	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
6	201	218	203	204	219	204	241	249	232	241
7	204	202	219	205	206	221	206	243	251	234
8	215	207	205	223	207	209	224	209	246	255
Total	**620**	**627**	**627**	**632**	**632**	**634**	**671**	**701**	**729**	**730**

Source: FutureThink

Hornsby Middle School

Projected Enrollment - High

Grade	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
6	254	276	257	259	278	258	305	316	293	305
7	259	256	278	259	261	280	260	307	318	296
8	273	262	260	282	263	265	284	264	312	323
Total	**786**	**794**	**795**	**800**	**802**	**803**	**849**	**887**	**923**	**924**

Source: FutureThink

James Blair Middle School

Projected Enrollment - High

Grade	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
6	170	185	172	174	186	173	204	212	197	204
7	173	172	186	174	175	188	175	206	213	198
8	183	176	174	189	176	178	190	177	209	216
Total	**526**	**533**	**532**	**537**	**537**	**539**	**569**	**595**	**619**	**618**

Source: FutureThink

Lafayette High School

Projected Enrollment - High

Grade	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
9	293	297	285	283	307	286	288	309	287	339
10	295	299	302	291	288	312	291	293	315	293
11	265	283	288	291	280	277	301	280	282	303
12	285	259	277	282	285	274	271	294	274	277
Total	**1,138**	**1,138**	**1,152**	**1,147**	**1,160**	**1,149**	**1,151**	**1,176**	**1,158**	**1,212**

Source: FutureThink

Jamestown High School

Projected Enrollment - High

Grade	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
9	328	332	319	316	343	320	322	346	322	380
10	330	335	338	325	322	350	326	328	353	328
11	296	317	322	325	313	310	337	314	316	339
12	319	290	311	315	319	306	303	329	307	310
Total	**1,273**	**1,274**	**1,290**	**1,281**	**1,297**	**1,286**	**1,288**	**1,317**	**1,298**	**1,357**

Source: FutureThink

Warhill High School

Projected Enrollment - High

Grade	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31
9	350	354	340	337	366	341	344	369	343	405
10	352	357	361	347	344	373	348	350	376	349
11	316	338	343	347	334	331	359	334	337	362
12	340	309	331	336	340	327	323	351	327	330
Total	**1,358**	**1,358**	**1,375**	**1,367**	**1,384**	**1,372**	**1,374**	**1,404**	**1,383**	**1,446**

Source: FutureThink

CONCLUSION

The enrollment projections presented in this report were developed using the cohort-survival methodology while incorporating housing and geographic information system data.

As with any projection, the Division should pay close attention to live birth counts, enrollment in elementary schools, and housing starts. Each of these factors will have an impact on future student enrollment.

FutureThink is pleased to have had the opportunity to provide the Division with enrollment projection services. We hope this document will provide the necessary information to make informed decisions about the future of the Williamsburg-James City County Public Schools.

RESOLUTION

JAMES CITY COUNTY ECONOMIC OPPORTUNITY DISTRICT

CONSTRUCTION PHASING GUIDELINES

WHEREAS, the task of creating the Economic Opportunity Zoning District was undertaken as a part of the Board of Supervisors adopted methodology for the zoning ordinance update in May 2010; and

WHEREAS, the 2009 Comprehensive Plan referenced the importance of construction phasing to ensure residential development did not take place before a majority of commercial/industrial development was completed; and

WHEREAS, after meeting with the Policy Committee, the Planning Commission, and the Board of Supervisors, the following policy is recommended for all Economic Opportunity area development.

NOW, THEREFORE, BE IT RESOLVED that the Board of Supervisors of James City County, Virginia, does hereby endorse the following:

Construction within the Economic Opportunity development shall be sequenced in accordance with a project build-out schedule submitted for review as a part of the initial application, and approved by the board of supervisors. As a guideline, project proposals that adhere to the following sequencing requirements will be considered consistent with the objectives of the phasing plan:

1. Building permits for 20 percent of the primary workplace square footage, as proposed on the master plan, must be issued prior to commencing any residential construction; and

2. Any certificate of occupancy must be issued for at least 50 percent of the primary workplace square footage, as designated on the master plan, prior to building permits being issued for any residential unit above 50 percent of the total proposed units as shown on the master plan; and

3. Prior to issuance of building permits for construction of the final 10 percent of the residential units, any certificates of occupancy must be issued for at least 90 percent of the primary workplace square footage as shown on the master plan.

Mary K. Jones
Chairman, Board of Supervisors

ATTEST:

Robert C. Middaugh
Clerk to the Board

Adopted by the Board of Supervisors of James City County, Virginia, this 13th day of September, 2011.

EOConsGLs_res

N/F
AMERICAN DYNC HOLDINGS
TOANO LLC
9220 OLD STAGE RD
PARCEL ID:
0440100016
ZONED B-1

N/F
HORNSBY OIL CO.
DOUGLAS L HORNSBY
9200 BARHAMSVILLE RD
PARCEL ID:
0440100018
ZONED B-1

N/F
SMO, INCORPORATED
9201 BARHAMSVILLE RD
PARCEL ID:
0440100019
ZONED B-1

N/F
MCDONALDS CORPORATION C/O
DOHO ENTERPRISES
9193 BARHAMSVILLE RD
PARCEL ID:
0440100020
ZONED B-1

WEST BOUND
EAST BOUND
INTERSTATE 64

ENTERPRISE
CENTER

OLD STAGE ROAD

PROPOSED ±4,000LF
OFFSITE 6" FORCE
MAIN

N/F
HORNSBY INVESTMENT CO.
DOUGLAS L HORNSBY
9131 BARHAMSVILLE RD
PARCEL ID:
0530100002 &
1120100009
ZONED B-1

PROPOSED ±4,400LF
OFFSITE 12" WATER
MAIN

BARHAMSVILLE ROAD

LIMITS
OF PSA

N/F
MARVIN, JOAN M.
9049 BARHAMSVILLE RD
PARCEL ID:
1210100002
ZONED A-1

LEISURE ROAD

N/F
BROWN, BARBARA M.
9051 & 9055 BARHAMSVILLE RD
PARCEL ID:
1210100002A & 2B
ZONED A-1

N/F
MCCREA, RONDA S TRUSTEE
223 OLD STAGE RD
PARCEL ID:
1120100008
ZONED A-1

N/F
L, SR & RACHAEL B
LEISURE RD
ARCEL ID:
Z0100007
ONED A-1

JAMES CITY COUNTY
UPPER COUNTY PARK

EX. 24"
HRSD FM

CONNECT TO
EX. JCSA 16"
WATERMAIN

LEGEND

EXISTING		PROPOSED
EX. WATER	WATER	
EX. SAN.	SANITARY SEWER	S
EX. FORCEMAIN	FORCE MAIN	

Rev.	Date	Description	Revised By

AES CONSULTING ENGINEERS
5248 Olde Towne Road, Suite 1
Williamsburg, VA 23188
Phone: (757) 253-0040
Fax: (757) 220-8994
www.aesva.com
Hampton Roads | Central Virginia | Middle Peninsula

CONCEPTUAL PLAN

HAZELWOOD FARMS

STONEHOUSE DISTRICT JAMES CITY COUNTY VIRGINIA

Project Contacts:	GAM
Project Number:	W10325-00
Scale: 1"=200'	Date: 10/5/16

Sheet Title:
CONCEPTUAL OFFSITE UTILITY LAYOUT

Sheet Number
-

S:\JOB\W10325\0-Hazelwood Farms\Planning\Conceptual & Preliminary\W10325\0-conceptual utility _ offsite.dwg, 9/1/2021 8:59:18 AM, jaeng@aes

Thomas Wysong

From: Paul Holt
Sent: Wednesday, August 25, 2021 10:28 AM
To: Thomas Wysong
Cc: Josh Crump
Subject: FW: [External] No Truck Stops

Citizen input for staff report

On Aug 24, 2021, at 2:48 PM, Ken Siegel <kensiegel2@aol.com> wrote:

I am writing with regard to the proposed Truck Stop off Exit 227. I am sure you realize that Toano and Historic Toano on one side and Stonehouse and other expensive neighborhoods on the other side will be greatly impacted by significant pollution, noise pollution, and unwanted people, traffic, and crime that a Truck Stop will bring. If you look at historical information regarding Truck Stops, once one is allowed, other approvals will follow shortly afterwards.

There is no reason what so ever that James City County and Toano need a Truck Stop of any kind or size. 64 has several Truck Stops just a few miles up the road in addition to the two Truck Rest Areas at exit 214. Truckers do not need additional places to stop anywhere in between exit 211 to Newport News. Please vote NO to keep our area free from these types of businesses. This is not what we need to represent the entrance to James City County and the Toano local community.

Thank you,

Ken

<IMG_9465.tiff>

JSG CORPORATION

September 21, 2021

Planning Commission Members James City County
Mr. Richard Krapf
Mr. Bob Rose
Ms. Julia Leverenz
Mr. Jack Halderman
Mr. Tim O'Connor
Mr. Frank Polster
Ms. Barbara Null

Ref: Z-19-0006 / SUP-19-0005 Hazelwood Farms – The Enterprise Center
SUP-19-0006 Hazelwood Farms – The Village Center

Dear Members and Staff:

Regarding the above referenced rezoning and Special Use Permit I want to provide my full support and ask for an affirmative vote from the Planning Commission. Due to a previous commitment, I am out of town at the October meeting. Please do not take my lack of attendance nor my failure to publicly speak at the hearing as a lack of enthusiasm for this project. I support the project and urge support from each member of the Planning Commission.

We are fortunate that the Hazelwood family has been a good steward of the property. They have maintained the property in a large tract. They have tended the land to be sure that it is available for a more desirable use. Strategically located at the 227 interchange on I-64 the referenced development has few traffic impacts. The property can be a tax generating asset to the community. It can help maintain the quality of life for our community by contributing to our tax revenues and provide employment opportunities for our citizens.

Important quality points that I urge you to consider in your approval are:

- The project is conveniently located to Richmond airport and the Newport News Williamsburg airport
- The entire project is within the Primary Service Area
- Water and sewer are available for the project
- Immediate access to exit 227 on interstate 64 allows the change in Land Use to add tax dollars to our community without additional traffic burdens.

5701 Centerville Road | Williamsburg, VA 23188 | P. 757.645.4870 | F. 757.645.4860 | jsgcorp.com

- The property is already assembled in two large contiguous tracts with common ownership. These parcels have been assembled and maintained by the Hazelwood family. Now with willing family members, who share a quality vision James City County can move forward and make a Land Use change that can benefit our citizens.

In recent years there has been a cry from citizens of "No Growth" or "No Rezoning". Those cries regarding this proposal would be out of place and incorrect. The proposed rezoning adds jobs, tax base, and additional citizens in a mix that is healthy for a vibrant community. Saying "No" to quality Land Use changes is a mistake.

In addition, you must look at what might happen if you said "No" to this opportunity. The land holding could become fragmented. Undesirable uses could be developed that would have less controls by the county and produce less tax income for our citizens.

This is a quality proposal with benefits for our citizens. I urge the Planning Commission to vote to approve the above referenced Rezoning and Special Use Permit.

Sincerely,



Gary M. Massie
Manager
J.S.G. Corporation

Thomas Wysong

From: Paul Holt
Sent: Monday, September 27, 2021 11:56 AM
To: Thomas Wysong
Cc: Josh Crump
Subject: FW: [External] Hazelwood Farm Proposal

Please include with staff report materials

From: Scott Maye <forensicearl@gmail.com>
Date: September 27, 2021 at 11:17:02 AM EDT
To: Sue Sadler <Sue.Sadler@jamescitycountyva.gov>
Subject: [External] Hazelwood Farm Proposal

Good morning Ms. Sadler,
I am a resident of Toano and live in the Meadow Lake subdivision adjacent to the proposed development. I am working with a group of concerned neighbors to oppose this development. A small group of us are meeting next week to develop a plan to speak at the upcoming public meeting. Based on my communications with my neighbors including residents of skillman estates and stonehouse there is a lot of opposion to this project as proposed. I am all for development, however, this project as proposed, specifically the Enterprise Center, is not suited for this location. There is an undeveloped Commerce Center right down the street more suitable for manufacturing. There are many many concerns regarding this proposal that are too lengthy for this email. I just wanted to share my opposition with you and I appreciate your service to the Stonehouse District. Thanks, Scott Maye

Thomas Wysong

From: Paxton Condon
Sent: Tuesday, September 28, 2021 3:54 PM
To: Thomas Wysong
Subject: FW: [External] Hazelwood Farms (Comprehensive Plan)

Follow Up Flag: Flag for follow up
Flag Status: Flagged

From: Scott Maye <scottmaye@hotmail.com>
Sent: Tuesday, September 28, 2021 3:32 PM
To: Planning <planning@jamescitycountyva.gov>
Subject: [External] Hazelwood Farms (Comprehensive Plan)

Please do not destroy the rural character of Toano by creating manufacturing opportunities on the Hazelwood Farm property. How many century farms are left in the county? My view is shared by many, many, many calling this area home.
Thanks, Scott Maye

Sent from my Verizon, Samsung Galaxy smartphone
Get Outlook for Android

AGENDA ITEM NO. F.3.

ITEM SUMMARY

DATE: 10/6/2021

TO: The Planning Commission

FROM: Thomas Wysong, Senior Planner II

SUBJECT: SUP-19-0006. Hazelwood Farms - The Village Center

ATTACHMENTS:

	Description	Type
🗋	Staff Report	Staff Report
🗋	1. Proposed Conditions	Backup Material
🗋	2. Location Map	Backup Material
🗋	3. Master Plan	Backup Material
🗋	4. Design Guidelines	Backup Material
🗋	5. Community Impact Statement	Backup Material
🗋	6. Traffic Impact Analysis	Backup Material
🗋	7. DRW Transportation Memos	Backup Material
🗋	8. Water and Sewer Graphic	Backup Material
🗋	9. Proposed Transportation Improvement Map	Backup Material

REVIEWERS:

Department	Reviewer	Action	Date
Planning Commission	Holt, Paul	Approved	9/29/2021 - 3:03 PM
Planning Commission	Holt, Paul	Approved	9/29/2021 - 3:04 PM
Publication Management	Pobiak, Amanda	Approved	9/29/2021 - 3:59 PM
Planning Commission	Holt, Paul	Approved	9/29/2021 - 4:00 PM

SUMMARY FACTS

Applicant:	Mr. Tim Trant, Kaufman and Canoles
Land Owners:	Hazelwood Farms LLC and Hazelwood R M III Trustee et ALS
Proposal:	A request for a Special Use Permit (SUP) on property located at 9505, 9517, 9689, and 9701 Old Stage Road, further identified as James City County Tax Map Nos. 0440100009, 0440100008, 0440100003, and 0440100002, respectively, and that portion of 9400 Barnes Road lying north of Interstate 64 (I-64), further identified as the portion of James City County Tax Map No. 0430100017 lying north of I-64 (collectively, the "Properties"). The application requests the following specially permitted uses on the Properties: • a convenience store which sells and dispenses fuel; • extension of public water and sewer facilities; • commercial buildings or groups of buildings that exceed 10,000 square feet of floor area pursuant to County Code Section 24-11(a)(2) and within the square footage limits shown on the master plan; • commercial buildings or groups of buildings, not including office uses, which generate, or would be expected to generate, a total of 100 or more additional trips to and from the site during the peak hour of the operation pursuant to County Code Section 24-11(a)(3); and • Any buildings, additions, and expansions requiring an SUP pursuant to County Code Section 24-11(b).
Locations:	9505 Old Stage Road 9517 Old Stage Road 9689 Old Stage Road 9701 Old Stage Road 9400 Barnes Road (portion north of I-64)
Tax Map/Parcel Nos.:	0440100009 0440100008 0440100003 0440100002 0430100017
Current Zoning:	B-1, General Business
Project Acreage:	The five parcels together total approximately 79 acres
Comprehensive Plan:	Mixed Use Stonehouse
Primary Service Area: (PSA)	Inside
Staff Contact:	Thomas Wysong, Senior Planner II

PUBLIC HEARING DATES

Planning Commission:	October 6, 2021, 6:00 p.m.
Board of Supervisors:	TBD

FACTORS FAVORABLE

1. Staff finds the proposal to be consistent with both the adopted 2035 Comprehensive Plan and draft 2045 Comprehensive Plan.

2. The applicant has submitted a Traffic Impact Analysis (TIA) accounting for the proposed commercial development. The proposed SUP conditions for multiple transportation commitments are intended to mitigate the proposed impacts of the development, improve the adjacent transportation network, and establish bicycle and pedestrian connections within the development and adjacent to nearby parcels.

3. The applicant has submitted design guidelines that adhere to the guidance in the 2035 Comprehensive Plan for Mixed Use development and exceed the requirements of the B-1, General Business Zoning District.

4. SUP conditions are proposed which are anticipated to mitigate impacts for each use.

5. With the proposed SUP conditions, staff finds that the proposal will not negatively impact surrounding development.

6. This proposal passes the Adequate Transportation Facilities Test.

7. Impacts: See Impact Analysis on Pages 9-11.

FACTORS UNFAVORABLE

1. Impacts: See Impact Analysis on Pages 9-11.

2. The proposal does not fully align with the *Regional Bikeways* plan.

SUMMARY STAFF RECOMMENDATION

Staff recommends that the Planning Commission recommend approval of the proposed SUP application, subject to the proposed conditions.

PROJECT DESCRIPTION

Mr. Tim Trant has applied on behalf of Hazelwood Farms LLC and Hazelwood R M III Trustee et ALS for an SUP for the following uses:

- a convenience store which sells and dispenses fuel;
- extensions of public water and sewer facilities;
- commercial buildings or groups of buildings that exceed 10,000 square feet of floor area pursuant to County Code Section 24-11(a)(2) and within the square footage limits shown on the master plan;
- commercial buildings or groups of buildings, not including office uses, which generate, or would be expected to generate, a total of 100 or more additional trips to and from the site during the peak hour of the operation pursuant to County Code Section 24-11(a)(3); and
- any buildings, additions, and expansions requiring an SUP pursuant to County Code Section 24-11(b).

The proposed SUP conditions would only allow for two fast food restaurants, one convenience store with fuel sales, and one bank with drive-through on the property.

Site Layout

The Hazelwood Farms Village Center is envisioned as an entertainment, retail, office, and business support complex. This SUP is being sought to permit up to 510,000 square feet of various retail, grocery, bank, office, self-storage, restaurant, hotel, convenience store, fuel station, and other commercial uses consistent with the B-1

zoning within a common development on these properties. The Village Center is a long-term project, meaning the applicant does not currently know the end users of the site or the exact locations of each use being proposed. As such, the proposed master plan and submitted design guidelines show the general layout of the Village Center and the uses designated for each of the five Land Bays of the property. Regarding public water and sewer, the site design proposes to extend a water transmission main and sewer force main from Fieldstone Parkway and under Route 30 to serve the development within the Village Center (See Attachment No. 7 for Improvement Graphic).

The site design proposes access to the property solely through the two entrances from Route 30 shown on the master plan. Commercial uses are proposed within each of the five Land Bays. A multiuse path is proposed along the frontage of the Property on Route 30 and connecting to interior commercial development. Land Bays 1, 2, and 3, which abut Route 30, are designated as the location of the "Frontage Retail Area," in which the applicant is proposing commercial use. The proposed SUP conditions limit the number of those particular uses that might have a negative impact on neighboring properties and community character. Specifically, the following limits are proposed in the conditions:

- Fast food restaurants with drive-throughs: two maximum
- Convenience stores with fuel sales: one maximum
- Banks with drive-throughs: one maximum

The applicant has submitted design guidelines for all development within the Village Center, which commit to bicycle and pedestrian connectivity, designing for public access improvements, parking standards, building pattern and form, and special design requirements. Per the illustrative layout detailed in the submitted design guidelines, the applicant envisions a series of inline shops, a food store, and a theatre as potential uses for Land Bay 5. A hotel is also shown as a potential use for Land Bay 4.

Public Transportation: Vehicular

The scale of this proposal requires the submittal of a TIA. The TIA examines the existing conditions of vehicular traffic for roads and intersections serving and impacted by the proposal of the Enterprise Center and the Village Center and the projected traffic impacts of the Hazelwood proposal on these roads and intersections with proposed improvements on these roads and intersections. For the Village Center, the Route 30/Fieldstone Parkway intersection, Route 30/Eastbound Ramp A intersection, and Route 30/Barnes Road intersection are the three existing intersections analyzed within the TIA. These intersections are not signalized or programmed for improvement by the Virginia Department of Transportation (VDOT). Each are expected to have increased demand as a result of the development of the Village Center. SUP conditions are proposed requiring a multi-stepped approach to improve the road network and mitigate the traffic impacts that are anticipated for the Village Center.

The first step is completing the TIA and gaining approval from VDOT for this analysis. The TIA has been reviewed by the County, Kimley-Horn and Associates (KHA), and VDOT, with KHA recommending approval and VDOT issuing approval. The approved TIA serves as the guide for the proposed improvements accompanying this SUP application.

The second step is ensuring the appropriate improvements are reviewed and scheduled for implementation. Per the proposed SUP conditions, the applicant is guaranteeing a Signal Justification Report (SJR) for the Route 30/Fieldstone Parkway and Route 30/I-64 Eastbound off-ramp intersections and Phasing Plan for both intersections will be approved prior to the submittal of the first site plan for the Village Center. The developer will be required to meet with the County and VDOT prior to submittal of both items to discuss traffic study requirements and review any updated road improvements that have occurred, been proffered by others, or funded by VDOT.

The third step is utilizing the approved Phasing Plan to ensure the necessary road improvements are installed as the Village Center is developed. The Phasing Plan is conditioned to include the improvements within the TIA, which are shown on the master plan and are intended to mitigate traffic impacts. Please see the table on the next page for a summary of the LOS analysis of road facilities conducted within the TIA.

Hazelwood TIA LOS Analysis						
Road/ Intersection (Project site impacted in bold)	*Current Status*	*Current Overall LOS*	*2030 Projected Overall LOS Without Hazelwood*	*Proposed Hazelwood Improvement (Proffered or Conditioned)*	*2030 Projected Overall LOS With Hazelwood*	*2030 Projected Overall LOS With Hazelwood, Moss Creek, and Stonehouse Developed**
Route 30/Fieldstone Parkway **Village Center**	Unsignalized	Level C or >	Level C or >	- Signalization. - Addition of double left-turn lanes on northbound Route 30 at Property entrance. - Addition of right-turn lane on southbound Route 30 at Property entrance. - Property entrance with four exit lanes and two entering lanes. - Shared use path.	Level C or >	Level C
Route 30/I-64 Westbound Ramps **Enterprise Center**	Unsignalized	Level C or >	Level C or >	- Signalization. - Adjustment of pavement for improvement.	Level B	Level B
Route 30/I-64 East-bound Ramp A	Unsignalized	Level B or >	Level B or >	- Signalization	Level B	Level A
Route 30/Old Stage Road **Enterprise Center**	Unsignalized	Level C or >	Level C or >	- Signalization. - Addition of second left-turn lane on northbound Route 30. - Extension of right-turn lane on	Level B	Level C

				southbound Route 30 at Route 746 Old Stage Road to make a continuous lane with merging lane from I-64 off ramp onto Route 30. - Third northbound through lane on Route 30 at approach to Route 746 Old Stage Road and continuing to drop off lane at ramp to I-64 east. - Improvements to Route 746 Old Stage Road as shown on the master plan. - Adding second westbound approach lane and taper on VDOT frontage road. - Restriction to two entrances on Old Stage Road as shown on master plan.		
Route 30/Barnes Road **Village Center**	Unsignalized	Level C or >	Level C or >	- None, Remain Unsignalized.	Level D or >	Level F**
I-64 Merges/Diverges **Enterprise Center/Village Center**	Unsignalized	Level B or >	Level B or >	- See continuous turn lane proposed for Route 30/Old Stage Road.	Level B or >	Level C or >

**90/100 Cycles analysis from TIA referenced in this column. TIA also includes 70-second cycle analysis, but 90/100 cycle deemed more appropriate.*
***See DRW Consultants LLC Memo dated 1/14/2020 for context on this intersection. The possibility of a U-turn at the signalized Fieldstone Parkway is presented as a potential solution to this LOS issue and can be expected to be examined during the SJR review of the Fieldstone Parkway and Route 30 intersection.*

In addition to the improvements detailed in the preceding table, the proposed SUP conditions restrict access to Barnes Road (except in the case of emergencies) and to include a public bus stop with the first site plan for development of the property. In order to ensure development does not exceed the bounds of the TIA, the proposed SUP conditions require that Property cannot exceed 1,596 PM peak hour trips as determined by the most recent edition of the Institute of Transportation Engineers Trip Generation Manual (the ITE Manual) at the time of each site plan approval for the development of the Property. Peak hour trips will be calculated and submitted with each development plan for the property.

Roadway congestion information from the 2045 Comprehensive Plan is presented below. As shown in the table, the most recent LOS data for each of the three facilities related to this proposal have a LOS in the A-C range. For each of these facilities, this LOS is anticipated to remain in this range in 2045.

Future Roadway Congestion Level

Facility	From	To	2017 Weekday Volume	2045 Weekday Volume	2017 PM Peak Period LOS	2045 PM Peak Period LOS
Barhamsville Road (Route 30)	I-64	Route 60	19,004	32,280	A-C	A-C
Old Stage Road (Route 30)	New Kent CL	Barnes Road (Route 601 S)	14,943	19,225	A-C	A-C
Old Stage Road (Route 30)	Barnes Road (Route 601 S)	I-64	8,315	13,680	A-C	A-C

The County adopted the Adequate Transportation Facilities Test by resolution on August 14, 2018. This policy requires for a proposed SUP or rezoning to be tested during the application process to ensure that transportation facilities are adequate to mitigate traffic impacts. Per the adopted policy, a proposed rezoning or special use permit application will pass the test if:

i. No off-site improvements are required by the TIA that is approved by both the Planning Director and the Virginia Department of Transportation; or
ii. All off-site improvements recommended by a TIA that is approved by both the Planning Director and the Virginia Department of Transportation are guaranteed in a form approved by the Planning Director and County Attorney.

The transportation improvements required by the SUP Conditions (which are recommended within the approved TIA) accompanying this application ensure that this proposal passes the Adequate Transportation Facilities Test.

PLANNING AND ZONING HISTORY

All of the parcels subject to this applicant are zoned B-1, which has been the zoning for the property since at least the 1980s.

SURROUNDING ZONING AND DEVELOPMENT

North: A-1, General Agricultural
MU, Mixed Use

West: A-1, General Agricultural

South: A-1, General Agricultural
B-1, General Business

East: PUD-R, Planned Unit Development Residential

The subject Property is located east of Barnes Road (Route 601), north of I-64, west of Old Stage Road, and west of Old Stage Road (Route 30). The Moss Creek Commerce Center and Land Bay 5 of the Stonehouse development are located to the east of the property on the other side of Route 30. Both of these projects are currently undeveloped. The Moss Creek parcel is zoned for Mixed Use and can permit development in accordance with the adopted Moss Creek Master Plan, which includes office/warehouse, a convenience store with fuel sales, a restaurant and retail uses. Per the adopted Stonehouse Master Plan, Land Bay 5 is designated for up to 180 residential units.

IMPACT ANALYSIS

Impacts/Potentially Unfavorable Conditions	Status *(No Mitigation Required/Mitigated/Not Fully Mitigated)*	Considerations/Proposed Mitigation of Potentially Unfavorable Conditions
Public Transportation: Vehicular	Mitigated	- See discussion on Page 3.
Public Transportation: Pedestrian/Bicycle	Not Fully Mitigated	- The County's *Pedestrian Accommodation Master Plan* requires a multi-use path along the southern frontage of Route 30. The Regional Bikeways Map proposes a bike lane along the southern frontage of Route 30. - Pursuant to Sec. 24-35 of the Zoning Ordinance, the proposed improvements shown on these maps are required to be shown on the site plan and installed at development. The bike lane will be further evaluated during the site plan review process. - The master plan proposed a multi-use path along the southern frontage of Route 30. Condition No. 4 requires the guarantee of this path prior to initial site plan approval. - Condition No. 15 ensures an internal traffic signage plan shall be submitted with site plans, which helps ensure pedestrian and cyclist safety. - Condition No. 17 requires internal pedestrian connections to be provided on the property.
Public Safety	No Mitigation Required	- Located within a six-minute radius of Fire Station 1. - The proposal does not generate impacts that require mitigation to the County's emergency services or facilities.
Public Schools	No Mitigation Required	- No residential units are proposed within the Village Center.
Public Parks and Recreation	No Mitigation Required	- No residential units are proposed within the Village Center.
Public Libraries and Cultural Centers	No Mitigation Required	- The proposal does not generate impacts that require mitigation to public libraries or cultural centers.
Groundwater and Drinking Water Resources	Mitigated	- The Village Center Master Plan proposes to use the existing James City Service Authority (JCSA) water main and sewer force main on Fieldstone Parkway. JCSA has reviewed and approved this conceptual proposal on the master plan, as well as the projected water and sewer flows within the CIS. The Master Plan shows a proposed public utility easement in the event that future looping of the water system under I-64 is pursued.

Impacts/Potentially Unfavorable Conditions	**Status** *(No Mitigation Required/Mitigated/Not Fully Mitigated)*	**Considerations/Proposed Mitigation of Potentially Unfavorable Conditions**
		Conditions - Condition No. 5 requires water conservation standards to be instituted and for the developer to consider designing the stormwater systems such that stormwater can be collected for irrigation. Furthermore, this condition prohibits the JCSA public water supply from being used for irrigation. - The conditions specific to convenience stores with fuel sales (Condition No. 20) require a Spill Prevention, Control and Countermeasures Plan be provided prior to issuance of a land disturbance permit. - The master plan includes the reservation of a corridor to accommodate a JCSA easement for a potential future water main loop.
Watersheds, Streams, and Reservoirs	Mitigated	- The master plan shows a conceptual layout for stormwater management facilities. This project is located within the Diascund Creek watershed. **Conditions** - Condition 19 requires the submittal of a Master Stormwater Management Plan meeting a higher standard than what is required by the County Ordinance.
Cultural/Historic	No Mitigation Required	- Per Section 24-145 of the Zoning Ordinance, an archaeological study and natural resource inventory will be required at the development plan stage.

Impacts/Potentially Unfavorable Conditions	**Status** *(No Mitigation Required/Mitigated/Not Fully Mitigated)*	**Considerations/Proposed Mitigation of Potentially Unfavorable Conditions**
Nearby and Surrounding Properties	Mitigated	**Conditions** - Condition No. 6 requires a 50-foot vegetated buffer along the Route 30 right-of-way. - Condition No. 7 requires a 50-foot vegetated buffer with additional evergreen plantings along I-64 to screen development in adjacent Land Areas. - Condition No. 8 requires a 100-foot vegetated buffer along the Barnes Road right-of-way to screen the project from nearby residential properties. - Condition No. 14 requires screening of all dumpsters, ground mounted HVAC, mechanical units, and cart corrals. - Condition No. 18 limits the height of lighting fixtures and states that lighting shall not be routinely illuminated at night. - Condition No. 20 (Convenience Stores with Fuel Sales) curtails outside displays, sale, or storage and intercom and speaker noise. - Condition No. 21 (Fast-Food Restaurants) curtails outside displays, sale, or storage and intercom and speaker noise.

Impacts/Potentially Unfavorable Conditions	**Status** *(No Mitigation Required/Mitigated/Not Fully Mitigated)*	**Considerations/Proposed Mitigation of Potentially Unfavorable Conditions**
Community Character	Mitigated	- Route 30 is designated as a Wooded Community Character Corridor. **Conditions** - The applicant has submitted design guidelines conditioned as part of this SUP. - Condition No. 3 prohibits a single building on the property from exceeding 70,000 square feet. - Condition No. 6 requires a 50-foot vegetated buffer along Route 30. - Condition No. 11 requires each site plan submitted to include the final architectural design for all buildings and include general elevations of the buildings, as well as the view of the building for all sides visible from Old Stage Road (Route 30) for the Director of Planning's review. - Condition No. 12 requires enhanced site design requiring a higher standard of façade design for certain buildings, parking lot design, location standards for drive-through uses, building footprint requirements, and design criteria for mini-storage warehouse use. - Condition No. 13 requires free-standing signage to be externally illuminated monument style signs not to exceed 8 feet in height, with brick base or similar material.

2035 Comprehensive Plan

The property is designated Mixed Use-Stonehouse on both the adopted 2035 Comprehensive Plan Land Use Map and the proposed 2045 Comprehensive Plan Land Use Map. The text for the specific Stonehouse Mixed-Use area from the 2035 and 2045 Comprehensive Plan is provided below:

"The principal suggested uses for the Stonehouse Mixed Use area are light industrial and office/business park. Except for the area between I-64 and Old Stage Road, commercial uses should be clearly secondary in nature, should be limited in scale, comprise a small percentage of the land area of the overall mixed use area, and be oriented towards support services that employees and residents in the Stonehouse area can utilize. The commercial uses should not be developed in a "strip" commercial fashion, but rather should be internally oriented with limited and shared access to Route 30. For the area between I-64 and Old Stage Road, community-scale commercial uses (such as shopping center, hotel, restaurant and office uses) consistent with prominent interstate interchange access and in support of surrounding residential development are envisioned. For the area between I-64 and Old Stage Road, residential is not a recommended use.

Staff finds the proposed Village Center is consistent with this language. The proposed development is for community-scale commercial uses, includes design guidelines that prohibit "strip development" and includes internal orientation of the site, and does not contain residential development.

Draft 2045 Comprehensive Plan

The 2045 Comprehensive Plan update for the Mixed Use Stonehouse designation includes one additional sentence for the Stonehouse Mixed Use Area: "Future development in the Stonehouse area will be conditioned on the provision of adequate transportation access."

Staff finds the proposed Village Center is consistent with this language, given the approved TIA and proposed SUP transportation conditions for the development.

The overall Mixed Use designation was revised and updated as part of the 2045 Comprehensive Plan Update to include general guidelines for overall development, the mix of uses, recommended densities and intensities, etc. The Village Center does not advance the complete communities concept (with recommended density and intensity) put forth within the 2045 Comprehensive Plan; however, staff finds that the development of the Village Center, when taken in context for all lands designated Stonehouse Mixed Use, is generally consistent with the intent of this designation in the 2045 Comprehensive Plan, which is to "create vibrant urban/small town environments that bring compatible land uses, public amenities, and utilities together at various scales. These developments should create pedestrian-friendly, complete communities, with a variety of uses that enable people to live, work, play, and shop in one place." Staff also finds that the Village Center aligns with the recommended uses and allocation for the Stonehouse Mixed Use designation, which call for 20-50% residential, 50-80% for non-residential, 5% public/civic area, and 10% open space and recreation area for the entire area on the Future Land Use Map designated for Stonehouse Mixed Use. As such, staff finds this proposal to be generally consistent with the draft 2045 Comprehensive Plan.

Goals Strategies and Actions

Staff also finds that this proposal generally aligns with multiple Goals, Strategies, and Actions (GSAs) within the Comprehensive Plan.

<u>Land Use</u>

This application aligns with multiple GSAs within the Land Use section. The GSAs in the Land Use section supports master-planning that emphasizes the economic potential of interchange areas by

promoting office and industry uses, encourages multiple uses commercial and industrial uses within nodes inside the PSA, and promotes the inclusion of bicycle and pedestrian facilities within the new developments.

Economic Development

This application aligns with multiple GSAs within the Economic Development section. The GSAs in the Economic Development section supports the development of a diverse economy, including retail and non-retail uses.

STAFF RECOMMENDATION

Staff recommends that the Planning Commission recommend approval of the proposed SUP application, subject to the proposed conditions.

TW/md
SUP19-6HzlwdFmsVillCtr

Attachments:
1. Proposed SUP Conditions
2. Location Map
3. Proposed Master Plan
4. Proposed Design Guidelines
5. Community Impact Statement
6. Traffic Impact Analysis
7. DRW Memo
8. Water and Sewer Graphic
9. Transportation Improvements Map

Village Center General Conditions

1. *Master Plan*. This SUP shall be valid for approximately 79.06 acres of property located at 9505 Old Stage Road, 9517 Old Stage Road, 9400 Barnes Road, 9689 Old Stage Road, and 9701 Old Stage Road, and further identified as 0440100009, 0440100008, portion of 0430100017, 0440100003, and 0440100002, respectively (collectively referred to as the "Property"). Development of the Property shall be generally in accordance with the master plan entitled "Special Use Permit For Village Center at Hazelwood Farms (2020)" prepared by AES Consulting Engineers, dated 3/12/21 (the "Master Plan") and design guidelines entitled " Design Guidelines for Hazelwood Farms Village Center," prepared by Hopke & Associates, dated 09/22/21 the "Design Guidelines"), with any deviations considered per Section 24-23(a)(2) of the Zoning Ordinance, as amended.

2. *Specially Permitted Uses*. This SUP shall be valid for (1) convenience store which sells and dispenses fuel, (2) any commercial building or group of buildings that exceeds 10,000 square feet of floor area pursuant to Section 24-11(a)(2) of the County Code, (3) any commercial building or group of buildings, not including office uses, which generates, or would be expected to generate, a total of 100 or more additional trips to and from the site during the peak hour of the operation pursuant to Section 24-11(a)(3) of the County Code, and (4) buildings, additions, and expansions requiring a special use permit pursuant to Section 24-11(b) of the County Code; however, such commercial building, group of buildings, and additions or expansions thereto shall be limited to those permitted uses under Section 24-390 of the County Code, as amended, and those special uses permitted by this SUP. Uses within such square footage are further subject to the following restrictions:

    A. There shall be no more than two fast-food restaurants, one convenience store with fuel sales, and one bank with a drive-through on the Property without amendment of these conditions.
    B. The uses in subsection (A) shall only be located in Land Bay 1, Land Bay 2, or Land Bay 3, as shown on the Master Plan, and shall not be located within 150 feet of Barnes Road.
    C. Drive-through windows on the Property shall be screened so as to not be visible from Route 30 with landscaping and/or fencing as determined by the Director of Planning.
    D. Any fast-food restaurant shall also be subject to Condition #22 of this Special Use Permit.

3. *Square Footage Limitations*. Development of the Property shall not exceed 510,000 square feet of maximum gross floor area. No single building on the Property shall exceed 70,000 square feet. Building coverage for each land bay shall not exceed 30%. In order to accurately track the progression of the development of the Property and requirements of this condition, each site plan or subdivision plan for any development within the

Property shall include a then-current accounting of the footage of non-residential development that have previously been approved by the County and that are proposed by the plan being submitted for review. Such accounting shall be in a form reasonably acceptable to the Director of Planning.

4. *Traffic Improvements.*

A. *SJR Required:* Prior to the submittal of a site plan for development within the Property, a Signal Justification Report (or such successor analysis or other requirement as may then be in effect) in accordance with VDOT regulations (the "SJR") for the Rt. 30 /1-64 eastbound ramp junction intersection and a phasing plan ("Phasing Plan") for the following intersections shall be submitted to VDOT and the Planning Division for review and approval:

i. Rt. 30 / Fieldstone Parkway; and
ii. Rt. 30 /I-64 eastbound off-ramp junction.

B. *SJR & Phasing Plan Scoping Meeting*: Prior to submittal of the SJR, a scoping meeting shall be conducted with VDOT and the Planning Division to determine the scope of the SJR.

C. *SJR Completion & Road Improvement Plans*: Prior to final approval of the first site plan for development within the Property:

i. The SJR must be approved by VDOT and the Director of Planning or designee;
ii. A phasing plan (the "Phasing Plan") for the improvements recommended in the approved SJR and, except to the extent superseded by the recommendation of the approved SJR, and the improvements listed in Condition F (collectively, the "Traffic Improvements") below must be approved by VDOT and the Director of Planning or designee;
iii. Road improvement plans containing the portion of the Traffic Improvements recommended by the Phasing Plan based on the then-proposed development of the Property shall be submitted to and approved by VDOT and the Director of Planning or designee; and
iv. The improvements reflected in the road improvement plans described in Condition C (iii) shall be completed or guaranteed ("Guaranteed") in accordance with Section 15.2-2299 of the Virginia Code (or such successor provision) and the applicable provisions of the County Code of Ordinances (such performance assurances to be herein referred to as a "Guarantee" or "Guarantees") in a manner acceptable to the County Attorney.

D. *Subsequent Approvals:* Prior to approval of any site plan for development within the Property subsequent to the first site plan:

i. Road improvement plans containing the portion of the Traffic Improvements recommended by the Phasing Plan based on the then-proposed development of the Property shall be submitted to and approved by VDOT and the Director of Planning or designee; and

ii. The improvements reflected in the road improvement plans described in Condition D(i) shall be completed or Guaranteed in a manner acceptable to the County Attorney.

E. *Subsequent SJR Approval:* Any subsequent SJR approved by VDOT and the Director of Planning or designee for the locations in Condition A above shall be deemed substituted for the SJR approval specified in Condition C(i).

F. *Intersection Improvements:* The following traffic improvements shall be constructed in accordance with the Phasing Plan described above:

i. Rt. 30/Fieldstone Parkway:
   a. Signalization of the intersection, either as a new signal installation or as an addition to a signal installed by others, or other intersection control improvements as determined by VDOT;
   b. Addition of double left turn lanes on northbound Rt. 30 at Property entrance;
   c. Addition of right turn lane on southbound Rt. 30 at Property entrance; and
   d. Property entrance with four exit lanes and two entering lanes.
   e. Shared use path, in accordance with Condition I.

ii. Rt. 30/Eastbound 1-64 off ramp:
   a. Signalization of the intersection, either as a new signal installation or as an addition to a signal installed by others, or other intersection control improvements as determined by VDOT; and
   b. Any adjustment of pavement required for signal installation, or other intersection control improvements as determined by VDOT.

iii. Second entrance (right turn in/out only) to property at approximately Sta. 321+25 will be permitted with a right turn lane on southbound Rt. 30 at this second entrance.

G. *Alternative Intersection Conditions:* If VDOT and the Director of Planning or designee, through SJR review, requires alternative intersection design at any location in Condition F above, then the improvements recommended by the approved SJR shall be substituted for the corresponding improvements listed in Condition F.

H. *Existing Rt. 30 Crossover*: The second existing crossover on Rt. 30 along the Property frontage located between Fieldstone Parkway and 1-64 shall be closed pursuant to the SJR and Phasing Plan review or other VDOT access approval for the Property.

I. *Multi-Use Path*: A multi-use path (in accordance with Sec. 24-35 (b) of the Zoning Ordinance) shall be included with all road improvement plans on southbound Rt. 30 from Barnes Road to 1-64 at approximately Sta 337+25 and shall be Guaranteed prior to site plan approval for initial development on the Property. On the north side of the Rt. 30/Fieldstone Parkway intersection, a multi-use path (in accordance with Sec. 24-35 (b) of the Zoning Ordinance) crossing of Rt. 30 from the Village Center entrance connecting to a future multi-use path in Moss Creek development will be constructed with Rt. 30/Fieldstone intersection improvements. Multi-use paths (in accordance with Sec. 24-35 (b) of the Zoning Ordinance) will be located in public rights of way or within easements dedicated to public access and VDOT maintenance.

J. *Barnes Road:* There will be no direct vehicular access, other than emergency access, between the Property and Barnes Road. Emergency access shall be determined by the Director of Planning. Such emergency access shall be designed to cross the Barnes Road Buffer at or near a perpendicular angle to the property line, with clearing kept to the minimum necessary to accommodate the access.

K. *Bus Stops:* A public bus stop shall be included in the initial site plan submitted for development of the Property. If placed on a public road, the bus stop may include a bump out and will have connections to the multi-use path system. If placed within the private property parking lot, the bus stop will include landings for bus patrons and pedestrian connections to multi-use paths on public right of way. Bus stop design shall be coordinated with the Williamsburg Area Transit Authority (WATA) prior to site plan approval to meet their design standards for shelters and pull-offs. Prior to final site plan approval the bus stop location, design, and bus circulation shall be approved by WATA and the Director of Planning. The bus stop shall be completed or guaranteed prior to issuance of a Certificate of Occupancy for the development shown on the initial site plan. The bus stop requirement set forth in this condition may be waived by the Director of Planning and the Executive Director of the Williamsburg Area Transit Authority (WATA).

L. *Trip Generation:* Development of the Property shall not exceed 1,596 PM peak hour trips as determined by the most recent edition of the Institute of Transportation Engineers Trip Generation Manual (the "ITE Manual") at the time of each site plan approval for the development of the Property. Accordingly, each site plan for the development of the Property shall, when submitted to the County for review, contain an accounting of the PM peak hour trip generation, as determined by the ITE Manual, associated with the development proposed by such site plan, all development shown on previously approved site plans for development of the

Property (except to the extent the proposed site plan is in lieu of a previously approved site plan for development of the Property), and all development shown on site plans then under review by the County for development of the Property. No site plan for development of the Property shall be approved by the County which includes an amount of development that, together with all other development shown on previously approved site plans for development of the Property (except to the extent the proposed site plan is in lieu of a previously approved site plan for development of the Property), would generate more than 1,596 PM peak hour trips as determined by the ITE Manual. In determining and accounting for the foregoing PM peak hour trips:

i. Internal and pass-by capture shall be determined in accordance with VDOT standards, and;

ii. Traffic counts for completed and occupied development on the Property may, with the approval of the County's Director of Planning, be substituted for ITE Manual estimated trips.

5. *Conservation & Irrigation*. Water conservation standards shall be enforced on the Property. Water conservation standards shall be submitted to and approved by the James City Service Authority prior to each site plan approval. The standards may include, but shall not be limited to, such water conservation measures as limitations on the installation and use of irrigation systems and irrigation wells, the use of approved landscaping materials including the use of drought-tolerant plants where appropriate, and the use of water-conserving fixtures and appliances to promote water conservation and minimize the use of public water resources.. In the design phase, the developer and designing engineer shall take into consideration the design of stormwater systems that can be used to collect stormwater for outdoor water use for the entire development. Only surface water collected from surface water impoundments, or water taken from an underground cistern, may be used for irrigating common areas on the Property. In no circumstances shall the JCSA public water supply be used for irrigation. If the Owner demonstrates to the satisfaction and approval of the CEO of the JCSA through drainage area studies and irrigation water budgets that the impoundments cannot provide sufficient water for all irrigation, the CEO of the JCSA may, in writing, approve a shallow (less than 100 feet) irrigation well to supplement the water provided by the impoundments or cisterns.

6. *Route 30 Buffer*. Prior to final approval of any site plan in Land Bay 1, Land Bay 2, or Land Bay 3, the Director of Planning or designee shall review and approve a landscape plan for the entirety of the Land Bay. The landscape plan for the Land Bay shall provide a 50-foot vegetated community character corridor buffer along the Route 30 right of way in accordance with Section 24-98 of the Zoning Ordinance. Any disturbance or grading into

this area shall be the minimum necessary and shall require additional plantings consisting of no less than 125% of the required plantings per the ordinance or as may be otherwise approved by the Director of Planning, such that at maturity the plantings match or exceed the mature height and density of trees and shrubs within the buffer. In areas of the buffer that are currently comprised of mature forest, as defined in Sec. 24-98 of the Zoning Ordinance, the buffer shall be left undisturbed in its natural state. In areas of the buffer that are not completely comprised of mature forest, as defined in Sec. 24-98 of the Zoning Ordinance, supplemental evergreen shrubs and trees shall be required. Any disturbance or grading into this area shall be the minimum necessary and shall require additional plantings consisting of no less than 125% of the required plantings per the ordinance, such that at maturity the plantings match or exceed the mature height and density of trees and shrubs within the buffer. The landscaping detailed in this condition shall be shown as part of the initial building site plan, or shall be submitted as a separate plan concurrent with the initial building site plan in Land Bay 1, 2, and 3. All landscaping on the landscape plan shall be guaranteed prior to site plan approval. The landscaping shown on the approved landscape plans(s) for Land Area 1, Land Bay 2, or Land Bay 3 shall be installed within 12 months of the final site plan approval, unless another timeline for planting has been approved by the Director of Planning.

7. *Interstate 64 Buffer*. Prior to final approval of any site plan in Land Bay 4 or Land Bay 5, the Director of Planning or designee shall review and approve a landscape plan for the Land Bay(s). The landscape plan for the Land Area shall provide a 50-foot vegetated buffer along the Interstate 64 right of way and be landscaped to the provisions of Section 24-98 of the Zoning Ordinance, except that the required tree and shrubs mixture be modified to require 45 percent of all proposed trees and shrubs within the 50-foot wide vegetated buffer to be evergreen, with at least 45 percent of evergreen trees achieving a minimum height at maturity of 40 feet. Any disturbance or grading into this area shall be the minimum necessary and shall require additional plantings consisting of no less than 125% of the required plantings per the ordinance or as may be otherwise approved by the Director of Planning, such that at maturity the plantings match or exceed the mature height and density of trees and shrubs within the buffer.. In areas of the buffer that are currently comprised of mature forest, as defined in Sec. 24-98 of the Zoning Ordinance, the buffer shall be left undisturbed in its natural state. In areas of the buffer that are not completely comprised of mature forest, as defined in Sec. 24-98 of the Zoning Ordinance, supplemental evergreen shrubs and trees shall be required. Any disturbance or grading into this area shall be the minimum necessary and shall require additional plantings consisting of no less than 125% of the required plantings per the ordinance, such that at maturity the plantings match or exceed the mature height and density of trees and shrubs within the buffer The landscaping detailed in this condition shall be shown as part of the initial building site plan, or shall be submitted as a separate plan concurrent with the initial building site plan in Land Bay 4 or Land Bay 5. All landscaping on the landscape plan shall be guaranteed prior to site plan approval. The landscaping shown on the approved landscape plans(s) for Land Bay 4 or

Land Bay 5 shall be installed within 12 months of the final site plan approval, unless another timeline for planting has been approved by the Director of Planning.

8. *Barnes Road Buffer*. Prior to final approval of any site plan in Land Bay 1 or Land Bay 5, the Director of Planning or designee shall review and approve a landscape plan for the Land Bay(s). The landscape plan for the Land Area shall provide a 100-foot vegetated buffer along the Barnes Road right of way and be landscaped to the provisions of Section 24-98 of the Zoning Ordinance, except that the required tree and shrubs mixture be modified to require 45 percent of all proposed trees and shrubs within the 100-foot wide vegetated buffer to be evergreen, with at least 45 percent of evergreen trees achieving a minimum height at maturity of 40 feet. Any disturbance or grading into this area shall be the minimum necessary and shall require additional plantings consisting of no less than 125% of the required plantings per the ordinance, such that at maturity the plantings match or exceed the mature height and density of trees and shrubs within the buffer. In areas of the buffer that are currently comprised of mature forest, as defined in Sec. 24-98 of the Zoning Ordinance, the buffer shall be left undisturbed in its natural state. In areas of the buffer that are not completely comprised of mature forest, as defined in Sec. 24-98 of the Zoning Ordinance, supplemental evergreen shrubs and trees shall be required. Any disturbance or grading into this area shall be the minimum necessary and shall require additional plantings consisting of no less than 125% of the required plantings per the ordinance or as may be otherwise approved by the Director of Planning, such that at maturity the plantings match or exceed the mature height and density of trees and shrubs within the buffer. The landscaping detailed in this condition shall be shown as part of the initial building site plan, or shall be submitted as a separate plan concurrent with the initial building site plan in Land Bay 1 or Land Bay 5. All landscaping on the landscape plan shall be guaranteed prior to site plan approval. The landscaping shown on the approved landscape plans(s) for Land Bay 1 or Land Bay 5 shall be installed within 12 months of the final site plan approval, unless another timeline for planting has been approved by the Director of Planning.

9. *Vehicular Access Restriction*. Access to the Property shall be restricted to the two primary commercial access roadways shown on the Master Plan. No other curb cuts are permitted on Route 30.

10. *Sustainable Design Initiatives*.
    A. Sustainable design initiatives shall be implemented during development of the Property and construction of all buildings to achieve the equivalent of those credits that would be required to achieve the "Certified" level in the LEED 2009 Certification program or whatever is equivalent from the Leadership in Energy and Environmental Design (LEED) for New Construction and Major Renovations (based on the most current guidelines) (the "Credits") for each building. This shall include completion of all prerequisite items, except that for the Energy and Atmosphere category prerequisite number 1, the Owner may choose to pursue

Energy Star designation or such other energy systems verification process as is approved in advance by the Director of Planning. In addition, for up to a maximum of 10% of the points needed to reach the LEED "Certified" level, the Owner may request that initiatives equivalent to, but not included on the LEED checklist as credits, be pursued instead. Any request for equivalent initiatives shall be submitted in writing as part of the process specified in (b) below, together with supporting documentation for review and approval by the Director of Planning. Documentation of the building energy performance shall be provided by a mechanical engineer to the Director of Planning before the Certificate of Occupancy for each building to demonstrate an improvement in efficiency of the building's thermal envelope, mechanical systems, and electrical systems over code-required baseline performance.

B. Application for formal LEED certification by the USGBC is at the discretion of the Owner, and is not required. If formal LEED certification is not pursued, compliance with this condition shall be monitored and verified to the County by a LEED Accredited Professional engaged by the Owner. The strategies to achieve the Credits will be incorporated into the construction documents either as part of the design, or as requirements for the contractor to substantiate during the course of construction. Compliance with the Credit requirements will be validated in a straightforward way through things like, but not limited to, review of contractor submittals, submission of design calculations, and letters certifying that requirements have been met. This validation will be overseen by a LEED-accredited professional and approved by the Director of Planning or his designee with Credits related to the design of the project approved prior to issuance of the final site plan approval, and Credits related to the construction of the project approved prior to issuance any Certificate of Occupancy.

11. *Architectural Review*. Prior to site plan approval, the Director of Planning shall review and approve the final architectural design of each proposed building to be consistent with the Design Guidelines. Each site plan shall include the final architectural design for all buildings shown and include general elevations of the buildings, as well as the view of the building for all sides visible from Old Stage Road (Route 30). Determination of substantial architectural consistency shall be determined by the Director of Planning or designee. In the event the Director of Planning disapproves, the applicant may appeal the decision of the Director of Planning to the Development Review Committee which shall forward a recommendation to the Planning Commission.

12. *Site Design*.

A. For Land Bay 1, Land Bay 2, and Land Bay 3, any building façade facing a road shall be designed in appearance as a front façade. The intent of this condition is to ensure that the side and rear of buildings, when visible from a roadway, achieve the standards put forward within the Design Guidelines for the front façade. No more than 25% of the required parking in these areas shall be located in between

the building and Old Stage Road (Route 30).

B. The design of parking lots shall be consistent with the Design Guidelines. Surface parking lots shall include landscaping that divides the parking lots into different "bays" or "pods" to reduce their visual dominance. Parking lot design showing compliance with this condition shall be shown on each site plan where new parking is required and shall be approved by the Director of Planning prior to site plan approval.

C. Any use containing a drive-through element shall be located to the side or at the rear of the building and shall not face Route 30.

D. No building may have a footprint greater than 70,000 square feet and no two buildings may have a combined footprint greater than 90,000 square feet. Floor plates may not be larger than 12,000 square feet without being divided into what appears to be two or more buildings.

E. Building depths may not be greater than 90 feet without being divided into what appears to be two buildings.

F. All warehouse storage units operated as mini-storage shall be designed as a single footprint building. Warehouse storage units whereby individual storage units have an exterior access door are prohibited.

13. *Free-Standing Signage*. All freestanding signage, including entrance signage located at the Property's two entrances as shown on the Master Plan shall be externally illuminated monument-style signs, not to exceed eight feet in height. The base of the signs shall be brick or shall use materials similar in type and color with the site architecture. The design of the signs shall be approved by the Director of Planning prior to final site plan approval for consistency with this condition.

14. *Screening of Site Features*. All dumpsters, ground mounted HVAC, mechanical units and cart corrals which are adjacent to buildings shall be screened by an enclosure composed of masonry, closed cell PVC, prefinished metal or cementitious panels, in detail and colors to blend with adjacent building materials. Where present, such features shall be shown on the site plan for the adjacent building, and shall be reviewed and approved by the Director of Planning for consistency with this condition.

15. *Internal Traffic Signage Plan*. The Owner shall include along with the materials submitted for the initial site plan review process an internal signage plan indicating the location of internal traffic signs and the orientation of vehicular flow within the Property. The internal signage plan shall be reviewed and approved by the Director of Planning, or his designee,

prior to final approval of the initial site plan for the Property. Thereafter, the internal signage plan may be amended with review and approval by the Director of Planning, or his designee.

16. *Shared Maintenance of Site Improvements*. Prior to first site plan approval, Owner shall submit documentation demonstrating that all shared site improvements (including, but not limited to, utilities, stormwater facilities, landscaping, roads and parking lots, and lighting) are subject to appropriate shared maintenance agreements ensuring that the site improvements will be maintained continuously. Compliance with this condition as to the existence of such shared maintenance documentation shall be subject to review and approval of the County Attorney or his designee.

17. *Internal Pedestrian Accommodations*. The owner of each property shall provide internal pedestrian connections to include, but not limited to, wherever sidewalk enters the parking area or crosses any entrance to the Property or drive-through lane and shall provide safe connections to any existing or proposed Williamsburg Area Transit Authority (WATA) bus stop. The connections shall be clearly delineated by use of a different color of pavement, brick pavers or some other method determined to be acceptable by the Director of Planning.

18. *Lighting*. All new exterior light fixtures, including building lighting, on the Property shall have recessed fixtures with no lens, bulb, or globe extending below the casing and a lighting plan shall be submitted to and approved by the Director of Planning or designee prior to final site plan approval. All light poles must not exceed twenty (20) feet in height and the lighting plan must indicate no glare outside the boundary lines of the Property unless otherwise approved in writing by the Director of Planning or designee. "Glare" is defined as more than 0.1 foot-candle at the boundary of the Property or any direct view of the lighting source from adjoining properties

19. *Master Stormwater Management Plan*. The Master Stormwater Management Plan (MSWMP) for the Property or any Land Bay Area within shall be approved prior to the first site plan submittal for the area. The MSWMP shall comply with the standards within the adopted watershed management plan in place at time of submittal and all outside agency permits shall be issued prior to the third submittal of the MSWMP. Furthermore, each Village Center Area MSWMP shall adhere to the conditions detailed below:

    A. Land Areas 1, 3, and 4, as delineated on the Conceptual Stormwater Master Plan (revision date 8/20/19) will include a stormwater management facility, designed to the standards and specifications current at the time of land Area development.

    B. Each land Area (1, 2, 3, and 4) will include no less than two treatment trains as part of the land Area master stormwater approach. Each of these trains will be required to contain at least three low impact development features, such as those noted on

the submitted plan set (i.e. vegetated filter strip, permeable pavement, bioretention basin, dry swale, manufactured treatment device).

C. If required by the watershed management plan adopted at the time of submittal, Special Stormwater Criteria (SSC) measures may not also be used to achieve required water quality requirements. At the time of an MSWMP submittal, specific SSC measures may be deemed unsuitable for the type of development as determined by the Director of Stormwater and Resource Protection or designee.

20. *Convenience Stores With Fuel Sales*.

A. *Outside Display, Sale or Storage*: Unless otherwise stated in this condition, no outside display, sale or storage of merchandise shall be permitted at the Property. As used for this condition, the term "merchandise" shall include but not be limited to ice, soda, candy and/or snack machines. For the Convenience Store, only two outside vending machine and one outside ice chest shall be permitted and, if used, shall be situated against the exterior wall not facing Route 30 and both shall be screened with building materials similar in type and color with the site architecture to minimize visual impacts from adjacent road rights-of-way. Final screening design shall be approved by the Director of Planning.

B. *Use Design:* The convenience store shall not be designed as a truck stop, as defined within the Zoning Ordinance.

C. *Fueling Islands:* There shall be no more than six (6) fueling islands associated with the convenience store.

D. *Intercom and Speaker Noise*: All intercom and other speaker systems on the Property shall operate in such a manner that they shall not be audible from adjacent developments within the same Land Bay.

E. *Landscaping:* Prior to final site plan approval, a landscape plan shall be submitted showing adequate screening of the fuel islands from internal uses and/or external properties through the use of landscaped islands and/or medians. The islands and/or medians shall be a minimum of 5' wide in order to accommodate landscaping adjacent to the boundaries of the gas facility. Evergreen plantings with a minimum of 3' tall shall be planted in these medians to adequately screen the fuel islands. The Director of Planning shall determine whether the screening is adequate prior to final site plan approval. Landscaping of the islands/medians shall be installed and/or bonded prior to the issuance of a temporary certificate of occupancy.

F. *Architectural Review:* The architecture of any canopy, including any columns, shall match the primary colors, design and exterior building materials of the convenience store. The canopies shall have a mansard roof design, as determined

by the Director of Planning. Any canopy shall have a maximum height of 15 feet measured from the finished grade to the underside of the canopy. The Canopy shall not include signage that involves backlighting or electronic lettering. There shall be no more than two signs on the canopy.

G. *Spill Prevention, Control and Countermeasures (SPCC) Plan*: Prior to the issuance of a Land Disturbing Permit, an SPCC Plan shall be reviewed and approved by the Director of Stormwater and Resource Protection. The SPCC Plan shall address chemical handling, including, but not limited to, oil, diesel, and gasoline.

21. Fast Food Restaurants.

A. Signage: All building face signage shall be externally illuminated or use back-lit or channeled lettered lighting as defined in Section 24-67 of the Zoning Ordinance. For any back-lit or channeled lettered signs, the sign shall meet the criteria listed in Section 24-72 of the Zoning Ordinance, or successor section. In addition to any building face signage as permitted by the Zoning Ordinance, the Restaurant may have one exterior freestanding sign. Freestanding signs shall be externally illuminated monument style signs not to exceed 8 feet in height and the base of the signs shall be brick or shall use materials similar in type and color with the site architecture.

B. Screening: The food order board and drive-through pick up window(s) shall be screened from Route 30 with landscaping and/or fencing, as determined by the Director of Planning or his designee.

C. Outside Display, Sale or Storage: No outside display, sale or storage of merchandise shall be permitted on the Property.

D. Intercom and Speaker Noise: All intercom and other speaker systems on the Property shall operate in such a manner that they shall not be audible from adjacent developments.

E. Architectural Review - Fast Food Canopy: The architecture of any canopy accessory to a fast-food restaurant shall match the primary colors, design and exterior building materials of the fast-food restaurant, in accordance with the "Design Guidelines for Hazelwood Farms Village Center" and dated January 29, 2020. Final design of the canopy shall be reviewed and approved by the Director of Planning prior to site plan approval.

21. Water and Sewer Facilities.

A. *Use:* This SUP shall be valid for the installation of a force main and water main, each a diameter of 4 inches or greater, to connect to existing facilities located within VDOT right-of-way for Fieldstone Parkway and extend across the

intersection of Fieldstone Parkway and Old Stage Road (Route 30) to serve the Properties. A water main loop may be installed on the Properties under Interstate 64 to connect to parcels south of the interstate

B. *Construction Hours:* The hours of construction of the Project shall be limited to daylight hours, Monday through Friday. Limited night and weekend work may be approved by the Director of Planning if requested in advance and it is determined that such work will not negatively affect surrounding properties.

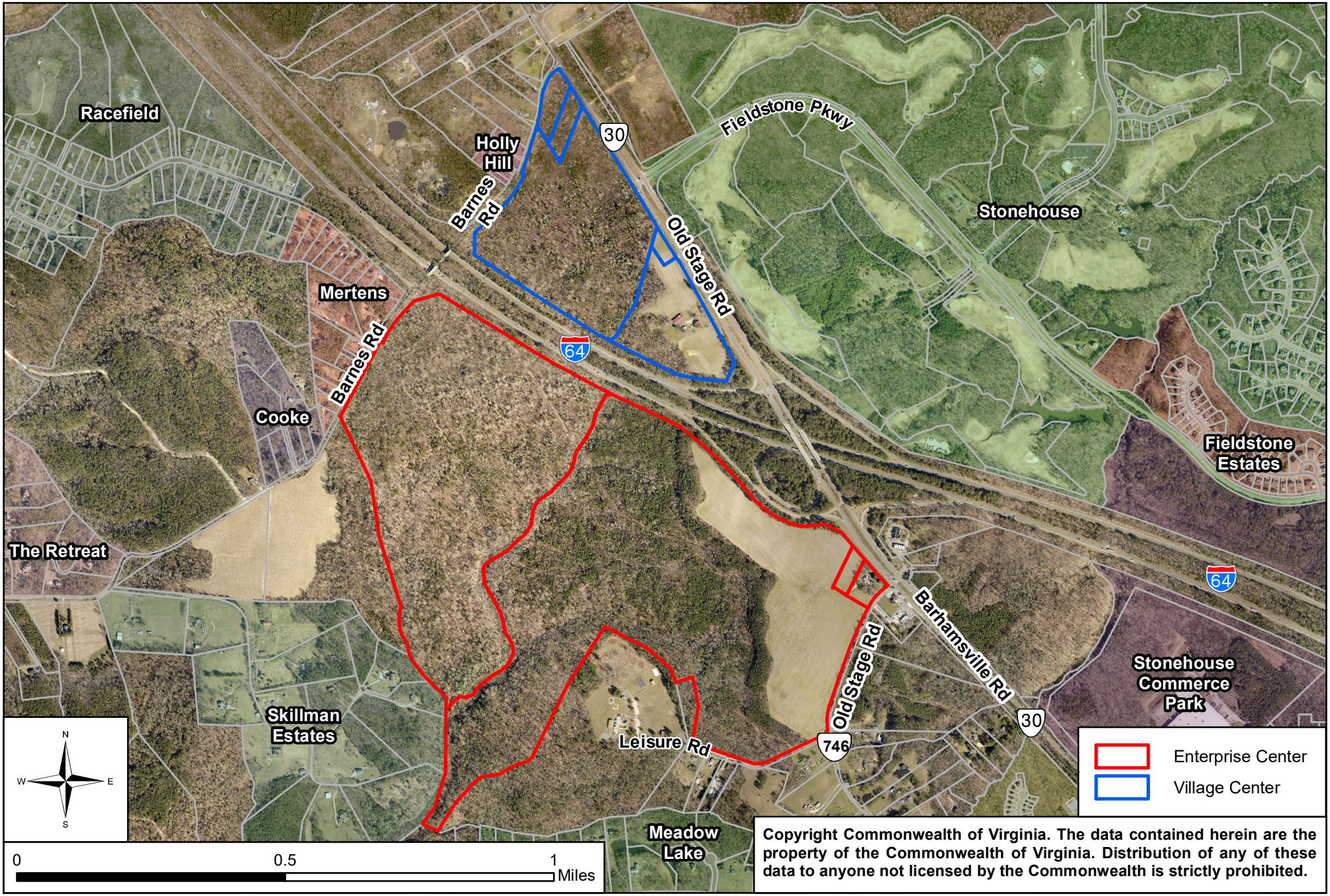
C. *Replanting:* Prior to issuance of a land disturbing permit, a plan addressing the replanting of disturbed vegetation within the right-of-way shall be submitted and approved by the Director of Planning or his designee. The intent of the plan is to restore the area to pre-land disturbing conditions.

D. *Lighting*: There shall be no new permanent lighting associated with the Project.

22. *Commencement for Construction*. Construction of one of these uses, excluding the public water and sewer facilities, shall commence within 60 months from the date of approval of this SUP or the SUP shall be void. Construction shall be defined as the first placement of permanent construction of a structure on a site, such as the pouring of slab or footings, the installation of piles, the construction of columns, or any work beyond the stage of excavation. Construction does not include land preparation such as clearing, grading, or filling.

23. *Severance Clause*. This SUP is not severable. Invalidation of any word, phrase, clause, sentence, or paragraph shall invalidate the remainder

JCC Z-19-0006, SUP-19-0005 & SUP-19-0006: Hazelwood Enterprise Center & Village Center



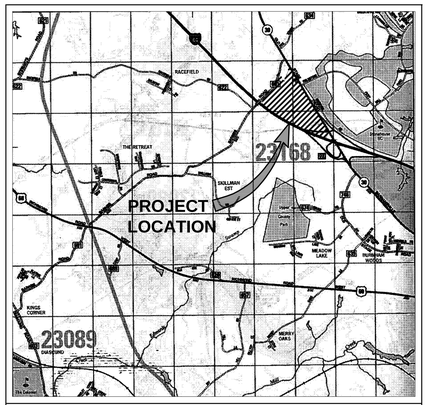
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SPECIAL USE PERMIT
FOR
VILLAGE CENTER
AT
HAZELWOOD FARMS

STONEHOUSE DISTRICT JAMES CITY COUNTY VIRGINIA

GENERAL NOTES

1. TOPOGRAPHIC INFORMATION IS BASED ON 1-FOOT CONTOUR INTERVALS PROVIDED BY AN AERIAL SURVEY FLOWN IN 2015.
2. SHEET 2, ENVIRONMENTAL INVENTORY, INDICATES 25% SLOPES, SOIL INVENTORY, WETLANDS, THE APPROXIMATE LOCATION OF RESOURCE PROTECTION AREAS (RPA) AND ASSOCIATED BUFFERS, AND PERENNIAL STREAM DETERMINATIONS. FOR FURTHER INFORMATION ON THE ENVIRONMENTAL INVENTORY, REFER TO THE COMMUNITY IMPACT STATEMENT.
3. THIS PROJECT IS LOCATED WITHIN THE WARE CREEK AND DIASCUND CREEK RESERVOIR WATERSHEDS.
4. CURB AND GUTTER STREETS ARE PROPOSED.
5. ALL PUBLIC STREETS WITHIN THE DEVELOPMENT WILL BE DESIGNED PER APPLICABLE VDOT STANDARDS.
6. HYDROLOGIC UNIT CODES
   Y062 WARE CREEK
   JL27 DIASCUND CREEK RESERVOIR
7. MAXIMUM BUILDING HEIGHT = 60'



VICINITY MAP
(Approximate Scale: 1"=2000')

Copyright ADC The Map People permitted use number 21004223

COUNTY PROJECT NO.: SUP-19-005
ORIGINAL SUBMITTAL DATE: 2/7/2019
APPROVAL DATE:

INDEX OF SHEETS

SHEET NO.	SHEET DESCRIPTION
MP-1	COVER SHEET
MP-2	EXISTING CONDITIONS PLAN
MP-3	CONCEPTUAL LAND USE AND SHARED USE PATH PLAN
MP-4	CONCEPTUAL STORMWATER MASTER PLAN
MP-5	CONCEPTUAL UTILITY PLAN
MP-6	CONCEPTUAL RT. 30 ROAD IMPROVEMENTS PLAN

SITE DATA:

SITE ADDRESS: 9505, 9517,9689 & 9701 OLD STAGE RD. & 9400 BARNES RD., WILLIAMSBURG, VIRGINIA 23185

ZONING: B-1, GENERAL BUSINESS

PARCELS:

T.M. 0430100017 (PART 1)	52.82 AC.±
T.M. 0440100002	2.83 AC.±
T.M. 0440100003	2.31 A.C.±
T.M. 0440100008	0.98 A.C.±
T.M. 0440100009 (PART 1)	20.05 A.C.±
T.M. 0440100009 (PART 2)	0.06 A.C.±
TOTAL ACREAGE:	79.06 A.C.±

FLOOD HAZARD MAP: THIS PROPERTY IS IN FLOOD ZONE "X" AS SHOWN ON MAP NUMBER 51095C0037D, PANEL 0037D, FOR COMMUNITY NUMBER 510201, DATED 12/16/2015 OF THE FLOOD INSURANCE RATE MAPS FOR JAMES CITY COUNTY, VIRGINIA. ZONE "X" IS DEFINED AS AREAS OUTSIDE THE 500 YEAR FLOOD PLAIN.

Rev.	Date	Description	Initials By
3	3/12/21	REVISED PER JCC COMMENTS	JAG
2	12/20/19	UPDATED PER JCC COMMENTS	JAG
1	8/20/19	UPDATED PER JCC COMMENTS	JAG

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SPECIAL USE PERMIT
FOR
VILLAGE CENTER
AT
HAZELWOOD FARMS
STONEHOUSE DISTRICT JAMES CITY COUNTY VIRGINIA

Project Contacts:	JAG
Project Number:	W10325-01
Scale: NONE	Date: 2/7/19

Sheet Title: COVER SHEET

Sheet Number
MP-1

S:\CIB\2019\10325-01 Hazelwood Farms\ 418 Land Planning\Master Planning\Northern 3 of Plat 2\10325-01 MP1 cover.dwg, 3/12/2021 4:58:40 PM, Dwg plots

HAZELWOOD PROPERTY AREA

PARCEL ID	ZONING	COMP PLAN	SITE AREA
0430100017	B-1	GENERAL BUSINESS	52.82± AC
0440100002	B-1	GENERAL BUSINESS	2.83± AC
0440100003	B-1	GENERAL BUSINESS	2.31± AC
0440100008	B-1	GENERAL BUSINESS	0.98± AC
0440100009	B-1	GENERAL BUSINESS	20.11± AC
TOTAL AREA			79.06± AC

ENVIRONMENTAL IMPACTS

TIDAL WETLANDS:	NONE ON SITE
TIDAL SHORES:	NONE ON SITE
NON-TIDAL WETLANDS IN RPA:	12,001 S.F., 0.28 AC.
100 FT RPA BUFFER:	88212 S.F., 2.03 AC.
25% SLOPE IMPACTS	NONE ON SITE

SOIL No.	SOIL NAME	HYDROLOGICAL GROUP	TYPICAL SLOPES	EROSION FACTOR (K)	EROSION FACTOR (T)
10B	CRAVEN FINE SANDY LOAM	D	2–6%	0.32–0.37	3
11C	CRAVEN–UCHEE COMPLEX	D	6–10%	0.32–0.37	3
15E	EMPORIA COMPLEX	B	15–25%	0.20–0.28	4
19B	KEMPSVILLE–EMPORIA FINE SANDY LOAMS	A	2–6%	0.24–0.32	3
29A	SLAGLE FINE SANDY LOAM	C	0–2%	0.24	3
29B	SLAGLE FINE SANDY LOAM	C	2–6%	0.24	3
35	UDORTHENTS LOAMY	*	–	–	–

INFORMATION TAKEN FROM "SOIL SURVEY OF JAMES CITY AND YORK COUNTIESAND THE CITY OF WILLIAMSBURG, VIRGINIA" ISSUED IN APRIL, 1985, BY THE UNITED STATES DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICEIN COOPERATION WITH VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY.

SOIL SUSCEPTIBILITY TO EROSION CLASSIFICATION (K)
0.23 AND LOWER – LOW ERODIBILITY
0.23 TO 0.36 – MODERATE ERODIBILITY
0.36 AND UP – HIGH ERODIBILITY

THE MAP SHOWN IS A "BEST FIT MODEL" OF THE SCS MAPS WITH EXISTING BASE INFORMATION.

DENOTES 25% OR GREATER SLOPES

LIMITS OF SOIL DELINEATION

GRAPHIC SCALE
100' 0' 100' 200'
SCALE: 1" = 100'

Rev.	Date	Description	Initials
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Peninsula Roads | Central Virginia | Middle Peninsula

SPECIAL USE PERMIT
FOR
VILLAGE CENTER
AT
HAZELWOOD FARMS
STONEHOUSE DISTRICT — JAMES CITY COUNTY — VIRGINIA

Project Contacts:	JAG
Project Number:	W10325-01
Scale: 1"=100'	Date: 2/7/19

Sheet Title:
EXISTING CONDITIONS PLAN

Sheet Number
MP-2

S:\JOBS\W10325\Engineering\Civil\Construction Drawings\Construction Plan\W10325 Existing Conditions.dwg, 2/20/2021 7:55:47 AM, Jack Augustine

DEVELOPMENT TABULATION

LANDBAY	AREA DESIGNATION	PROPOSED USE	TOTAL AREA (AC)	PERCENT OF TOTAL SITE	MAX GROSS FLOOR AREA (RATIO)
1	E, G	COMMERCIAL, COMMERCIAL OFFICE, RETAIL COMMERCIAL, RESTAURANT COMMERCIAL, OFFICE, RESTAURANT	±12.35	15.62%	±85,000 SF (0.158)
2	E, G	COMMERCIAL, COMMERCIAL OFFICE, RETAIL COMMERCIAL, RESTAURANT COMMERCIAL, OFFICE, RESTAURANT	±8.82	11.16%	±60,000 SF (0.156)
3	E, G	COMMERCIAL, COMMERCIAL OFFICE, RETAIL COMMERCIAL, RESTAURANT COMMERCIAL, OFFICE, RESTAURANT	±4.95	6.27%	±33,000 SF (0.153)
4	E, G	COMMERCIAL, COMMERCIAL OFFICE, RETAIL COMMERCIAL, RESTAURANT COMMERCIAL, OFFICE, HOTEL, RESTAURANT	±14.19	17.95%	±167,000 SF (0.270)
5	E, F, G, I	COMMERCIAL, OFFICE, RETAIL, WHOLESALE & WAREHOUSE, INSTITUTIONAL OR PUBLIC USES	±38.74	49.00%	±360,000 SF (0.213)
		TOTALS	±79.06	100.00%	–
		MAXIMUM COMBINED	–	–	510,000 SF± (0.148) SEE NOTE

NOTES:
1. "FRONTAGE RETAIL AREA WITHIN" LAND BAYS 1–3 SHALL BE LIMITED IN NUMBER TO NO MORE THAN TO 2 FAST FOOD W/DRIVE THRU., 1 CONVENIENCE STORE W/FUEL SALES, 1 BANK W/DRIVE THRU. SPECIAL CONSIDERATION SHOULD BE GIVEN TO SCREEN DRIVE THRU WINDOWS FROM ROUTE 30.
2. NO SINGLE GROCERY STORE SHALL EXCEED 70,000 S.F. ON LAND BAY 5.
3. MAXIMUM SQUARE FOOTAGE IS COMBINED AND SHALL BE ALLOTTED BASED ON THE ORDER OF APPROVED PLANS FOR RESPECTIVE SITES.
4. BUILDING COVERAGE FOR EACH LAND BAY OR THEIR SUBDIVIDED PARCELS CANNOT EXCEED 30%.

LEGEND:

- PRIMARY COMMERCIAL ACCESS
- SECONDARY COMMERCIAL ACCESS
- PROPERTY BOUNDARY
- APPROXIMATE INTERNAL DEVELOPMENT BOUNDARY
- MULTI–USE PATH
- FRONTAGE RETAIL AREA: SEE NOTE 1

GRAPHIC SCALE
100' 0' 100' 200'
SCALE: 1" = 100'

Rev.	Date	Description	By
3	3/12/21	REVISED PER JCC COMMENTS	JAG
2	12/20/19	UPDATED PER JCC COMMENTS	JAG
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SPECIAL USE PERMIT FOR
VILLAGE CENTER AT HAZELWOOD FARMS
STONEHOUSE DISTRICT JAMES CITY COUNTY VIRGINIA

Project Contacts:	JAG
Project Number:	W10325-01
Scale: 1"=100'	Date: 2/7/19

Sheet Title: CONCEPTUAL LAND USE AND SHARED USE PATH PLAN

Sheet Number
MP-3

TREATMENT TRAIN OPTIONS:

- VEGETATED FILTER STRIP
- PERMEABLE PAVEMENT
- BIORETENTION BASIN
- DRY SWALE
- FILTERRA

ENVIRONMENTAL IMPACTS

TIDAL WETLANDS:	NONE ON SITE
TIDAL SHORES:	NONE ON SITE
NON-TIDAL WETLANDS IN RPA:	10,186 S.F., 0.24 AC.
100 FT RPA BUFFER:	88212 S.F., 2.03 AC.
25% SLOPE IMPACTS	NONE ON SITE

NOTES: 1. ALL WET PONDS SHOWN IN APPROXIMATE LOCATIONS FOR PLANNING CONSIDERATION ONLY. FINAL LOCATION OF STORMWATER MANAGEMENT FEATURES TO BE DETERMINED DURING SITE PLAN PREPARATION.

2. STORMWATER MANAGEMENT FOR ALL AREAS SHALL BE DESIGNED TO STAND ALONE. THESE SITES SHALL BE REQUIRED TO SHOW AN APPROVED MASTER STORMWATER PLAN (FOR PHASED DEVELOPMENT) FOR EACH PARCEL AREA.

STORMWATER MANAGEMENT NARRATIVE

A STORMWATER MANAGEMENT PLAN IS PROPOSED FOR THIS SITE TO MEET THE GENERAL CRITERIA OF THE COMMONWEALTH OF VIRGINIA AND JAMES CITY COUNTY'S STORMWATER REQUIREMENTS. STORMWATER IS TO BE MANAGED BY A SERIES OF BEST MANAGEMENT PRACTICES AND PIPE DRAINAGE NETWORKS THAT ULTIMATELY DISCHARGE INTO DOWNSTREAM WATERWAYS. PER EACH PARCEL, WET PONDS WILL SERVE AS THE FINAL MEANS OF WATER QUALITY CONTROL. THESE PONDS WILL HAVE A NATURAL AESTHETIC AND ATTENUATE FLOW. DISCHARGES FROM THESE PONDS WILL BE LESS IN QUANTITY THAN CURRENT EXISTING CONDITIONS WHICH WILL MINIMIZE THE POSSIBILITY OF EROSION. UPSTREAM BIORETENTION PONDS, FILTERRAS, DRY SWALES, AND OTHER LOW IMPACT DEVELOPMENT MEASURES WILL CONTRIBUTE TO STORMWATER QUALITY CONTROL AND WILL FEED INTO THE DOWNSTREAM WET PONDS. PER COMPLIANCE WITH THE VIRGINIA RUNOFF REDUCTION METHOD, ALL PROPOSED SITE WORK WILL BE MANAGED BY THESE STORMWATER MEASURES TO NEGATE DOWNSTREAM WETLANDS IMPACTS AND POLLUTION FROM ENTERING INTO THE CHESAPEAKE BAY.

LEGEND:

- PRIMARY COMMERCIAL ACCESS
- SECONDARY COMMERCIAL ACCESS
- PROPERTY BOUNDARY
- APPROXIMATE INTERNAL DEVELOPMENT BOUNDARY
- MULTI-USE PATH

GRAPHIC SCALE
100' 0' 100' 200'
SCALE: 1" = 100'

N/F MOSS CREEK MARKET PLACE LLC
9690 OLD STAGE RD
PARCEL ID: 0440100004
ZONED A-1

N/F MOSS CREEK MARKET PLACE LLC
9686 OLD STAGE RD
PARCEL ID: 0440100034
ZONED A-1

N/F WIGGS, WENDY E
9601 BARNES RD
PARCEL ID: 0430100007
ZONED A-1

N/F EVELAND, JOSEPH ROGER
9595 BARNES RD
PARCEL ID: 0430100006A
ZONED A-1

N/F HERTZLER, CALEB A
9593 BARNES RD
PARCEL ID: 0430100008
ZONED A-1

N/F STEWART, LOIS W & JAMES E
9591 BARNES RD
PARCEL ID: 0430100009
ZONED A-1

N/F STEWART, LOIS W & JAMES E
9583 BARNES RD
PARCEL ID: 0430100010
ZONED A-1

N/F NEFF, BARRY F JR
9567 BARNES RD
PARCEL ID: 0430200005
ZONED A-1

N/F SHAVE, NORRIS L
9563 BARNES RD
PARCEL ID: 0430200004
ZONED A-1

N/F STAVROU COMPANY LLC C/O CHARITA STAVROU
9557 BARNES RD
PARCEL ID: 0430200003
ZONED A-1

N/F STAVROU COMPANY LLC C/O CHARITA STAVROU
9551 BARNES RD
PARCEL ID: 0430200002
ZONED A-1

N/F STAVROU COMPANY LLC C/O
9547 BARNES RD
PARCEL ID: 0430200001
ZONED A-1

N/F HERTZLER, STEVEN L & MARY E
9537 BARNES RD
PARCEL ID: 0430100012A
ZONED A-1

N/F ASSOCIATION AT STONEHOUSE INC (THE)
9330 FIELDSTONE PARKWAY
PARCEL ID: 0440100024B
ZONED PR PUD RESIDENTIAL

N/F STONEHOUSE 2.0 LLC
9310 FIELDSTONE PARKWAY
PARCEL ID: 0440100021
ZONED PC PUD RESIDENTIAL

N/F ASSOCIATION AT STONEHOUSE INC
9300 FIELDSTONE PARKWAY
PARCEL ID: 0440100027
ZONED PC PUD RESIDENTIAL

N/F ASSOCIATION AT STONEHOUSE INC (THE)
PROPERTY ADDRESS NOT GIVEN
PARCEL ID: 0440100026
ZONED PC PUD COMMERCIAL

HAZELWOOD FARMS, LLC
PARCEL ID: 0430100017
52.84 AC
ZONED B-1

FIELDSTONE PARKWAY
STONEHOUSE
PROPOSED TRAFFIC SIGNAL
NORTH BOUND
SOUTH BOUND
OLD STAGE ROAD
STATE ROUTE 30
VARIABLE WIDTH R/W
BARNES ROAD
STATE ROUTE 601
100' R/W
OVERPASS ROAD
INTERNAL ROAD
NORTH 'A' ENTRANCE
NORTH 'B' ENTRANCE
CLOSED CROSSOVER PER VDOT
30' PERIMETER BUFFER
50' PERIMETER BUFFER
APPROXIMATE LOCATION OF WET POND
LIMITS OF WETLANDS
100' RPA BUFFER
RPA BUFFER
ANTICIPATED WETLANDS IMPACT
5,900 S.F.±
0.14 AC.±
ANTICIPATED WETLANDS IMPACT
1,068 S.F.±
0.02 AC.±
ANTICIPATED WETLANDS IMPACT
3,218 S.F.±
0.07 AC.±

LAND BAY 1
537,833 S.F. (12.35 AC.)

LAND BAY 2
384,239 S.F. (8.82 AC.)

LAND BAY 3
215,752 S.F. (4.95 AC.)

LAND BAY 4
618,280 S.F. (14.19 AC.)

LAND BAY 5
1,687,546 S.F. (38.74 AC.)

WEST BOUND
EAST BOUND
INTERSTATE 64
VARIABLE WIDTH R/W
LIMITED ACCESS HIGHWAY
STATE HIGHWAY PROJECT
0064-047-101, RW-201

No.	Date	Description	Initial By
3	3/12/21	REVISED PER JCC COMMENTS	JAG
2	12/20/19	UPDATED PER JCC COMMENTS	JAG
1	8/20/19	UPDATED PER JCC COMMENTS	JAG

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SPECIAL USE PERMIT
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VILLAGE CENTER
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HAZELWOOD FARMS
JAMES CITY COUNTY VIRGINIA
STONEHOUSE DISTRICT

Project Contacts:	JAG
Project Number:	W10325-01
Scale: 1"=100'	Date: 2/7/19

Sheet Title:
CONCEPTUAL STORMWATER MASTER PLAN

Sheet Number
MP-4

S:\10JOBS\10325\01-Implement Facility 433 Layout\Planning\Graphics\Layout\Plan\Village Center Master Plan.dwg, 3/12/2021 4:27:21 PM, Danny Lynch

LEGEND:

- PRIMARY COMMERCIAL ACCESS
- SECONDARY COMMERCIAL ACCESS
- PROPERTY BOUNDARY
- APPROXIMATE INTERNAL DEVELOPMENT BOUNDARY
- MULTI-USE PATH

UTILITY LEGEND

EXISTING		PROPOSED
	WATER	
	SANITARY GRAVITY SEWER	
	FORCE MAIN	

PROJECTED WATER USAGE

Type of Use	Design Units	Flow (GPD/Unit)	Total Flow (GPD)	Duration (hrs)	Avg Flow (GPM)	Peak Flow (GPM)
Shopping Center	375,000 SF	0.2	75,000	12	104.17	416.67
Office	135,000 SF	0.1	13,500	12	18.75	75.00
Total			**88,500**		**122.92**	**491.67**

PROJECTED WASTEWATER FLOWS

Type of Use	Design Units	Flow (GPD/Unit)	Total Flow (GPD)	Duration (hrs)	Avg Flow (GPM)	Peak Flow (GPM)
Shopping Center	375,000 SF	0.2	75,000	12	104.17	312.50
Office	135,000 SF	0.1	13,500	12	18.75	56.25
Total			**88,500**		**122.92**	**368.75**

NOTE:
1. ALL PARCEL AREAS TO BE SERVED BY JCSA GRAVITY SEWER AND WATER. SEE NARRATIVE IN COMMUNITY IMPACT STATEMENT FOR DETAILS.
2. UPGRADES TO IMPELLERS AT JCSA PS 9-16 PS 10-1 SHALL BE MADE PRIOR TO ISSUANCE OF 3RD CERTIFICATE OF OCCUPANCY ON THE PROPERTY.

GRAPHIC SCALE
100' 0' 100' 200'
SCALE: 1" = 100'

EX. 16" WATERLINE

EXTEND PROPOSED FORCEMAIN TO CONNECT TO EXISTING JCSA SANITARY SEWER

CONNECT TO EX. JCSA WATERMAIN

APPROXIMATELY 600 LF OF OFFSITE 12" WATER LINE EXTENSION

N/F
MOSS CREEK MARKET PLACE LLC
9690 OLD STAGE RD
PARCEL ID:
0440100004
ZONED A-1

N/F
MOSS CREEK MARKET PLACE LLC
9686 OLD STAGE RD
PARCEL ID:
0440100034
ZONED A-1

N/F
WIGGS, WENDY E
9601 BARNES RD
PARCEL ID:
0430100007
ZONED A-1

N/F
EVELAND, JOSEPH ROGER
9595 BARNES RD
PARCEL ID:
0430100006A
ZONED A-1

N/F
HERTZLER, CALEB A
9593 BARNES RD
PARCEL ID: 0430100008
ZONED A-1

N/F
STEWART, LOIS W & JAMES E
9591 BARNES RD
PARCEL ID:
0430100009
ZONED A-1

N/F
STEWART, LOIS W & JAMES E
9583 BARNES RD
PARCEL ID:
0430100010
ZONED A-1

N/F
NEFF, BARRY F JR
9567 BARNES RD
PARCEL ID:
0430200005
ZONED A-1

N/F
SHAVE, NORRIS L
9563 BARNES RD
PARCEL ID:
0430200004
ZONED A-1

N/F
STAVROU COMPANY LLC C/O
CHARITA STAVROU
9557 BARNES RD
PARCEL ID:
0430200003
ZONED A-1

N/F
STAVROU COMPANY LLC C/O
CHARITA STAVROU
9551 BARNES RD
PARCEL ID:
0430200002
ZONED A-1

N/F
STAVROU COMPANY LLC C/O
9547 BARNES RD
PARCEL ID:
0430200001
ZONED A-1

N/F
HERTZLER, STEVEN L & MARY E
9537 BARNES RD
PARCEL ID:
0430100012A
ZONED A-1

N/F
ASSOCIATION AT STONEHOUSE INC (THE)
9330 FIELDSTONE PARKWAY
PARCEL ID:
0440100024B
ZONED PR PUD RESIDENTIAL

N/F
STONEHOUSE 2.0 LLC
9310 FIELDSTONE PARKWAY
PARCEL ID:
0440100021
ZONED PC PUD RESIDENTIAL

N/F
ASSOCIATION AT STONEHOUSE INC
9300 FIELDSTONE PARKWAY
PARCEL ID:
0440100027
ZONED PC PUD RESIDENTIAL

N/F
ASSOCIATION AT STONEHOUSE INC (THE)
PROPERTY ADDRESS NOT GIVEN
PARCEL ID:
0440100026
ZONED PC PUD COMMERCIAL

STONEHOUSE

FIELDSTONE PARKWAY

PROPOSED TRAFFIC SIGNAL

NORTH BOUND

SOUTH BOUND

OLD STAGE ROAD
STATE ROUTE 30
VARIABLE WIDTH R/W

NORTH A/E ENTRANCE

INTERNAL ROAD

CLOSED CROSSOVER PER VDOT

OVERPASS ROAD

LAND BAY 1
537,833 S.F. (12.35 AC.)

LAND BAY 2
384,239 S.F. (8.82 AC.)

LAND BAY 3
618,280 S.F. (14.19 AC.)

LAND BAY 4
618,280 S.F. (14.19 AC.)

LAND BAY 5
1,687,546 S.F. (38.74 AC.)

30' PERIMETER BUFFER

APPROX. LOCATION OF SANITARY SEWER PUMP STATION

LIMITS OF WETLANDS

100' RPA BUFFER

CORRIDOR TO BE RESERVED TO ACCOMMODATE JCSA EASEMENT FOR POTENTIAL FUTURE WATERMAIN LOOP (FINAL LOCATION TO BE DETERMINED AT TIME OF SITE PLAN ON SUBJECT PARCEL(S))

50' PERIMETER BUFFER

RPA BUFFER

BARNES ROAD
STATE ROUTE 601
100' R/W

WEST BOUND

EAST BOUND

INTERSTATE 64
VARIABLE WIDTH R/W
LIMITED ACCESS HIGHWAY
STATE HIGHWAY PROJECT
0064-047-101, RW-201

Rev.	Date	Description	By
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Project Contacts:	JAG
Project Number:	W10325-01
Scale: 1"=100'	Date: 2/7/19

Sheet Title:
CONCEPTUAL UTILITY PLAN

Sheet Number
MP-5

S:\JOBS\W10325\02 Hazelwood Farms 143 acres\Planning\Rezoning Plan\Village\Rezoning Plan\Village\Rezoning Plan\Village

N/F
ASSOCIATION AT STONEHOUSE INC (THE)
9330 FIELDSTONE PARKWAY
PARCEL ID:
0440100024B
ZONED PR PUD RESIDENTIAL

FIELDSTONE PARKWAY

SIGNALIZED INTERSECTION STA 313+08

STA 315+00

NORTH BOUND

STA 310+00

309+00

310+00

311+00

312+00

313+00

314+00

315+00

OLD STAGE ROAD
STATE ROUTE 30
VARIABLE WIDTH R/W

SOUTH BOUND

MATCHLINE – SEE BELOW

NORTH #1 ENTRANCE

GRAPHIC SCALE
20' 0' 20' 40'
SCALE: 1" = 20'

N/F
ASSOCIATION AT STONEHOUSE INC
9300 FIELDSTONE PARKWAY
PARCEL ID:
0440100027
ZONED PC PUD RESIDENTIAL

END TAPER
STA 321+09

GRAPHIC SCALE
20' 0' 20' 40'
SCALE: 1" = 20'

CLOSE CROSSOVER
STA 321+35

STA 320+00

NORTH BOUND

OLD STAGE ROAD
STATE ROUTE 30
VARIABLE WIDTH R/W

316+00

317+00

318+00

319+00

320+00

321+00

322+00

323+00

CLOSE CROSSOVER
AS DIRECTED BY VDOT

SOUTH BOUND

PROPOSED RIGHT IN/RIGHT OUT

MATCHLINE – SEE ABOVE

NORTH #2 ENTRANCE

Rev.	Date	Description	By
3	3/12/21	REVISED PER JCC COMMENTS	JAG
2	12/20/19	UPDATED PER JCC COMMENTS	JAG
1	8/20/19	UPDATED PER JCC COMMENTS	JAG

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AES CONSULTING ENGINEERS
Hampton Roads | Central Virginia | Middle Peninsula

SPECIAL USE PERMIT
FOR
VILLAGE CENTER
AT
HAZELWOOD FARMS
STONEHOUSE DISTRICT
JAMES CITY COUNTY
VIRGINIA

Project Contacts:	JAG
Project Number:	W10325-01
Scale: 1"=20'	Date: 2/7/19

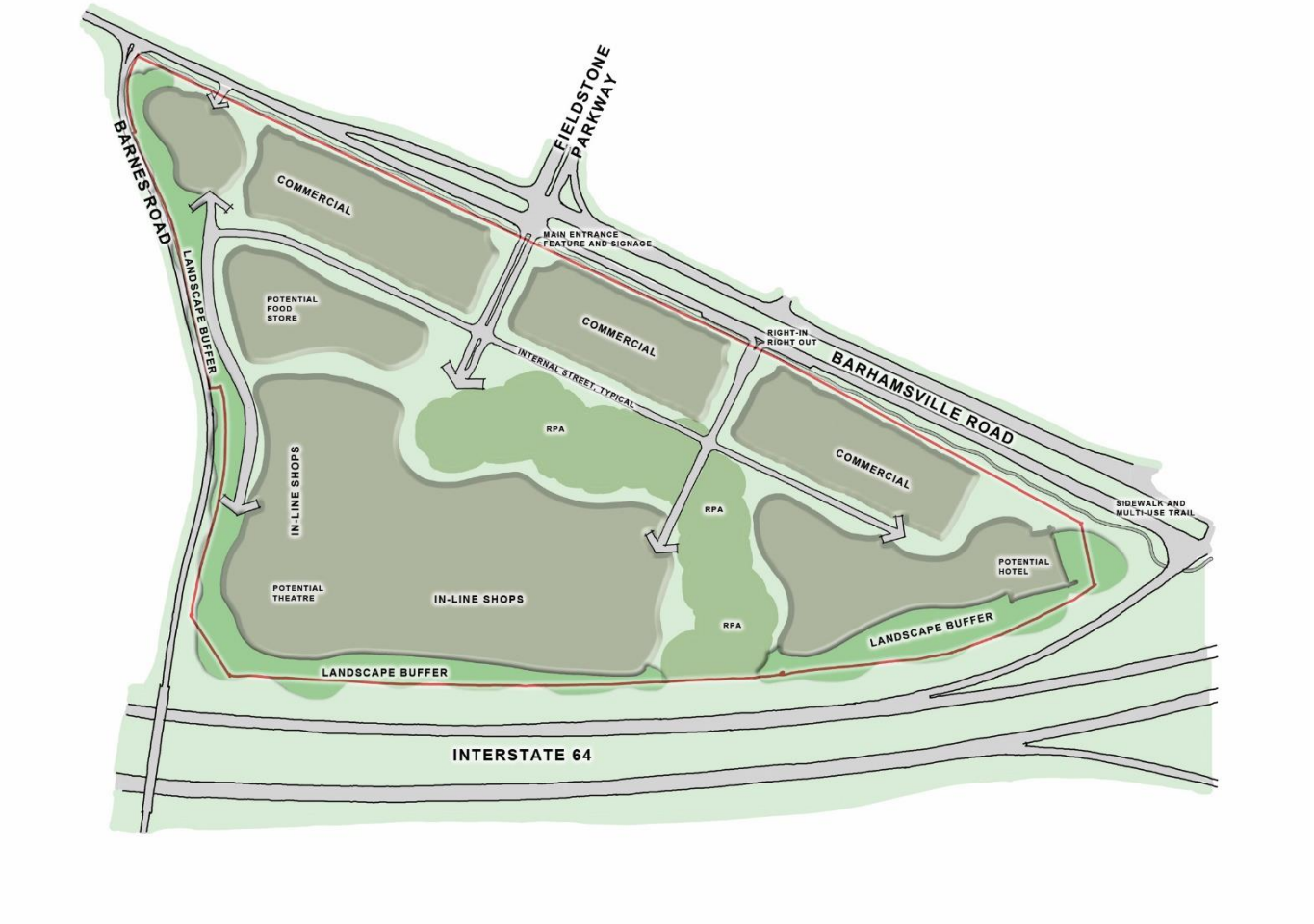
Sheet Title:
CONCEPTUAL RT. 30 ROAD IMPROVEMENTS PLAN

Sheet Number
MP-6

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Design Guidelines
for
Hazelwood Farms Village Center

James City County, Virginia
September 22, 2021



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Overview

The property is located in the Stonehouse district of James City County, Virginia, at the intersection of Interstate 64 and Route 30/Barhamsville Road. It lies entirely to the west side of Route 30/Barhamsville Road and is subdivided by Interstate 64 into two major sections. These guidelines are concerned with the north section, heretofore referred to as the "Village Center."

The Village Center has easy access from the interstate for west-bound traffic and shares a major intersection with the Stonehouse residential community. Thus the Village Center is master planned as a mixed use development to create a walkable downtown for the Stonehouse district of James City County. The master plan further encourages forward-thinking accommodations for the automobile, with ease of parking and circulation without sacrificing a quality pedestrian experience.

These standards are intended to comply with the James City County Zoning Ordinance with the expectation of a "Special User Permit" (SUP) under the current "B-1" zoning category per Division 10, "General Business District." Wherein any discrepancies or ambiguities may occur, these guidelines shall not be interpreted to allow standards which are less restrictive than the Zoning Ordinance. These guidelines are also written to satisfy the conditions of Landscape Standards, in accordance with Section 24-98(3) of the Zoning Ordinance.

The Developer shall be responsible for administration of these Design Standards and shall engage a licensed Architect ("Review Architect") to interpret their application for all aspects of the project through a formal, documented review process. Selection of the Review Architect shall be at the sole discretion of the Developer. The responsibility for administration of the Design Standards may be assigned to another entity (such as a "property owners association") in the future, at the sole discretion of the Developer.

It is recognized by the Owner and agencies having jurisdiction that these guidelines are written with an overarching intent of establishing a standard of quality and consistency in the architecture and site development for the property. It is furthermore understood that actual development and detailed planning may occur in the less immediate future when real estate market trends, best practices of land planning and transportation technology have changed in ways that cannot be imagined or anticipated at this time. As such these guidelines may be re-visited in the future and may be appropriately amended to reflect such changes at the discretion of the developer, property owner or property owners association, with the review and approval of the James City County Planning Director.

Design submission procedures and forms shall be developed and formalized by the developer prior to submission to James City County for building permits or site plan approvals. At a minimum, those procedures shall include:

- Conceptual Review of proposed site development of a given parcel as well as any implied master plan adjustments.
- Conceptual Review of proposed exterior architectural development with rendered perspectives and/or elevations, consistent with footprints depicted on the site development plan and indicating grade adjustments with reasonable accuracy.

- Final building design and site plan submissions with proposed materials and colors at appropriate scale and detail.
- Final building material and color selections submitted and documented with samples of predominant materials
- Final landscape and hardscape selections submitted and documented with photographs of key elements, such as street furnishing (e.g. bike racks, street light posts, trash receptacles, benches, etc…)

The developer shall commit to "sustainable" land planning and building design, incorporating best practices of LEED, Earthcraft, or other equivalent "Green Building" certification and assessment tools, in compliance with the "Endorsement of Green Building Incentives" policy of James City County (case no. ZO-00005-2011). If the developer elects to obtain formal certification through such a program, it is recognized that they would be entitled to the benefits outlined in that official resolution.

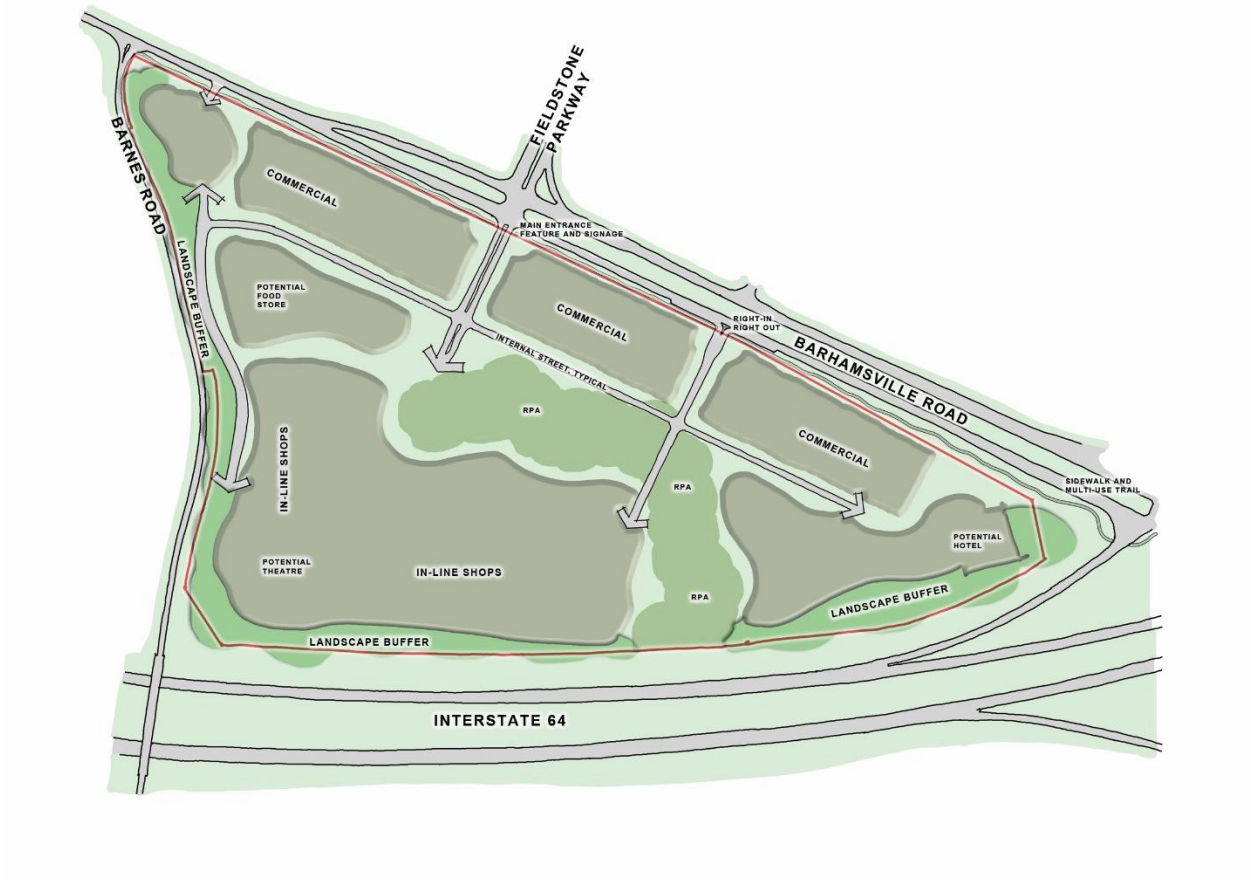
General Description

The Village Center is envisioned as an entertainment, retail, office and business support complex. While connected to the Stonehouse residential development with cycling and pedestrian ways, this parcel is located at ideally for arrival by automobile. Thus, a portion of the site is to be organized in a more traditional regional shopping center development pattern, with in-line shops and parking courts. An appropriate community anchor, such as a movie theater, is proposed on center with the main property access.

Along Route 30/Barhamsville Road, commercial/retail establishments are proposed, but with a required pedestrian approach from a parallel internal street. For the remainder of the parcel, numerous small, common parking areas are to be incorporated in the final master plan, in lieu of a single large parking field. The eastern most portion of the property is the most prominent. The master plan anticipates a larger use, such as a hotel or multi-story office building at that location.

The parcel is naturally subdivided by a small amount of environmentally sensitive wetlands. Buffers are to be utilized to both protect these areas and feature them as a park for pedestrians, bikers and vehicles. On-street parking along the face of the in-line shops and/or pick-up/drop-off zones are to be incorporated to promote a pedestrian character, while also anticipate future accommodations for semi-autonomous self-parking vehicles.

Figure 1: Village Center Diagrammatic Master Plan



Vehicular and Pedestrian Circulation

The heart of the Village Center is organized around a collection of parking courts which are bounded by out-parcels on two sides, a series of in-line shops on a two other sides, and park land on the remaining. While planned for convenient access from the interstate, it is also connected to the Stonehouse residential development by a bike path and a pedestrian friendly boulevard.

Arrival by automobile is through a sequence of spaces designed to calm traffic and cede preference to the pedestrian. In anticipation of a future with autonomous or semi-autonomous (self-parking) vehicles, accommodations are proposed for vehicle drop-off and pick-up convenient to each shop or service. Parking is arranged in relatively small lots to complement residential scale architecture and includes parallel parking to promote pedestrian safety and an urban character. Charging stations for electric cars are to be distributed within the larger parking areas with adequate infrastructure to accommodate increased demand over time. Bike Racks are to be included at major services (e.g. restaurants) and public spaces to encourage the use of bicycles within the Village.

So, what might this look like? While it is the purpose of these guidelines to allow for creative solutions, below is an "illustrative plan" to serve as an example. This is a workable solution which provides a network of circulation paths which work together to serve the economic viability of the property while utilizing its environmentally sensitive assets as natural amenities. Other approaches may be equally viable, and acceptable under these guidelines.



However the specific layout of the streets and buildings eventually develops, it should exhibit pedestrian connectivity:



- Main vehicular entrances to the site should also include pedestrian and biking connections to the multi-use trail along Route 30/Barhamsville Road.
- Internal streets should be served by sidewalks that themselves connect to building entrances.
- The sidewalk system is to be well thought-out such that traversing from any one building on the site to any other can be accomplished in a clear and logical manner, without interruption, along internal streets, through passive parks and woodlands, from each parking court, and within each sub-parcel.
- Allowance should be made in the detail planning of the site for two (2) Bus Stops that coincide with designated pedestrian ways.

Public Access Improvements

Vehicular and non-vehicular public access to Village Center is provided by improvements to Rt. 30, VDOT shared use paths on Rt. 30 frontage, and accommodations for bus service.

Vehicular access to the site includes the following road improvements:

- A primary full access entrance aligned at the Rt. 30/Fieldstone Parkway intersection with a divided median entrance to Village Center, additional turn lanes for site access and signalization. Future improvements by Stonehouse are integrated into plans.
- A secondary right turn in and out entrance on Rt. 30 south of Fieldstone Parkway.

The improvements at Rt. 30/Fieldstone Parkway provide the capacity to accommodate traffic from Village Center and other planned developments in the area.

Non-vehicular access is to be provided by VDOT shared use paths (10 foot wide):

- On the west side of Rt. 30 from I-64 ramps to end of limited access fence: approximately 1500 feet. This section is within the I-64 limited access fence and is contingent upon Federal and State approval.
- On the west side of Rt. 30 from to I-64 limited access fence to Barnes Road: approximately 2300 feet.
- On the north side of the Rt. 30/Fieldstone Parkway intersection, a shared use path crossing of Rt. 30 from the Village Center entrance connecting to a future shared use path in Moss Creek development: approximately 300 feet.
- Total: approximately 4100 feet.

These shared use paths are to be built to VDOT specifications for VDOT maintenance. These paths will be located with public rights of way or on easements dedicated to public use and VDOT maintenance.

Two bus stops will be included as approved by WATA. Bus stops on public roads may include bump outs designs and will include access to the shared use path system. Bus stops within the private property parking lots will include landings for bus patrons and pedestrian connections to shared used paths.

Streetscapes

Buildings will be oriented to the streets or a public park. Where parking must be behind or to the side of a building, a secondary entrance more convenient to vehicle access is acceptable, but will not eliminate the requirement of a major entrance addressing the street or park.

Architectural elements, businesses and services with street activities such as sidewalk-dining and balcony overlooks are strongly encouraged.



For free-standing buildings especially, buildings should be located on their respective sites so as to reinforce a pedestrian comfort and vitality. Specifically:

1. Parking should be located to the rear or side of each building. Shared parking between free-standing buildings is to be encouraged.
2. Buildings along Route 30/Barhamsville Road should have main entrances facing the internal street with some formal gesture, such as a secondary entrance, facing Route 30/Barhamsville Road. Alternatively, entrances may face to the side, with sidewalk extending to the streets to create a strong visual connection to both the internal street and Route 30/Barhamsville Road.
3. Sidewalks and pedestrian accommodations are to be provided to create obvious, safe and functional connections to the internal street sidewalks.
4. Street Trees and pedestrian scaled lighting are to be installed along internal roads that are complementary to those features located on in-line shops. Coordination of such elements with the owner of the in-line shops building is encouraged. Some latitude will be afforded in the approval process for such coordination.

Parking and Access

1. Parking shall be arranged in a collection of central parking courts and small parking enclaves. "On street" parking along the face of in-line shops, in combination with pick-up/drop-off areas adjacent to the entry elements is encouraged. Such areas, as well as the parking courts themselves, should be designed with an eye toward accommodating future semi-autonomous self-parking cars and include charging stations for electric vehicles.
2. Landscaping within these parking enclaves shall be minimized in favor of more effective landscaping at their perimeter for screening. Parking capacity shall be provided in accordance with the James City County Zoning Ordinance, the location and number to be confirmed as a part of the final site plan development.



Building Pattern and Form

Fundamentally, building masses are to be broken down into smaller, pedestrian scaled elements. There should be a mix of sloped roof elements and parapet-roofed facades. Outer parcel buildings are to have a predominantly 1-1/2 to 2 story expression; thus one-story buildings should appear to have an attic level with dormers or other architectural devices creating that illusion. Large floor plates (exceeding 12,000 sf) are to be avoided; but where necessary building masses are to be visually broken down into smaller elements to give the appearance of multiple smaller buildings. A single building footprint greater than 70,000 or with a depth greater than 90' will be allowed without such treatment to its massing and appearance.

General

1. In-line shops:

The general building form of the in-line shops is anticipated to be a relatively simple series of "boxes" with a parapeted, low-slope roof system. Each tenant space shall have at least one major architectural feature at each of its public entrances. Exterior finishes generally visible to the public shall be of the nature and quality that are consistent with the free-standing buildings, such as brick and siding. Facades on sides of the building that are not visible to public right-of-ways may deviate, but shall be well screened with landscaping and of a color and quality compatible with the rest of the building, such as painted, textured concrete block.



1.1. Entrances to the retail spaces shall have a village character, being more in scale with the pedestrian than the main building form, which is necessarily large. Store entrance elements shall have a consistency of architectural vocabulary, but vary enough to evoke the organic nature of a village. Sloped roofs, dormers, display windows and awnings are encouraged.

1.2. Special attention is to be paid to the spaces between the buildings and between the retail entrance elements, creating a sequence of pedestrian ways which link street-like walk-ways to the parking court and natural green spaces



2. Free-standing Buildings:

Free-standing buildings are generally anticipated to be single-user buildings which are to have a village or small-urban scale. Simple, unadorned building massing is not acceptable.

2.1. They should be predominantly slope-roofed and designed to be seen from all four sides. If the main entrance to the building faces to side parking area, a well landscaped, prominent sidewalk should connect that entrance to the internal street and sidewalk system.

2.2. Architecturally, they should emulate, complement or respond to the architecture of the in-line shops. While reference to corporate chain architecture is not prohibited, it must be customized to appear as part of a consistent development theme.

3. Building Elements:



The height of each building shall be limited by code and zoning ordinance as well as specific tenant requirements. Mechanical equipment shall be screened from view utilizing roof-top equipment or, if ground mounted, fencing and/or landscaping. Tenant entrance elements should exceed the height of the main building form.

Visual Character

1. Architectural Style:

These guidelines are not intended to require a specific architectural style. Rather, once chosen there should be a consistency of architectural style and character throughout the Village. The following visual design criteria are meant to be style-independent, although they clearly lend themselves to historic revival or contemporary-transitional styles.

2. Edge Definition and Screening:



Fences and walls shall be architecturally consistent with the building designs. Walls are to be made of a combination of materials, including brick, decorative cmu, siding, stone, and to a limited extent, stucco. Fences and privacy screens are to be made of wood pickets, pvc lumber, wrought iron, vinyl board on board fencing, or painted metal. Chain link fences are not permitted. Landscaping may be used in conjunction with fences and walls to better define edges or screen views and activities.

3. Scale and Articulation:



3.1. Scale is the relationship in size between buildings and the human form. Articulation is the way in which architectural elements are used to reduce the scale of the masses that compose the building form. Buildings shall be designed to appear smaller through the articulation of the overall massing and organizing it as a collection of smaller component masses. The use of architectural elements such as bays, balconies, porches, loggias and arcades add interest to building facades and aid in relating the scale of any building to human dimensions. Roofs may be articulated through the use of dormers, lanterns, monitors, widow's watches and other roof¬top elements.



Each of these devices adds character and interest to the buildings of the development which, in turn, reinforces the village character intended by these guidelines.

3.2. There shall be an adequate variety of architectural elements along all facades to distinguish individual shops while remaining stylistically consistent within the entire development.

4. Building Elements:

4.1. Building Materials - General

4.1.1. Building walls: brick, stucco, clad wood, wood shingle, wood clapboard, wood board and batten, and fiber cement siding.

4.1.2. Exposed Foundation Walls: Brick or brick facing, or stucco finished poured concrete or concrete block.

4.1.3. Materials shall transition and terminate appropriately. If a material transition is desired, such transition shall occur at interior corners, not outside corners. Materials shall be utilized to express component massing and shall not be treated as surface decoration. No more than two wall materials may occur on any individual building.

4.1.4. Chimneys: brick, stucco, or tabby (coastal concrete)

4.1.5. Arcades and colonnades: brick, stucco, wood, poly-stone, fiberglass

4.1.6. Porches, columns: painted wood, cellular pvc, painted metal, poly-stone, fiberglass

4.1.7. Posts, spindles, balusters: painted wood, cellular pvc, painted metal, poly-stone, fiberglass

4.1.8. Stoops, exterior stairs: brick, wood, or steel

4.1.9. Decks: wood, composite lumber, or high quality synthetic wood decking

4.1.10. Awning and canopies: canvas-covered metal or wood structure

4.2. Roofs:

4.2.1. Recommended Materials:

- Roofs: Wood shingles, galvanized or painted metal seamed, copper, lead-coated copper, slate, synthetic slate, architectural grade asphalt or fiberglass shingle.
- Live Roofs: Live roofs are permissible, to be approved on a case-by-case basis and should be integral to the architectural character of the entire building.
- Gutters and downspouts: galvanized aluminum, painted metal, copper
- Flashing: copper, lead coated copper, galvanized aluminum

4.2.2. Roof Shapes:

- Buildings shall have a varied character of traditionally shaped roofs.
- Principal Roofs: Gabled, hipped, hipped gables, gabled hips or gambrel in a symmetrical fashion with a slope of 6:12 to 12:12.
- Secondary Roofs: Shed with minimum slope of 2:12.
- Roof Terraces: Permitted when accessible from an interior space or in the form of a special rooftop element.
- Flat Roofs: Permitted as a primary roof when interrupted with other sloped or parapeted roof elements. Permitted as a secondary roof when in the form of a

special rooftop element or tower. Flat roofs generally are to have parapets, balustrades or railings.

- Parapets: Horizontal
- Dormers: Shed, Pitched or eyebrow
- Special roof-top elements: Symmetrically situated or aligned with the rhythm of structural bays and fenestration.
- Roof-top mechanical enclosures: Concealed from view by sloped roofs of the character described above.

4.3. Fenestration

4.3.1. Window Glazing: Refelctive glass (such as black spandrel) is unacceptable and will not be permitted. All window glazing should allow visibility to the interior of the building.

4.3.2. Recommended Materials:

- Windows: wood, painted metal, vinyl, metal clad wood
- Bay windows: wood, metal clad wood, painted metal, with metal tops
- Doors: painted wood, metal clad wood, painted metal, fiberglass resin
- Garage doors: painted wood, metal with incorporated glazing, clad wood
- Shutters: wood, fiberglass resin
- Security doors and grilles: metal

4.3.3. Configuration:

- Windows: Rectangular with a minimum proportion of 1.5 vertical to 1 horizontal.
- Bay windows: rectangular or chamfered.
- Doors: rectangular with rectangular transoms, if used. Glazing within doors shall be consistent with window glazing.
- Garage doors: 16’ max. in width, articulated to appear as multiple doors where possible.
- Shutters: Operable or given the convincing appearance of being operable and sized to fully cover the opening.
- Security doors and grilles: metal
- Service Doors (rear facade only): Overhead coiling metal or folding metal.

Special Requirements for Specific Building Types

1. Convenience Stores: Convenience Stores shall be designed so as to safely and effectively separate vehicular from pedestrian traffic with techniques that allow for convenient access by automobile but without sacrificing pedestrian access and connectivity. Convenience Stores with Fuel Sales and canopy must have a canopy that is visually subservient to the main store building. Canopies must relate to the store building architecturally in form, color and materials. This includes columns, ceilings, and all exposed trim, fascias and roofing. The roof element itself shall reference vernacular roof forms (gabled, hipped, mono-pitched, mansard, etc..) while being consistent with the main building form. A predominant ceiling height is limited to 15’ maximum, so as not to dominate the main building form. Use of exposed trusses and/or decorative elements that reduce the industrial feel of the canopy is strongly encouraged. There shall be no more than two signs on the canopy and

shall be integrated into the canopy design so as not to appear “mounted” as an afterthought. Halo lighting is allowed. The background of any backlit signs shall be opaque, allowing only lettering and logos to broadcast light. String or tape lighting is not allowed. Electronic lettering in canopy signs is not allowed.

2. Hotels: It is anticipated that a multi-story hotel may be an optimal use within the Village Center, given its proximity to the interstate interchange. Such a facility should be designed with a sensitivity to the established theme of the Village Center and the local vernacular architecture. In addition to general criteria above, hotels will also be subject to the following requirements:

2.1. To make the building consistent with the surrounding vernacular architecture, it should endeavor to incorporate design elements that are evocative of its surroundings in their use of materials, scale and architectural embellishment.

2.2. Emphasis in the design should be given to the ground-floor, as the portion of the building that is most relatable to the pedestrian scale. Ground floor commercial uses that are easily accessed from the balance of the Village Center are encouraged. Design elements that take advantage of views toward the Village Center and its environmental assets are also encouraged.

2.3. The design of the building should also make a nod to the vernacular architecture by the use of sloped roof elements at or above the top floor.

2.4. Façade elements between the top and ground floors should be composed of a balanced pattern of fenestration elements, to include windows, balconies and bays. A monotonous repetition of the same window is not acceptable.

3. Site Design:

3.1. Any use containing a drive-through element shall be located to the side or at the rear of the building and shall not face Route 30

3.2. No building may have a footprint greater than 70,000 square feet and no two buildings may have a combined footprint greater than 90,000 square feet. Floor plates may not be larger than 12,000 square feet without being divided into what appears to be two or more buildings.

3.3. Building depths may not be greater than 90 feet without being divided into what appears to be two buildings.

Landscape and Open Space Standards

General Requirements

Landscaped open spaces, parking areas and pedestrian ways shall have emphasis placed on their edges either with buildings or plantings to create the effect of "outdoor rooms." Walk-ways adjacent to buildings shall reinforce the sense of a public street. Walk-ways adjacent to open spaces shall be lined with trees to reinforce the edge of the open space. Landscaping along Route 30/Barhamsville Road should provide visibility into the development while creating an effective buffer for parking and "back of house" building elements. Other property edges should retain natural buffers, to the extent practical, to maintain a character consistent with the surrounding area. The main road into the development, should be tree-lined and formal, creating a natural extension of, but not necessarily duplicative treatment as, Fieldstone Parkway.

Open Spaces and Pedestrian Ways



1. Pedestrian ways are to be planted with trees spaced at a consistent spacing, at a magnitude appropriate to their species (e.g. 40' on center for Pin Oak). Shade/Canopy type trees are the preferred tree type for all formal open spaces; ornamental trees may be used to emphasize special open spaces and pedestrian ways. In all cases, species and planting sizes are to be selected to be in keeping with the scale of the space in which they will reside. Street-lights in public ways shall be spaced so-as not to conflict with tree plantings and be of a pedestrian scale and design, a maximum of 16' in height.



2. Developer shall provide for a multi-use trail and sidewalk along Route 30/Barhamsville Road site boundary. The trail shall be 8'-0" to 10'-0" in width, minimum. Precise design and character of both is to be determined in coordination with any VDOT required improvements at Barahmsville Road.

Parking Areas



1. Parking shall be arranged in small parking enclaves. On-street parking is encouraged adjacent to the entry side of the buildings. Pick-up and Drop-off areas are also encouraged in anticipation of future semi-autonomous self-driving vehicle technology.
2. Landscaping within parking enclaves shall be minimized in favor of more effective landscaping at their perimeter for screening.

3. Parking layout is to be simple and logical. Fencing and landscape screening is to be utilized to effectively screen parking areas from adjacent properties and public right-of-ways. Lighting in parking areas shall be taller than the pedestrian oriented fixtures, providing a reasonable degree of ambient lighting for public safety.

Signage



1. Signs are to be submitted as part of building design and park design submissions.
2. Monument signs are encouraged. Pedestrian oriented, architecturally detailed post-mounted signs (such as those in the Merchant Square district of Colonial Williamsburg) are also encouraged. Similarly detailed wall-mounted blade signs are encouraged. Simple pole-mounted signs are prohibited.
3. Building face signs must be coordinated with the architectural design of the building and sized to fit naturally into a sign band or other location anticipated in the building design. Roof mounted signs are prohibited.
4. Where allowed by ordinance, a secondary building face sign facing a public street is allowed, but must be sized and designed to coordinate with the building architecture.
5. All signs must conform with the James City County sign ordinances and be approved by James City County subsequent to approval by the developer.
6. There is to be a significant entrance feature, facing the Stonehouse residential development. The entrance feature should be aesthetically pleasing to the eye and incorporate similar lines, materials, colors and signage font as StoneHouse residential development located opposite of the entrance. The intent will be to create the appearance of being an extension of the neighborhood ambiance. However, while complementary it should be more pedestrian in scale and urban in character. A detailed landscape plan should accompany the entrance design and may incorporate a monument sign complying with the James City County sign ordinances. Signage may be utilized to identify the development, major tenants, or both.







Community Impact Statement

Special Use Permit

for

The Village Center

at

Hazelwood Farms

Prepared For

Hazelwood Farms, LLC
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Toano, Virginia 23168

And
Timothy O. Trant II
Kaufman & Canoles
P.O. Box 6000
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February 7, 2019
(Revised on April 2021)

AES Project Number: W10325-01

Prepared by:

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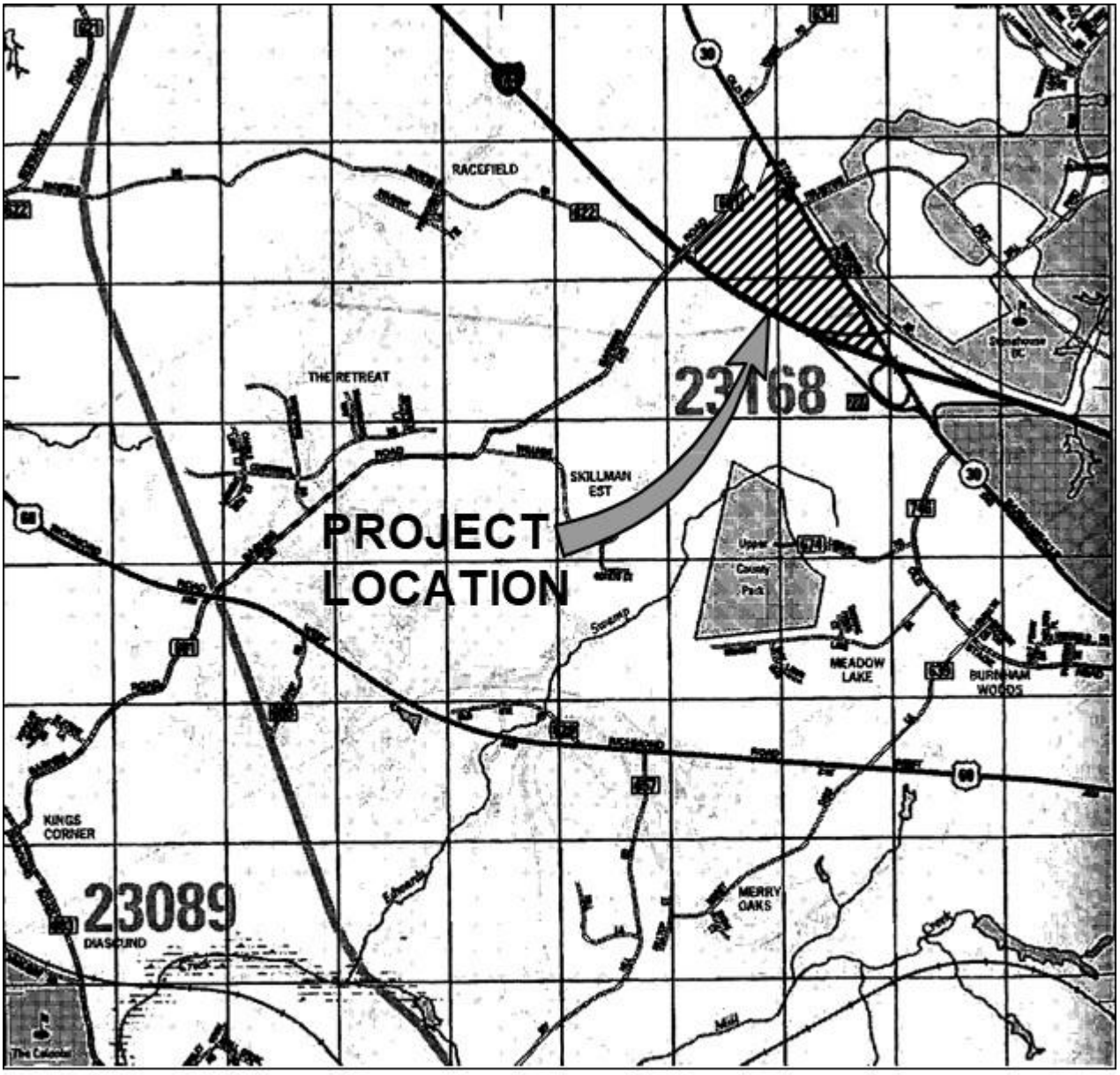
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- Endangered Species Report ……..…...

I. INTRODUCTION

On behalf of Hazelwood Farms, LLC, Timothy O. Trant II of Kaufman & Canoles, P.C. proposes to request a Special Use Permit for the Hazelwood Farms property in the Stonehouse district that is referred to as the Village Center (Northern parcel). The property consists of approximately 79.06 acres total, consisting of 5 parcels (3) in the Name of Hazelwood Farms, LLC and (2) in the name of Hazelwood Farms, LLC & Hazlewood RM III Trustee ET ALS, All parcels are zoned in the B-1 (General Business) and are within the Primary Service Area (PSA). The property is located on the Northwest side of Interstate 64 and accessible by the South side of Old Stage Road (Rte. 30). This Special Use Permit is being sought to allow for up to 510,000 square foot of various retail, grocery, bank, office, self-storage, restaurant, hotel, convenience store, fuel station and other commercial uses consistent with the B-1 zoning within a common development on these properties in the Stonehouse District in James City County.

Exhibit 1 – Location Map



II. THE PROJECT TEAM

The organizations that participated in the preparation of the information provided in this impact study are as follows:

- Owner -Hazelwood Farms, LLC
- Legal -Kaufman & Canoles
- Land Planning -AES Consulting Engineers
- Civil Engineering -AES Consulting Engineers
- Architectural -Hopke & Associates
- Environmental -Kerr Environmental
- Traffic -DRW Consultants, LLC

III. PROJECT DESCRIPTION AND PLANNING CONSIDERATIONS

Project Description

The owner is proposing to build a commercial development to include various business uses to include possible retail, grocery, bank, self-storage, restaurant, and other commercial uses consistent with the B-1 zoning within approximately 79 acres in the Stonehouse District in James City County.

Potential Special Permit Uses

- Any convenience stores that sell and dispense fuel
- Commercial in excess of 10,000 square feet of floor area
- Commercial that generates more than 100 additional trips during peak hour of operation
- Automobile and gasoline service stations
- Fast Food with Drive Thru
- Banks with Drive Thru
- Transmission pipelines, public or private

Planning Considerations

The Village Center at Hazelwood Farms, lies within the Primary Service Area (PSA) of the County, is designated within the Stonehouse Mixed Use area within the Comprehensive Plan and fronts on a Community Character Corridor (US Rte. 30).

The Primary Service Area (PSA) is an important planning tool within James City County and it encourages efficient use of public facilities and services, avoids overburdening such facilities and services, helps ensure facilities are available where and when needed, increases public benefit per dollar spent, promotes public health and safety through improved emergency response time, and minimizes well and septic failures. As this Site is within the PSA it has been identified as one where James City County has planned for growth with the knowledge that services can be brought to the site and that there is ample capacity in these systems to support this project.

The project frontage along Old Stage Road (US Rte. 30) and is designated as an open/agricultural in the Community Character Corridor classification. The County “acknowledges that views along these roads can have a significant impact on how citizens and visitors perceive

the character of an area." It is the intent of this project to enhance the character of this area of the County with the implementation of Design Guidelines that will help to frame the development within the proposed business zoning.

The site is designated to be within the Stonehouse Mixed Use area on the Comprehensive Plan. That mixed use area is noted to be suitable for business development for light industrial, office/business park, with an emphasis to avoid "strip" style development. It is the intent of this project to enhance the character of this area through the use of our Master Plan and design guidelines (including the Enterprise Center under separate application) to develop a retail/commercial center that avoids the "strip" center feel and enhances the experience for the existing residential and commercial areas in the upper portion of the County.

IV. ANALYSIS OF IMPACTS TO PUBLIC FACILITIES AND SERVICES

The subject property of this Special Use Permit application is located within the Primary Service Area of James City County. Identified on the zoning maps, the Primary Service Area is an area where urban development is encouraged to occur. Public water and public sanitary sewer services (and other public services such as police, fire and life rescue, and transportation) are presently provided to parcels within the Primary Service Area.

A. Public Water Facilities

The subject property will be served with potable water by the existing JCSA water distribution system in the area. JCSA currently maintains a 16" water main along the north side of Fieldstone Parkway. The existing water system shall be extended from Fieldstone parkway across Old Stage Road to service the proposed development.

The project's internal water system will consist of a combination of 12 and 8-inch water mains, providing the project adequate volumes and pressures for consumption and fire protection. Verification of the adequacy of the JCSA existing water system and design of the on-site water main extensions will be further analyzed and location of piping confirmed with modeling techniques based upon field testing during the site design. As part of discussions with representatives of the James City Service Authority, there are concerns about the future needs within the northern portions of James City County that may require a system loop across Interstate 64. Accommodation for a system loop will be made additional modeling will be preformed at the site plan stage to ensure adequate supply and pressures exist within the system.

Water consumption for the proposed project is estimated at with a Daily Water Demand of 88,500 gallons per day. Peak Hour Water Demand for this project is estimated at approximately 492 gallons per minute (see Table 1 for more detail)

.

TABLE 1 - PROJECTED WATER USAGE

Type of Use	Design Units	Flow (GPD/Unit)	Total Flow (GPD)	Duration (hrs)	Avg Flow (GPM)	Peak* Flow (GPM)
Shopping Center	375,000 SF	0.2	75,000	12	104.17	416.67
Office	135,000 SF	0.1	13,500	12	18.75	75.00
Total			**88,500**		**122.92**	**491.67**

*Peak Flow = 4 * Avg. Flow

B. Public Sewer Facilities

The commercial properties and buildings proposed within this development are proposed to be served by a sanitary sewer pumping station and 6" force main that will connect to the JCSA system. The proposed force main and pump station are anticipated to be owned and operated by JCSA at the time the system is connected to the public sewer system. For the exisiting sewer along Fieldstone there is the option to connect to either a gravity sewer system or a 12" force main sanitary sewer system. Portions of the sewer system along Fieldstone Parkway have not been dedicated to JCSA and it is understood that any connection to these not yet dedicated systems will require testing and assurances to JCSA that the existing system and downstream stations have capacity to accept the flow. At this time based upon future development forecasting, it is anticipated that pump station upgrades may be necessary to both LS 9-1 and LS 10-1. The owner agrees to make the necessary accommodations at the time of site plan approvals to ensure system adequacy.

The estimated average daily flow generated from the proposed development is 88,500 gallons per day (GPD) with a peak flow rate of 369 gallons per minute (GPM). See Table 2 below for details of projected wastewater flows.

Table 2 – Wastewater Flows

Type of Use	Design Units	Flow (GPD/Unit)	Total Flow (GPD)	Duration (hrs)	Avg Flow (GPM)	Peak* Flow (GPM)
Shopping Center	375,000 SF	0.2	75,000	12	104.17	312.50
Office	135,000 SF	0.1	13,500	12	18.75	56.25
Total			**88,500**		**122.92**	**368.75**

* Peak Flow = 3 * Avg. Flow

C. Fire Protection and Emergency Services

There are currently five fire stations providing fire protection and Emergency Medical Service (EMS) to James City County. Each station is placed within the County in such a way as to help achieve the response goal of six minutes or less. Every station is staffed by three shifts of career and volunteer Firefighters. Station crews are responsible for the pre-planning of target hazards in their area as well as safety inspections of private businesses within the response district

In addition, there exists a mutual aid agreement with the York County and City of Williamsburg for backup assistance. The location of the project allows for coverage by one of the county's five stations: James City County Station 1, located on Forge Road, York County Station 5, located on Newman Road, and the City of Williamsburg as a third backup all will be within reasonable response times of the project.

D. Solid Waste

The proposed development on the subject property will generate solid wastes that will require collection and disposal to promote a safe and healthy environment. Reputable, private contractors will handle the collection of solid waste. Both commerical trash and recyclable material will be removed from this site to a solid waste transfer station.

E. Franchise Utility Service Providers

Virginia Natural Gas, Dominion Enginery, Cox Communications, and Verizon Communications provide, respectively, natural gas, electricity, cable TV/ Internet service, and telephone service to this area. The current policy of these utility service providers is to extend service to new development at no cost to the developer when positive revenue is identified; plus, with new land development, these utility service providers are required to place all new utility service underground.

V. ANALYSIS OF ENVIRONMENTAL IMPACTS

An environmental inventory, wetland delineation, and perennial stream analysis has been prepared by the Kerr Environmental Group 4/15/15. The inventory is incorporated into the provided Master Plan for the development.

VI. ANALYSIS OF STORMWATER MANAGEMENT (SWM) / BEST MANAGEMENT PRACTICES (BMP)

A conceptual stormwater management plan, meeting the general criteria of the Commonwealth of Virginia and James City County's stormwater requirements, was completed as a component of the planning for the proposed The Hazelwood Farm development. The goal of the stormwater management plan is to meet or exceed local and state stormwater requirements. In evaluating preliminary stormwater management solutions of the proposed development on the subject site, the site characteristics are considered. Preliminary site observations and mapping identify the following unique site characteristics to be considered in stormwater management

planning:

A. The property drains to an unnamed tributary of the Diascund Creek watershed which drains under Interstate 64 and through the southern portions of the Hazelwood Farms property.
B. The project currently collects off-site water from Route 30 and portions of Barnes Road.
C. The site currently has one home, various out buildings, 10 acres of crop land, with the remaining portions being forest.
D. All of the project area's existing drainage is surface runoff, ultimately converging to the unnamed tributary of Diascund Creek, located in central and south east of the project site.
E. The project site largely consists of well drained soils with 0 to 6% slopes, with some slopes over 25%. Slopes greater than 25% are primarily found within the RPA buffer.

Stormwater is to be managed by a series of best management practices and pipe drainage networks that ultimately discharge into downstream wetlands. Stormwater management, conceptually, consists of two primary components; large wet ponds and a series of Low Impact Development (LID) features scattered around the project to capture and treat water near its source (buildings and parking lots). The stormwater management plan is intended to meet the general criteria of the Commonwealth of Virginia and James City County's stormwater requirements. Upstream bioretention cells, filterras, dry swales, and other low impact development measures will contribute to stormwater quality control and will feed into the downstream wet pond. Per compliance with the Virginia runoff reduction method, all proposed site work will be managed by these stormwater measures to negate downstream wetlands impacts and pollution from entering into the Chesapeake Bay.

Preliminary analysis of the Stormwater Management and BMP goals using the DEQ Virginia Runoff Reduction Method Spreadsheet is included on the Master Stormwater Management Plan (sheet 4 of the Master Plan set). In this system, the project must reduce the post-development phosphorus load to provide adequate stormwater treatment. The wet pond BMPs are designed to improve water quality and elongate time of concentration for stormwater runoff.

In summary, the preliminary analysis and intent of the stormwater management plan for the Village Center at Hazelwood Farms project demonstrates the stormwater management plan proposed will improve the overall downstream water quality and will help to control the

downstream erosion and water quality from the currently uncontrolled runoff onto the downstream neighboring properties.

VII. ANALYSIS OF IMPACTS TO TRAFFIC

The proposed commercial development has been analyzed by DRW Consultants, LLC and is addressed within the Master plan. The DRW traffic impact analysis is submitted under separate cover.

VIII. ANALYSIS OF CULTURAL RESOURCES IMPACTS

An Archaeological Assessment for James City County; per the County's Archaeological Policy, was prepared by Circa (October 2014) and is attached in the Appendix of this report.

IX. ANALYSIS OF NATURAL RESOURCES IMPACTS

Rouse Environmental Services working on behalf of Kerr Environmental Group conducted an investigation of the site to review it for potential endangered wildlife and plant species. It was determined following an investigation that there were no such species or potential habitats deemed to be present on this property. A copy of their report is attached to this submittal.

X. CONCLUSION

In summary, The Village Center at Hazelwood Farms development is being planned as a commercial site which may include offices/retail, banks, restaurants, retail specialty's, fast food and a hotel within the B-1 Zoning District (General Business). Planning of the site as a commercial village center incorporates design principles to not only attract interstate traffic but to provide a "Village" atmosphere for surrounding residents to enjoy. There is adequate capacity in the system of roads serving this project, as well as adequate public facilities and wet and dry utilities available for the development. The site respects the environmental sensitivity of the watershed by reducing uncontrolled runoff and providing water quality protections. The proposed use meets the intent of the Comprehensive Plan and the community with the tangible public benefits of a neighborhood commercial center.

Ch. 527 Traffic Impact Statement For Village Center And Enterprise Center At Hazelwood Farms

JAMES CITY COUNTY, VIRGINIA

For:
Hazelwood Farms, LLC

By:
DRW Consultants, LLC
Midlothian, VA

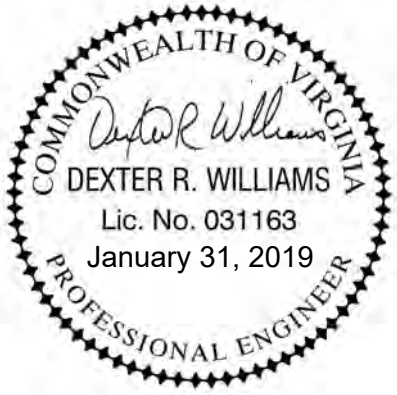
January 2019

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January 2019

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REPORT
TEXT

INTRODUCTION

Hazelwood Farms proposes to rezone their property at the I-64/Rt. 30 interchange in James City County. This traffic study is the second phase of study to address the requirements of VDOT Traffic Impact Analysis Regulations (24VAC30-155), commonly known as Chapter 527.

The first phase traffic study included complete background information as well as complete traffic counts and forecasts required for the study. It addressed only PM peak hour traffic analysis for buildout of the area and an evaluation of two Rt. 30 intersections pursuant to VDOT Roundabout Policy (Road Design Manual Appendix F). VDOT review of the first phase study acknowledged that roundabouts are not preferable for Rt. 30 locations and only traffic signals are included in this study.

This second phase study includes traffic signals on Rt. 30 and analysis of existing conditions, future conditions without and with Hazelwood Farms, and future conditions without and with Stonehouse and Moss Creek.

The approved Ch. 527 Pre-Scope of Work Meeting Form and the signed Scope of Work Meeting Checklist are included at the end of the Appendix. This study will also provide information to James City County for its consideration of the proposed rezoning.

EXECUTIVE SUMMARY

Hazelwood Farms location in the Hampton Roads region is shown on the upper section of Exhibit 1a. The lower section of Exhibit 1a shows the two sections of Hazelwood Farms:

1. North Hazelwood Farms (formally named Village Center at Hazelwood Farms): northwest quadrant of the I-64/Rt. 30 interchange. This area is referred to in planning documents as Village Center.
2. South Hazelwood Farms (formally named Enterprise Center at Hazelwood Farms): southwest quadrant of the I-64/Rt. 30 interchange. This area is referred to in planning documents as Enterprise Center.

The directional convention in this report is Rt. 30 runs north and south and I-64 runs east and west, and North Hazelwood Farms and South Hazelwood Farms nomenclature are used.

Exhibit 1b shows the Hazelwood Farms property location with on an area parcel map. I-64 and all other public roads are maintained by VDOT.

Rt. 30 is a minor arterial under VDOT functional classification in the area and has traffic in the 10,000 vehicles per day range. North Hazelwood Farm is anticipated to be developed with all access on Rt. 30 only.

Rt. 746 Old Stage Road is located on the west side of Rt. 30 and has daily traffic in the 1,000 vehicles per day range. South Hazelwood Farms frontage on Rt. 30 is a limited access line, and all property is anticipated to be developed with access on Rt. 746 Old Stage Road. (Note: part of Rt. 30 carries the name Old Stage Road, but the name Old Stage Road only applies to Rt. 746 in this report).

North Hazelwood Farms land use plan is shown on Exhibit 2a. Anticipated development consists of 135,000 square feet office (Area 1) and 375,000 square feet of retail space (Areas 2, 3 and 4). Depending on future conditions, the rear of the property (Area 4) may have less trip generation with alternative warehouse use.

Exhibit 2b shows the access plan for North Hazelwood Farms on Rt. 30. The major access (Entrance 1) will align across from Fieldstone Parkway at a signalized intersection with four-way access. Entrance 2 will have right turn in and out only access at approximately the current location of a crossover on Rt. 30. Per VDOT directive, the existing crossover is to be closed when Entrance 2 is constructed. All site access is anticipated to be VDOT commercial entrances with private internal access.

South Hazelwood Farms land use plan is shown on Exhibit 2c. Anticipated development consists of 2,920,000 square feet warehouse (Areas 1, 2, 4, and 5), 75,000 square feet of retail space (Area 3) and 300 apartments (Area 6).

Exhibit 2d shows the access plan for South Hazelwood Farms. All access for South Hazelwood Farms is on Old Stage Road. The proposed access road (Entrance 1) will be the primary entrance and is planned to be a VDOT subdivision street. Entrance 2 will be the secondary entrance closest to Rt. 30 and is anticipated to be a commercial entrance. Both entrances are proposed to be constructed with single lane roundabouts on Old Stage Road. Roundabouts are a recommended design when left turns are a substantial part of traffic (as is the case here). Access includes reconstruction of Old Stage Road with raised median and added lanes and a traffic signal at the Rt. 30/Old Stage intersection.

The raised median on Old Stage Road will block existing left turns at the Shell Station and McDonald's entrances. The roundabout at Entrance 2 also serves to accommodate U-turns for existing left turn entering the Shell Station and McDonald's entrances.

The Rt. 30 corridor also serves as primary access for two other developments: Stonehouse and Moss Creek shopping center.

Exhibit 1i shows the Stonehouse phasing plan included with the Timmons Group traffic study for Stonehouse in 2015. That study included full development of Phase 1 and 2 and that Stonehouse traffic is included in this study. On Rt. 30, Stonehouse has two access points:

1. Fieldstone Parkway north of I-64 across from North Hazelwood Farms serves the generally residential area of Stonehouse.
2. LaGrange Parkway south of I-64 and Old Stage Road serving Hazelwood Farms the generally warehouse area of Stonehouse.

Exhibit 1j shows the Moss Creek master plan by LandMark from 2006. Trip generation for Moss Creek is included in this study. Moss Creek has two access points:

1. Moss Creek #1 entrance on Rt. 30 with full access and traffic signal.
2. Moss Creek #2 entrance on Fieldstone Parkway with full access.

Development improvements to the Rt. 30 corridor within the study are included at the following intersections from north to south (see Exhibit 2g for reference):

1. Moss Creek #1 Entrance #1 (Station 303+86). Extend 2nd northbound through lane from Fieldstone to drop off right turn at MC1. Widen for southbound left turn lane. Add traffic signal. All work by Moss Creek development.
2. Fieldstone Parkway/North #1 Entrance (Station 313+06). For Stonehouse, future signalization is required with second westbound left turn lane. For North Hazelwood Farms, signalization also required with northbound double left turn lanes, southbound right turn lane, and four eastbound lanes: double left turn lanes, through lane and right turn lane. See Exhibit 2b for details.
3. North #2 Entrance (Station 321+35). Close crossover and add southbound right turn lane. Right turn in/out only. All work by Hazelwood Farms.
4. I-64 Westbound Ramps B & C (Station 337+23). Westbound double left turn lanes and northbound double left turn lanes with signal proffered by Stonehouse. Only signalization required by Hazelwood Farms.
5. I-64 Eastbound Off Ramp A (Station 350+36). Signal addition by North Hazelwood Farms. See Exhibit 2f.
6. I-64 Eastbound On Ramp D (Station 353+47). Extend northbound right turn lane back to Old Stage Road intersection as drop-off lane by South Hazelwood Farms. See Exhibit 2f.
7. Old Stage Road (Station 359+58). South Hazelwood Farms improvements include (see Exhibit 2e):
    a. Four lanes on Old Stage Road eastbound approach: double left turn lanes, through lane and right turn lane.
    b. Two lanes on westbound approach.
    c. Double left turn lane on northbound approach.

d. Add third through lane on northbound approach (Note: this improvement is required for all development traffic, but not required for Hazelwood Farms only.
e. Extend southbound right turn lane back to Ramp A as drop-off lane at Old Stage Road.
f. Add signal.

Traffic analysis for the signalized intersection have been performed for all development build out conditions on the Rt. 30 corridor for the 2030 PM peak hour forecast year. This includes analysis with 70 second cycle lengths used in the 2015 Timmons Group traffic study as well as 90 (AM) and 100 (PM) second cycle lengths. All signalized intersections have overall LOS C or better for all development scenarios and traffic signal cycle lengths.

BACKGROUND INFORMATION

Site Location And Description

Hazelwood Farms site location in the Hampton Roads region is shown on the upper section of Exhibit 1a. The site is located in northern James City County at the I-64 and Rt. 30 interchange (Note: The directional convention in this report is Rt. 30 runs north and south and I-64 runs east and west).

Hazelwood Farms property location with respect to area roads is shown on the lower portion of Exhibit 1a. I-64 and all other public roads are maintained by VDOT. North Hazelwood Farms is in the northwest quadrant of the I-64/Rt. 30 interchange. South Hazelwood Farms is located in the southwest quadrant of the I-64/Rt. 30 interchange.

Exhibit 1b shows Hazelwood Farms property on the county parcel map. Please note the name Old Stage Road includes Rt. 746 as well as Rt. 30 north of Rt. 746. For this report, all of Rt. 30 is referred to as Rt. 30 and Rt. 746 is referred to as Old Stage Road.

The property's land use is now farm and woodlands. General terrain in the area is level plains divided by drainage ravines and wetlands.

Study Area

Weekday AM and PM peak hours have been confirmed with VDOT and James City County for counts and analysis for inclusion in this report.

The existing intersections confirmed with VDOT and James City County for weekday AM and PM peak hour counts and analysis for inclusion in this report are shown on Exhibit 1c as follows:

1. Rt. 30/Barnes Road
2. Rt. 30/Fieldstone Parkway
3. Rt. 30/Overpass Road (count and forecast only)
4. Rt. 30/I-64 westbound ramps
5. Rt. 30/I-64 eastbound ramps
6. Rt. 30/Old Stage Road
7. Old Stage Road/Shell Station entrance (count and forecast only)
8. Old Stage Road/McDonalds entrance (count and forecast only)

All of these intersections are unsignalized.

The I-64/Route 30 interchange ramp junction merges and diverges confirmed with VDOT and James City County for weekday AM and PM peak hour counts and analysis are shown on Exhibit 1c (light blue lettering) as follows:

- Diverge 1 (D1): Eastbound Ramp A Diverge
- Diverge 2 (D2): Westbound Ramp C Diverge
- Merge 1 (M1): Westbound Ramp B Merge
- Merge 2 (M2): Eastbound Loop A Merge
- Merge 3 (M3): Eastbound Ramp D Merge

Peak hour counts are tabulated in the Appendix Exhibit A series.

Existing Roadways

The study area existing intersections, ramp junctions and roads are shown on a road network diagram on Exhibit 1d. Existing lane configurations at the intersections are also shown.

Rt. 30 is a four-lane divided median highway south of Fieldstone Parkway. Rt. 30 tapers to a two-lane road north of Fieldstone Parkway at Barnes Road. The road is posted 55 mph throughout the study area. Rt. 30 is the key arterial in the area and has traffic in the 10,000+ vehicle per day range.

Exhibit 1d shows the existing intersections (all unsignalized) from north to south on Rt. 30 as follows:

1. Rt. 30/Barnes Road. Barnes Road and Rt. 30 are two lane roads without auxiliary lanes. Barnes Road is stop sign controlled.
2. Rt. 30/Fieldstone Parkway. Rt. 30 is four lane divided highway with crossover at Fieldstone Parkway. Fieldstone Parkway is a four-lane divided highway and is stop controlled with left and right turn lanes as shown.
3. Rt. 30/Overpass Road. Rt. 30 is four lane divided highway with crossover at Overpass Road (a dead-end state frontage road).
4. Rt. 30/I-64 Westbound Exit Ramp C & On Ramp B. Rt. 30 is four lane divided highway with crossover at the I-64 westbound ramps. Exit Ramp C has a stop controlled left turn lane at Rt. 30 and a channelized right turn with acceleration lane to northbound Rt. 30. There is a northbound left turn lane.
5. Rt. 30/I-64 Eastbound Exit Ramp A. Rt. 30 is four lane divided highway with crossover at the I-64 eastbound ramp. Exit Ramp A has a stop controlled left turn lane at Rt. 30 and a channelized right turn with acceleration lane to southbound Rt. 30.
6. Rt. 30/Old Stage Road. Rt. 30 is four lane divided highway with crossover at Old Stage Road. Eastbound Old Stage Road and westbound C-store are two lane roads with stop-controlled approaches to Rt. 30. Auxiliary lanes on Rt. 30 are shown.

On Old Stage Road, the Shell Station and McDonald's entrances are combined for simplicity of forecast.

I-64/Rt. 30 is a diamond interchange with the single loop A in the southwest quadrant.

Programmed Improvements

There are no programmed improvements in the area.

Area Land Uses And Zoning

See Exhibit 1e for zoning in the area. North Hazelwood Farms property is all zoned B1 General Business. South Hazelwood Farms is zoned A1 Agriculture and B1 General Business.

There are two convenience stores with gas and the McDonald's at the Rt. 30/Old Stage Road intersection. These are within existing B1 zoning that includes part of South Hazelwood Farms.

Stonehouse east of North Hazelwood Farms and Rt. 30 is zoned PUD-C and PUD-R. It is developed primarily as residential in this area. Moss Creek east of North Hazelwood Farms is zoned MU Mixed Use and is vacant.

Much of the area north, west and south of Hazelwood Farms is zoned A1 Agriculture.

Comprehensive Plan Recommendations

Exhibit 1f shows the JCC 2035 Comprehensive Plan Land Use Map for this area. North Hazelwood Farms (proposed SUP) is consistent with the Mixed Use designation and South Hazelwood Farms (proposed EO zoning) is consistent with the Economic Opportunity designation.

Exhibit 1g-1 shows Map 8 of the James City/York Transportation Study prepared by the Hampton Roads TPO in March 2012. The only improvement shown in the vicinity of Hazelwood Farms is the widening of I-64.

Exhibit 1g-2 shows Hampton Roads 2040 Long Range Transportation Plan. There are no Regional Priority Projects shown in the vicinity of Hazelwood Farms.

Enclosed Exhibit 1g-3 shows the Regional Bikeway Plan for this area.

Enclosed Exhibit 1g-4 shows the JCC Pedestrian Accommodation Master Plan for this area.

The proposed development is consistent with/not in conflict with any comprehensive plan for roads.

Analysis Locations

Exhibit 1h shows the intersection analysis locations with future analysis conditions for build out of all development as follows:

1. Rt. 30/Barnes Road. Unsignalized.
2. Rt. 30/Moss Creek Entrance 1. Signalized.
3. Rt. 30/North #1 Entrance/Fieldstone Parkway. Signalized.
4. Rt. 30/North #2 Entrance. Right turn in and out with Rt. 30 crossover closed.
5. Rt. 30/I-64 Westbound Exit Ramp C & On Ramp B. Signalized.
6. Rt. 30/I-64 Eastbound Exit Ramp A. Signalized Vs. Roundabout.
7. Rt. 30/Old Stage Road. Signalized Vs. Roundabout.
8. Old Stage Road/South #2 Entrance. Roundabout.
9. Old Stage Road/South #1 Entrance. Roundabout.

Exhibit 1h also shows the I-64 ramp junction analysis locations as follows:

- Diverge 1 (D1): Eastbound Ramp A Diverge
- Diverge 2 (D2): Westbound Ramp C Diverge
- Merge 1 (M1): Westbound Ramp B Merge
- Merge 2 (M2): Eastbound Loop A Merge
- Merge 3 (M3): Eastbound Ramp D Merge

Current And Proposed Site Zoning

Hazelwood Farms is comprised of approximately 407 acres of land currently zoned A1 and B1. Rezoning by James City County is required to allow proposed uses.

The following table shows the conceptual development inventory:

TABLE A – PROPOSED REZONING FOR HAZELWOOD FARMS

	Rezoning Area	Acres	Units		
North	B1 to B1 w/Special Use Permit	79	Retail	375,000	sq. ft.
			Office	135,000	sq. ft.
South	A1 & B1 to EO	328	Warehousing	2,920,000	sq. ft.
			Retail	75,000	sq. ft.
			Apartments	300	units

Stonehouse Development Plan

The 2017 Stonehouse Development Phasing Plan prepared by Timmons Group is shown on Exhibit 1i. Timmons Group also did a traffic analysis dated April 16, 2015 that included forecast and analysis for Phases 1 and 2 on the phasing plan. The 2015 zoning addressed only Phases 1 and 2 for traffic impact and proffers.

On Rt. 30, Stonehouse has two access points:

1. Fieldstone Parkway north of I-64 across from North Hazelwood Farms serves the generally residential area of Stonehouse.
2. LaGrange Parkway south of I-64 and Old Stage Road serves the generally warehouse area of Stonehouse.

April 20, 2015 proffers include:

1. traffic signal and pavement markings to add second westbound left turn lane at Rt. 30/Fieldstone Parkway
2. traffic signal and second westbound left turn lane at Rt. 30/westbound I-64 ramps
3. second left turn lane on northbound Rt. 30 at westbound I-64 ramps

Moss Creek Development Plan

Exhibit 1j shows the Moss Creek master plan by LandMark from 2006. Trip generation for Moss Creek is included in this study. Moss Creek has two access points:

1. Moss Creek #1 entrance on Rt. 30 with full access and traffic signal.
2. Moss Creek #2 entrance on Fieldstone Parkway with full access.

Hazelwood Farms Proposed Development Plan

North Hazelwood Farms land use plan is shown on Exhibit 2a. Anticipated development consists of 135,000 square feet office (Area 1) and 375,000 square feet of retail space (Areas

2, 3 and 4). Depending on future conditions, the rear of the property (Area 4) may have less trip generation with alternative warehouse use.

Exhibit 2b shows the access plan for North Hazelwood Farms on Rt. 30. The major access (Entrance 1) will align across from Fieldstone Parkway at a signalized intersection with four-way access. Entrance 2 will have right turn in and out only access at approximately the current location of a crossover on Rt. 30. Per VDOT directive, the existing crossover is to be closed when Entrance 2 is constructed. All site access is anticipated to be VDOT commercial entrances with private road internal circulation.

South Hazelwood Farms land use plan is shown on Exhibit 2c. Anticipated development consists of 2,920,000 square feet warehouse (Areas 1, 2, 4, and 5), 75,000 square feet of retail space (Area 3) and 300 apartments (Area 6).

Exhibit 2d shows the access plan for South Hazelwood Farms. All access for South Hazelwood Farms is on Old Stage Road. The proposed access road (Entrance 1) will be the primary entrance. Entrance 2 will be the secondary entrance closest to Rt. 30. Both entrances are proposed to be constructed with single lane roundabouts. Roundabouts are a recommended design when left turns are a substantial part of traffic (as is the case here). Access includes reconstruction of Old Stage Road with raised median and added lanes and a traffic signal at the Rt. 30/Old Stage intersection, which is the gateway for South Hazelwood Farms.

The raised median on Old Stage Road will block existing left turns at the Shell Station and McDonald's entrances. The roundabout at Entrance 2 also serves to accommodate U-turns for existing left turn entering the Shell Station and McDonald's entrances.

Related VDOT Requirements

Change In Limited Access. Reconstruction of Old Stage Road will require adjustment of the limited access line on Rt. 30 north of Old Stage Road. At Rt. 30, the Old Stage Road reconstruction will add approximately 50 feet of pavement on the Hazelwood Farms side of Old Stage Road. This will require moving the end of the limited access line back toward I-64 50 to 75 feet depending on final design details. Commonwealth Transportation Board approval for this limited access change will be required with approval of plans for widening Old Stage Road.

Secondary Street Acceptance Regulations (SSAR). The cul-de-sac of the proposed public road in South Hazelwood Farms is not permitted by right under SSAR: at least two connections are required. An exception request for VDOT to allow the cul-de-sac has been included with this study for concurrent VDOT review. The basis for the exception is incompatible land use.

Access Management Regulations (AMR) & Signal Justification Report (SJR). Any AMR and SJR approval that may be required will be addressed prior to site approval by conditions for North Hazelwood Farms and proffers for South Hazelwood Farms.

EXISTING CONDITIONS

2017 TRAFFIC COUNTS

Weekday AM and PM peak hour turning movement counts and machine counts were conducted in January 2017. Tabulated traffic counts are in the Technical Appendix Exhibit A series. 2017 AM and PM peak hour counts with balance are shown on Exhibits 3a and 3b.

2018 TRAFFIC

For existing conditions, 2017 counts have been increased to 2018 levels based on growth factors. Exhibit 4a and 4b respectively show 2018 weekday AM and PM peak hour traffic volumes using a 1.1% increase in Rt. 30 traffic over 2017 counts and a 1.2% increase in I-64 traffic over 2017 counts. These growth factors were stipulated in the Ch. 527 Pre-Scope of Work Meeting Form.

Available VDOT daily counts are shown on Exhibit 4c. Exhibit 4c also shows calculated daily counts which have been developed by applying area road k-factors (ratio of peak hour traffic to daily traffic) to PM peak hour counts to calculate daily traffic.

EXISTING PEDESTRIAN/BICYCLE/TRANSIT FACILITIES

Exhibit 4c shows the existing bicycle/pedestrian facilities in the area. The only multi-use path is on Fieldstone Parkway and at Rt. 30. These were built by Stonehouse. There are no other sidewalks or multi-use paths in the area.

There is no transit service in the area. The closest WATA route has a turnaround end on LaGrange Parkway to the south on Rt. 30.

INTERSECTION TRAFFIC ANALYSIS PROCEDURES

Synchro 10 has been used to calculate traffic level of service (LOS) at signalized and unsignalized intersections. 95th percentile Synchro queuing reports and SimTraffic Queuing and Blocking reports are also included. SimTraffic queuing includes average of five simulations per recommended procedures for 95th percentile interval simulations.

The following table describes the six different LOS letter grades for signalized intersections from the Highway Capacity Manual 6th Edition (HCM6):

TABLE B - SIGNALIZED INTERSECTION TRAFFIC LEVELS OF SERVICE

Level Of Service (LOS)	Stopped Delay Per Vehicle (seconds)	Description
A	≤10.0	Low delay. Many vehicles do not stop.
B	>10 - 20	More stopping vehicles than LOS A.
C	>20 - 35	Longer cycle length. Stopping vehicles significant.
D	>35 - 55	Congestion more noticeable. Many vehicles stop.
E	>55 - 80	Long cycle lengths. High delay
F	>80	Considered in excess of acceptable delay.

The following table presents the six different LOS letter grades for unsignalized intersections from HCM6:

TABLE C – UNSIGNALIZED AND ROUNDABOUT INTERSECTION TRAFFIC LEVELS OF SERVICE

Level Of Service (LOS)	Stopped Delay Per Vehicle (seconds)
A	0-10
B	>10 - 15
C	>15 - 25
D	>25 - 35
E	>35 - 50
F	>50

It should be noted that HCM6 also defines LOS F as having a volume/capacity (v/c) ratio of greater than 1.0.

RT. 30/FIELDSTONE PARKWAY- 2018

The following table shows unsignalized intersection LOS results at Rt. 30/Fieldstone Parkway:

TABLE 1-1 Rt. 30/FIELDSTONE PARKWAY
2018 UNSIGNALIZED

SIGNALIZED LOS And Seconds Delay					95th Percentile Queues By Lane Group				
	AM		PM		Storage Length	Synchro		SimTraffic Q&B	
						AM	PM	AM	PM
WBL	B	14.6	C	19.6		28	25	305	94
WBR	A	9.2	B	11.4		3	3	29	8
SBL	A	8.2	A	9.7	150	0	3	9	7

All lanes have LOS C or better. Queueing on the southbound left turn lane on Rt. 30 at Fieldstone is well within storage.

RT. 30/I-64 WESTBOUND RAMPS - 2018

The following table shows unsignalized intersection LOS results at Rt. 30/I-64 westbound ramps:

TABLE 1-2 Rt. 30/I-64 WESTBOUND RAMPS
2018 UNSIGNALIZED

SIGNALIZED LOS And Seconds Delay					95th Percentile Queues By Lane Group				
	AM		PM		Storage Length	Synchro		SimTraffic Q&B	
						AM	PM	AM	PM
WBL	C	15.4	C	19.3		18	28	109	79
NBL	B	10.9	A	8.6	200	15	10	74	55

All lanes have LOS C or better. Queuing on northbound Rt. 30 at the westbound ramps is well within storage.

RT. 30/I-64 EASTBOUND RAMP A - 2018

The following table shows unsignalized intersection LOS results at Rt. 30/I-64 eastbound off ramp:

TABLE 1-3 Rt. 30/I-64 EASTBOUND RAMP
2018 UNSIGNALIZED

SIGNALIZED LOS And Seconds Delay					95th Percentile Queues By Lane Group				
	AM		PM		Storage Length	Synchro		SimTraffic Q&B	
						AM	PM	AM	PM
EBL	B	12.1	B	11.8		3	8	35	52

All lanes have LOS B or better.

RT. 30/OLD STAGE ROAD - 2018

The following table shows unsignalized intersection LOS results at Rt. 30/Rt. 746 Old Stage Road:

TABLE 1-4 Rt. 30/OLD STAGE ROAD
2018 UNSIGNALIZED

SIGNALIZED LOS And Seconds Delay					95th Percentile Queues By Lane Group				
	AM		PM		Storage Length	Synchro		SimTraffic Q&B	
						AM	PM	AM	PM
EBL/T/R	C	18.2	C	19.3		23	23	70	90
WBL/T/R	B	12.1	B	14.5		20	33	90	87
NBL	A	9.7	A	8.2	200	3	5	30	33
SBL	A	8.2	A	9.3	200	5	5	30	24

All lanes have LOS C or better. Queuing on the northbound and southbound left turn lanes on Rt. 30 are well within storage.

RT. 30/BARNES ROAD - 2018

The following table shows unsignalized intersection LOS results at Rt. 30/Barnes Road:

TABLE 1-5 RT. 30/BARNES ROAD
2018 UNSIGNALIZED

UNSIGNALIZED LOS And Seconds Delay					95th Percentile Queues By Lane Group				
	AM		PM		Storage Length	HCM 6th		SimTraffic Q&B	
						AM	PM	AM	PM
EBL/R	C	19.4	C	20.6		30	15	74	56
NBL/T	A	9.5	A	8.5		3	5	56	105

All lanes have LOS C or better.

I-64 RAMP MERGES/DIVERGES - 2018

The following table shows I-64 ramp merge and diverge LOS:

TABLE 1-6 I-64/RT. 30 RAMPS MERGE/DIVERGE
2018

LOS And Passenger Cars Per Mile Per Lane				
	AM		PM	
I-64 Eastbound Ramp A Diverge	B	12.0	B	12.3
I-64 Eastbound Loop A Merge	B	14.4	B	12.3
I-64 Westbound Ramp B Merge	B	12.3	B	12.1
I-64 Westbound Ramp C Diverge	B	12.1	B	11.8
I-64 Eastbound Ramp D Merge	B	16.5	B	14.2

All merge/diverge movements have LOS B or better.

SUMMARY COMMENTS - 2018

All intersections and ramp merge/diverge movements have LOS C or better with intersection auxiliary lane queuing within storage limits. Exhibits 4d and 4e show LOS results on the network diagram.

2030 BACKGROUND TRAFFIC FORECAST WITHOUT HAZELWOOD FARMS

The forecast analysis year used in this study is 2030 as stipulated in the Ch. 527 Pre-Scope of Work Meeting Form.

2030 PEAK HOUR FORECAST

Background traffic growth factors were stipulated Ch. 527 Pre-Scope of Work Meeting Form. A 1.14 growth factor is applied to all 2017 peak hour traffic counts on Rt. 30. A 1.16 growth factor is applied to I-64. The resulting 2030 background traffic forecast is shown on Exhibits 5a and 5b for the weekday AM and PM peak hours, respectively.

Exhibit 5c shows calculated 2030 daily background traffic calculated from 2030 PM peak hour traffic with k-factors.

2030 PEDESTRIAN AND BICYCLE FACILITIES

There are no planned additions to pedestrian, bicycle or transit facilities. The facilities shown on Exhibit 5c are the same as existing.

RT. 30/FIELDSTONE PARKWAY- 2030 BACKGROUND

The following table shows unsignalized intersection LOS results at Rt. 30/Fieldstone Parkway:

TABLE 2-1 Rt. 30/FIELDSTONE PARKWAY
2030 BACKGROUND UNSIGNALIZED

SIGNALIZED LOS And Seconds Delay					95th Percentile Queues By Lane Group				
	AM		PM		Storage Length	Synchro		SimTraffic Q&B	
						AM	PM	AM	PM
WBL	C	15.1	C	21.8		33	28		
WBR	A	9.3	B	11.8		3	3		
SBL	A	8.2	B	10.1	150	0	3		

All lanes have LOS C or better. Queueing on the southbound left turn lane on Rt. 30 at Fieldstone is well within storage.

RT. 30/I-64 WESTBOUND RAMPS - 2030 BACKGROUND

The following table shows unsignalized intersection LOS results at Rt. 30/I-64 westbound ramps:

TABLE 2-2 Rt. 30/I-64 WESTBOUND RAMPS
2030 BACKGROUND UNSIGNALIZED

SIGNALIZED LOS And Seconds Delay					95th Percentile Queues By Lane Group				
	AM		PM		Storage Length	Synchro		SimTraffic Q&B	
						AM	PM	AM	PM
WBL	C	16.0	C	20.0		20	23		
NBL	B	11.3	A	8.8	200	15	10		

All lanes have LOS C or better. Queuing on northbound Rt. 30 at the westbound ramps is well within storage.

RT. 30/I-64 EASTBOUND RAMP A - 2030 BACKGROUND

The following table shows unsignalized intersection LOS results at Rt. 30/I-64 eastbound off ramp:

TABLE 2-3 Rt. 30/I-64 EASTBOUND RAMP
2030 BACKGROUND UNSIGNALIZED

SIGNALIZED LOS And Seconds Delay					95th Percentile Queues By Lane Group				
	AM		PM		Storage Length	Synchro		SimTraffic Q&B	
						AM	PM	AM	PM
EBL	B	12.3	B	12.0		3	10		

All lanes have LOS B or better.

RT. 30/OLD STAGE ROAD - 2030 BACKGROUND

The following table shows unsignalized intersection LOS results at Rt. 30/Rt. 746 Old Stage Road:

TABLE 2-4 Rt. 30/OLD STAGE ROAD
2030 BACKGROUND UNSIGNALIZED

SIGNALIZED LOS And Seconds Delay					95th Percentile Queues By Lane Group				
	AM		PM		Storage Length	Synchro		SimTraffic Q&B	
						AM	PM	AM	PM
EBL/T/R	C	18.1	C	20.4		20	25		
WBL/T/R	B	12.0	B	14.4		18	25		
NBL	A	8.7	A	9.5	200	5	5		
SBL	A	8.3	A	8.3	200	3	5		

All lanes have LOS C or better. Queuing on the northbound and southbound left turn lanes on Rt. 30 are well within storage.

RT. 30/BARNES ROAD - 2030 BACKGROUND

The following table shows unsignalized intersection LOS results at Rt. 30/Barnes Road:

TABLE 2-5 RT. 30/BARNES ROAD
2030 BACKGROUND UNSIGNALIZED

UNSIGNALIZED LOS And Seconds Delay					95th Percentile Queues By Lane Group				
	AM		PM		Storage Length	HCM 6th		SimTraffic Q&B	
						AM	PM	AM	PM
EBL/R	C	19.9	C	22.5		30	18		
NBL/T	A	9.6	A	8.5		3	5		

All lanes have LOS C or better.

I-64 RAMP MERGES/DIVERGES - 2030 BACKGROUND

The following table shows I-64 ramp merge and diverge LOS:

TABLE 2-6 I-64/RT. 30 RAMPS MERGE/DIVERGE
2030 BACKGROUND

LOS And Passenger Cars Per Mile Per Lane				
	AM		PM	
I-64 Eastbound Ramp A Diverge	B	12.9	B	14.8
I-64 Eastbound Loop A Merge	B	15.6	B	14.9
I-64 Westbound Ramp B Merge	B	13.2	B	14.8
I-64 Westbound Ramp C Diverge	B	12.9	B	14.8
I-64 Eastbound Ramp D Merge	B	17.4	B	16.6

All merge/diverge movements have LOS B or better.

SUMMARY COMMENTS - 2030 BACKGROUND

All intersections and ramp merge/diverge movements have LOS C or better with intersection auxiliary lane queuing within storage limits. Exhibits 5d and 5e show LOS results on the network diagram.

HAZELWOOD FARMS TRIP GENERATION, DISTRIBUTION AND ASSIGNMENT

Trip generation for Hazelwood Farms has been calculated using Trip Generation Manual, 10th Edition (TGM10), published by the Institute of Transportation Engineers (ITE).

The development includes the following anticipated uses and estimated sizes:

TABLE D – PROPOSED REZONING FOR HAZELWOOD FARMS

	Acres	Units		
North	79	Shopping Center	375,000	sq. ft.
		Office	135,000	sq. ft.
South	328	Warehousing	2,920,000	sq. ft.
		Shopping Center	75,000	sq. ft.
		Apartments	300	units

Exhibit 6-1 shows trip generation for Hazelwood Farms as follows:

- Table 1 shows trip generation for North Hazelwood Farms. Internal capture percentage is calculated on Exhibit 6-4 and applied to total trips in Table 1 to show internal trips. % pass by trips for the shopping center are calculated using the equation in the Trip Generation Manual Handbook and the pass by trip percentage is applied to total trips to calculate pass by trips. Primary trips are total trips remaining after internal capture and pass by trip reductions.
- Table 4 shows trip generation for South Hazelwood Farms. Internal capture percentage is calculated on Exhibit 6-5 and applied to total trips in Table 4 to show internal trips. % pass by trips for the shopping center are calculated using the equation in the Trip Generation Manual Handbook and the pass by trip percentage is applied to total trips to calculate pass by trips. Primary trips are total trip remaining after internal capture and pass by trip reductions.

Primary trip distribution for Hazelwood Farms trips was derived from trip distribution in the 2015 Stonehouse study by Timmons Group and counts. Trip distribution percentages for North Hazelwood Farms are shown on the road network on Exhibit 6-2 and for South Hazelwood Farms on Exhibit 6-3. These trip distribution percentages were stipulated in the Ch. 527 Pre-Scope of Work Meeting Form.

North Hazelwood Farms primary trip distribution is tabulated in Table 2 on Exhibit 6-1. Primary trips are assigned in Appendix Exhibits I5 and I6. North Hazelwood Farms pass by trip distribution is tabulated in Table 3 on Exhibit 6-1 based on background traffic. Pass by trips are assigned in Appendix Exhibit I7 and I8.

South Hazelwood Farms primary trip distribution is tabulated in Table 5 on Exhibit 6-1. Primary trips are assigned in Appendix Exhibits I9 and I10. South Hazelwood Farms pass by trip distribution is tabulated in Table 6 on Exhibit 6-1 based on background traffic. Pass by trips are assigned in Appendix Exhibit I11 and I12.

North and South Hazelwood Farms off site trips are shown on Exhibit 7a for the AM peak hour, Exhibit 7b for the PM peak hour, and Exhibit 7c for daily traffic.

OLD STAGE ROAD TRIP DIVERSIONS

The raised median on Old Stage Road to be constructed with South Hazelwood Farms access will change the route for trips using the McDonald's and Shell Station entrances on Old Stage Road. Appendix Exhibits E1 and E2 respectively show AM and PM diversion of these trips. Appendix Exhibits E3 and E4 respectively show 2030 AM and PM peak hour traffic with diversion of these trips

HAZELWOOD FARMS TRUCK TRIPS

15% trucks are assumed for the warehouse component of South Hazelwood Farms. All other uses are assumed to have 2% trucks.

Appendix Exhibits E5 and E6 show truck trip assignments for North Hazelwood Farms.

Appendix Exhibit 6-1 shows the calculation of truck trips for South Hazelwood Farms. 15% trucks are calculated for warehousing and 2% for other uses in Table 2. Table 5 shows tabulated trip distribution and Appendix Exhibit E7 and E8 respectively show AM and PM truck trip assignments for South Hazelwood Farms.

HAZELWOOD FARMS PEDESTRIAN AND BICYCLE FACILITIES

Exhibit 2a shows a multi-use path along the North Hazelwood Farms Rt. 30 frontage as part the master plan. Exhibit 2c shows multi-use paths as part of the South Hazelwood Farms frontage on Old Stage Road from Rt. 30 to Leisure Road and on the South Entrance #1 access road.

Exhibit 7c shows the multi-use paths and a pedestrian connection across Rt. 30 north of Fieldstone Parkway. A pedestrian connection north of Fieldstone Parkway is preferable to south of Fieldstone Parkway because north of Fieldstone Parkway has 10,000 fewer vehicles per day than south of Fieldstone Parkway. North of Fieldstone Parkway also aligns with a multi-use path to be built by Moss Creek along the north side of Fieldstone Parkway (see Exhibits 1j and 11c).

ANALYSIS OF 2030 TRAFFIC WITH HAZELWOOD FARMS

Total 2030 AM peak hour traffic with Hazelwood Farms is shown on Exhibit 8a. Total 2030 PM peak hour traffic with Hazelwood Farms is shown on Exhibit 8b. 2030 daily traffic with Hazelwood Farms is shown on Exhibit 8c.

RT. 30/FIELDSTONE PARKWAY- 2030 WITH HAZELWOOD FARMS

The following table shows signalized intersection LOS results at Rt. 30/Fieldstone Parkway:

TABLE 3-1 Rt. 30/FIELDSTONE PARKWAY
2030 HAZELWOOD ONLY 70 SECOND CYCLE

SIGNALIZED LOS And Seconds Delay					95th Percentile Queues By Lane Group				
	AM		PM		Storage	Synchro		SimTraffic Q&B	
Overall	C	23.8	C	20.3	Length	AM	PM	AM	PM
EBL2	C	29.8	C	23.4	150	20	91	36	202
EBT	C	29.7	C	28.9		5	28	8	64
EBR	C	20.6	B	13.6	200	0	82	83	246
WBL	C	32.2	C	27.3	250	117	65	155	89
WBT/R	C	26.3	C	34.8		19	22	43	44
NBL2	C	24.8	C	22.3	300	55	209	125	315
NBT2	B	10.6	B	15.5		67	169	130	406
NBR	B	11.3	B	17.4	350	0	9	0	0
SBL	B	15.7	C	23.7	150	11	18	64	42
SBT2	C	28.2	C	30.5		342	127	289	133
SBR	B	16.5	C	23.4	200	0	0	83	65

SimTraffic queue shown is maximum report value for multi-lane groups

Overall intersection LOS and all lane groups are LOS C or better.

RT. 30/I-64 WESTBOUND RAMPS - 2030 WITH HAZELWOOD FARMS

The following table shows signalized intersection LOS results at Rt. 30/I-64 westbound ramps:

TABLE 3-2 Rt. 30/I-64 WESTBOUND RAMPS
2030 HAZELWOOD ONLY 70 SECOND CYCLE

SIGNALIZED LOS And Seconds Delay					95th Percentile Queues By Lane Group				
	AM		PM		Storage	Synchro		SimTraffic Q&B	
Overall	B	12.2	B	11.9	Length	AM	PM	AM	PM
WBL	C	32.8	C	34.6		137	107	120	109
NBL	C	35.0	C	25.9	200	138	143	117	183
NBT2	A	6.8	A	6.8		71	209	100	134
SBT2	A	8.0	B	13.0		94	194	433	215
SBR	A	0.0	A	0.2	300	0	0	163	0

SimTraffic queue shown is maximum report value for multi-lane groups

Overall intersection LOS is LOS B and all lane groups are LOS C or better.

RT. 30/I-64 EASTBOUND RAMP A - 2030 WITH HAZELWOOD FARMS

The following table shows signalized intersection LOS results at Rt. 30/I-64 eastbound ramp A:

TABLE 3-3 Rt. 30/I-64 EASTBOUND RAMP
2030 HAZELWOOD ONLY 70 SECOND CYCLE

SIGNALIZED LOS And Seconds Delay					95th Percentile Queues By Lane Group				
	AM		PM		Storage	Synchro		SimTraffic Q&B	
Overall	A	3.2	A	5.3	Length	AM	PM	AM	PM
EBL	C	30.9	C	29.1		84	129	134	153
NBT2	A	0.7	A	2.0		5	18	57	78
SBT2	A	0.3	A	2.6		0	29	120	72

SimTraffic queue shown is maximum report value for multi-lane groups

Overall intersection LOS is LOS B and all lane groups are LOS C or better.

RT. 30/OLD STAGE ROAD - 2030 WITH HAZELWOOD FARMS

The following table shows signalized intersection LOS results at Rt. 30/Old Stage Road:

TABLE 3-4 Rt. 30/OLD STAGE ROAD
2030 HAZELWOOD ONLY 70 SECOND CYCLE

SIGNALIZED LOS And Seconds Delay					95th Percentile Queues By Lane Group				
	AM		PM		Storage	Synchro		SimTraffic Q&B	
Overall	B	16.7	B	19.3	Length	AM	PM	AM	PM
EBL2	C	29.6	C	30.6	200	65	125	110	162
EBT	C	27.3	C	23.9		14	15	22	29
EBR	B	16.5	B	14.9	200	0	34	83	145
WBL/T	C	30.8	C	30.8		40	33	54	52
WBR	C	29.7	C	30.0		0	0	65	67
NBL2	C	29.2	C	31.1	200	72	81	106	101
NBT2	B	15.5	B	18.6		111	206	67	129
NBR	B	13.7	B	13.7		0	0	19	16
SBL	B	17.1	C	21.8	200	36	42	71	51
SBT2	A	9.9	B	10.8		83	68	92	76
SBR	A	8.9	A	9.5		10	0	85	66

SimTraffic queue shown is maximum report value for multi-lane groups

Overall intersection LOS is LOS B and all lane groups are LOS C or better.

RT. 30/BARNES ROAD – 2030 WITH HAZELWOOD FARMS

The following table shows unsignalized intersection LOS results at Rt. 30/Barnes Road:

TABLE 3-5 RT. 30/BARNES ROAD
2030 HAZELWOOD ONLY UNSIGNALIZED

UNSIGNALIZED LOS And Seconds Delay					95th Percentile Queues By Lane Group				
	AM		PM		Storage	HCM 6th		SimTraffic Q&B	
					Length	AM	PM	AM	PM
EBL/R	C	23.1	D	32.7		35	28	89	79
NBL/T	A	9.9	A	8.8		3	5	92	177

All lanes have LOS D or better.

OLD STAGE ROAD/SOUTH #2 ENTRANCE – 2030 WITH HAZELWOOD FARMS

The following table shows roundabout intersection LOS results at the Old Stage Road/South #2 entrance:

TABLE 3-6 OLD STAGE ROAD/South #2 Entrance
2030 HAZELWOOD ONLY ROUNDABOUT

ROUNDABOUT LOS And Seconds Delay					95th Percentile Queues By Lane Group				
	AM		PM		Storage	SIDRA		SimTraffic Q&B	
Overall	A	6.0	A	5.8	Length	AM	PM	AM	PM
EBL/T	A	7.4	A	7.4		41	41	36	79
WBT	A	4.9	A	4.4		29	25	18	24
WBR	A	4.0	A	3.8		16	16	0	0
SBL/R	A	7.2	A	6.8		37	36	42	78

All approach lanes have LOS A. All queues are less than 90 feet.

OLD STAGE ROAD/SOUTH #1 ENTRANCE – 2030 WITH HAZELWOOD FARMS

The following table shows roundabout intersection LOS results at the Old Stage Road/South #1 entrance:

TABLE 3-7 OLD STAGE ROAD/South #1
2030 HAZELWOOD ONLY ROUNDABOUT

ROUNDABOUT LOS And Seconds Delay					95th Percentile Queues By Lane Group				
	AM		PM		Storage	SIDRA		SimTraffic Q&B	
Overall	A	4.5	A	4.8	Length	AM	PM	AM	PM
EBL/T	A	3.7	A	4.1		4	5	21	30
WBT/R	A	5.0	A	4.4		30	24	12	9
SBL/R	A	3.7	A	5.4		10	30	23	52

All approach lanes have LOS A. All queues are less than 60 feet.

I-64 RAMP MERGES/DIVERGES - 2030 WITH HAZELWOOD FARMS

The following table shows I-64 ramp merge and diverge LOS:

TABLE 3-8 I-64/RT. 30 RAMPS MERGE/DIVERGE
2030 HAZELWOOD ONLY 70 SECOND

LOS And Passenger Cars Per Mile Per Lane				
	AM		PM	
I-64 Eastbound Ramp A Diverge	B	12.9	B	14.8
I-64 Eastbound Loop A Merge	B	15.8	B	16.5
I-64 Westbound Ramp B Merge	B	13.8	B	17.3
I-64 Westbound Ramp C Diverge	B	12.9	B	14.8
I-64 Eastbound Ramp D Merge	B	18.1	B	19.4

All merge/diverge movements have LOS B or better.

SUMMARY COMMENTS - 2030 WITH HAZELWOOD FARMS

All signalized intersections have LOS C or better overall and for each turning movement. For unsignalized Barnes Road, eastbound AM was LOS C and PM is LOS D. Roundabouts have LOS A overall and for approaches. All I-64 ramp merges and diverge sections have LOS B.

Exhibits 8d and 8e show LOS results on the network diagram.

MOSS CREEK TRIP GENERATION, DISTRIBUTION AND ASSIGNMENT

Trip generation for Moss Creek was provided in the LandMark Design Group traffic study for Moss Creek revised March 2006. Those trips are shown in Table 1 on Exhibit 9.

Primary trip distribution for Moss Creek trips is shown in Table 2 on Exhibit 9. Trip distribution to north Rt. 30 and Fieldstone Parkway are taken from the LandMark study. The remainder of primary trips is distributed throughout the remainder of the network in general accordance with North Hazelwood Farms distribution. Moss Creek primary trips as assigned on Appendix Exhibits D1 and D2.

Moss Creek pass by trips are distributed in Table 3 on Exhibit 9. Moss Creek pass by trips are assigned on Appendix Exhibits D3 and D4.

All Moss Creek AM peak hour traffic assignment is shown on Exhibit 9a and all Moss Creek PM peak hour traffic is shown on Exhibit 9b. Daily traffic for Moss Creek is shown on Exhibit 9c. Exhibit 9c also shows the multi-purpose path and bike lane to be included with the Moss Creek development.

Moss Creek truck assignments are shown on Appendix Exhibits C5 and C6 for the AM and PM peak hours respectively.

STONEHOUSE TRIP GENERATION, DISTRIBUTION AND ASSIGNMENT

Exhibits 10a and 10b respectively show AM and PM peak hour traffic for Stonehouse phases 1 and 2 presented in the Timmons Group traffic study for Stonehouse in 2015. Exhibit 10c shows daily traffic for Stonehouse based on trip generation k-factor.

Stonehouse truck assignments are shown on Appendix Exhibits F1 and F2 for the AM and PM peak hours respectively.

ANALYSIS OF 2030 TRAFFIC WITH ALL DEVELOPMENT

Total 2030 AM peak hour traffic with all three developments is shown on Exhibit 11a. Total 2030 PM peak hour traffic with all three developments is shown on Exhibit 11b. 2030 daily traffic with all development is shown on Exhibit 11c.

Appendix Exhibits F3 and F4 show total trips in 2030 with all development for the AM and PM peak hours respectively. Appendix Exhibits F3 and F4 show truck percentages for turning movements in 2030 with all development for the AM and PM peak hours respectively.

Development improvements to the Rt. 30 corridor within the study are included at the following intersections from north to south (see Exhibit 2g for reference):

1. Moss Creek #1 Entrance #1 (Station 303+86). Extend 2nd northbound through lane from Fieldstone to drop off right turn at MC1. Widen for southbound left turn lane. Add traffic signal. All work by Moss Creek development.
2. Fieldstone Parkway/North #1 Entrance (Station 313+06). For Stonehouse, future signalization is required with second westbound left turn lane. For North Hazelwood Farms, signalization also required with northbound double left turn lanes, southbound right turn lane, and four eastbound lanes: double left turn lanes, through lane and right turn lane. See Exhibit 2b for details.
3. North #2 Entrance (Station 321+35). Close crossover and add southbound right turn lane. Right turn in/out only. All work by Hazelwood Farms.
4. I-64 Westbound Ramps B & C (Station 337+23). Westbound double left turn lanes and northbound double left turn lanes with signal proffered by Stonehouse. Signalization also proffered by South Hazelwood Farms.
5. I-64 Eastbound Off Ramp A (Station 350+36). Signal addition proffered by North Hazelwood Farms. See Exhibit 2f.
6. I-64 Eastbound On Ramp D (Station 353+47). Extend northbound right turn lane back to Old Stage Road intersection as drop-off lane by South Hazelwood Farms. See Exhibits 2f.
7. Old Stage Road (Station 359+58). South Hazelwood Farms proffered improvements include (see Exhibit 2e):
    a. Four lanes on Old Stage Road eastbound approach: double left turn lanes, through lane and right turn lane.
    b. Two lanes on westbound approach.
    c. Double left turn lane on northbound approach.
    d. Add third through lane on northbound approach.
    e. Extend southbound right turn lane back to Ramp A as drop-off lane at Old Stage Road.
    f. Add signal.

Synchro and SimTraffic reports are included in the Technical Appendix as follows for signalized and unsignalized (two way stop) intersections:

TABLE E: 2030 FULL DEVELOPMENT ANALYSIS REPORT EXHIBITS

Report	70 Second Cycle		90/100 Second Cycle	
	AM	PM	AM - 90	PM - 100
HCM2000 Signalized Intersection	J9	J10	J11	J12
HCS6 Unsignalized Intersection	K9	K10	K11	K12
Synchro 10 Queues	L9	L10	L11	L12
SimTraffic Queuing & Blocking	M9	M10	M11	M12

Analyses for roundabouts are not included for full buildout conditions because the traffic assignments on Old Stage Road at the Hazelwood Farms South entrances have the same traffic as Hazelwood only conditions.

The 90 second AM and 100 second PM cycles were optimized by Synchro for coordinated signal operation.

I-64 ramp merge and diverges LOS are including in the Appendix Exbibit T series for full build out.

Exhibit 11c shows 2030 daily traffic with all development and all pedestrian/bicycle facilities.

2030 TRAFFIC WITH ALL DEVELOPMENT – 70 SECOND CYCLE

RT. 30/FIELDSTONE PARKWAY- 2030 WITH ALL DEVELOPMENT 70 SEC CYCLE

Table 4-1 shows signalized intersection LOS and queuing for Rt. 30/Fieldstone Parkway:

TABLE 4-1 Rt. 30/FIELDSTONE PARKWAY
2030 ALL DEVELOPMENT 70 SECOND CYCLE

SIGNALIZED LOS And Seconds Delay					95th Percentile Queues By Lane Group				
	AM		PM		Storage	Synchro		SimTraffic Q&B	
Overall	C	22.1	C	20.8	Length	AM	PM	AM	PM
EBL2	C	33.1	C	26.3	150	15	91	39	126
EBT	C	29.7	C	27.0		5	28	8	38
EBR	B	17.0	B	12.9	200	0	95	76	198
WBL2	C	32.2	C	31.2	250	85	67	146	138
WBT/R	C	25.3	C	32.0		26	39	45	70
NBL2	C	23.1	B	19.1	300	62	118	122	361
NBT2	B	13.1	B	15.8		137	321	118	547
NBR	B	17.6	A	2.2	350	2	3	0	77
SBL	B	13.2	B	18.0	150	17	20	64	57
SBT2	C	25.0	C	34.3		385	245	267	208
SBR	B	15.1	C	33.1	200	0	4	57	73

SimTraffic queue shown is maximum report value for multi-lane groups

All turning movements are LOS C or better with overall LOS C. Auxiliary lane queues are accommodated by storage length provided.

RT. 30/I-64 WESTBOUND RAMPS - 2030 WITH ALL DEVELOPMENT 70 SEC CYCLE

Table 4-2 shows signalized intersection LOS and queuing for Rt. 30/I-64 westbound ramps:

TABLE 4-2 Rt. 30/I-64 WESTBOUND RAMPS
2030 ALL DEVELOPMENT 70 SECOND CYCLE

SIGNALIZED LOS And Seconds Delay					95th Percentile Queues By Lane Group				
	AM		PM		Storage	Synchro		SimTraffic Q&B	
Overall	B	19.3	B	15.4	Length	AM	PM	AM	PM
WBL	C	32.2	C	29.6		174	117	120	110
NBL	C	26.0	C	23.1	200	109	153	117	175
NBT2	A	8.5	A	6.3		141	178	100	108
SBT2	B	18.3	C	20.7		444	376	433	294
SBR	A	0.1	A	0.2	300	0	0	0	0

SimTraffic queue shown is maximum report value for multi-lane groups

All turning movements are LOS C or better as well as overall LOS B. Auxiliary lane queues are accommodated by storage length provided.

RT. 30/I-64 EASTBOUND RAMP A - 2030 WITH ALL DEVELOPMENT 70 SEC CYCLE

Table 4-3 shows signalized intersection LOS and queuing for Rt. 30/I-64 eastbound ramps:

TABLE 4-3 Rt. 30/I-64 EASTBOUND RAMP
2030 ALL DEVELOPMENT 70 SECOND CYCLE

SIGNALIZED LOS And Seconds Delay					95th Percentile Queues By Lane Group				
	AM		PM		Storage	Synchro		SimTraffic Q&B	
Overall	A	5.4	A	5.9	Length	AM	PM	AM	PM
EBL	C	28.8	C	29.0		112	166	134	174
NBT2	A	1.5	A	4.1		43	84	57	174
SBT2	A	4.4	A	2.2		48	11	120	105

SimTraffic queue shown is maximum report value for multi-lane groups

All turning movements are LOS C or better as well as overall LOS A.

RT. 30/OLD STAGE ROAD - 2030 WITH ALL DEVELOPMENT 70 SEC CYCLE

Table 4-4 shows signalized intersection LOS for Rt. 30/Old Stage Road:

TABLE 4-4 Rt. 30/OLD STAGE ROAD
2030 ALL DEVELOPMENT 70 SECOND CYCLE

SIGNALIZED LOS And Seconds Delay					95th Percentile Queues By Lane Group				
	AM		PM		Storage	Synchro		SimTraffic Q&B	
Overall	C	23.8	C	28.7	Length	AM	PM	AM	PM
EBL2	C	28.0	C	30.6	200	62	125	101	164
EBT	C	26.0	C	23.9		14	15	23	26
EBR	B	15.9	B	14.9	200	0	34	88	147
WBL/T	C	30.8	C	30.8		40	33	65	56
WBR	C	29.7	C	30.0		0	0	70	80
NBL2	C	30.2	C	31.1	200	73	81	98	110
NBT/R3	B	16.2	C	29.8		139	430	109	245
SBL	C	27.8	C	26.0	200	47	36	68	58
SBT2	C	28.0	C	33.2		411	377	242	235
SBR	C	20.6	A	6.9		20	10	85	78

SimTraffic queue shown is maximum report value for multi-lane groups

All turning movements are LOS C or better with overall LOS C. Auxiliary lane queues are accommodated by storage length provided.

RT. 30/MOSS CREEK - 2030 WITH ALL DEVELOPMENT 70 SEC CYCLE

Table 4-5 shows signalized intersection LOS and queuing for Rt. 30/Old Stage Road:

TABLE 4-5 Rt. 30/MOSS CREEK 2030 ALL DEVELOPMENT 70 SECOND CYCLE									
SIGNALIZED LOS And Seconds Delay					95th Percentile Queues By Lane Group				
	AM		PM		Storage	Synchro		SimTraffic Q&B	
Overall	A	9.4	C	24.1	Length	AM	PM	AM	PM
WBL	C	30.8	C	30.7		74	133	89	149
WBR	C	27.7	C	24.7		22	45	32	94
NBT	A	2.9	C	33.9		88	893	129	731
NBR	A	0.4	A	2.9		0	3	41	250
SBL	A	2.9	D	39.1	200	19	100	65	176
SBT	B	11.0	A	7.3		637	208	206	201

Most turning movements are LOS C or better with LOS D for the southbound left turn as well as overall LOS C. Auxiliary lane queues are accommodated by storage length provided.

RT. 30/BARNES ROAD – 2030 WITH ALL DEVELOPMENT 70 SEC CYCLE

Table 4-6 shows unsignalized intersection LOS and queuing for Rt. 30/Barnes Road:

TABLE 4-5 Rt. 30/MOSS CREEK 2030 ALL DEVELOPMENT 70 SECOND CYCLE									
SIGNALIZED LOS And Seconds Delay					95th Percentile Queues By Lane Group				
	AM		PM		Storage	Synchro		SimTraffic Q&B	
Overall	A	9.4	C	24.1	Length	AM	PM	AM	PM
WBL	C	30.8	C	30.7		74	133	89	149
WBR	C	27.7	C	24.7		22	45	32	94
NBT	A	2.9	C	33.9		88	893	129	731
NBR	A	0.4	A	2.9		0	3	41	250
SBL	A	2.9	D	39.1	200	19	100	65	176
SBT	B	11.0	A	7.3		637	208	206	201

The eastbound Barnes Road approach has LOS F while northbound Rt. 30 traffic has LOS A and southbound Rt. 30 traffic doesn't register any delay.

I-64 RAMP MERGES/DIVERGES - 2030 WITH ALL DEVELOPMENT

TABLE 4-7 I-64/RT. 30 RAMPS MERGE/DIVERGE 2030 ALL DEVELOPMENT 70 SECOND				
LOS And Passenger Cars Per Mile Per Lane				
	AM		PM	
I-64 Eastbound Ramp A Diverge	B	12.9	B	14.8
I-64 Eastbound Loop A Merge	B	16.4	B	17.9
I-64 Westbound Ramp B Merge	B	15.2	C	20.5
I-64 Westbound Ramp C Diverge	B	12.9	B	14.8
I-64 Eastbound Ramp D Merge	B	19.9	C	23.5

SUMMARY COMMENTS - 2030 WITH ALL DEVELOPMENT 70 SEC CYCLE

With the 70 second cycle length, all turning movements at signalized intersections on Rt. 30 have LOS C except for the Moss Creek intersection with LOS D for the southbound left turn. Overall signalized LOS is LOS C or better at all intersections.

Exhibits 11d and 11e show LOS results on the network diagram.

2030 TRAFFIC WITH ALL DEVELOPMENT – 90/100 SECOND CYCLE

Synchro traffic signal optimization was used for the Rt. 30 corridor to determine cycle lengths for signal coordination on the corridor. The results were 90 seconds for the AM peak hour and 100 seconds for the PM peak hour. Green time splits at intersections were also set using Synchro optimization.

RT. 30/FIELDSTONE PARKWAY- 2030 WITH ALL DEVELOPMENT 90/100 SEC CYCLE

Table 5-1 shows signalized intersection LOS and queuing for Rt. 30/Fieldstone Parkway:

TABLE 5-1 Rt. 30/FIELDSTONE PARKWAY
2030 ALL DEVELOPMENT 90/100 SECOND CYCLE

SIGNALIZED LOS And Seconds Delay					95th Percentile Queues By Lane Group				
	AM		PM		Storage	Synchro		SimTraffic Q&B	
Overall	C	23.5	C	22.9	Length	AM	PM	AM	PM
EBL2	D	37.8	D	41.0	150	19	110	43	151
EBT	D	39.6	D	40.2		5	34	10	53
EBR	C	23.6	C	25.7	200	0	117	87	200
WBL2	D	40.3	D	47.1	250	104	91	161	158
WBT/R	D	37.7	D	44.9		31	47	45	70
NBL2	C	31.5	C	31.7	300	97	232	154	236
NBT2	B	11.6	B	12.6		130	282	118	343
NBR	B	16.7	A	9.2	350	6	20	0	0
SBL	B	16.0	C	21.0	150	25	27	60	66
SBT2	C	23.6	C	23.9		311	198	194	236
SBR	B	16.2	A	5.5	200	0	4	38	85

SimTraffic queue shown is maximum report value for multi-lane groups

All turning movements are LOS D or better with overall LOS C. Auxiliary lane queues are accommodated by storage length provided.

RT. 30/I-64 WESTBOUND RAMPS - 2030 WITH ALL DEVELOPMENT 90/100 SEC CYCLE

Table 5-2 shows signalized intersection LOS and queuing for Rt. 30/I-64 westbound ramps:

TABLE 5-2 Rt. 30/I-64 WESTBOUND RAMPS
2030 ALL DEVELOPMENT 90/100 SECOND CYCLE

SIGNALIZED LOS And Seconds Delay					95th Percentile Queues By Lane Group				
	AM		PM		Storage	Synchro		SimTraffic Q&B	
Overall	B	19.2	B	19.6	Length	AM	PM	AM	PM
WBL	D	42.0	D	48.4		212	169	116	114
NBL	D	46.4	C	34.7	200	112	213	160	235
NBT2	A	7.9	A	3.0		45	51	109	173
SBT2	A	9.3	C	25.5		164	436	240	321
SBR	A	0.1	A	0.3	300	0	0	0	0

SimTraffic queue shown is maximum report value for multi-lane groups

All turning movements are LOS D or better as well as overall LOS B. Auxiliary lane queues are accommodated by storage length provided.

RT. 30/I-64 EASTBOUND RAMP A - 2030 WITH ALL DEVELOPMENT 90/100 SEC CYCLE

Table 5-3 shows signalized intersection LOS and queuing for Rt. 30/I-64 eastbound ramps:

TABLE 5-3 Rt. 30/I-64 EASTBOUND RAMP 2030 ALL DEVELOPMENT 90/100 SECOND CYCLE									
SIGNALIZED LOS And Seconds Delay					95th Percentile Queues By Lane Group				
	AM		PM		Storage	Synchro		SimTraffic Q&B	
Overall	B	10.2	A	8.0	Length	AM	PM	AM	PM
EBL	D	40.0	D	45.9		142	240	156	183
NBT2	A	9.0	A	4.3		87	124	113	170
SBT2	A	6.7	A	2.8		116	96	129	116

SimTraffic queue shown is maximum report value for multi-lane groups

All turning movements are LOS D or better as well as overall LOS A.

RT. 30/OLD STAGE ROAD - 2030 WITH ALL DEVELOPMENT 90/100 SEC CYCLE

Table 5-4 shows signalized intersection LOS for Rt. 30/Old Stage Road:

TABLE 5-4 Rt. 30/OLD STAGE ROAD 2030 ALL DEVELOPMENT 90/100 SECOND CYCLE									
SIGNALIZED LOS And Seconds Delay					95th Percentile Queues By Lane Group				
	AM		PM		Storage	Synchro		SimTraffic Q&B	
Overall	C	25.3	C	24.3	Length	AM	PM	AM	PM
EBL2	D	41.4	D	46.9	200	85	176	121	225
EBT	D	37.0	D	35.5		18	20	27	34
EBR	C	27.1	C	25.1	200	20	72	99	192
WBL/T	D	42.1	D	46.8		51	44	63	55
WBR	D	40.0	D	45.0		0	0	71	99
NBL2	D	37.0	D	50.2	200	92	114	120	128
NBT/R3	B	19.5	C	20.9		176	408	145	264
SBL	D	41.3	D	52.8	200	78	63	77	61
SBT2	C	23.6	B	15.1		341	255	219	200
SBR	B	19.0	B	11.9		32	0	125	70

SimTraffic queue shown is maximum report value for multi-lane groups

All turning movements are LOS D or better with overall LOS C. Auxiliary lane queues are accommodated by storage length provided.

RT. 30/MOSS CREEK - 2030 WITH ALL DEVELOPMENT 90/100 SEC CYCLE

Table 5-5 shows signalized intersection LOS and queuing for Rt. 30/Old Stage Road:

TABLE 5-5 Rt. 30/MOSS CREEK 2030 ALL DEVELOPMENT 90/100 SECOND CYCLE									
SIGNALIZED LOS And Seconds Delay					95th Percentile Queues By Lane Group				
	AM		PM		Storage	Synchro		SimTraffic Q&B	
Overall	A	9.2	B	18.9	Length	AM	PM	AM	PM
WBL	D	50.8	E	69.9		99	243	107	249
WBR	D	38.3	D	38.6		28	47	21	123
NBT	A	3.2	B	18.0		64	454	93	498
NBR	A	1.8	A	2.0		0	1	36	87
SBL	A	2.4	C	32.0	200	15	116	55	201
SBT	A	8.3	A	5.7		428	179	186	230

Overall LOS B with turning movements LOS A through E. Auxiliary lane queues are accommodated by storage length provided.

Exhibits 11f and 11g show LOS results on the network diagram.

SUMMARY AND CONCLUSIONS

70 SECOND CYCLE RESULTS

70 second cycle traffic signal analysis was incorporated into this study because:

1. 70 second cycle length was used in the 2015 Stonehouse study by Timmons Group.
2. JCC has LOS C objective for turning movements.
3. Traffic signals do not operate to provide LOS C on turning movements: that is not a performance criterion.
4. Only short cycles (i.e., shorter than realistic) produce LOS C for turning movements.

With 70 second cycles lengths, development of Hazelwood Farms alone and with development of Stonehouse and Moss Creek produce LOS C on turning movements as well overall intersection LOS C for the four Rt. 30 signalized intersections serving Hazelwood Farms (Fieldstone Parkway, I-64 westbound ramps, I-64 eastbound off-ramp and Old Stage Road). The only LOS for signalized intersections less than LOS C is LOS D for the exiting left turn from Moss Creek to Rt. 30.

2018 traffic studies for Stonehouse by Gorove-Slade used cycle length less than 70 seconds for Rt. 30/Fieldstone and Rt. 30/westbound I-64 ramps (mitigated).

90 SECOND AM/100 SECOND PM CYCLE RESULTS

90/100 second cycle traffic signal analysis is far more typical of how signals are designed and operated. There are LOS D results mostly located on minor street approaches for the four Rt. 30 signalized intersections serving Hazelwood Farms. All signalized intersections have overall LOS C or better. In some instances, overall delay at the intersection decreased in seconds delay relative to 70 second cycle results.

In almost all instances, signalized intersection delay for northbound and southbound through movements on Rt. 30 decreased from 70 second cycle levels. This illustrates the essence of traffic signal design: green time on minor streets is minimized with related increases in delay to allow greater green time and reduced delay for major street through movements, which are the bulk of the traffic. Forcing traffic signal timing to produce LOS C for turning moments is not an element of modern traffic signal efficient design and operation.

RT. 30/MOSS CREEK DESIGN

At the Rt. 30/Moss Creek intersection, there is overall LOS A and B with LOS D for some minor street movements and LOS E for the PM peak hour westbound left turn movement. This intersection is essentially one northbound through lane and one southbound through, and thus is an inferior design to the other four signalized intersections. The traffic study for Moss Creek also used artificially reduced signal timing (less than 50 seconds) to get LOS C for turning movements.

RT. 30/BARNES ROAD

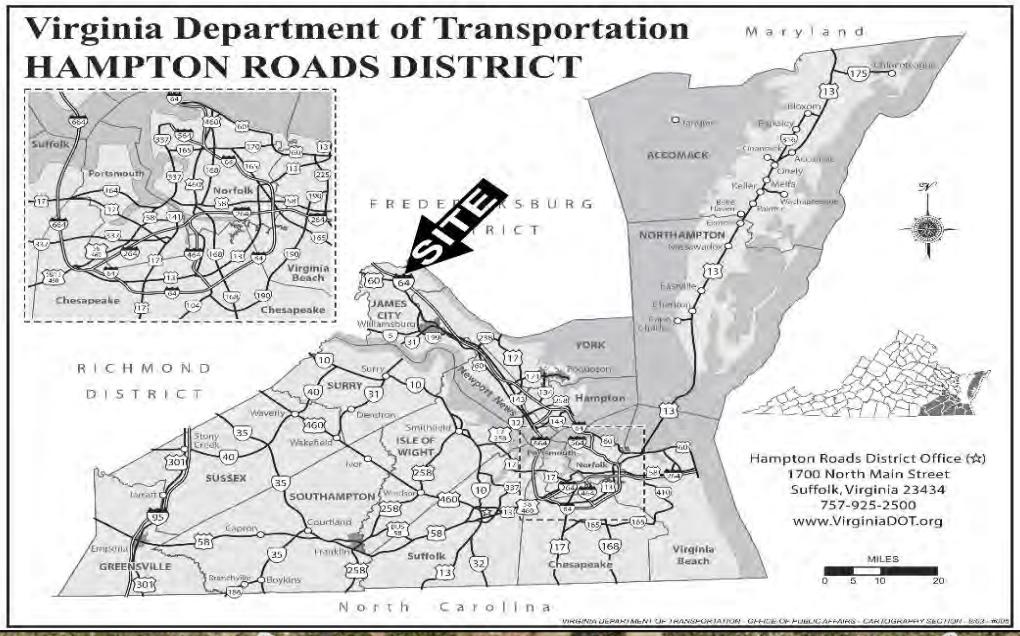
With all development in 2030, the eastbound approach on Barnes Road is LOS F in the PM peak hour. Some alternatives for this intersection include:

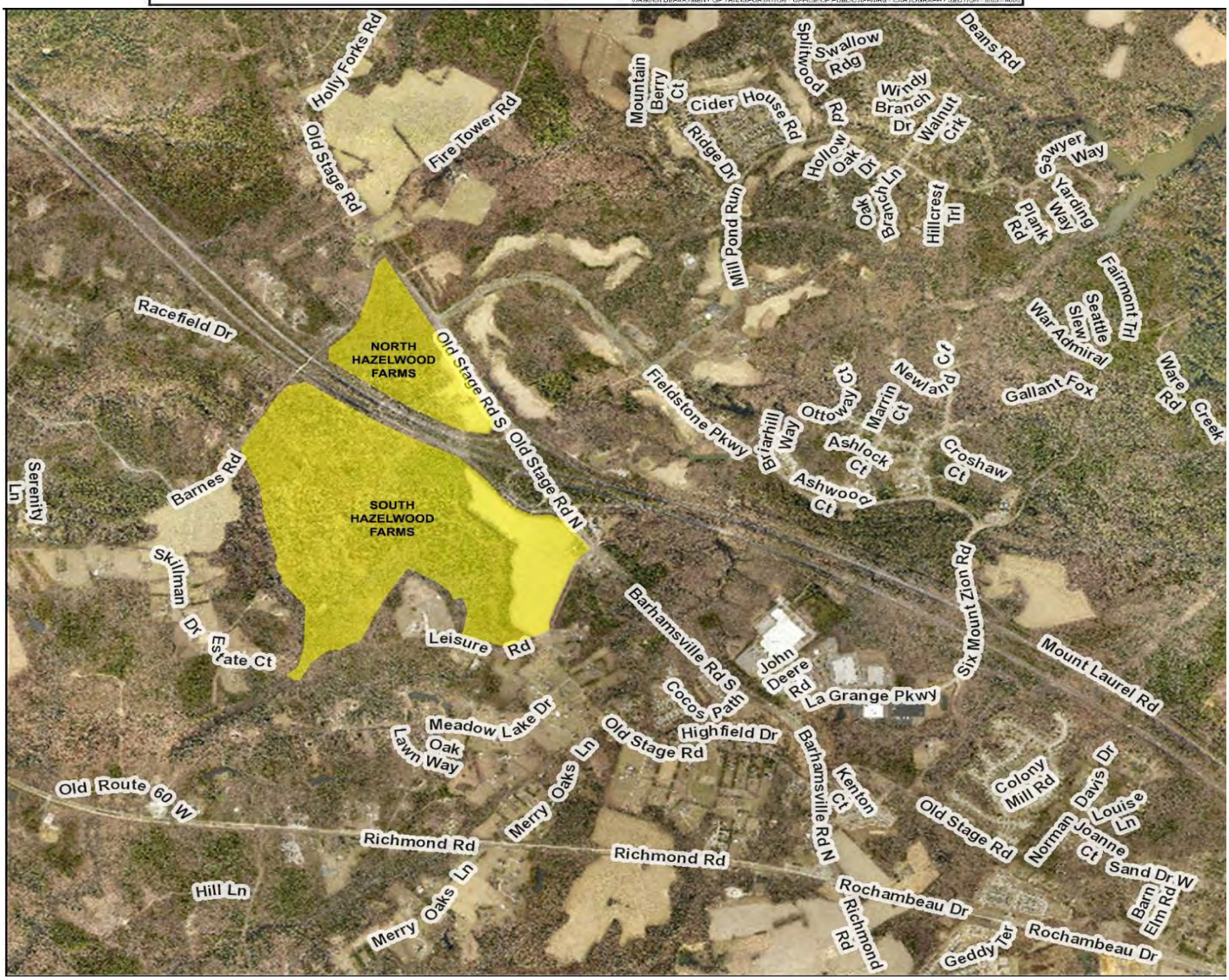
1. Add a left turn lane on the eastbound approach. This produces LOS F for the resulting separate left turn lane.
2. Prohibit eastbound left turn and divert to U-turn at Fieldstone Parkway. This produces LOS B for the eastbound approach with a slight increase in delay at the Rt. 30/Fieldstone Parkway intersection.
3. Widen Rt. 30 to four lanes. With wide median and yield bar treatments in the median, this produces LOS C for the eastbound approach.

CONCLUSIONS

The proffered improvements by Stonehouse and Hazelwood Farms at four intersections on Rt. 30 accommodates all future traffic. Moss Creek access on Rt. 30 is under designed and warrants further consideration during development plan review. If traffic on Barnes Road at Rt. 30 becomes a problem, the problem eastbound left turns can be diverted to the Rt. 30/Fieldstone Parkway to be constructed Stonehouse and Hazelwood Farms developments.

REPORT
EXHIBITS





HAZELWOOD FARMS
REGIONAL AND AREA MAPS

DRW Consultants, LLC
804-794-7312

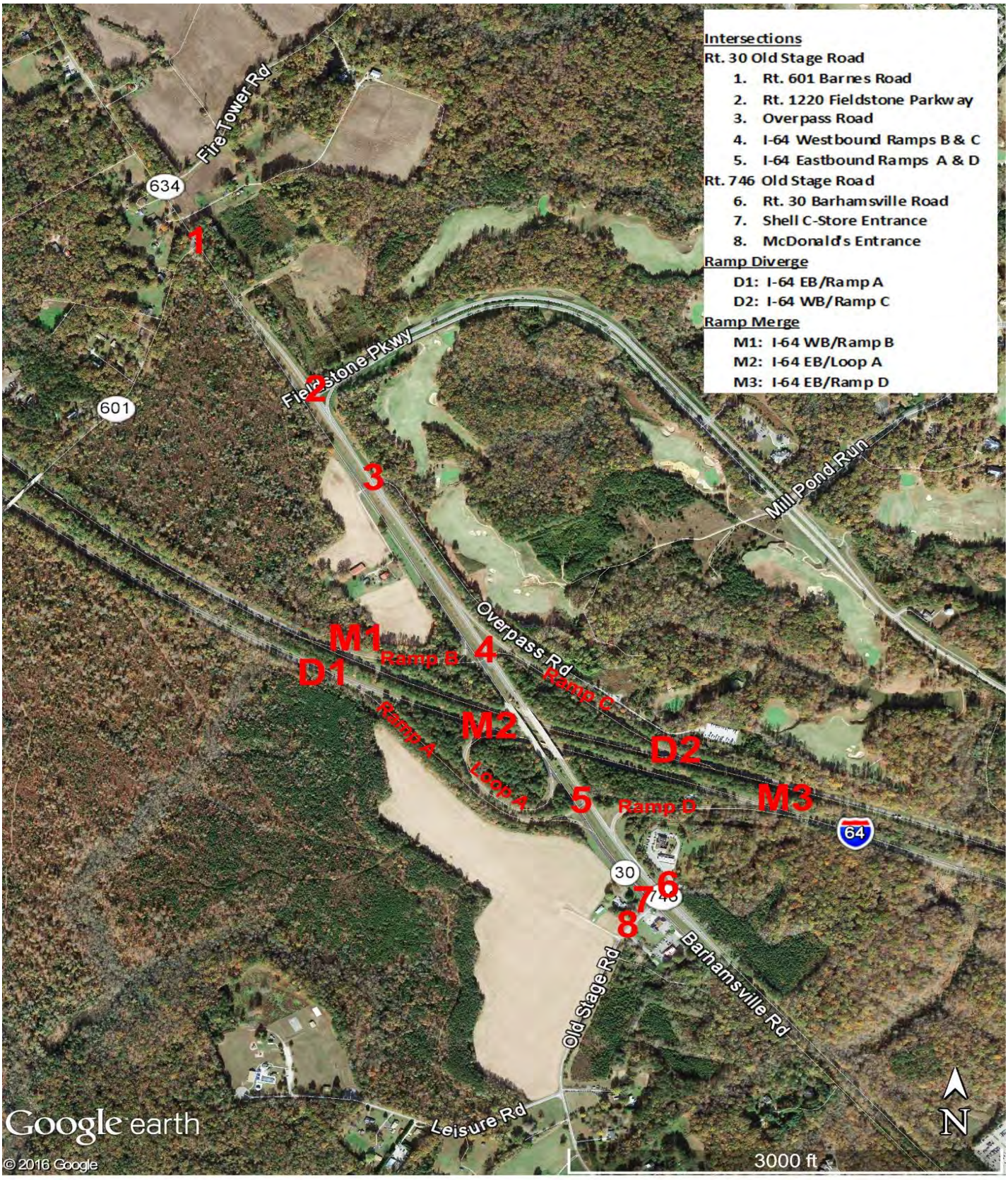
Exhibit 1a



HAZELWOOD FARMS
AREA PARCEL MAP

DRW Consultants, LLC
804-794-7312

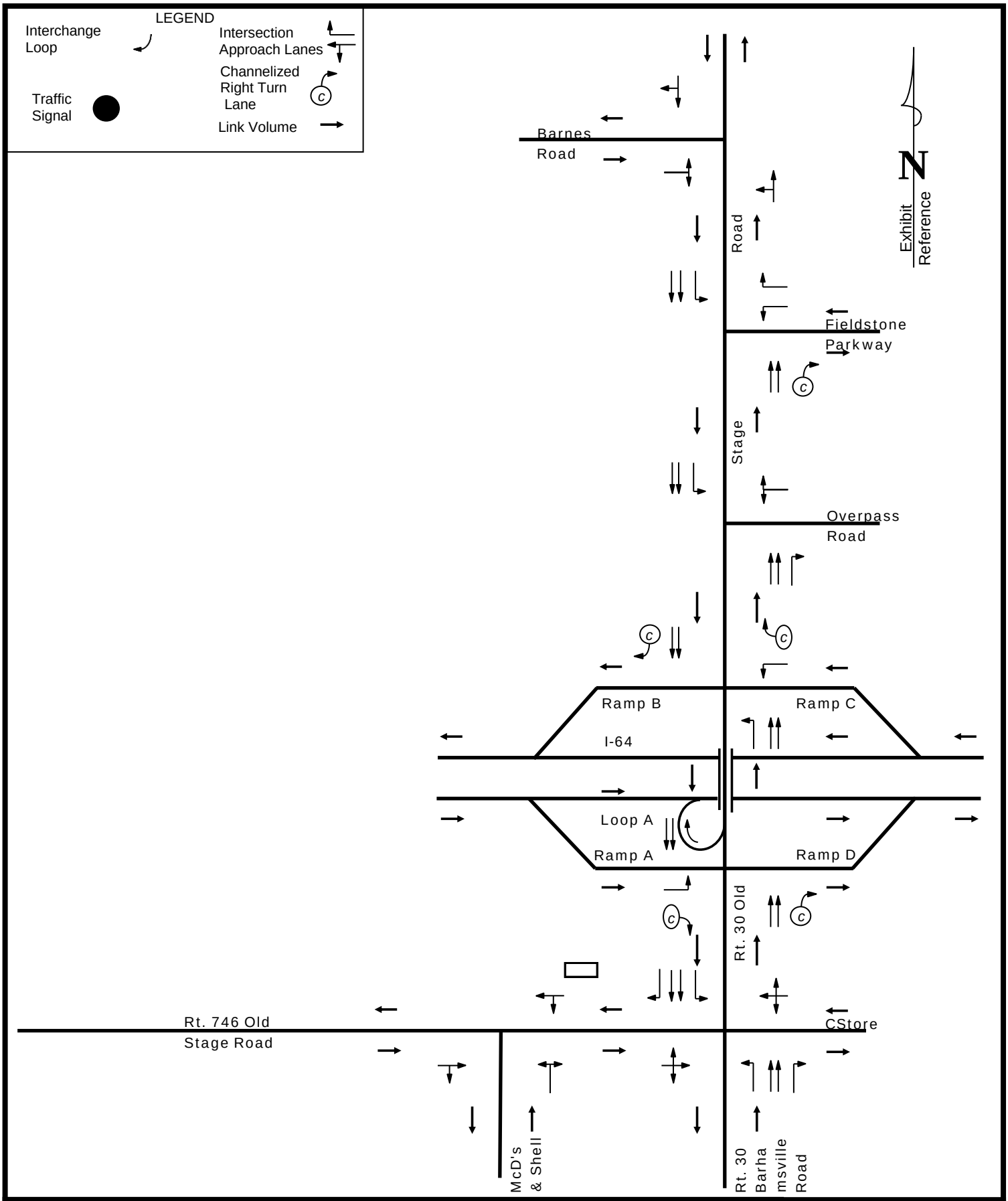
Exhibit 1b



HAZELWOOD FARMS
PEAK HOUR COUNT LOCATIONS

DRW Consultants, LLC
804-794-7312

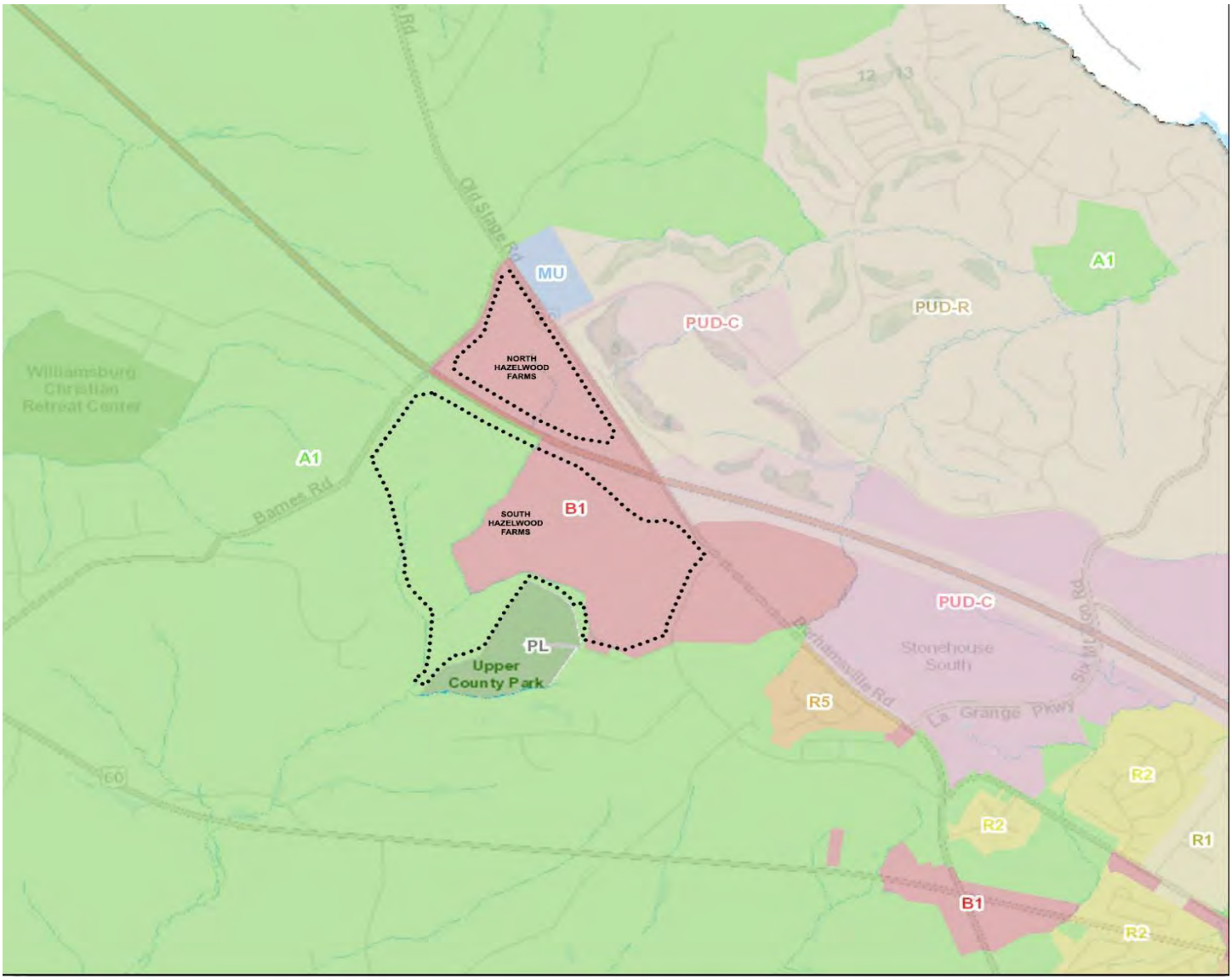
Exhibit 1c



HAZELWOOD FARMS
EXISTING ROADWAYS

DRW Consultants, LLC
804-794-7312

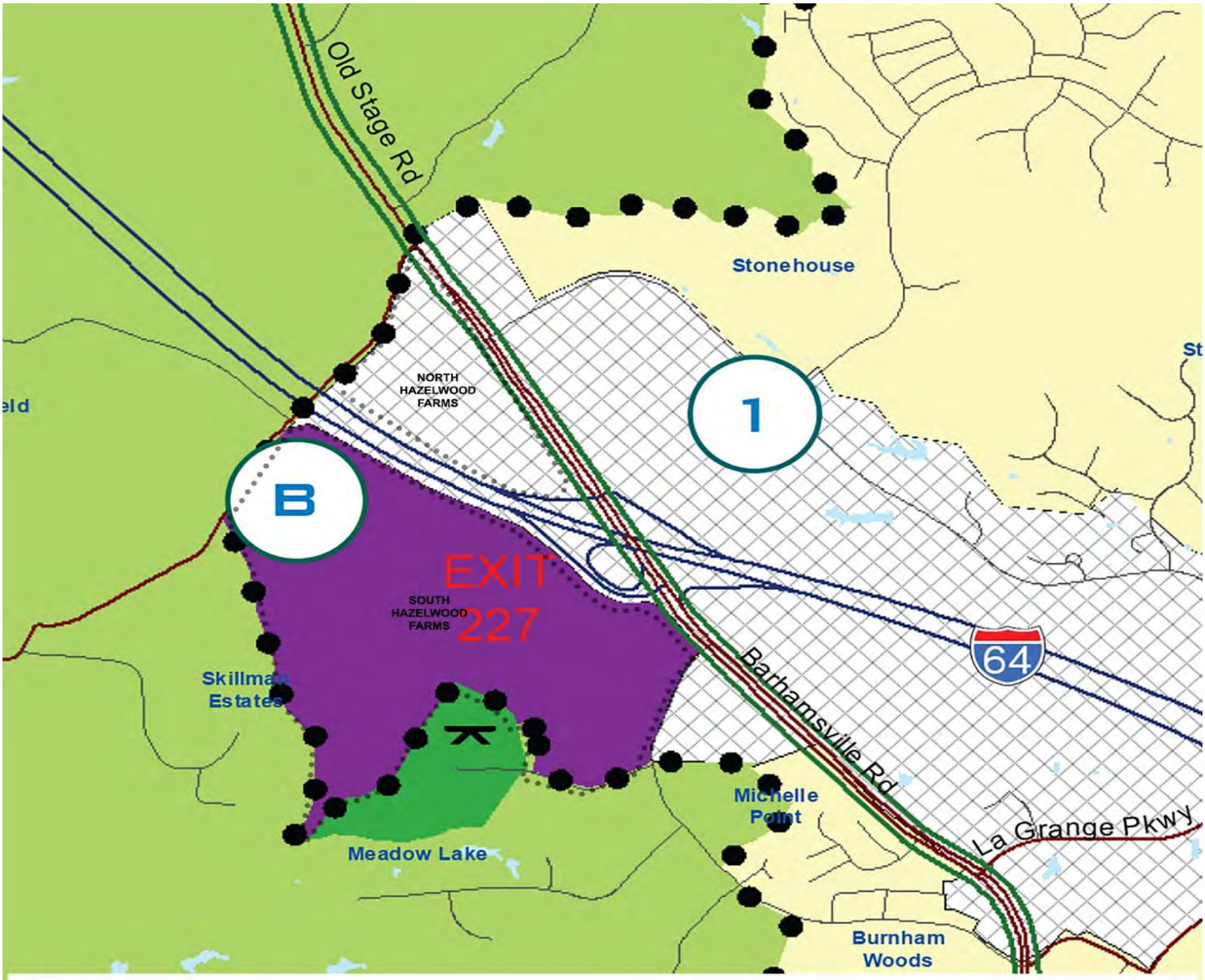
Exhibit 1d



HAZELWOOD FARMS
EXISTING ZONING

DRW Consultants, LLC
804-794-7312

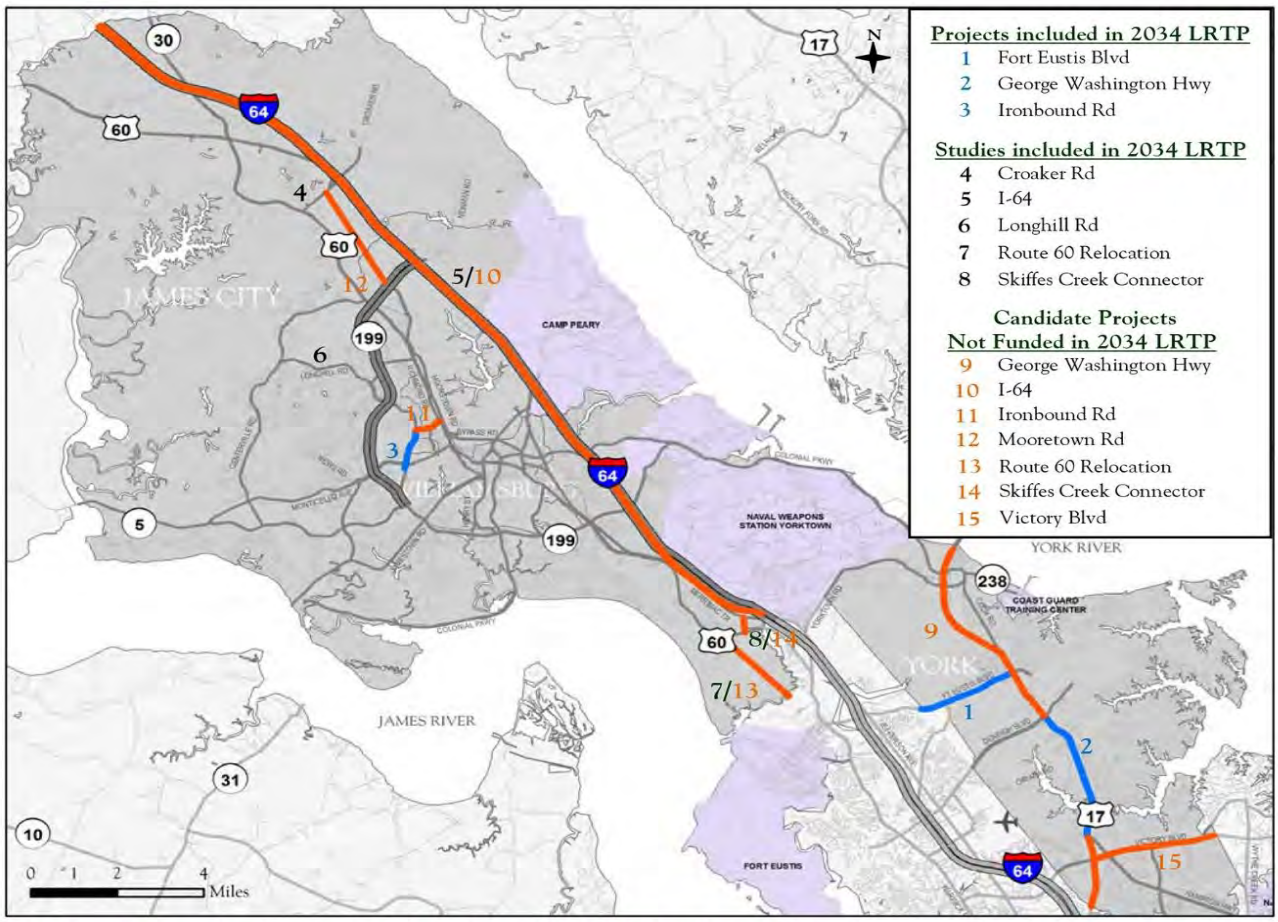
Exhibit 1e



HAZELWOOD FARMS
JAMES CITY COUNTY 2035 LAND USE MAP

DRW Consultants, LLC
804-794-7312

Exhibit 1f



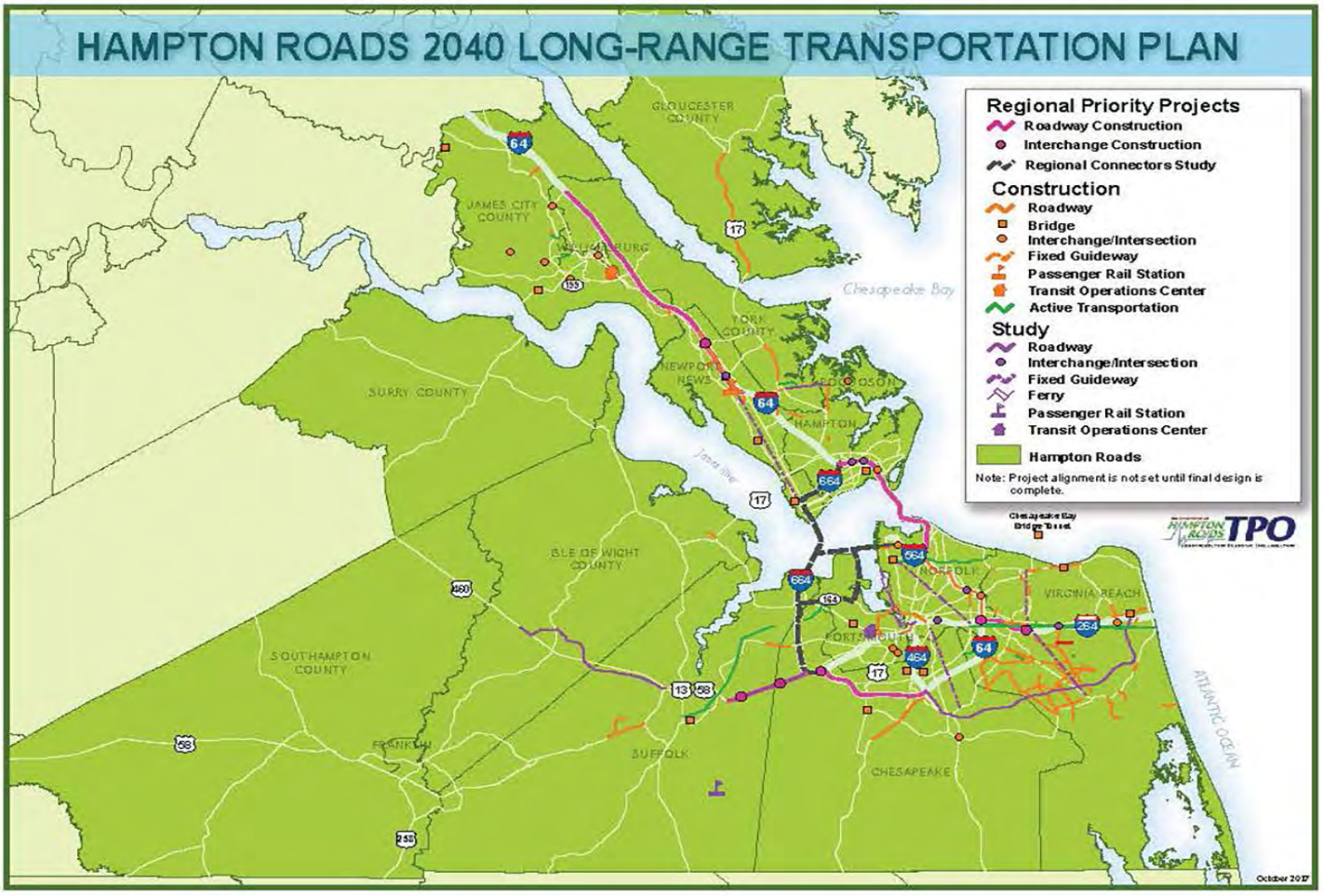
Map 8 – Projects/Studies Included in the 2034 LRTP and Candidate Projects Not Funded in the 2034 LRTP

Data Source: HRTPO.

2034 LONG RANGE TRANSPORTATION PLAN
JAMES CITY COUNTY/WILLIAMSBURG/YORK COUNTY
COMPREHENSIVE TRANSPORTATION STUDY
HAMPTON ROADS TPO MARCH 2012

DRW Consultants, LLC
804-794-7312

Exhibit 1g-1



HAMPTON ROADS 2040 LONG-RANGE TRANSPORTATION PLAN
HAMPTON ROADS TPO

DRW Consultants, LLC
804-794-7312

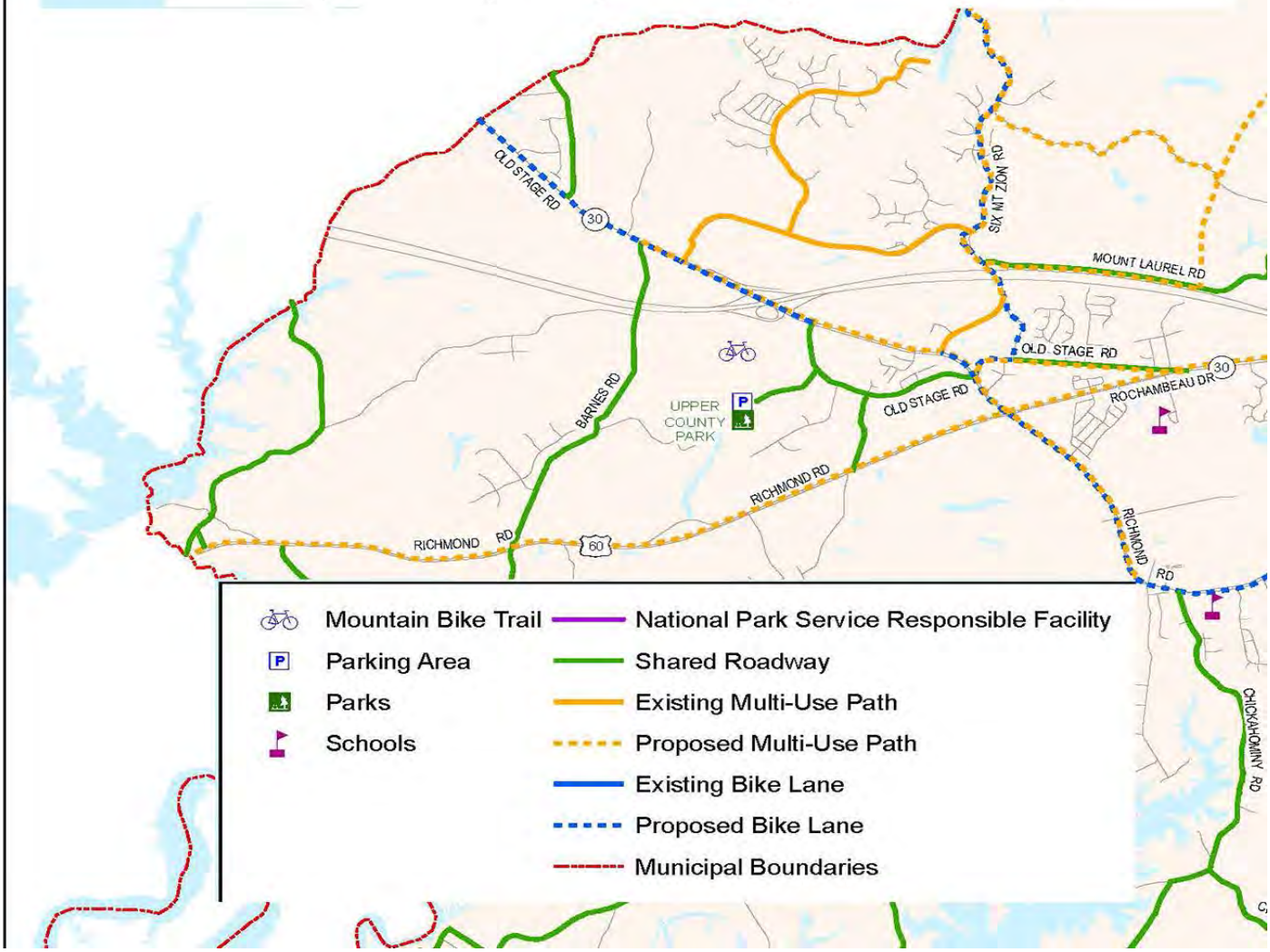
Exhibit 1g-2

Regional Bikeways

James City County, Williamsburg, and York County, Virginia

Adopted by City of Williamsburg City Council 6/10/93
Adopted by York County Board of Supervisors 6/17/93
Adopted by James City County Board of Supervisors 6/21/93

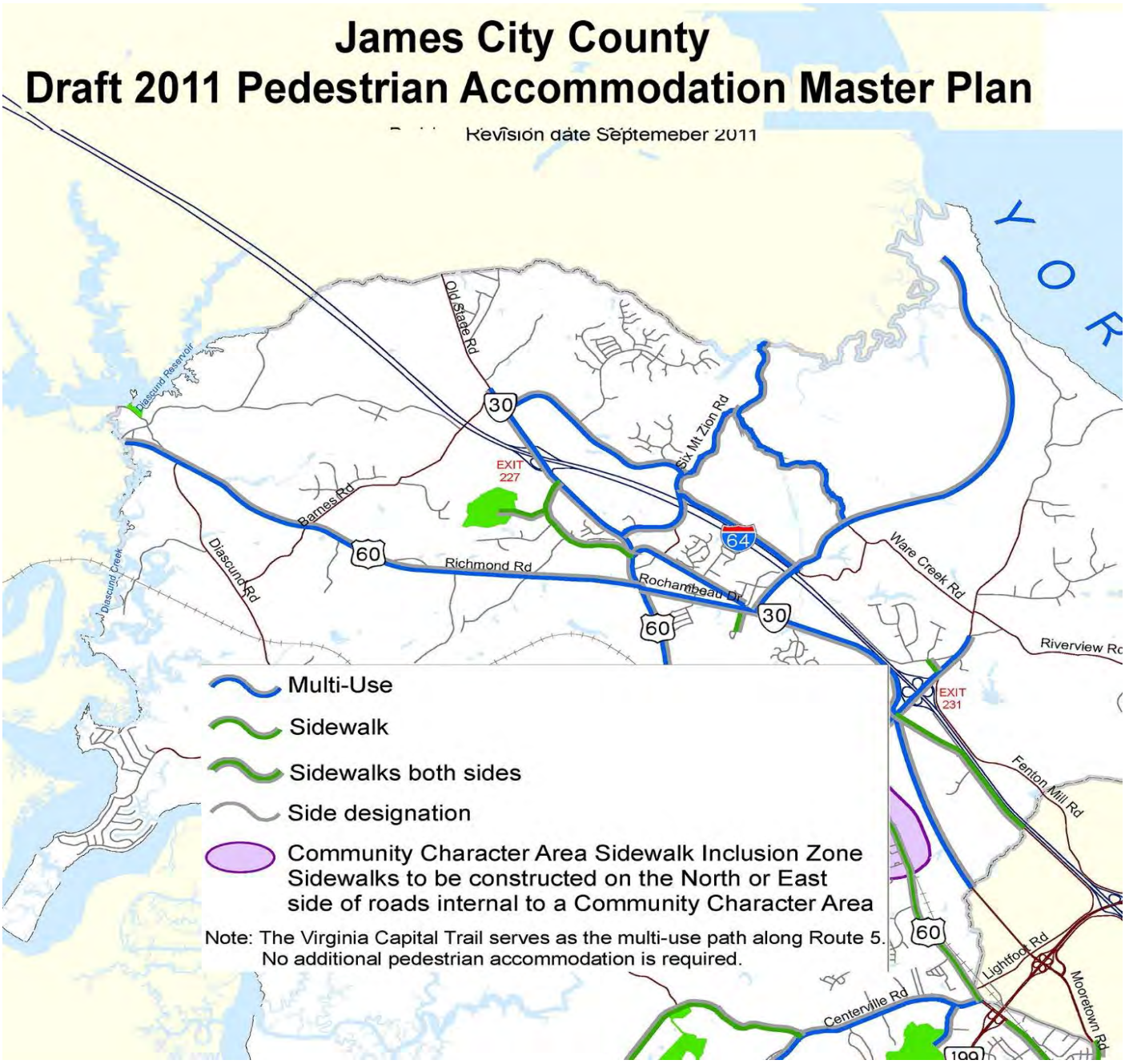
Revised by City of Williamsburg City Council 11/12/98, 10/12/06, **1/10/13**
Revised by York County Board of Supervisors 10/6/99, 12/6/05, **9/3/13**
Revised by James City County Board of Supervisors 11/10/98, **9/10/13**



REGIONAL BIKEWAYS
JAMES CITY COUNTY , WILLIAMSBURG, AND YORK COUNTY
REVISED 2013

DRW Consultants, LLC
804-794-7312

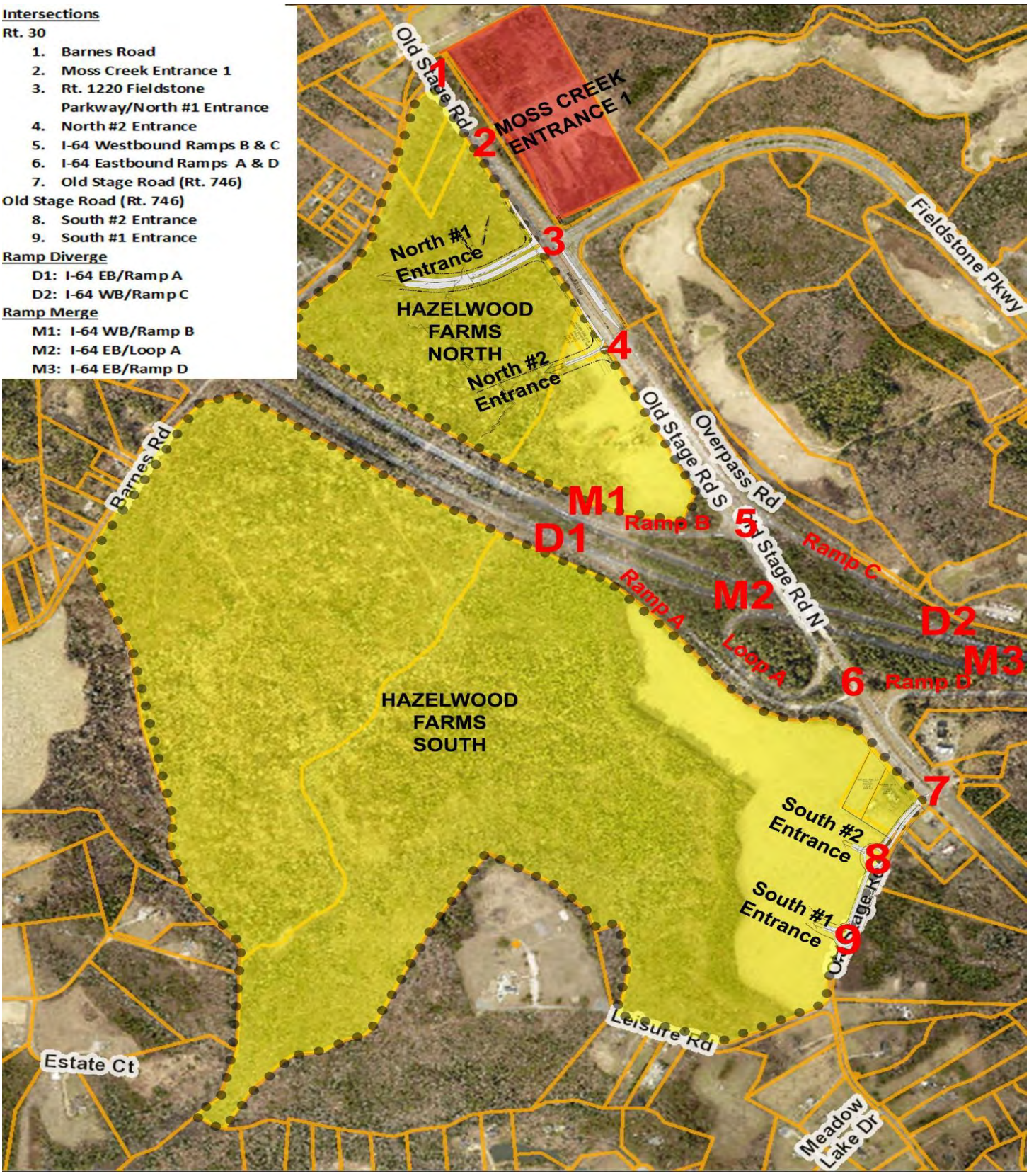
Exhibit 1g-3



JAMES CITY COUNTY
DRAFT 2011 PEDESTRIAN
ACCOMMODATION MASTER PLAN

DRW Consultants, LLC
804-794-7312

Exhibit 1g-4



HAZELWOOD FARMS
PEAK HOUR ANALYSIS LOCATIONS

DRW Consultants, LLC
804-794-7312

Exhibit 1h

NEW KENT COUNTY

YORK RIVER

TRACT 8

TRACT 7

TRACT 6

TRACT 5

TRACT 4

TRACT 3

TRACT 2

TRACT 1A

TRACT 1B

TRACT 9

TRACT 10A

TRACT 10B

TRACT 11A

TRACT 11B

TRACT 12

TRACT 13

SCHOOL

LAND BAY 14

LB 1

LB 3

LB 5

LB 8

NORTH HAZELWOOD FARMS

SOUTH HAZELWOOD FARMS

FUTURE PARKWAY

FIELDSTONE PKWY

A GRANGE PKWY (RT 1045)

EXIT 227

INTERSTATE 64

FIRE TOWER RD (RT 634)

OLD STAGE RD (RT 30)

OLD STAGE RD (RT 746)

BARHAMSVILLE RD (RT 30)

RICHMOND RD (RT 60)

ROCHAMBEAU DR (RT 30)

SPLITWOOD RD

RIDGE RD

CIDER HOUSE RD

OLD GROVE LN

RIDGE DR

LEATHERLEAF DR

MILL POND RUN

SIX MT ZION RD (RT 600)

WARE CREEK RD (RT 606)

MT LAUREL RD (RT 608)

SYCAMORE LANDING RD (RT. 607)

CROAKER LANDING RD (RT. 605)

CROAKER RD (RT. 607)

MASSENA DR

WOODLAND RD

NAD 83

HATCH LEGEND

- PHASE 1
- PHASE 2
- PHASE 3
- PHASE 4

SCALE 1"=1,000'

0 1,000' 2,000'

THIS DRAWING PREPARED AT THE
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TEL 804.200.6500 FAX 804.560.1016 www.timmons.com

YOUR VISION ACHIEVED THROUGH OURS.

TIMMONS GROUP

REVISION DESCRIPTION

DATE

DATE 3-12-2015

DRAWN BY A.CAMPBELL

DESIGNED BY S. WORTHINGTON

CHECKED BY

SCALE 1"=1,000'

STONEHOUSE

STONEHOUSE DISTRICT - JAMES CITY COUNTY - VA

DEVELOPMENT PHASING PLAN

EXHIBIT 1i

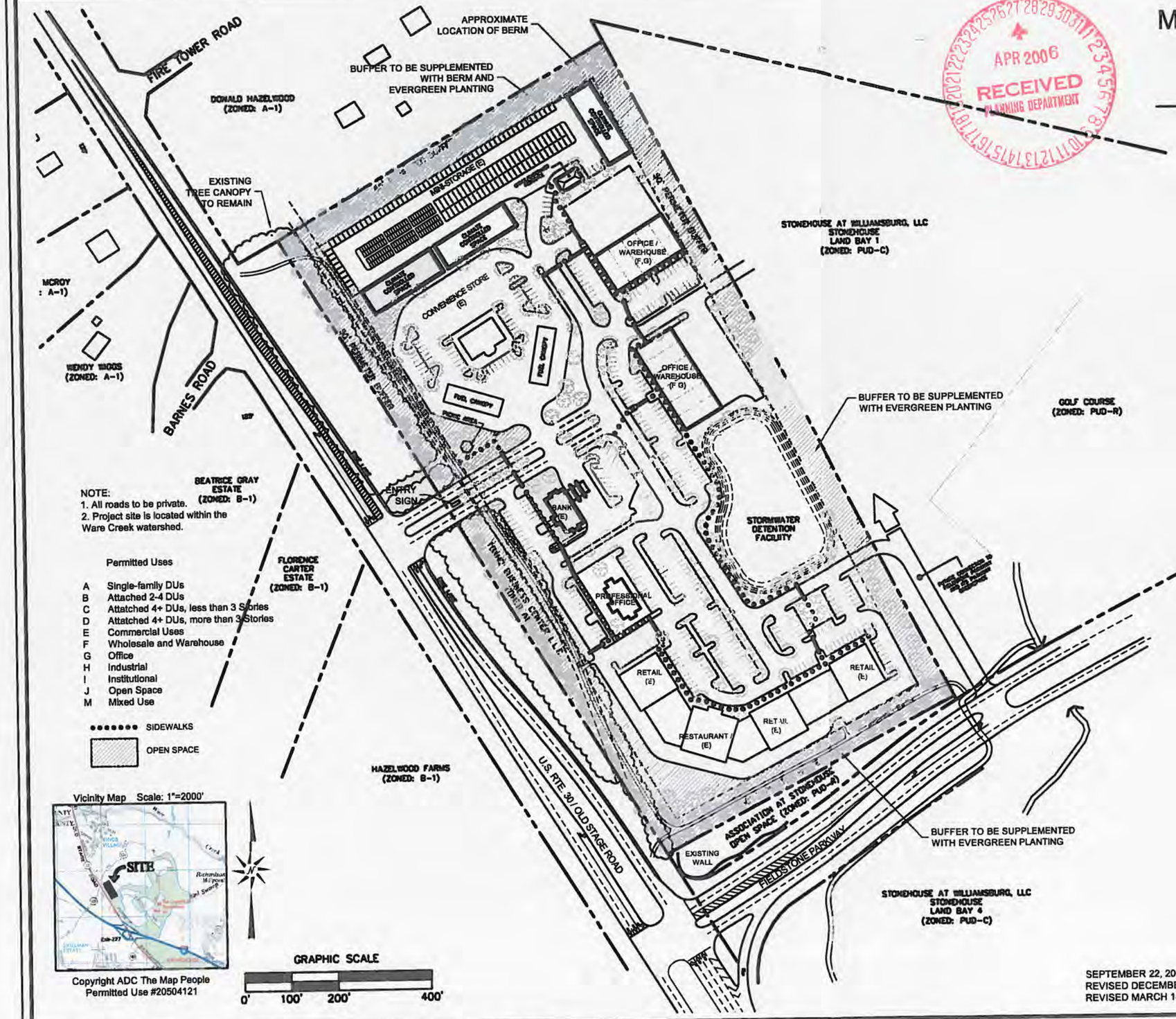
JOB NO. 34549

SHEET NO. 1 OF 1

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G:\30034549-Stonehouse\Civil\DWG\34549_GIS_PHASING_-15-03-12.dwg | Plotted on 3/12/2015 10:35 AM | by Steve Worthington

Z-12-05 BOS adopted 5/9/06



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APR 2006
RECEIVED
PLANNING DEPARTMENT

PROPOSED MASTER PLAN
MOSS CREEK COMMERCE CENTRE
AT STONEHOUSE

9690 OLD STAGE ROAD
JAMES CITY COUNTY, VIRGINIA

SITE SUMMARY:

PARCEL ID #:	0440100004 and 044010034
GROSS SITE AREA:	21.9 AC +/-
NET DEVELOPABLE AREA:	21.9 AC.+/-
EXISTING ZONING:	A1 (GENERAL AGRICULTURAL)
PROPOSED ZONING:	MU (MIXED USE)
PERIMETER BUFFER REQU'D.:	50'
MIN. LOT SIZE, FRONT YARD:	N/A
REAR YARD AND SIDE YARD:	N/A
OPEN SPACE REQU'D.:	10% (2.19 AC. +/-)
OPEN SPACE PROVIDED:	2.19 AC. +
NON-RESIDENTIAL FLOOR AREA.:	3.1 AC
FLOOR AREA DENSITY:	.14
IMPERVIOUS COVER:	9.5 +/-AC (43%+/-)

PROGRAM SUMMARY:

- 3,574 S.F. BANK WITH 3 DRIVE-THRU LANES
- 3,910 S.F. CONVENIENCE STORE WITH FUELING
- 54,250 S.F. MINI-STORAGE FACILITY:
  - ~ 3-CLIMATE CONTROLLED BUILDINGS
  - ~ 5' X 10' STORAGE SPACE (120 IUNITS)
  - ~ 10' X 20' STORAGE SPACE (28 UNITS)
  - ~ 10' X 15' STORAGE SPACE (60 UNITS)
  - ~ 10' X 25' STORAGE SPACE (28 UNITS)
  - ~ OFFICE/CARETAKER BLDG.
- 44,475 S.F. RETAIL WITH RESTAURANT ANCHOR
- 26,400 S.F. OFFICE/WAREHOUSE SPACE
- 3,628 S.F. PROF. OFFICE BLDG.

NOTE: ALL QUANTITIES ARE APPROXIMATE, BASED ON ASSUMED BOUNDARY, TOPOGRAPHIC AND PHYSICAL FEATURES INFORMATION. LANDSCAPING IS SHOWN FOR ILLUSTRATIVE PURPOSES ONLY.

Parking Calculations

	Formula	Qty.	Required
Bank	1 per 250 s.f.	3,574 s.f.	14
Convenience Store	1 per 250 s.f.	3910 s.f.	16
Retail	1 per 200 s.f.	*29,358 s.f.	147
Office**	1 per 250 s.f.	11,428 s.f.	45
Mini-Storage & Climate Storage	1 per 100 Units & 2 per caretaker residence	236 Units & 1 res.	4
Restaurant	1 per 250	7,777 s.f.	31
Warehouse	1 per 2 employees	T.B.D.	-

TOTAL PARKING PROVIDED: 355

EXHIBIT
1j

* BASED ON NET AREA EQUAL TO 80% OF GROSS AREA
** INCLUDES PROF. OFFICE AND 1/2 S.F. OF OFFICE/WAREHOUSE
(Calculations are approximate, may change with final site plan)

SEPTEMBER 22, 2004
REVISED DECEMBER 28, 2005
REVISED MARCH 14, 2006

Job # 2004085-000.00
LFV Drawing # 15818W

LANDMARK DESIGN GROUP
Engineers • Planners • Surveyors
Landscape Architects • Environmental Consultants
4029 IRONBOUND ROAD SUITE 100
WILLIAMSBURG, VIRGINIA
(757) 253-2075 FAX: (757) 229-0049

EXHIBIT 2a

EXHIBIT 2b

EXHIBIT 2c

EXHIBIT 2d

EXHIBIT 2e

EXHIBIT 2f

STA 290+00
STA 295+00
STA 300+00
STA 305+00
STA 310+00
STA 315+00
STA 320+00
STA 325+00
STA 330+00
STA 335+00
STA 340+00
STA 345+00
STA 350+00
STA 355+00
STA 360+00
STA 365+00
STA 370+00
STA 375+00
STA 380+00

TELEGRAPH ROAD
OLD STAGE ROAD
OVERPASS ROAD
WEST BOUND
INTERSTATE 64
EAST BOUND
BARNES ROAD
BARHAMSVILLE ROAD
OLD STAGE ROAD
8' MULTI-USE TRAIL
LISBURE ROAD

BRIDGE DECK
BRIDGE DECK

GRAPHIC SCALE
300' 0' 300' 600'
SCALE: 1" = 300'

N

Revised	Description	Rev.	Date

AES CONSULTING ENGINEERS
5248 Olde Towne Road, Suite 1
Williamsburg, Virginia 23188
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Fax: (757) 220-8994
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Hampton Roads | Central Virginia | Middle Peninsula

HAZELWOOD FARM
EXHIBIT INDEX

JAMES CITY COUNTY VIRGINIA

STONEHOUSE DISTRICT

Project Contacts:	JAG
Project Number:	W10325-01
Scale: 1"=300'	Date: 2/7/19

Sheet Title:

OVERALL EXHIBITS

Sheet Number
2

S:\JOB\W10325\01\Hazlewood Farms #3 xrefs\Plans\Master Planning\Exhibits for ID #\Master\W10325-01-Overall Exhibit.dwg, 2/8/2019 2:58:56 PM, mlevins

STA 295+00

STA 300+00

STA 305+00

STA 310+00

STA 315+00

STA 320+00

STA 325+00

STA 330+00

STA 335+00

MOSS CREEK ENTRANCE #2

ENTRANCE #1

MOSS CREEK

FIELDSTONE PKWY
STATE ROUTE 1531

OLD STAGE ROAD
STATE ROUTE 30

NORTH #1 ENTRANCE

NORTH #2 ENTRANCE

OVERPASS ROAD

BARNES ROAD
STATE ROUTE 801

RAMP A

RAMP B

RAMP C

INTERSTATE 64

WEST BOUND

EAST BOUND

NORTH BOUND

SOUTH BOUND

N/F
MOSS CREEK MARKET PLACE LLC
9686 OLD STAGE RD
PARCEL ID:
0440100034

N/F
ASSOCIATION AT STONEHOUSE INC (THE)
9330 FIELDSTONE PARKWAY
PARCEL ID:
0440100024B
ZONED PR PUD RESIDENTIAL

N/F
ASSOCIATION AT STONEHOUSE INC
9300 FIELDSTONE PARKWAY
PARCEL ID:
0440100027
ZONED PC PUD RESIDENTIAL

STONEHOUSE

N/F
EVELAND, JOSEPH ROGER
9595 BARNES RD
PARCEL ID:
0430100006A
ZONED A-1

N/F
STEWART, LOIS W & JAMES E
9593 BARNES RD
PARCEL ID:
0430100008
ZONED A-1

N/F
STEWART, LOIS W & JAMES E
9591 BARNES RD
PARCEL ID:
0430100009
ZONED A-1

N/F
STEWART, LOIS W & JAMES E
9583 BARNES RD
PARCEL ID:
0430100010
ZONED A-1

N/F
NEFF, BARRY F JR
9567 BARNES RD
PARCEL ID:
0430200005
ZONED A-1

N/F
SHAVE, NORRIS L
9563 BARNES RD
PARCEL ID:
0430200004
ZONED A-1

N/F
STAVROU COMPANY LLC C/O
CHARITA STAVROU
9557 BARNES RD
PARCEL ID:
0430200003
ZONED A-1

N/F
STAVROU COMPANY LLC C/O
CHARITA STAVROU
9551 BARNES RD
PARCEL ID:
0430200002
ZONED A-1

N/F
STAVROU COMPANY LLC C/O
9547 BARNES RD
PARCEL ID:
0430200001
ZONED A-1

50' LANDSCAPE BUFFER

AREA 1

AREA 2

AREA 3

AREA 4

PROPOSED TRAFFIC SIGNAL

PEDESTRIAN CROSSING

200' TAPER

200' RTL

RIGHT IN/RIGHT OUT

LIMITS OF WETLANDS

100' RPA BUFFER

WETLANDS 9.31 AC.

RPA BUFFER

100' LANDSCAPE BUFFER

GRAPHIC SCALE
100' 0' 100' 200'
SCALE: 1" = 100'

N

Rev.	Date	Description	Revised

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NORTH HAZELWOOD FARM
LAND USE PLAN

JAMES CITY COUNTY VIRGINIA

STONEHOUSE DISTRICT

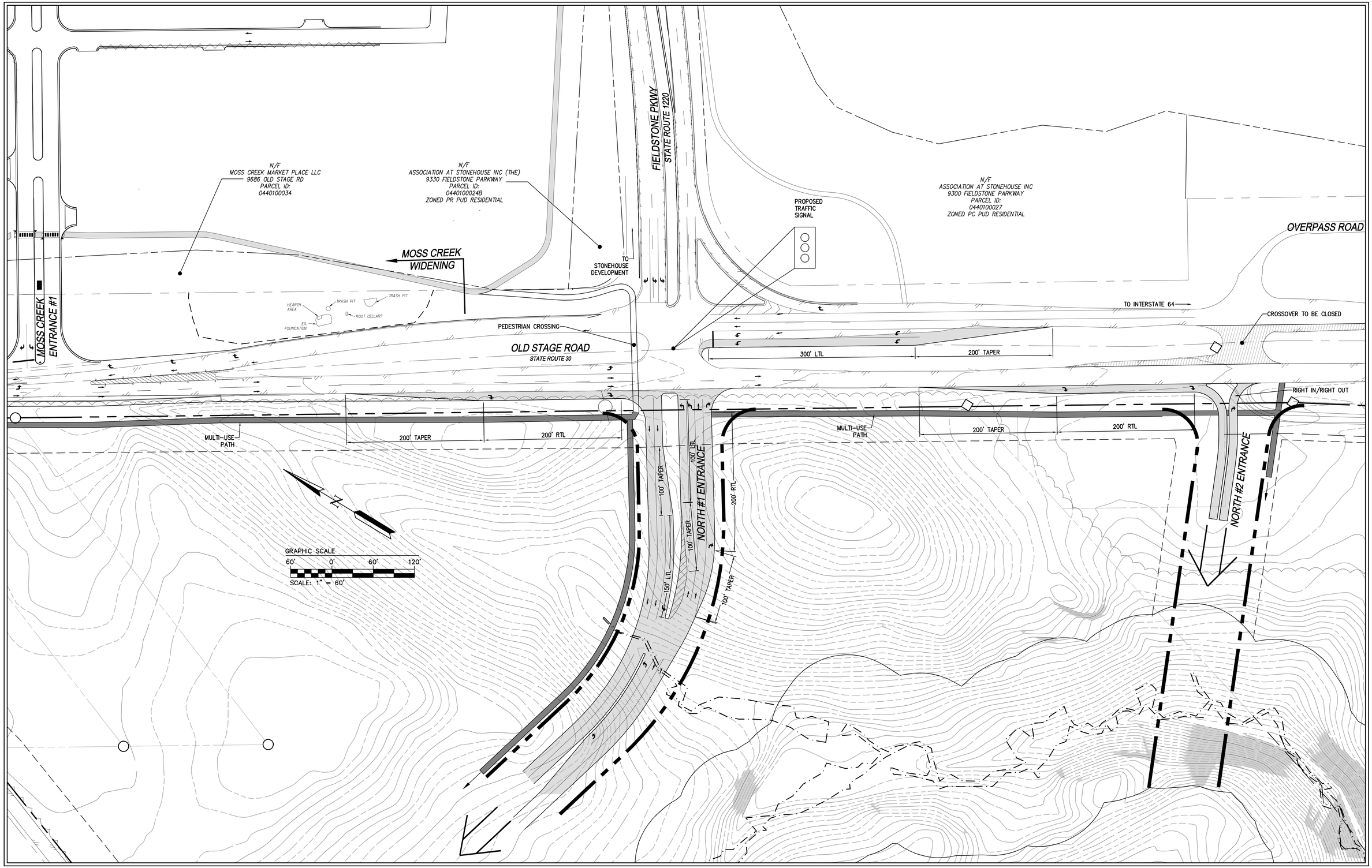
Project Contacts:	JAG
Project Number:	W10325-01
Scale: 1"=100'	Date: 2/7/19

Sheet Title:

NORTH EXHIBIT

Sheet Number
2a

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Rev.	Date	Description	Revised By

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NORTH HAZELWOOD FARM
ACCESS PLAN

STONEHOUSE DISTRICT JAMES CITY COUNTY VIRGINIA

Project Contacts:	JAG
Project Number:	W10325-01
Scale: 1"=60'	Date: 2/7/19
Sheet Number	NORTH EXHIBIT 2b

WEST BOUND
INTERSTATE 64
EAST BOUND
RAMP B
RAMP A
LOOP A
RAMP D
STA 345+00
STA 350+00
STA 355+00
STA 360+00
STA 365+00
STA 370+00
PROPOSED TRAFFIC SIGNAL
PROPOSED TRAFFIC SIGNAL
C-STORE ACCESS
BARNES ROAD
STATE ROUTE 601
BARHAMSVILLE ROAD
STATE ROUTE 30
OLD STAGE ROAD
LEISURE ROAD
AREA 1
AREA 2
AREA 3
AREA 4
AREA 5
AREA 6
AREA 7
SOUTH #1 ENTRANCE
SOUTH #2 ENTRANCE
SECONDARY ACCESS
100' LANDSCAPE BUFFER
100' RPA BUFFER
50' BUFFER
50' LANDSCAPE BUFFER
LIMITS OF WETLANDS
MULTI-USE PATH
MULTI-USE PATH TO BARNES ROAD
PROPOSED ACCESS ROAD
PEDESTRIAN ACCESS
N/F LOEBS, STEPHANIE M. 101 RACEFIELD DR. PARCEL ID: 0430500010 ZONED A-1
N/F NESS, MICHAEL REID & BONNIE BREEDEN 9427 BARNES RD PARCEL ID: 0430500009 ZONED A-1
N/F GRAHAM, MARDINE 9409 BARNES RD PARCEL ID: 0430500002 ZONED A-1
N/F HILL, JAMES H. & DAPHNE P. 9403 BARNES RD PARCEL ID: 0430500005 ZONED A-1
N/F SMITH, WILLIAM E. & BETTY A. PARCEL ID: 0430500004 ZONED A-1
N/F DILLARD, ROBERT S & HELEN HOPE 9337 BARNES RD PARCEL ID: 0430500002 ZONED A-1
N/F WALLS, RICHARD R & SHARON PARCEL ID: 0430500001 ZONED A-1
N/F STUPPY, DAVID W 9341 BARNES RD PARCEL ID: 0430500003 ZONED A-1
PAMAKA, LLC PARCEL ID: 0430100016 39.2± AC
N/F KELLEY, DANNY L & R CATHERINE 217 SKILLMAN DR PARCEL ID: 0430400011 ZONED A-1
N/F WHEELER, GEORGE L & S DIANE W 219 SKILLMAN DR PARCEL ID: 0430400018 ZONED A-1
N/F LEIGHTON-HERRMANN, MICHAEL R & MARSH 216 SKILLMAN DR PARCEL ID: 1110200009 ZONED A-1
N/F TYRER, DAVID D & CAROL D 475 BURNHAM RD PARCEL ID: 1110200007 ZONED A-1
N/F JAMES CITY COUNTY 180 LEISURE RD PARCEL ID: 1120100001 ZONED PUBLIC LANDS
JAMES CITY COUNTY UPPER COUNTY PARK
N/F PAUL, ROBERT H 136 LEISURE RD PARCEL ID: 1120100002 ZONED A-1
N/F RUTHERFORD, ROBIN C 129 LEISURE RD PARCEL ID: 1120100005 ZONED A-1
N/F MCCREA, RONDA S TRUSTEE 223 OLD STAGE RD PARCEL ID: 1120100008 ZONED A-1
N/F HUGHES, JACK & HELEN 137 LEISURE RD PARCEL ID: 1120100004 ZONED A-1
N/F LACKS, BENNY L. SR & RACHAEL B 101 LEISURE RD PARCEL ID: 1120100007 ZONED A-1
N/F HAMILTON, FORREST W III ESTATE C/O CLIFTON R MARTIN EXECUTOR 121 LEISURE RD PARCEL ID: 1120100006 ZONED A-1
N/F KIRKLAND, RAYMOND O & KING, SUNI T 210 OLD STAGE RD PARCEL ID: 11201000010A ZONED A-1
N/F HORNSBY INVESTMENT CO. DOUGLAS L. HORNSBY 244 OLD STAGE RD PARCEL ID: 1120100009 ZONED B-1
N/F HORNSBY INVESTMENT CO. DOUGLAS L. HORNSBY 9131 BARHAMSVILLE RD PARCEL ID: 0530100002 ZONED B-1
N/F MCDONALDS CORPORATION C/O DOKO ENTERPRISES 9193 BARHAMSVILLE RD PARCEL ID: 0440100020 ZONED B-1
N/F SMG, INCORPORATED 9201 BARHAMSVILLE RD PARCEL ID: 0440100019 ZONED B-1
N/F HORNSBY OIL CO. 9200 BARHAMSVILLE RD PARCEL ID: 0440100018 ZONED B-1
N/F AMERICAN DYNC HOLDINGS TOANO LLC 9210 OLD STATE RD PARCEL ID: 0440100032 ZONED B-1
N/F AMERICAN DYNC HOLDINGS TOANO LLC 9220 OLD STAGE RD PARCEL ID: 0440100016 ZONED B-1
GRAPHIC SCALE
200' 0' 200' 400'
SCALE: 1" = 200'

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SOUTH HAZELWOOD FARM
LAND USE PLAN

JAMES CITY COUNTY VIRGINIA
STONEHOUSE DISTRICT

Project Contacts:	JAG
Project Number:	W10325-01
Scale: 1"=200'	Date: 2/7/19

Sheet Title: SOUTH EXHIBIT

Sheet Number 2c

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RAMP D

C-STORE ACCESS

350+00 351+00 352+00 353+00 354+00 355+00 356+00 357+00 358+00 359+00 360+00 361+00 362+00 363+00 364+00 365+00 366+00 367+00 368+00 369+00 370+00 371+00 372+00 373+00 374+00 375+00

BARHAMSVILLE ROAD

LIMITED ACCESS BREAK

RAMP A

N/F
SMO, INCORPORATED
9201 BARHAMSVILLE RD
PARCEL ID:
0440100019
ZONED B-1

N/F
MCDONALDS CORPORATION C/O
DOHO ENTERPRISES
9193 BARHAMSVILLE RD
PARCEL ID:
0440100020
ZONED B-1

HAZELWOOD FARMS, LLC
PARCEL ID:
0440100014
1.5± AC
ZONED B-1

GRAPHIC SCALE
80' 0' 80' 160'
SCALE: 1" = 80'

N/F
HORNSBY INVESTMENT CO.
DOUGLAS L HORNSBY
9131 BARHAMSVILLE RD
PARCEL ID:
0530100002
ZONED B-1

SINGLE LANE ROUNDABOUT
(150' OUTSIDE DIAMETER
TO PAVEMENT EDGE)

SOUTH #2 ENTRANCE

EXISTING RIGHT OF WAY

N/F
HORNSBY INVESTMENT CO.
DOUGLAS L HORNSBY
244 OLD STAGE RD
PARCEL ID:
1120100009
ZONED B-1

EXISTING PROPERTY LINE
AND RIGHT OF WAY

MULTI-USE PATH

OLD STAGE ROAD

SOUTH #1 ENTRANCE

SINGLE LANE ROUNDABOUT
(150' OUTSIDE DIAMETER
TO PAVEMENT EDGE)

MULTI-USE PATH

N/F
KIRKLAND, RAYMOND O & KING, SUN T
210 OLD STAGE RD
PARCEL ID:
1120100010A
ZONED A-1

LEISURE ROAD

Rev.	Date	Description	Revised By

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SOUTH HAZELWOOD FARM ACCESS PLAN

STONEHOUSE DISTRICT JAMES CITY COUNTY VIRGINIA

Project Contacts:	JAG
Project Number:	W10325-01
Scale: 1"=80'	Date: 2/7/19

Sheet Title:
SOUTH EXHIBIT

Sheet Number
2d

GRAPHIC SCALE
60' 0' 60' 120'
SCALE: 1" = 60'

N/F
AMERICAN DYNC HOLDINGS
TOANO LLC
9220 OLD STAGE RD
PARCEL ID:
0440100016
ZONED B-1

N/F
AMERICAN DYNC HOLDINGS
TOANO LLC
9210 OLD STAGE RD
PARCEL ID:
0440100032
ZONED B-1

N/F
HORNSBY OIL CO.
DOUGLAS L HORNSBY
9200 BARHAMSVILLE RD
PARCEL ID:
0440100018
ZONED B-1

SIGNALIZED
INTERSECTION
STA 359+58

C-STORE
ACCESS

BEGIN LANE
STA 370+06

1000' ADD ON LANE

660' TAPER

BEGIN TAPER
STA 376+67

358+00 359+00 360+00 361+00 362+00 363+00 364+00 365+00 366+00 367+00 368+00 369+00 370+00 371+00 372+00 373+00 374+00 375+00 376+00 377+00

BARHAMSVILLE ROAD STATE ROUTE 30

EXISTING SIGNAL

N/F
SMO, INCORPORATED
9201 BARHAMSVILLE RD
PARCEL ID:
0440100019
ZONED B-1

N/F
MCDONALDS CORPORATION C/O
DOHO ENTERPRISES
9193 BARHAMSVILLE RD
PARCEL ID:
0440100020
ZONED B-1

HAZELWOOD FARMS, LLC
PARCEL ID:
0440100014
1.5± AC
ZONED B-1

MULTI-USE PATH

N/F
HORNSBY INVESTMENT CO.
DOUGLAS L HORNSBY
9131 BARHAMSVILLE RD
PARCEL ID:
0530100002
ZONED B-1

OLD STAGE ROAD

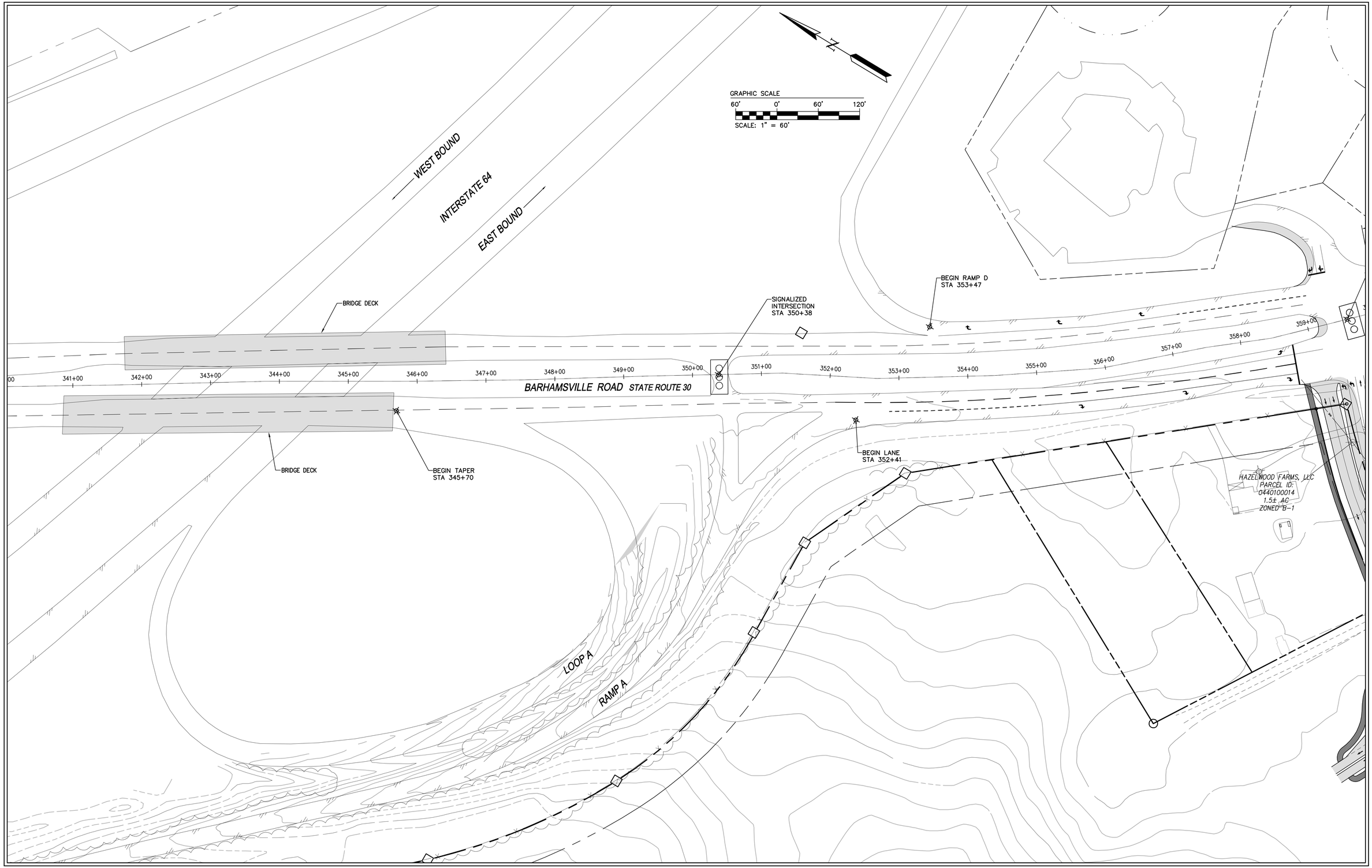
Rev.	Date	Description	Revised By

AES CONSULTING ENGINEERS
5248 Olde Towne Road, Suite 1
Williamsburg, Virginia 23188
Phone: (757) 253-0040
Fax: (757) 220-8994
www.aesva.com
Hampton Roads | Central Virginia | Middle Peninsula

SOUTH HAZELWOOD FARM
ACCESS PLAN

STONEHOUSE DISTRICT JAMES CITY COUNTY VIRGINIA

Project Contacts:	JAG
Project Number:	W10325-01
Scale: 1"=60'	Date: 2/7/19
Sheet Number	SOUTH EXHIBIT 2e



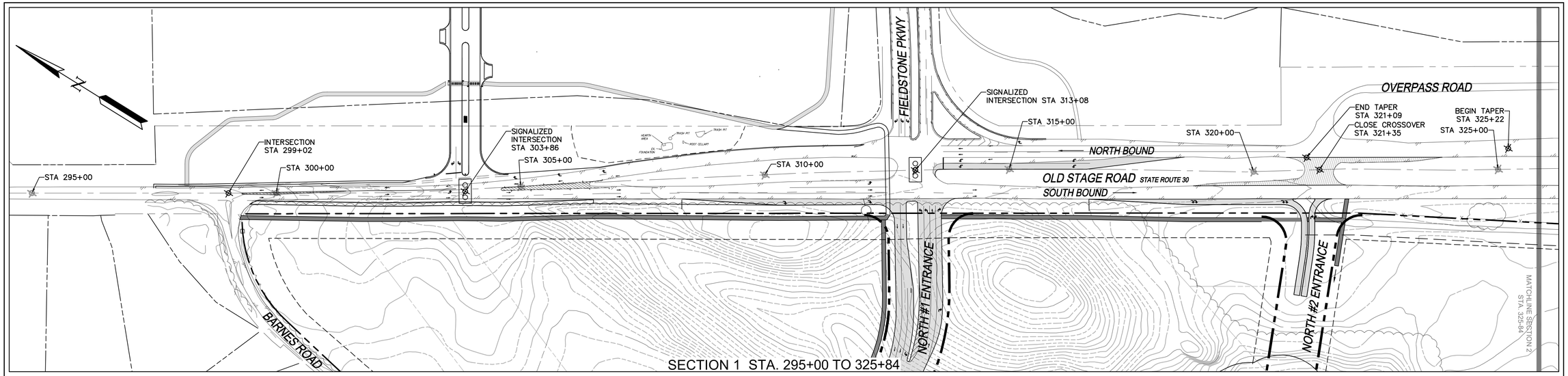
Rev.	Date	Description	Revised By

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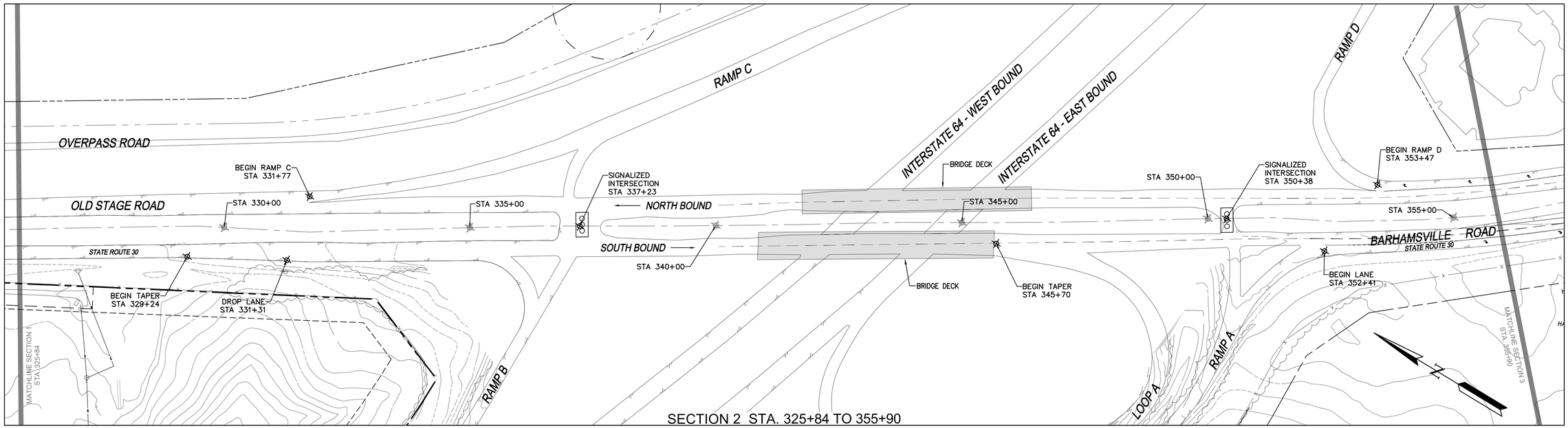
SOUTH HAZELWOOD FARM
ACCESS PLAN

STONEHOUSE DISTRICT JAMES CITY COUNTY VIRGINIA

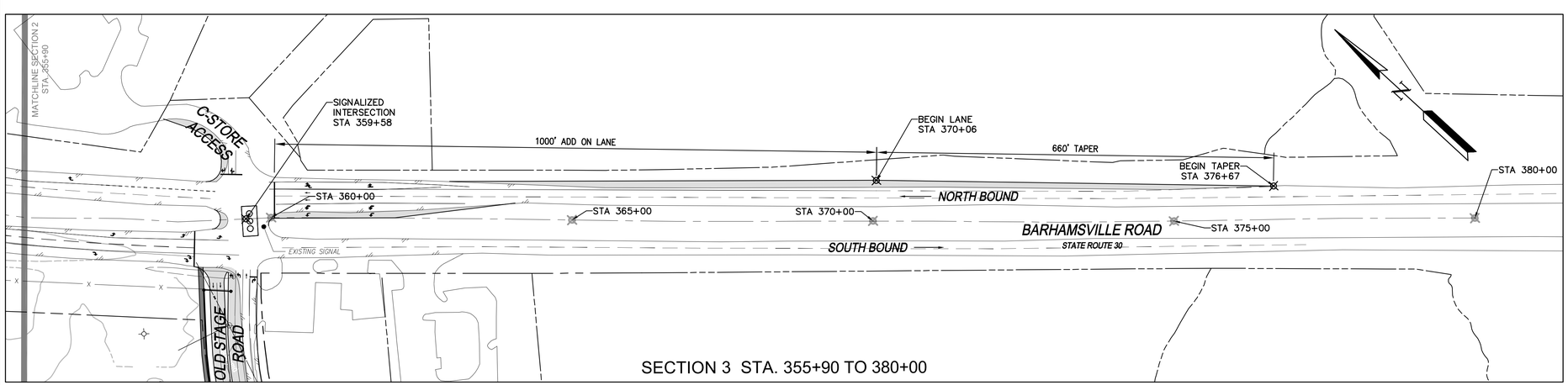
Project Contacts:	JAG
Project Number:	W10325-01
Scale: 1"=60'	Date: 2/7/19
Sheet Number	SOUTH EXHIBIT 2f



SECTION 1 STA. 295+00 TO 325+84



SECTION 2 STA. 325+84 TO 355+90



SECTION 3 STA. 355+90 TO 380+00

GRAPHIC SCALE
100' 0' 100' 200'
SCALE: 1" = 100'

Revised By	Description	Date
Rev.		

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www.aesva.com
Middle Peninsula | Central Virginia | Hampton Roads

HAZELWOOD FARM
RT. 30 STATIONING

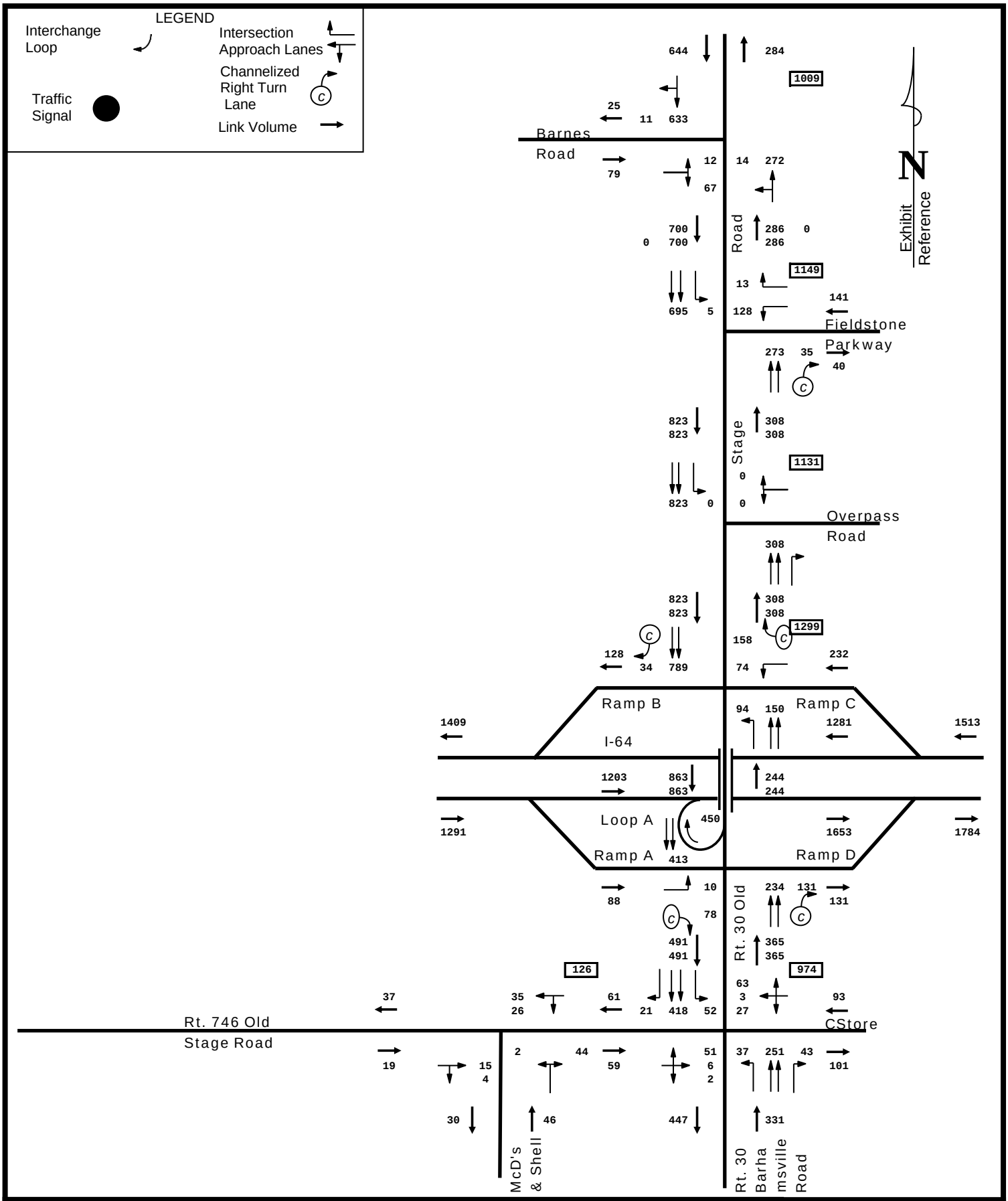
JAMES CITY COUNTY
STONEHOUSE DISTRICT
VIRGINIA

Project Contacts:	JAG
Project Number:	W10325-01
Scale: 1"=100'	Date: 2/7/19

Sheet Title:

ROUTE 30 EXHIBIT

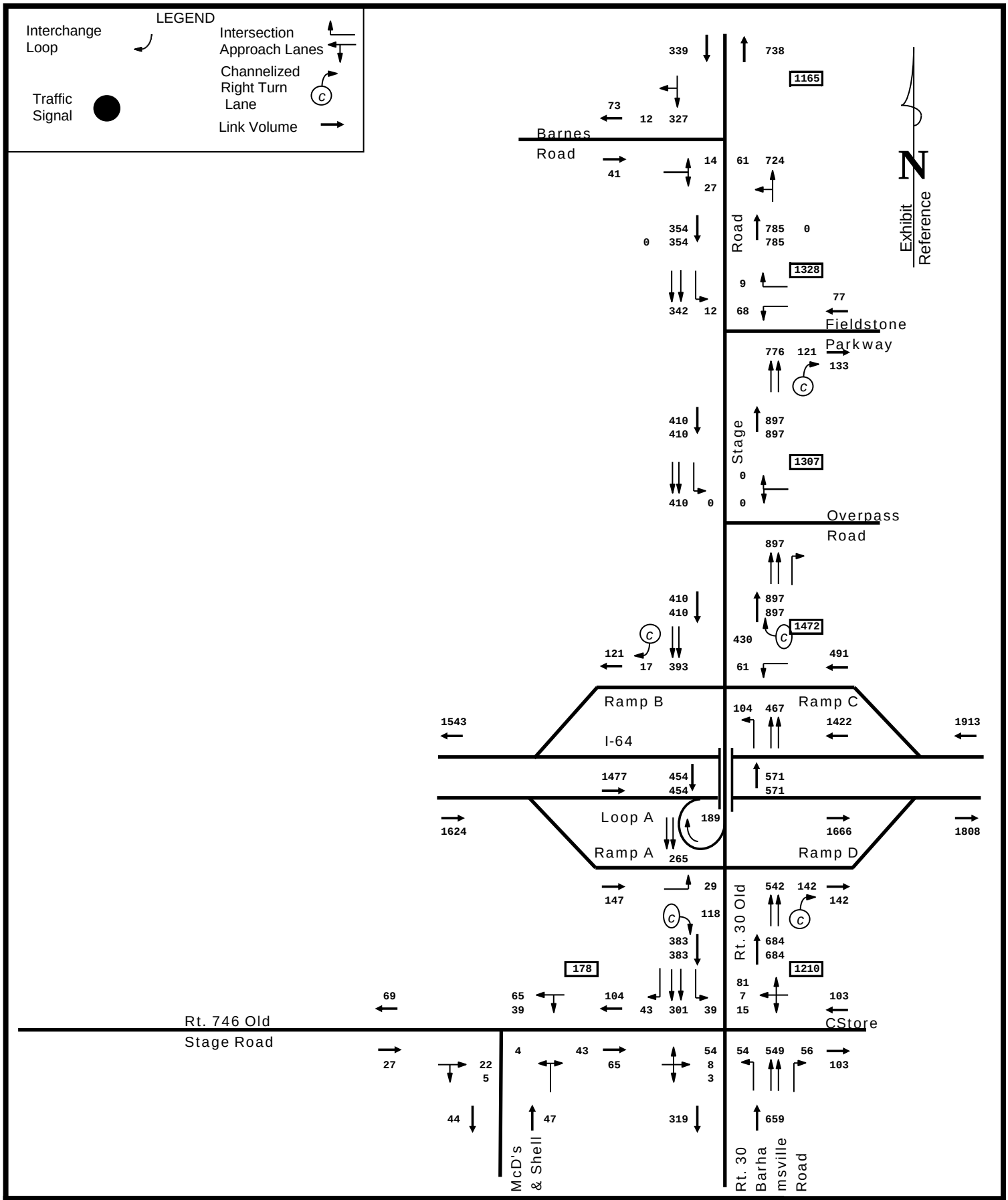
Sheet Number
2g



2017 AM PEAK HOUR COUNTS WITH BALANCE

DRW Consultants, LLC
804-794-7312

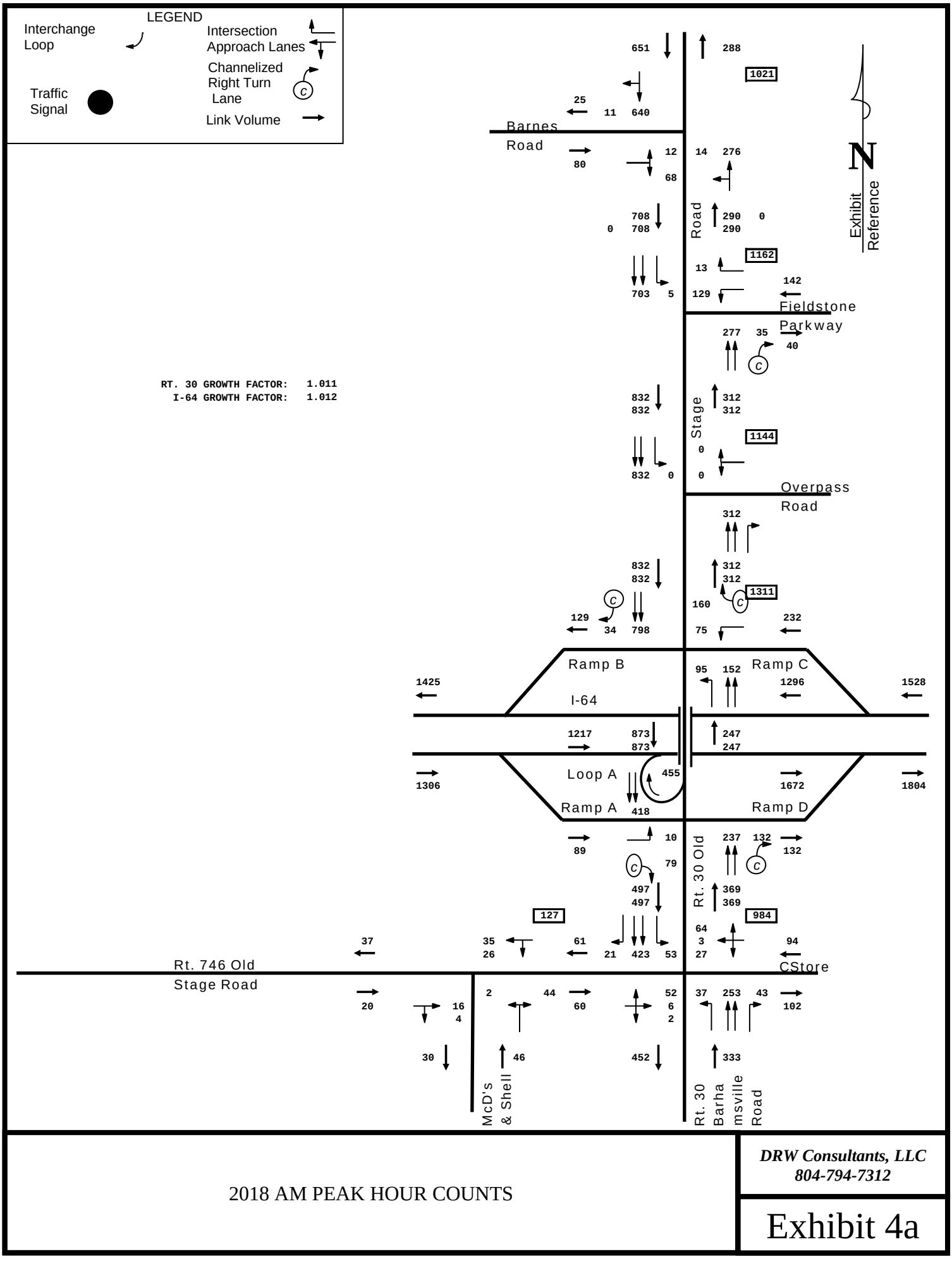
Exhibit 3a



2017 PM PEAK HOUR COUNTS WITH BALANCE

DRW Consultants, LLC
804-794-7312

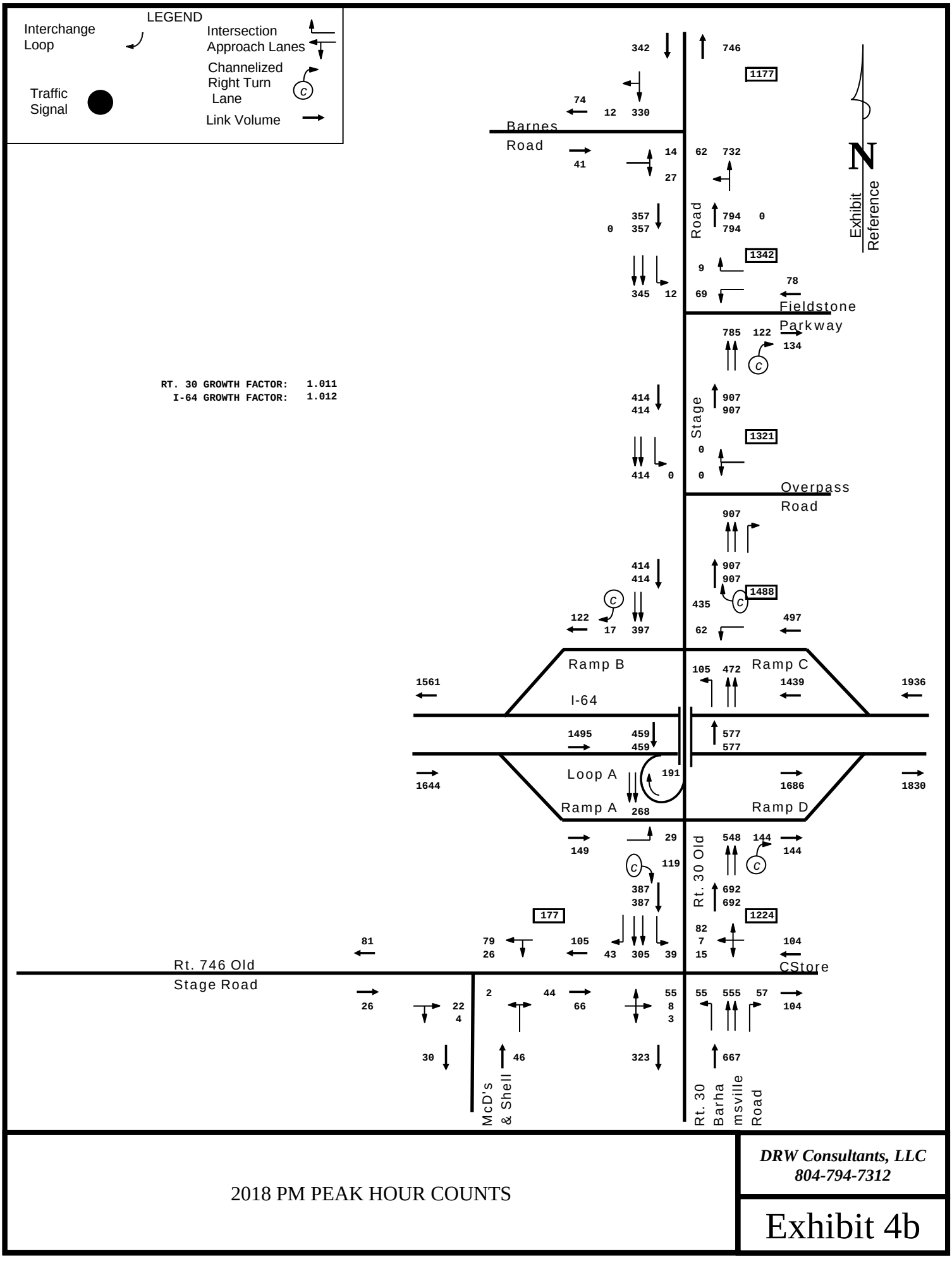
Exhibit 3b



2018 AM PEAK HOUR COUNTS

DRW Consultants, LLC
804-794-7312

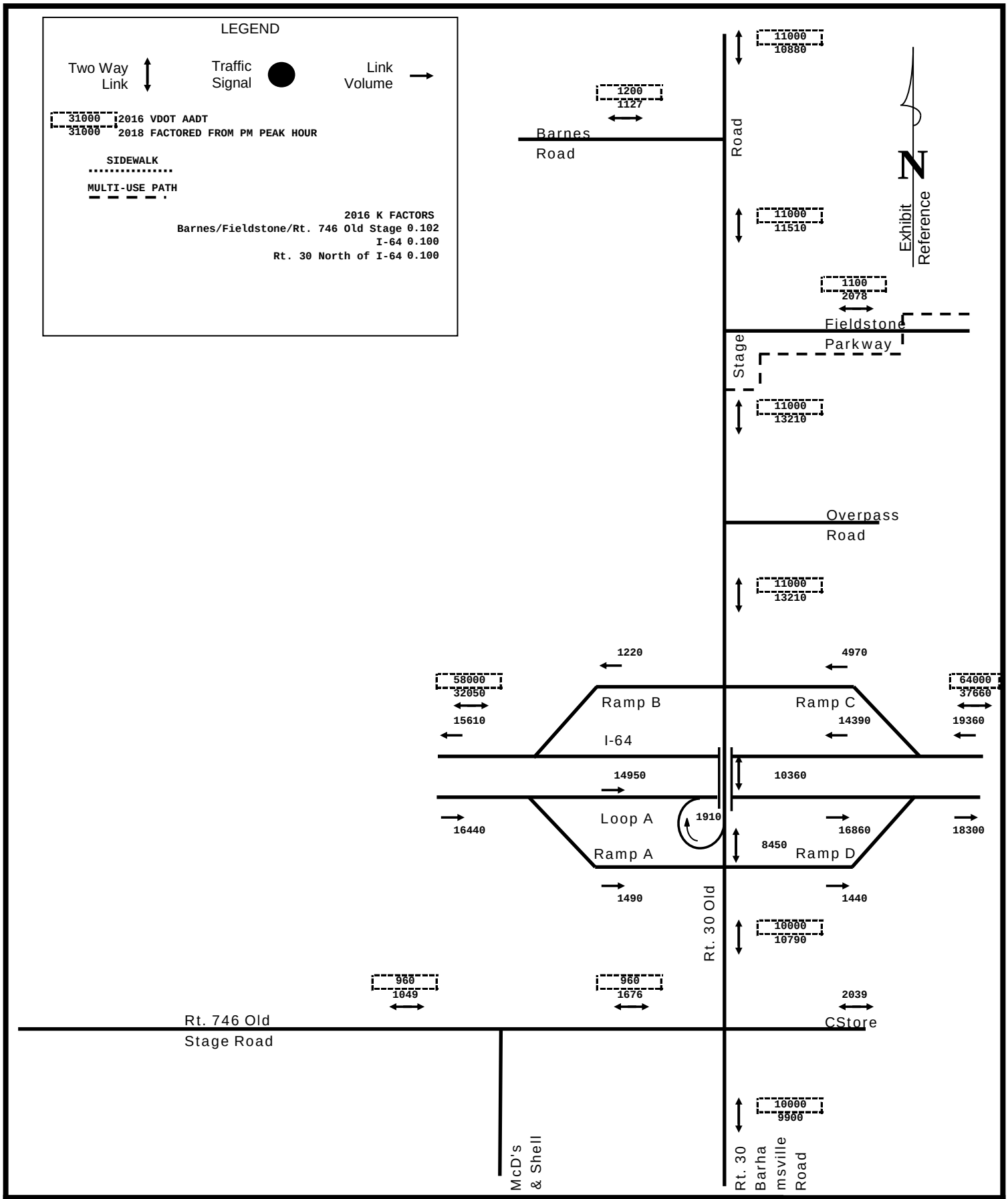
Exhibit 4a



2018 PM PEAK HOUR COUNTS

DRW Consultants, LLC
804-794-7312

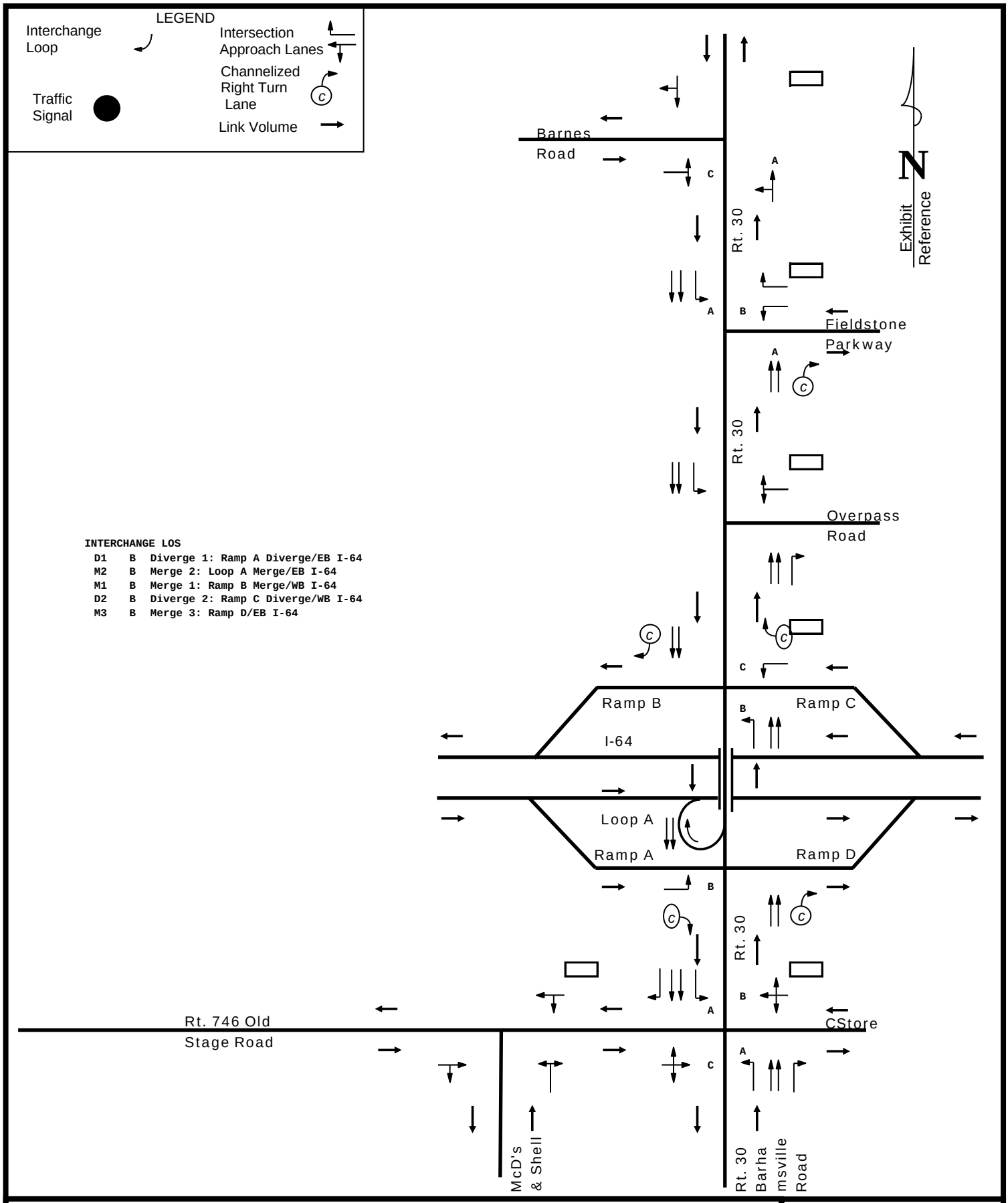
Exhibit 4b



2018 DAILY TRAFFIC
EXISTING SIDEWALKS, MULTI-USE (VDOT SHARED USE PATH), TRANSIT

DRW Consultants, LLC
804-794-7312

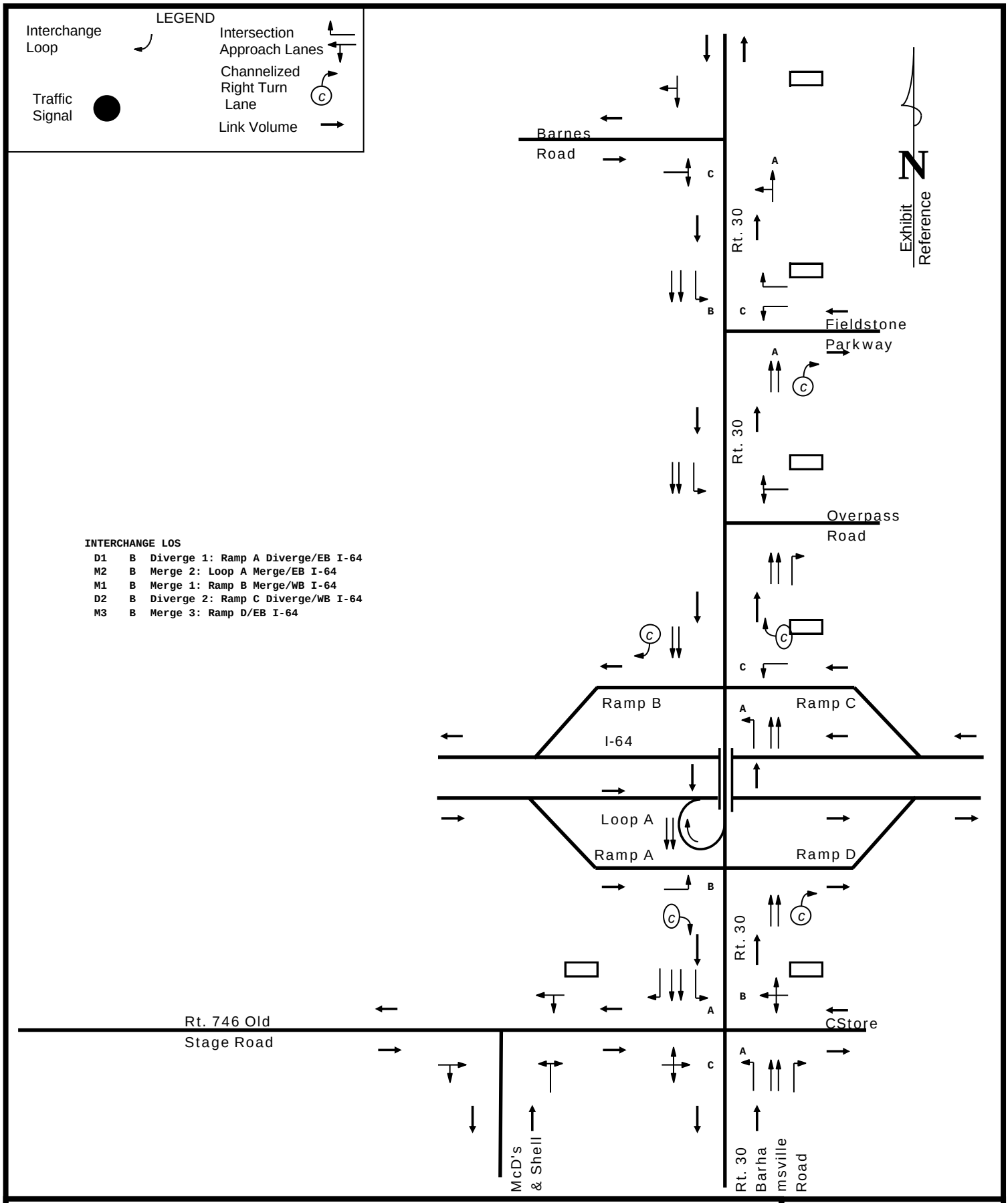
Exhibit 4c



2018 AM PEAK HOUR LEVEL OF SERVICE

DRW Consultants, LLC
804-794-7312

Exhibit 4d



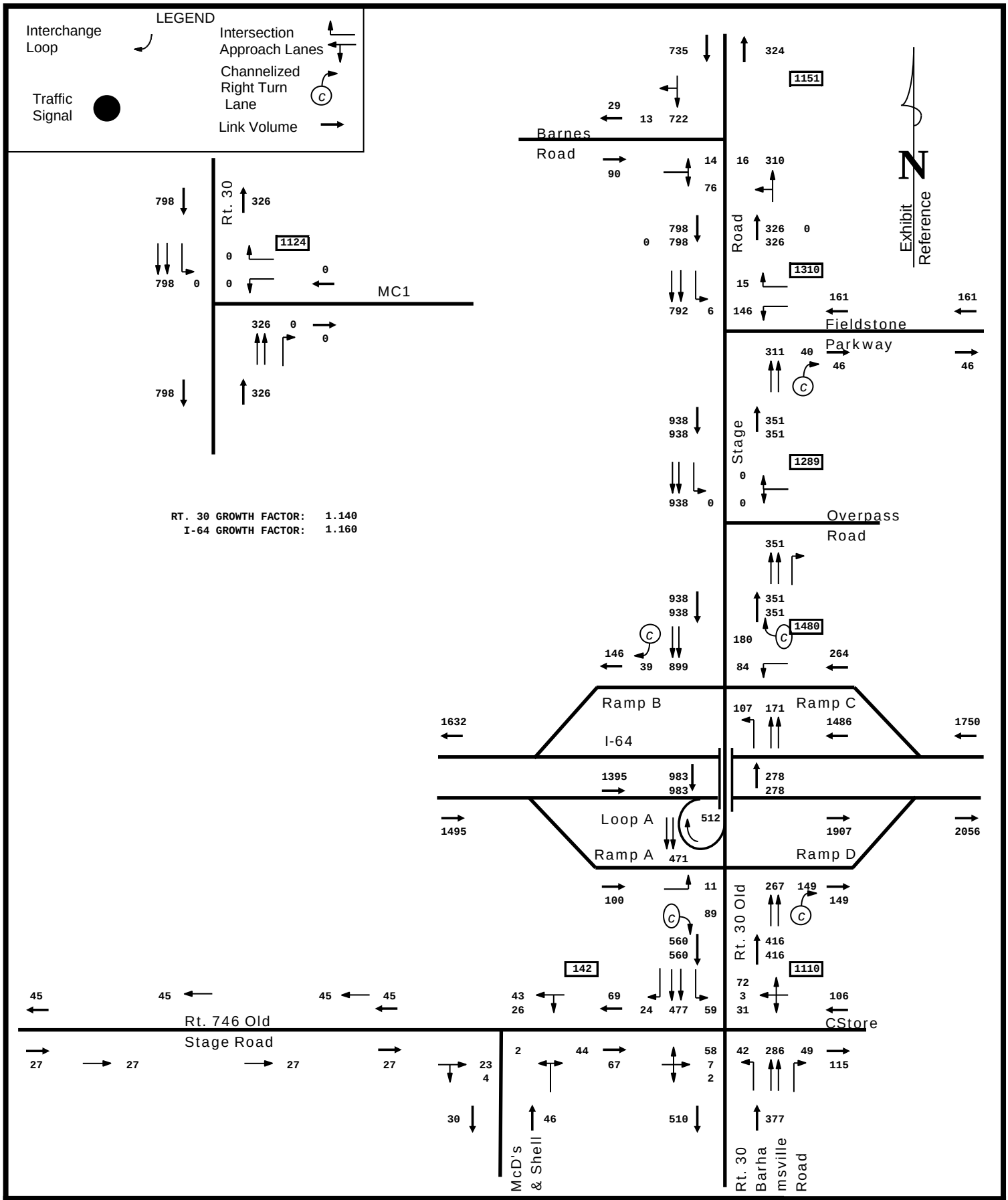
INTERCHANGE LOS

D1	B	Diverge 1: Ramp A Diverge/EB I-64
M2	B	Merge 2: Loop A Merge/EB I-64
M1	B	Merge 1: Ramp B Merge/WB I-64
D2	B	Diverge 2: Ramp C Diverge/WB I-64
M3	B	Merge 3: Ramp D/EB I-64

2018 PM PEAK HOUR LEVEL OF SERVICE

DRW Consultants, LLC
804-794-7312

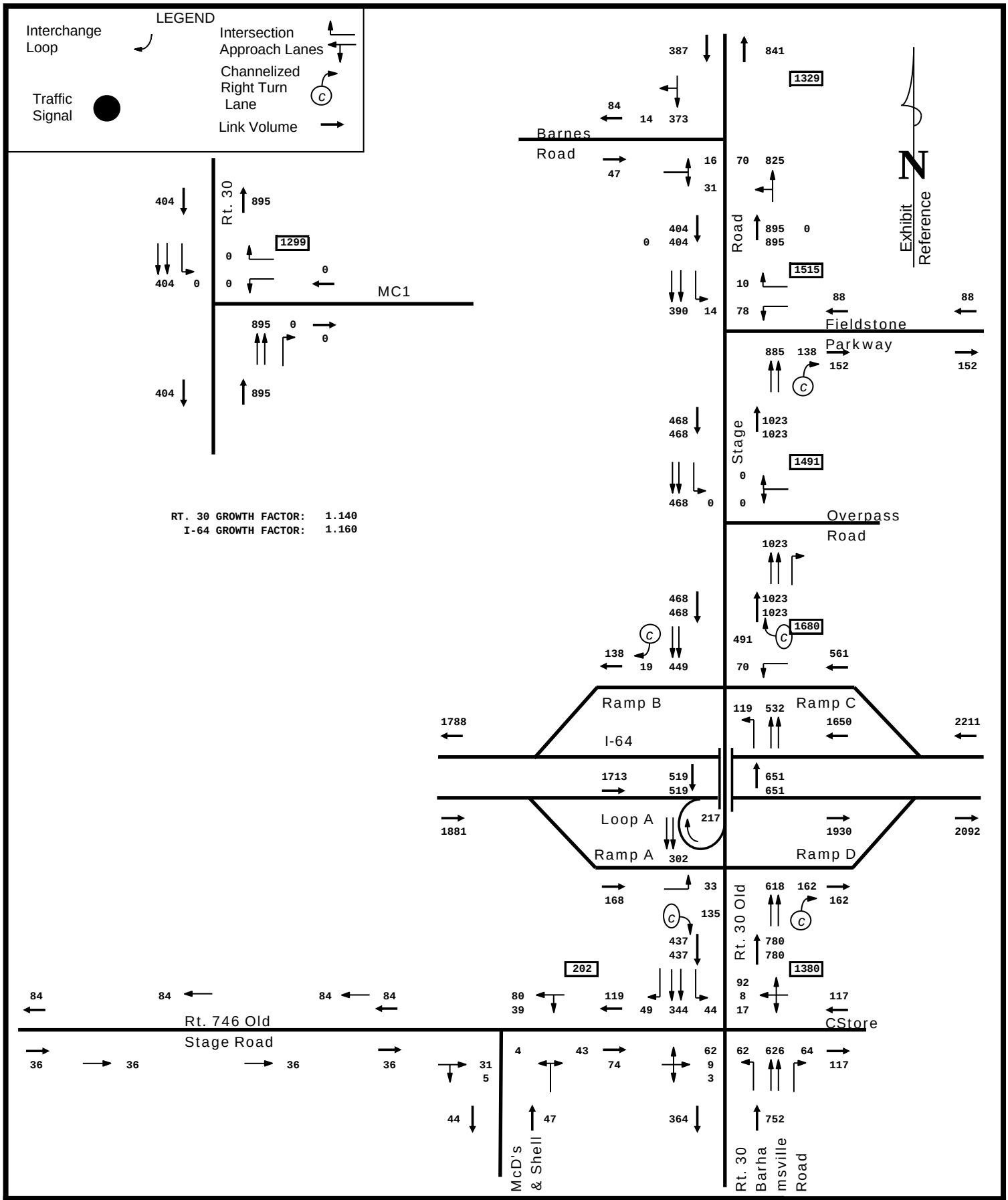
Exhibit 4e



2030 AM PEAK HOUR BACKGROUND TRAFFIC
GROWTH FACTOR ONLY

DRW Consultants, LLC
804-794-7312

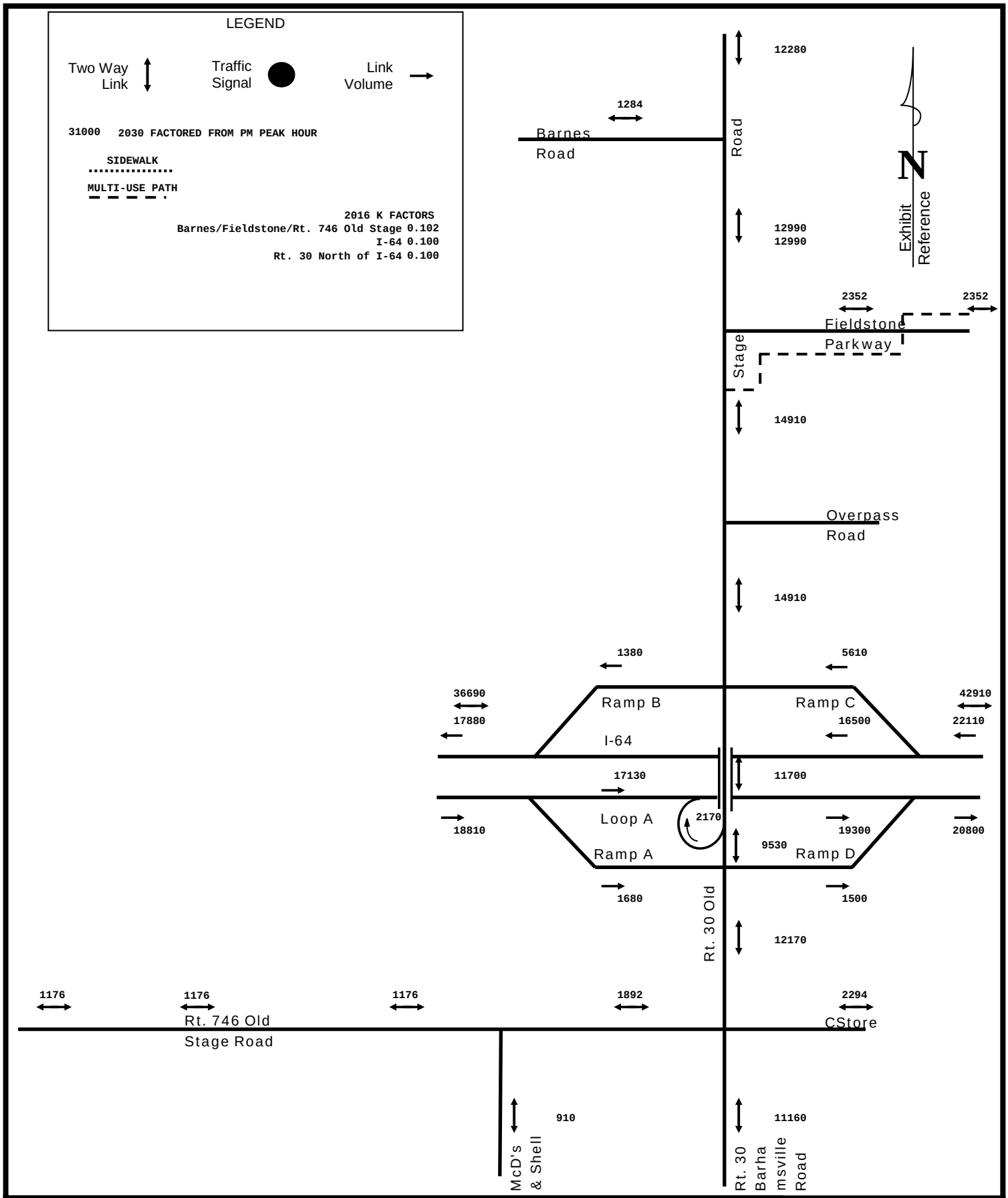
Exhibit 5a



2030 PM PEAK HOUR BACKGROUND TRAFFIC
GROWTH FACTOR ONLY

DRW Consultants, LLC
804-794-7312

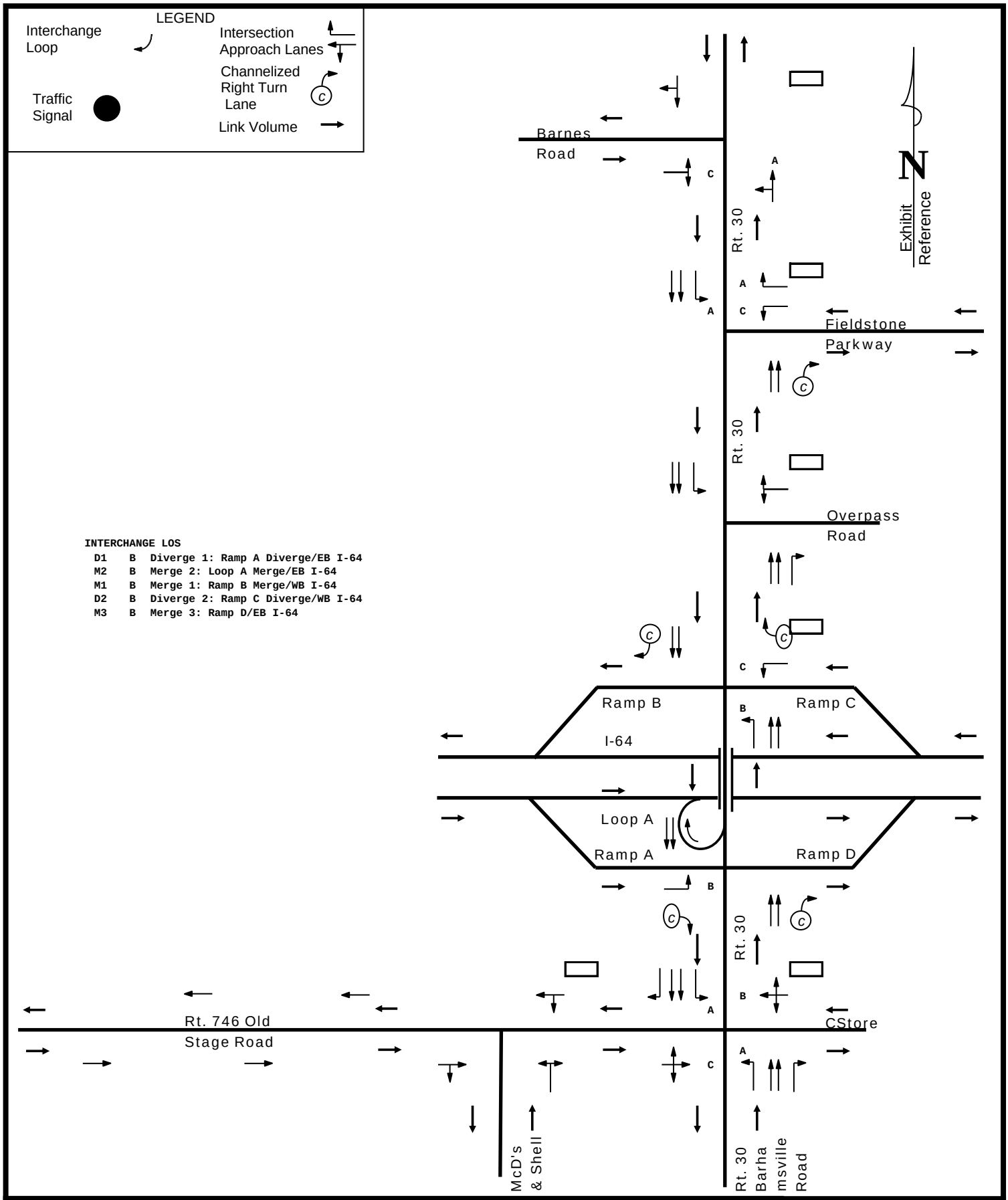
Exhibit 5b



2030 DAILY TRAFFIC GROWTH FACTOR ONLY
EXISTING SIDEWALKS, MULTI-USE (VDOT SHARED USE PATH), TRANSIT

DRW Consultants, LLC
804-794-7312

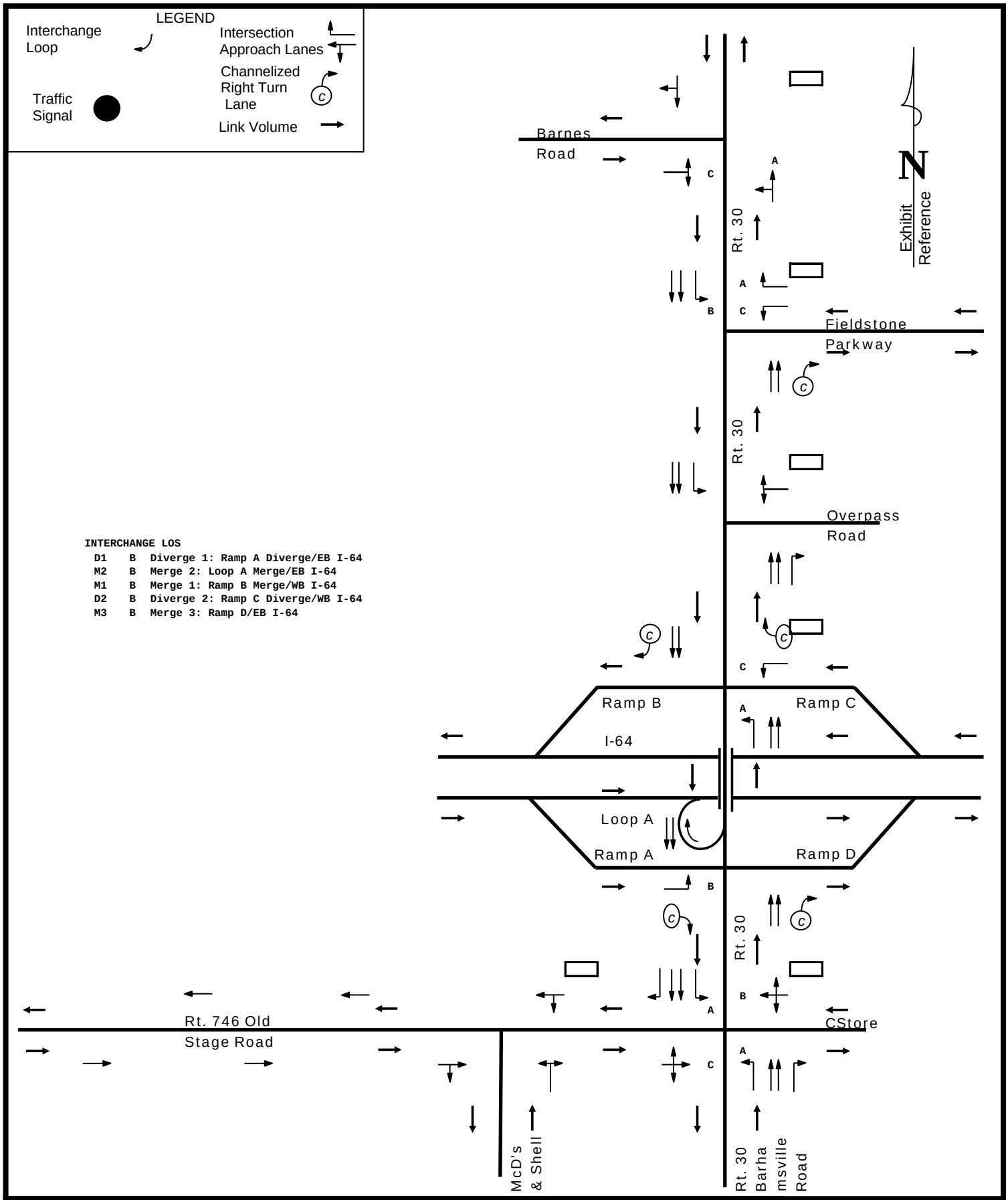
Exhibit 5c



2030 AM PEAK HOUR LEVEL OF SERVICE
BACKGROUND GROWTH FACTOR ONLY

DRW Consultants, LLC
804-794-7312

Exhibit 5d



2030 PM PEAK HOUR LEVEL OF SERVICE
BACKGROUND GROWTH FACTOR ONLY

DRW Consultants, LLC
804-794-7312

Exhibit 5e

VALUE	LAND USE	LAND USE CODE	SQ.FT., OTHER UNITS	WEEKDAY TRIP GENERATION AM PEAK HOUR Enter	Exit	Total	PM PEAK HOUR Enter	Exit	Total	DAILY
Table 1: North Hazelwood Farms Trip Generation										
eq.-adj. st.	Shopping Center	820	375,000 sq. ft.	210	129	339	694	751	1445	14769
eq.-adj. st.	Gen. Office Building	710	135,000 sq. ft.	132	21	153	24	127	151	1420
TOTAL TRIPS				342	150	492	718	878	1596	16189
	Internal Capture Trips (PM on Exhibit 8-4)		2.63%	7	7	14	21	21	42	426
	% Shopping Center Pass By Trips:		27 %	34	34	68	187	187	374	3987
	All Primary Trips			301	109	410	510	670	1180	11776

Table 2: North Hazelwood Farms Primary Trip Distribution K Factor: 0.09859

	AM Peak Hour Entering Traffic		AM Peak Hour Exiting Traffic		PM Peak Hour Entering Traffic		PM Peak Hour Exiting Traffic	
Direction	% Dist.	Trips	% Dist.	Trips	% Dist.	Trips	% Dist.	Trips
North Rt. 30	15%	46	15%	16	15%	77	15%	101
East I-64	30%	90	30%	33	30%	153	30%	201
South Rt. 30	25%	75	25%	27	25%	128	25%	168
West I-64	30%	90	30%	33	30%	152	30%	200
	100%	301	100%	109	100%	510	100%	670

Table 3: North Hazelwood Farms Pass By Trip Distribution

	AM Peak Hour Entering Traffic		AM Peak Hour Exiting Traffic		PM Peak Hour Entering Traffic		PM Peak Hour Exiting Traffic	
Direction	% Dist.	Trips	% Dist.	Trips	% Dist.	Trips	% Dist.	Trips
North Rt. 30	798	21	326	8	404	50	895	110
East Fieldstone	161	4	46	1	88	11	152	19
South Rt. 30	351	9	938	25	1023	126	468	58
	1310	34	1310	34	1515	187	1515	187

VALUE	LAND USE	LAND USE CODE	SQ.FT., OTHER UNITS	WEEKDAY TRIP GENERATION AM PEAK HOUR Enter	Exit	Total	PM PEAK HOUR Enter	Exit	Total	DAILY
Table 4: South Hazelwood Farms Trip Generation										
eq.-adj. st.	Warehousing	150	2,920,000 sq. ft.	290	86	376	102	276	378	4659
eq.-adj. st.	Shopping Center	820	75,000 sq. ft.	117	72	189	211	228	439	4944
eq.-adj. st.	Multifamily Mid Rise	221	300 units	26	74	100	77	50	127	1633
TOTAL TRIPS				433	232	665	390	554	944	11236
	Internal Capture Trips (PM on Exhibit 8-5)		11.86%	40	40	80	56	56	112	1333
	% Shopping Center Pass By Trips:		42 %	30	30	60	88	88	176	2076
	All Primary Trips			363	162	525	246	410	656	7827

Table 5: South Hazelwood Farms Primary Trip Distribution K Factor: 0.08402

	AM Peak Hour Entering Traffic		AM Peak Hour Exiting Traffic		PM Peak Hour Entering Traffic		PM Peak Hour Exiting Traffic	
Direction	% Dist.	Trips	% Dist.	Trips	% Dist.	Trips	% Dist.	Trips
North Rt. 30	10%	36	10%	16	10%	25	10%	41
East I-64	25%	91	25%	41	25%	62	25%	103
South Rt. 30	37%	134	37%	60	37%	91	37%	152
West Rt. 746	3%	11	3%	5	3%	7	3%	12
West I-64	25%	91	25%	40	25%	61	25%	102
	100%	363	100%	162	100%	246	100%	410

Table 6: South Hazelwood Farms Pass By Trip Distribution

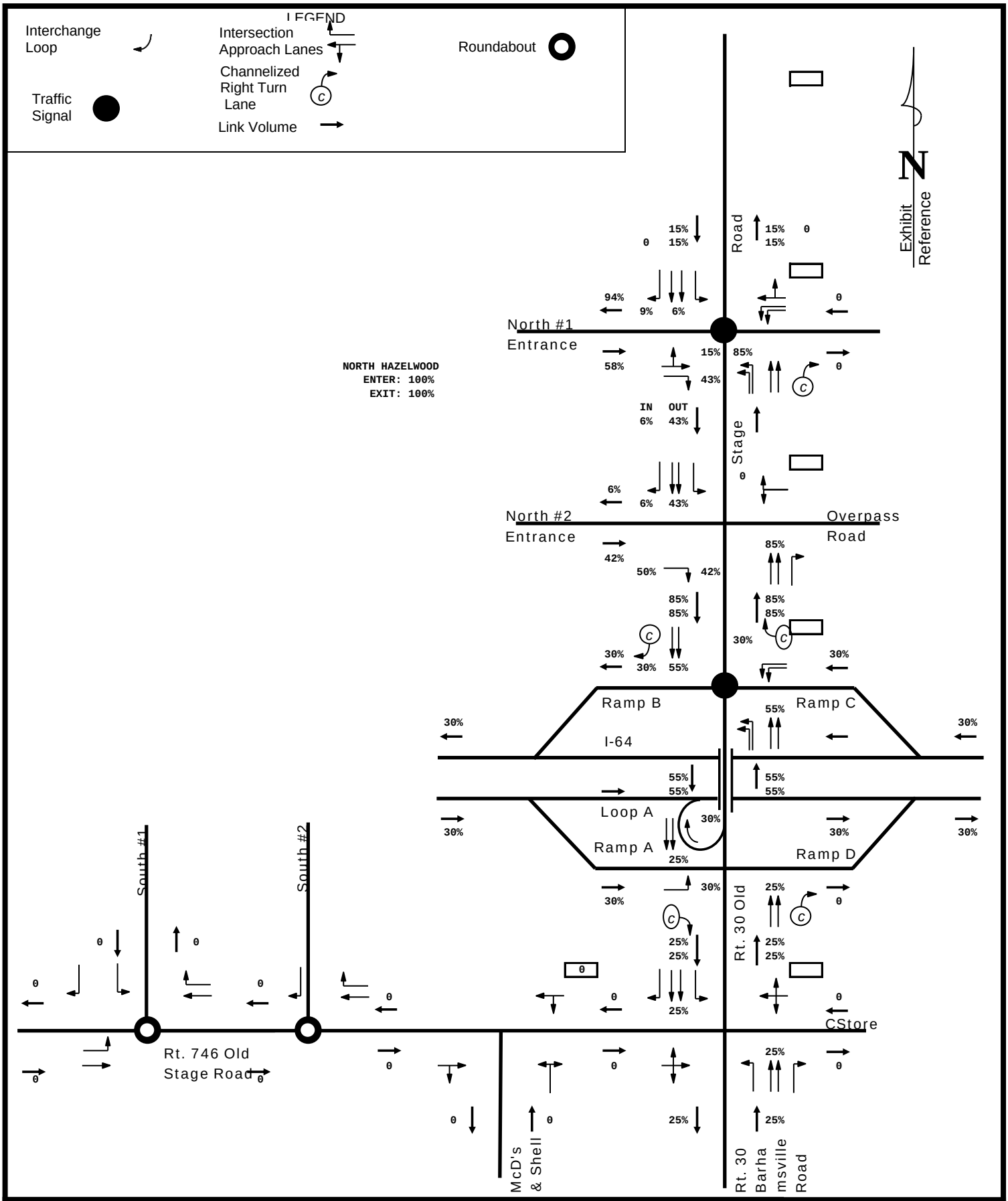
	AM Peak Hour Entering Traffic		AM Peak Hour Exiting Traffic		PM Peak Hour Entering Traffic		PM Peak Hour Exiting Traffic	
Direction	% Dist.	Trips	% Dist.	Trips	% Dist.	Trips	% Dist.	Trips
North Rt. 30	477	19		11	344	31		57
South Rt. 30	286	11		19	626	57		31
	763	30		30	970	88		88

HAZELWOOD FARMS
TRIP GENERATION AND DISTRIBUTION

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804-794-7312

Trip generation rates from Trip Generation Manual, 10th Edition (TGM10) by the Institute of Transportation Engineers (ITE)

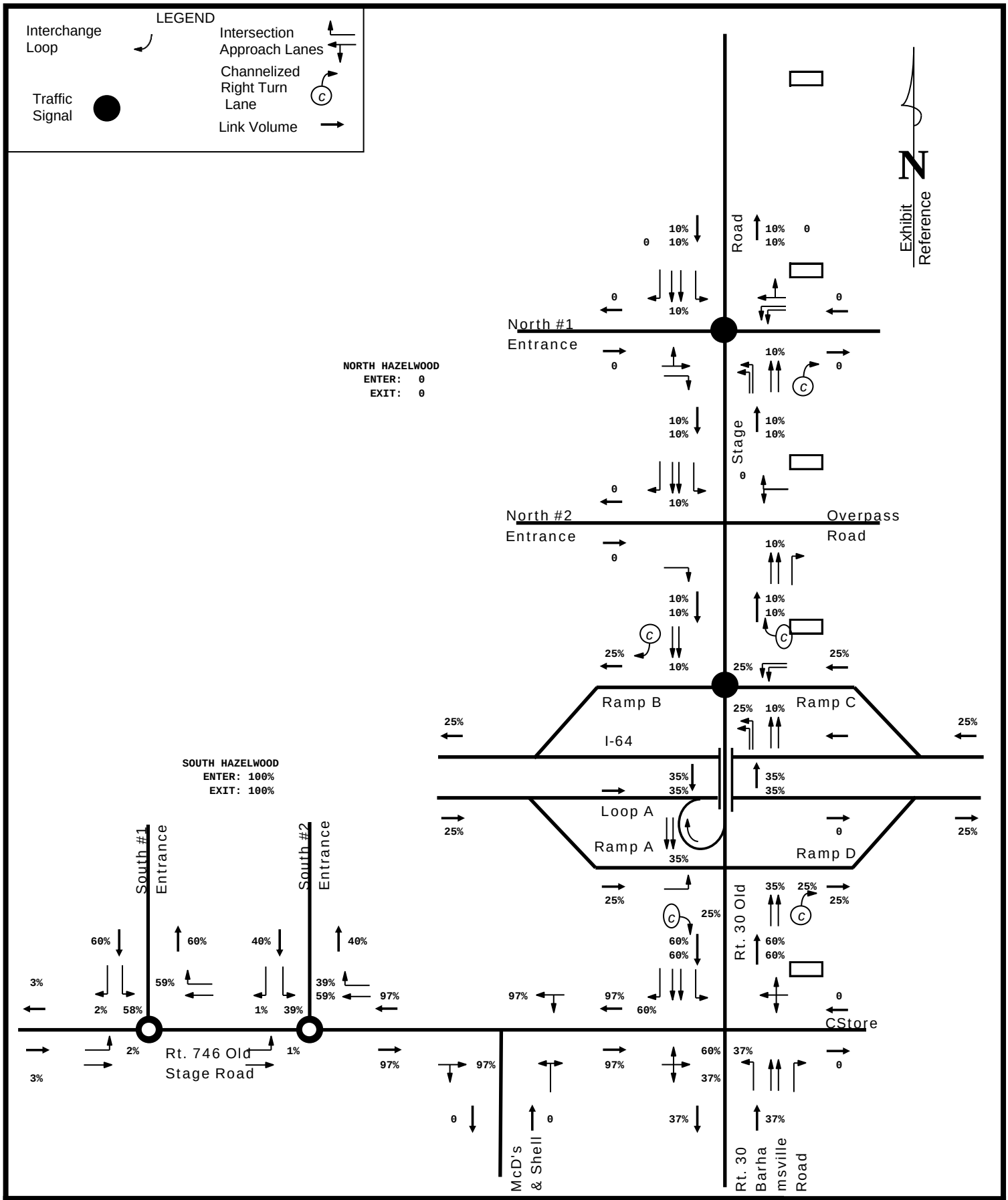
Exhibit 6-1



NORTH HAZELWOOD FARMS
PRIMARY TRIP DISTRIBUTION PERCENTAGES

DRW Consultants, LLC
804-794-7312

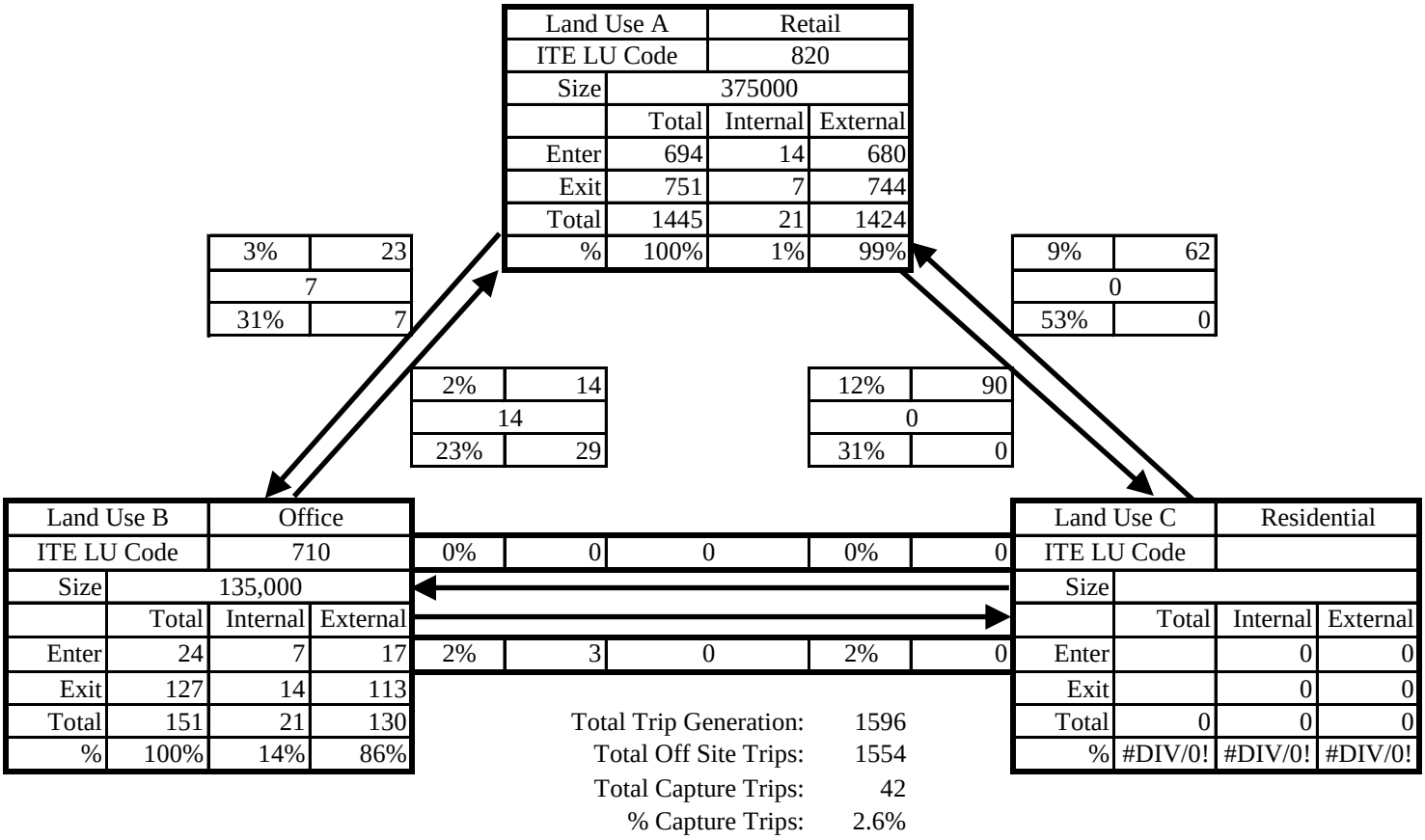
Exhibit 6-2



SOUTH HAZELWOOD FARMS
PRIMARY TRIP DISTRIBUTION PERCENTAGES

DRW Consultants, LLC
804-794-7312

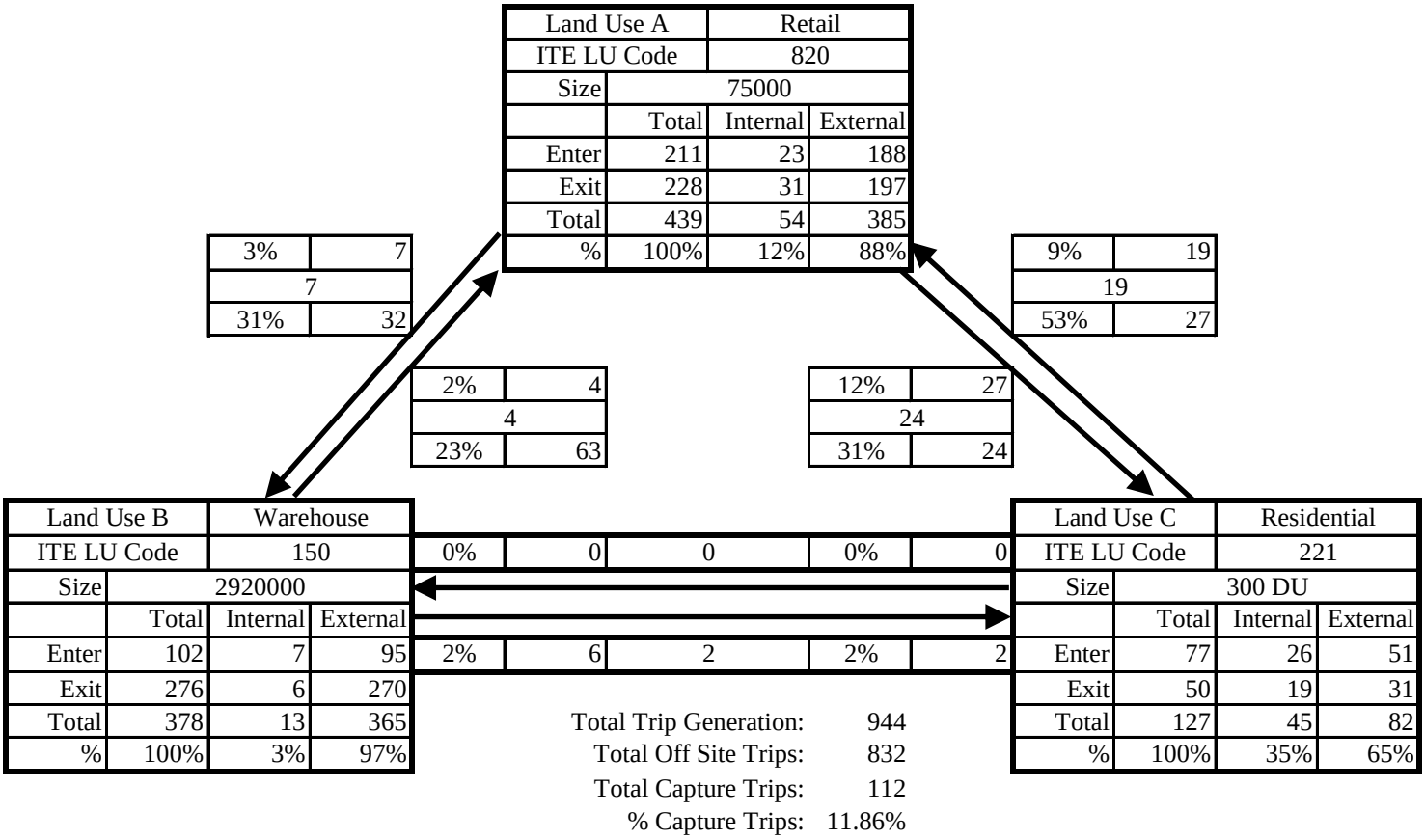
Exhibit 6-3



TRIP GENERATION HANDBOOK, SECOND EDITION
PM PEAK HOUR INTERNAL CAPTURE CALCULATION
NORTH HAZELWOOD FARMS

DRW Consultants, LLC
804-794-7312

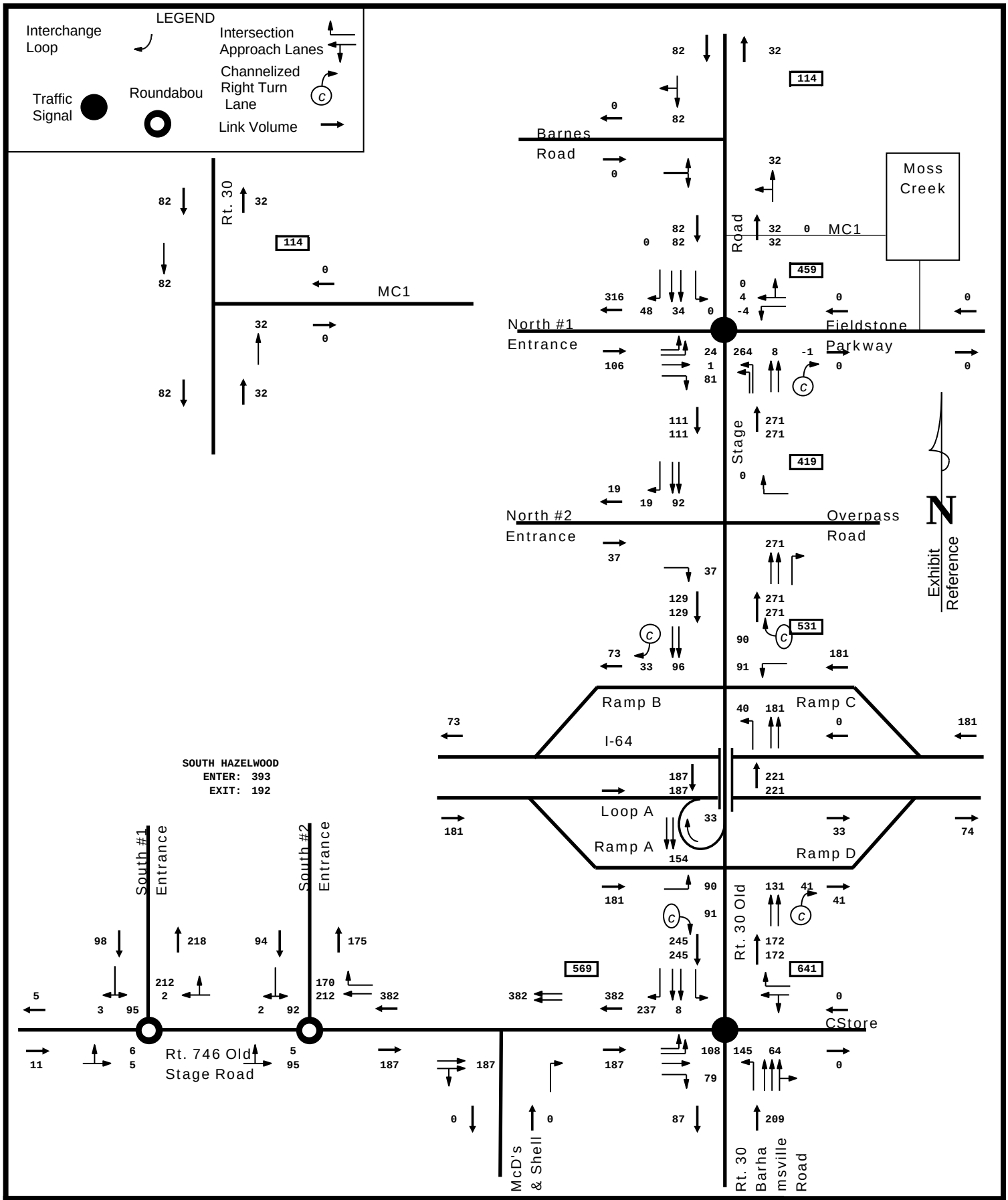
Exhibit 6-4



TRIP GENERATION HANDBOOK, SECOND EDITION
PM PEAK HOUR INTERNAL CAPTURE CALCULATION
SOUTH HAZELWOOD FARMS

DRW Consultants, LLC
804-794-7312

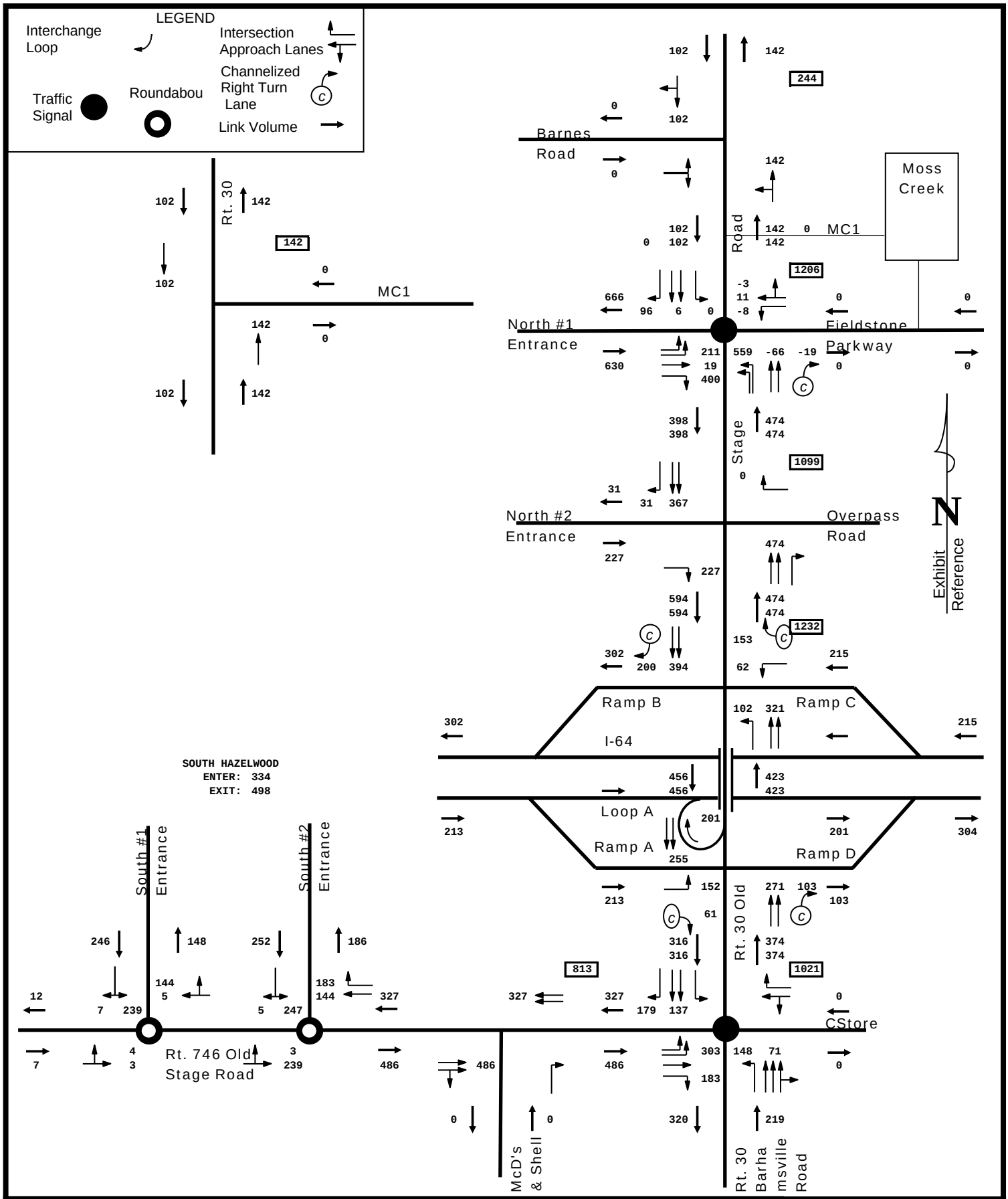
Exhibit 6-5



NORTH AND SOUTH HAZELWOOD FARMS
AM PEAK HOUR TRIPS

DRW Consultants, LLC
804-794-7312

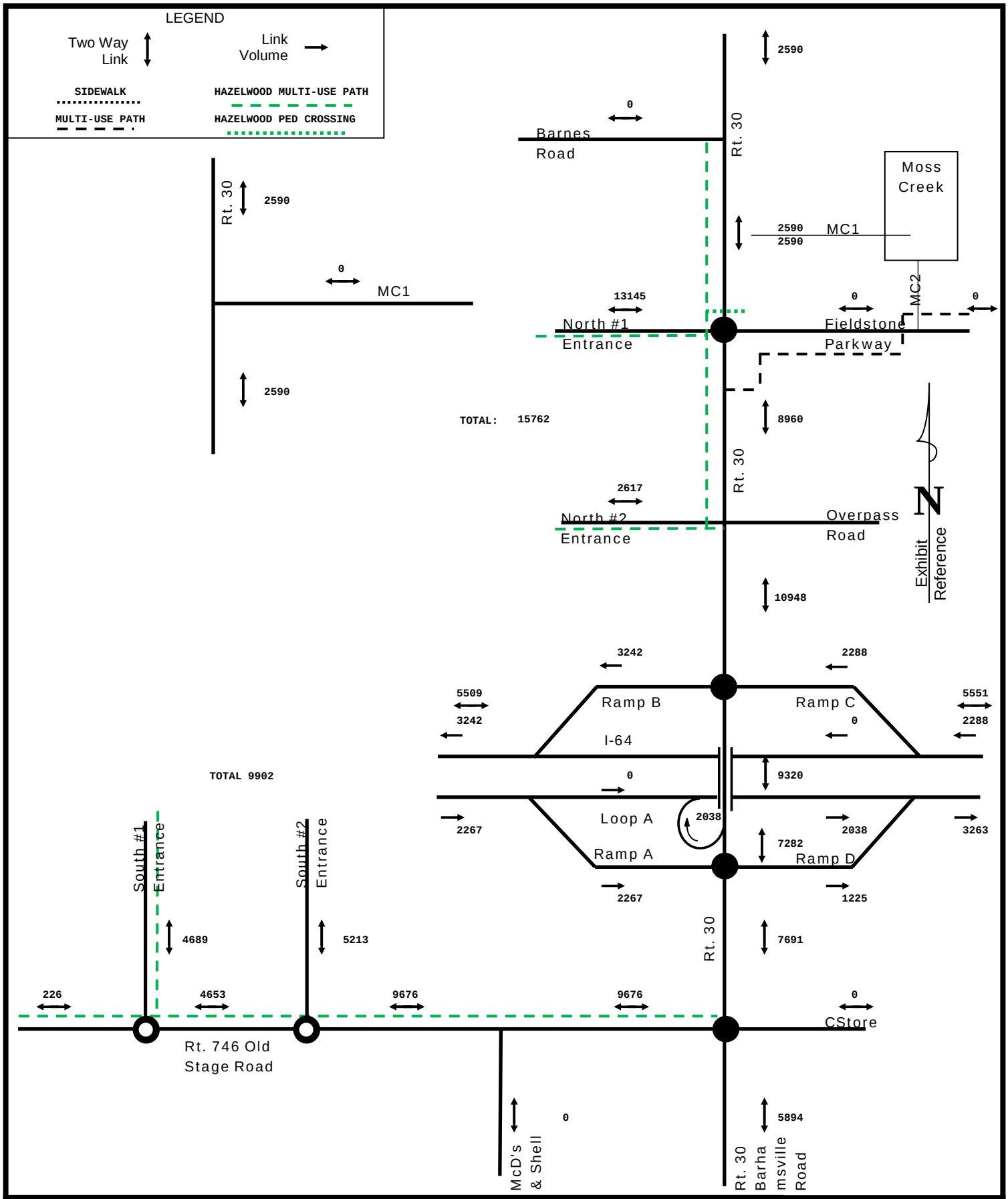
Exhibit 7a



NORTH AND SOUTH HAZELWOOD FARMS
PM PEAK HOUR TRIPS

DRW Consultants, LLC
804-794-7312

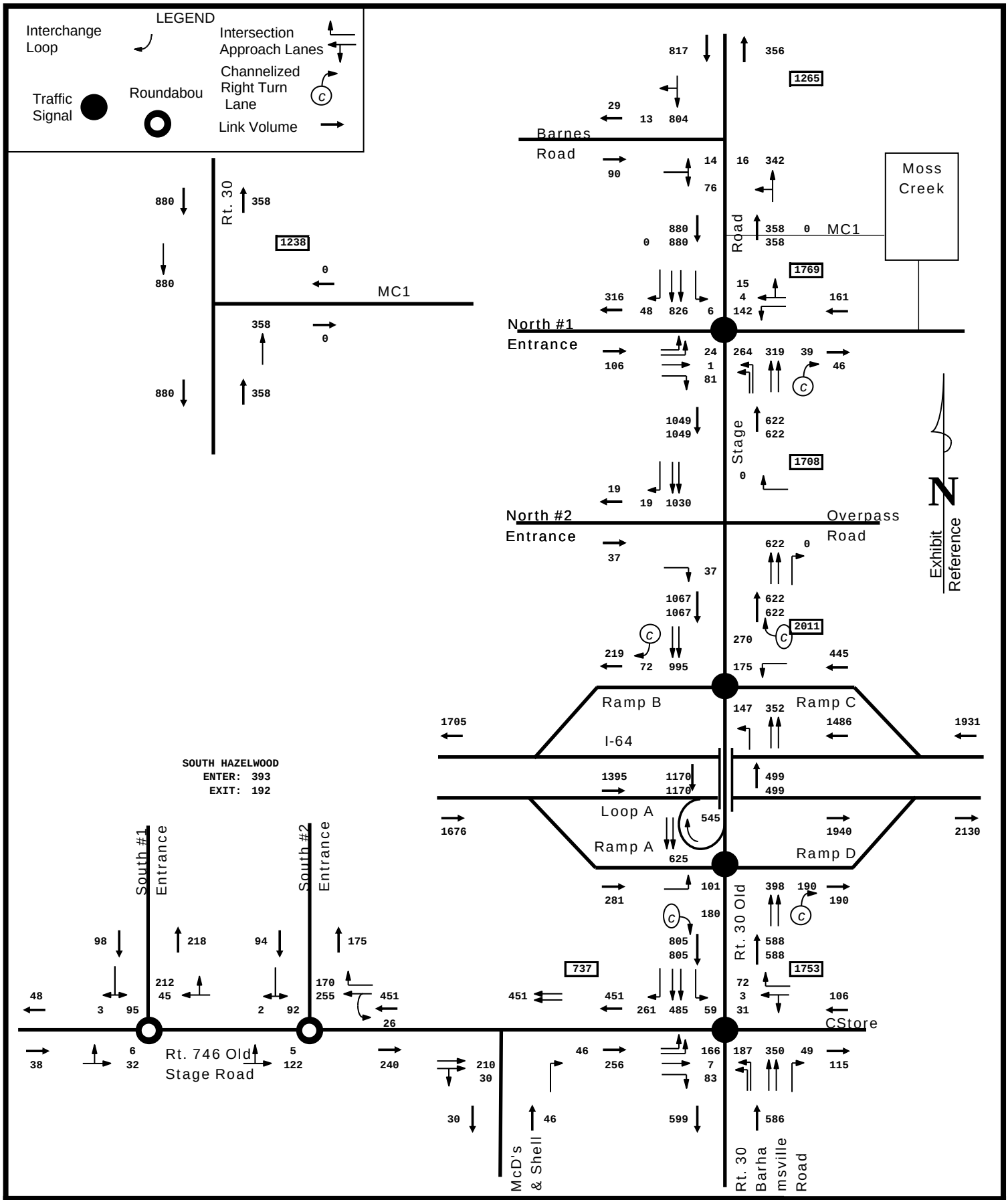
Exhibit 7b



NORTH AND SOUTH HAZELWOOD FARMS DAILY TRAFFIC
SIDEWALKS, MULTI-USE (VDOT SHARED USE PATH), TRANSIT

DRW Consultants, LLC
804-794-7312

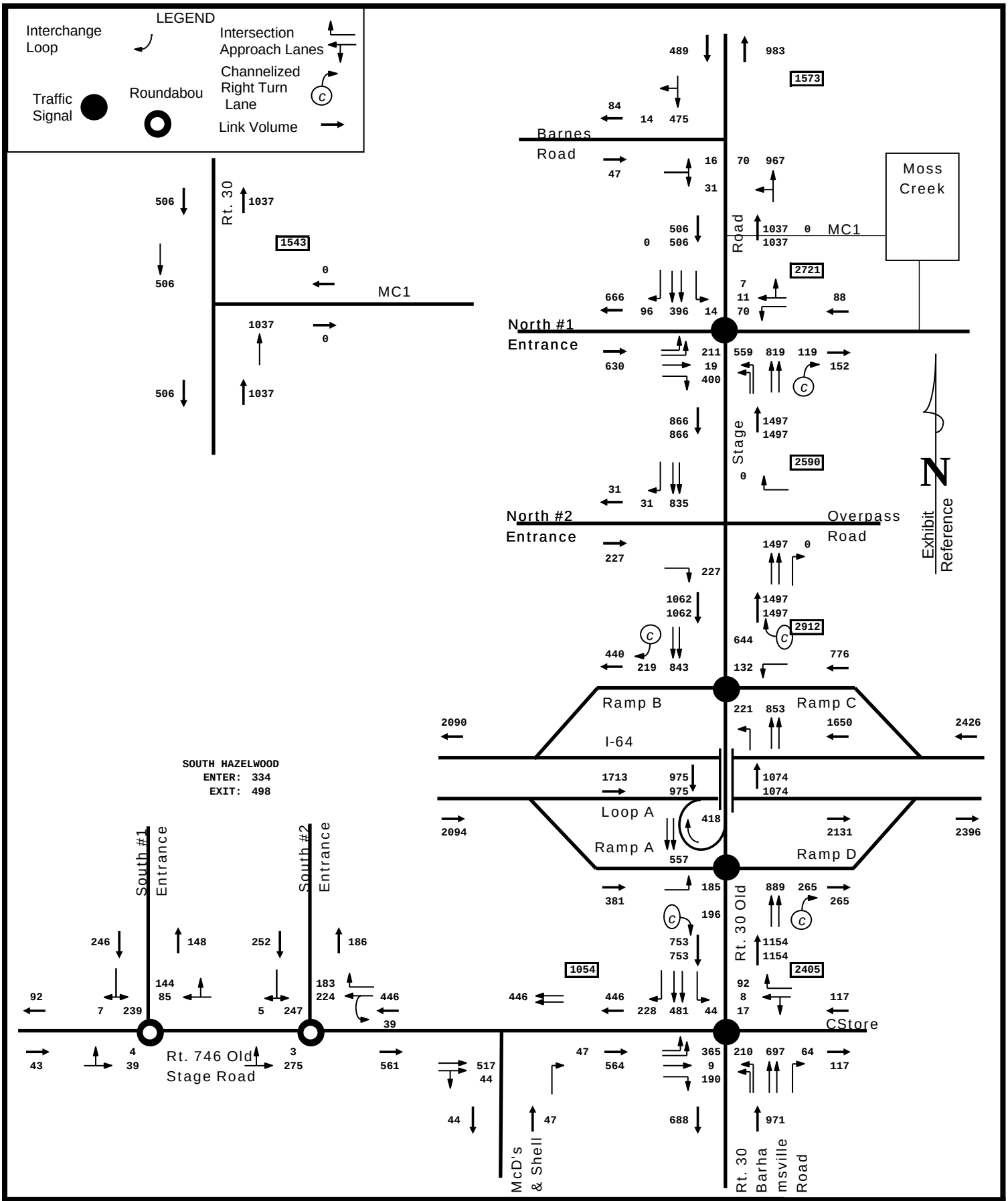
Exhibit 7c



2030 AM PEAK HOUR TOTAL TRAFFIC WITH HAZELWOOD FARMS

DRW Consultants, LLC
804-794-7312

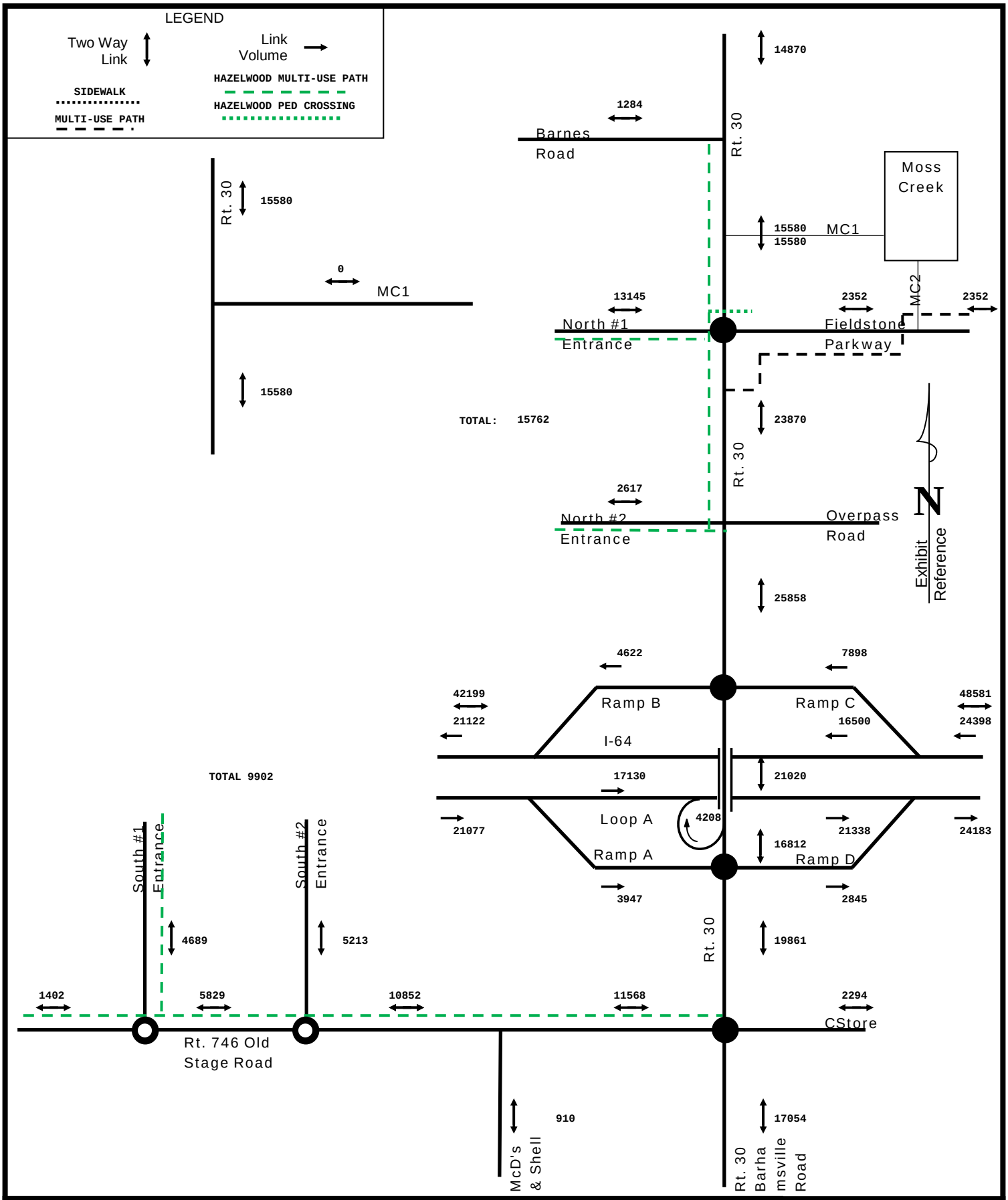
Exhibit 8a



2030 PM PEAK HOUR TOTAL TRAFFIC WITH HAZELWOOD FARMS

DRW Consultants, LLC
804-794-7312

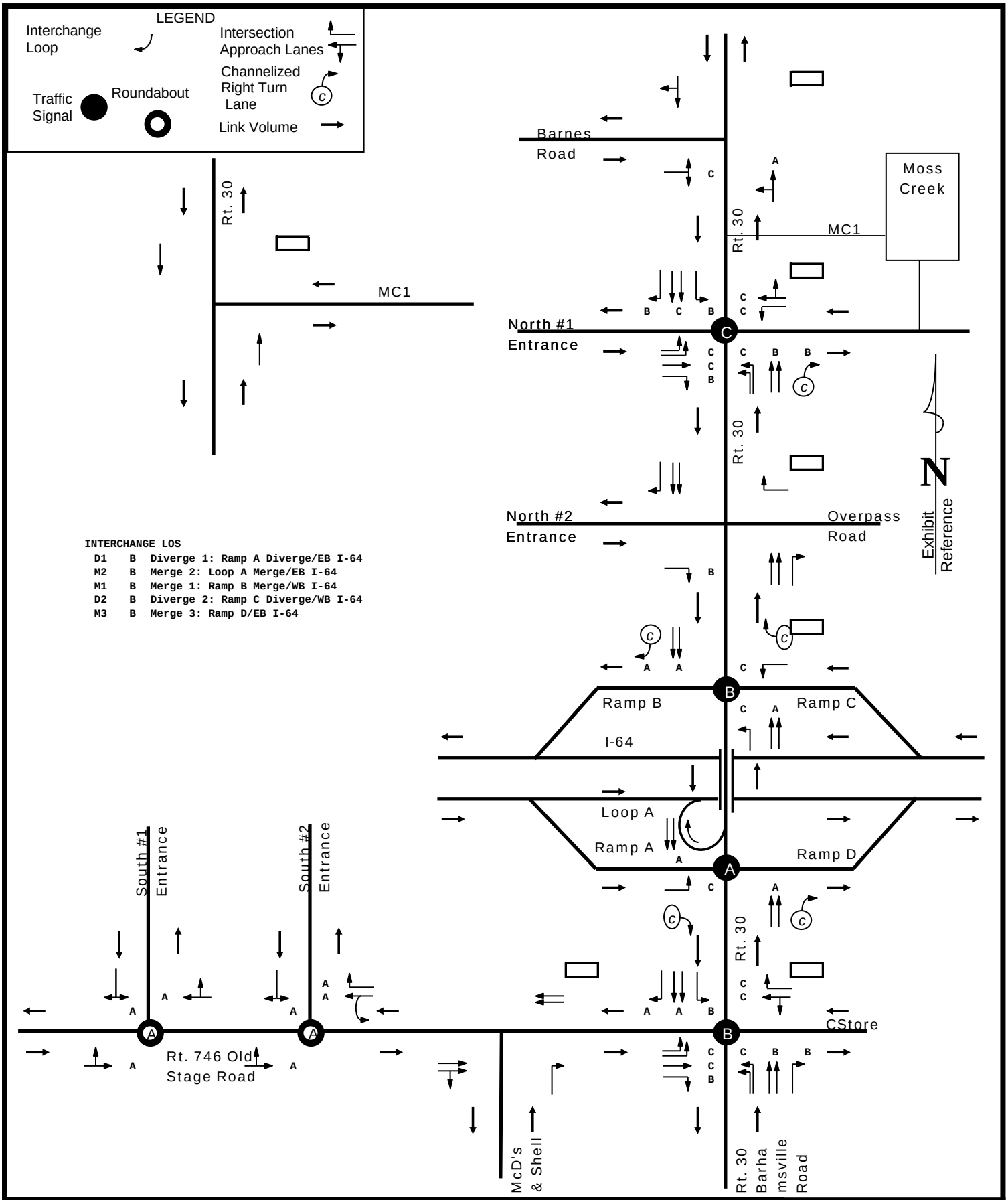
Exhibit 8b



2030 TOTAL DAILY TRAFFIC WITH HAZELWOOD FARMS SIDEWALKS, MULTI-USE (VDOT SHARED USE PATH), TRANSIT

DRW Consultants, LLC
804-794-7312

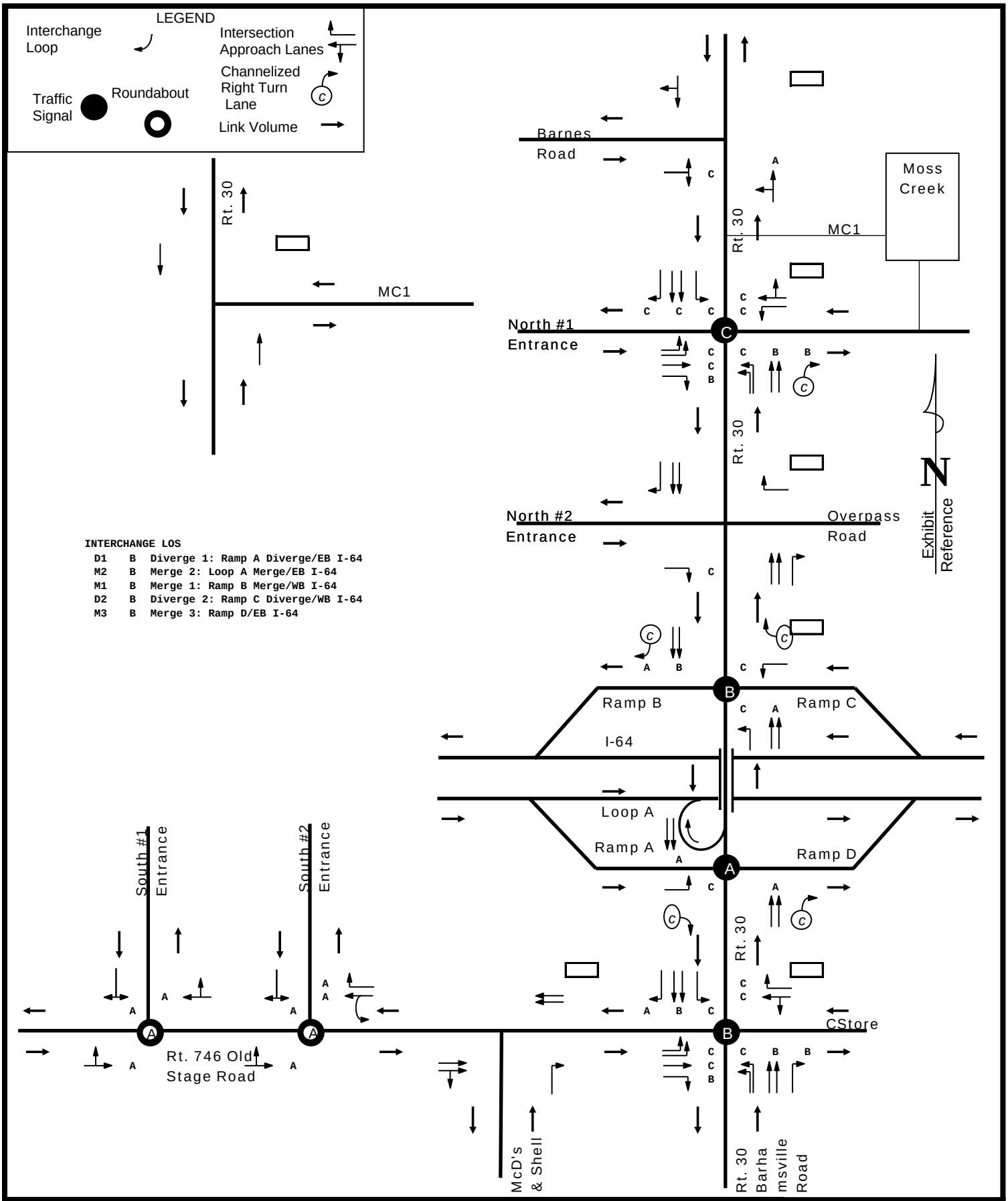
Exhibit 8c



2030 AM PEAK HOUR LEVEL OF SERVICE: 70 SECOND CYCLE
HAZELWOOD FARMS ONLY

DRW Consultants, LLC
804-794-7312

Exhibit 8d



INTERCHANGE LOS

D1	B	Diverge 1: Ramp A Diverge/EB I-64
M2	B	Merge 2: Loop A Merge/EB I-64
M1	B	Merge 1: Ramp B Merge/WB I-64
D2	B	Diverge 2: Ramp C Diverge/WB I-64
M3	B	Merge 3: Ramp D/EB I-64

2030 PM PEAK HOUR LEVEL OF SERVICE: 70 SECOND CYCLE
HAZELWOOD FARMS ONLY

DRW Consultants, LLC
804-794-7312

Exhibit 8e

VALUE	LAND USE	LAND USE CODE	SQ.FT., OTHER UNITS	WEEKDAY TRIP GENERATION						
				AM PEAK HOUR			PM PEAK HOUR			
				Enter	Exit	Total	Enter	Exit	Total	DAILY
Table 1: Moss Creek Trip Generation - LandMark Traffic Study March 2006										
			TOTAL TRIPS	204	142	346	317	341	658	7167
			PASS BY TRIPS	28	28	56	52	52	104	1278
			PRIMARY TRIPS	176	114	290	265	289	554	5889

Table 2: Moss Creek Primary Trip Distribution k factor: 0.09181

	AM Peak Hour					PM Peak Hour			
	Entering Traffic		Exiting Traffic			Entering Traffic		Exiting Traffic	
Direction	% Dist.	Trips	% Dist.	Trips		% Dist.	Trips	% Dist.	Trips
North Rt. 30	20%	35	20%	23		20%	53	20%	58
East Fieldstone	10%	18	10%	11		10%	27	10%	29
East I-64	25%	44	25%	29		25%	66	25%	72
South Rt. 30	20%	35	20%	23		20%	53	20%	58
West I-64	25%	44	25%	28		25%	66	25%	72
	100%	176	100%	114		100%	265	100%	289

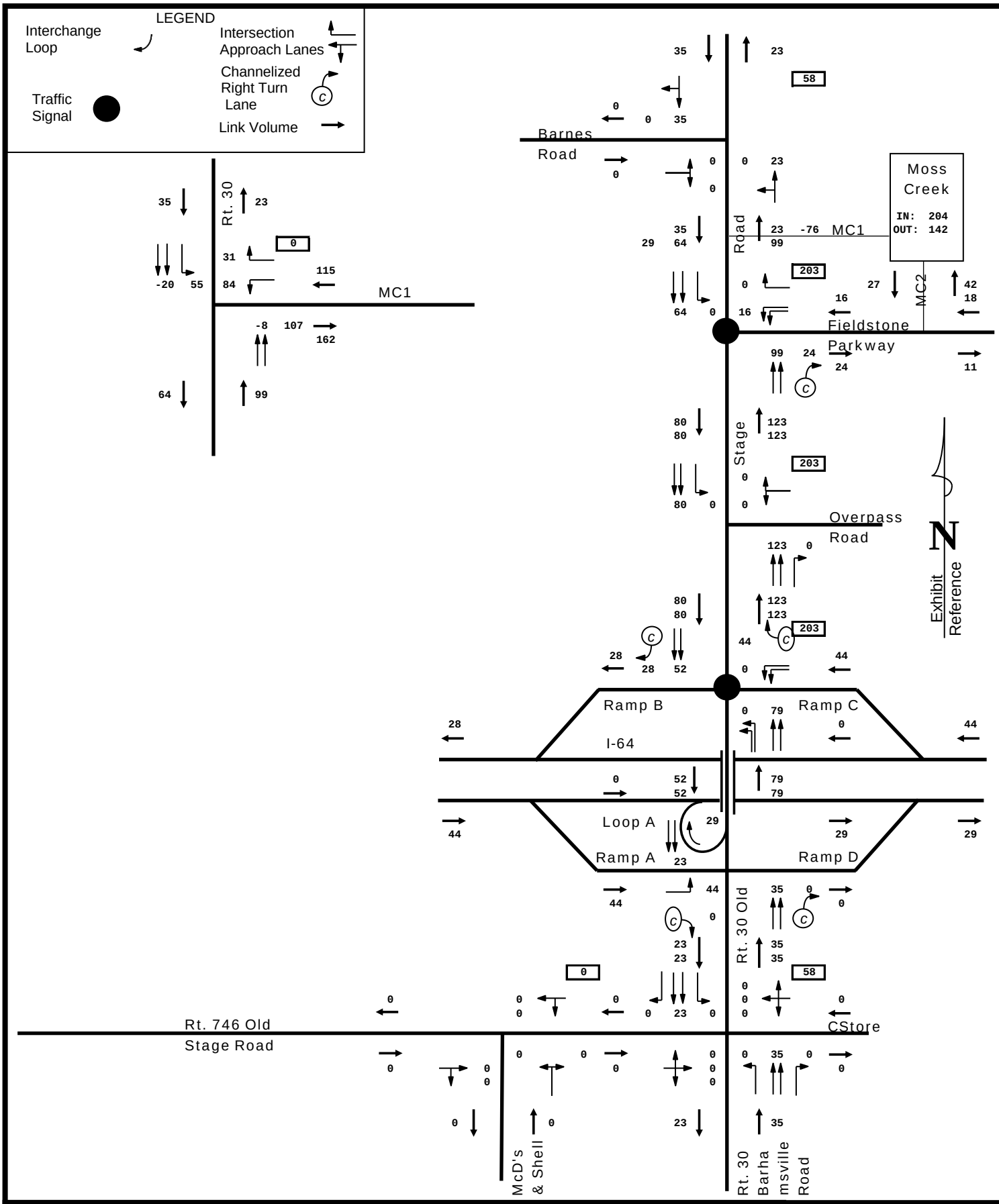
Table 3: Moss Creek Pass By Trip Distribution

	AM Peak Hour					PM Peak Hour			
	Entering Traffic		Exiting Traffic			Entering Traffic		Exiting Traffic	
Direction	% Dist.	Trips	% Dist.	Trips		% Dist.	Trips	% Dist.	Trips
North Rt. 30	798	20	326	8		404	16	895	36
South Rt. 30	326	8	798	20		895	36	404	16
	1124	28	1124	28		1299	52	1299	52

MOSS CREEK TRIP GENERATION AND DISTRIBUTION

DRW Consultants, LLC
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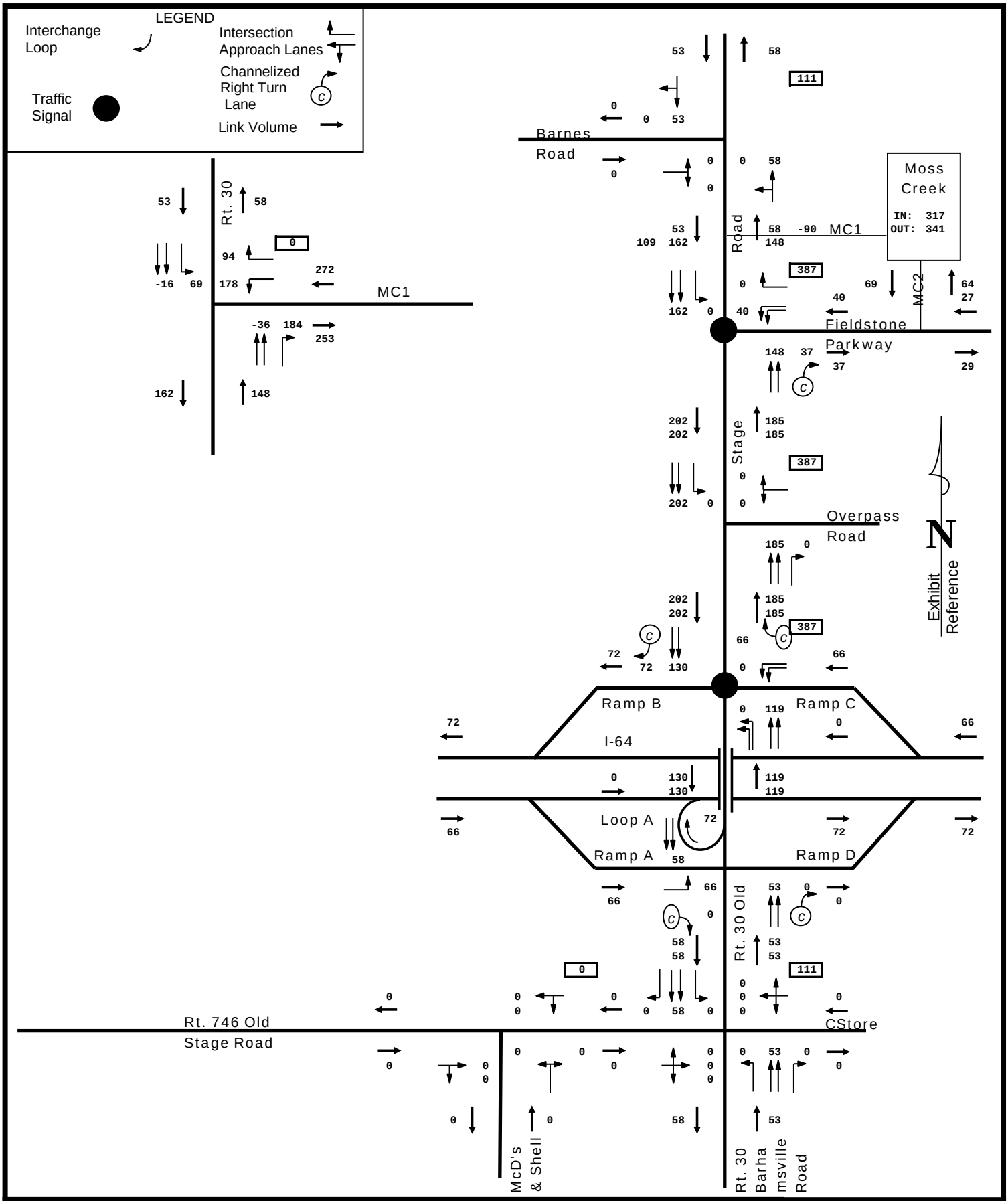
Exhibit 9



MOSS CREEK AM PEAK HOUR TRAFFIC

DRW Consultants, LLC
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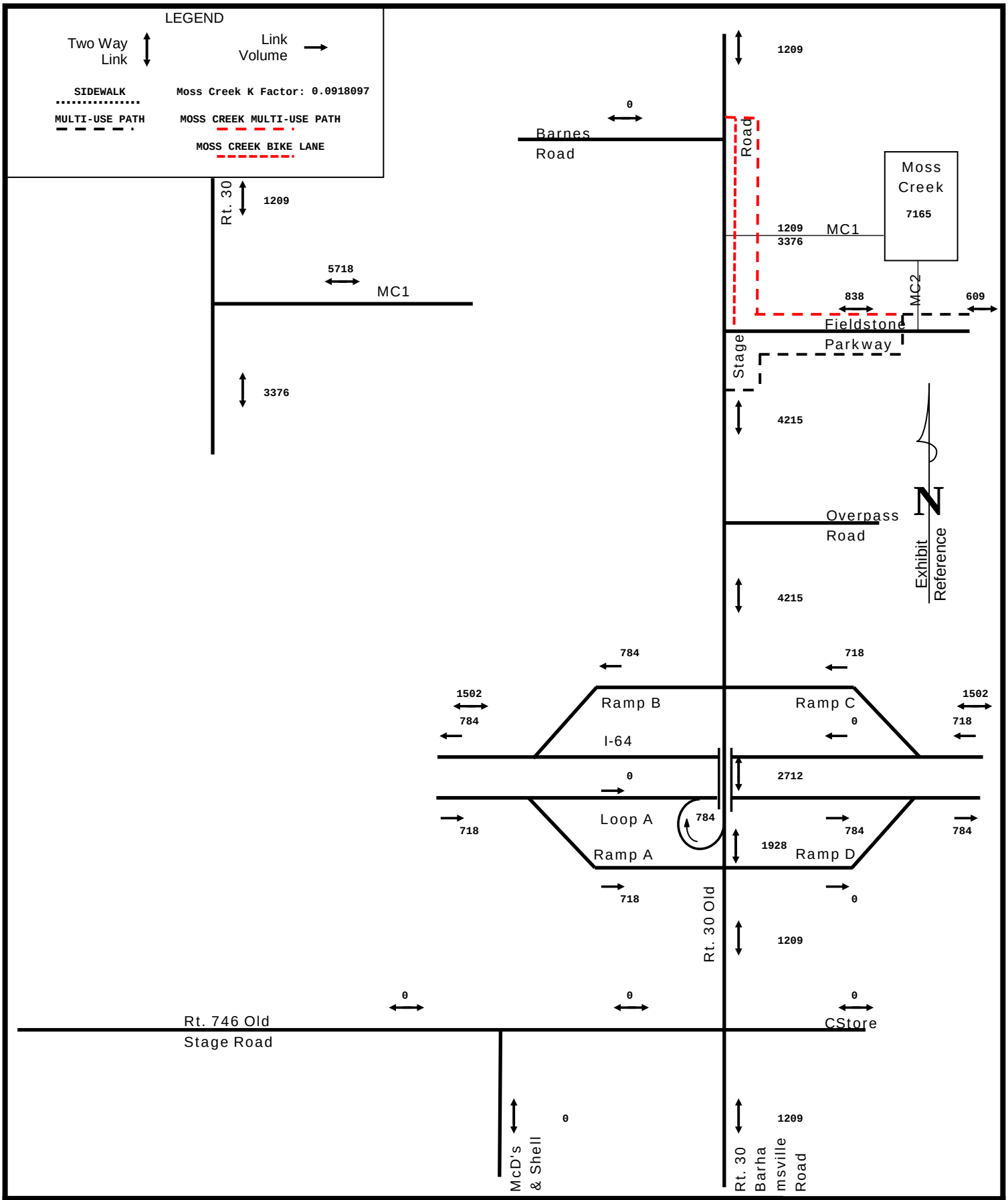
Exhibit 9a



MOSS CREEK PM PEAK HOUR TRAFFIC

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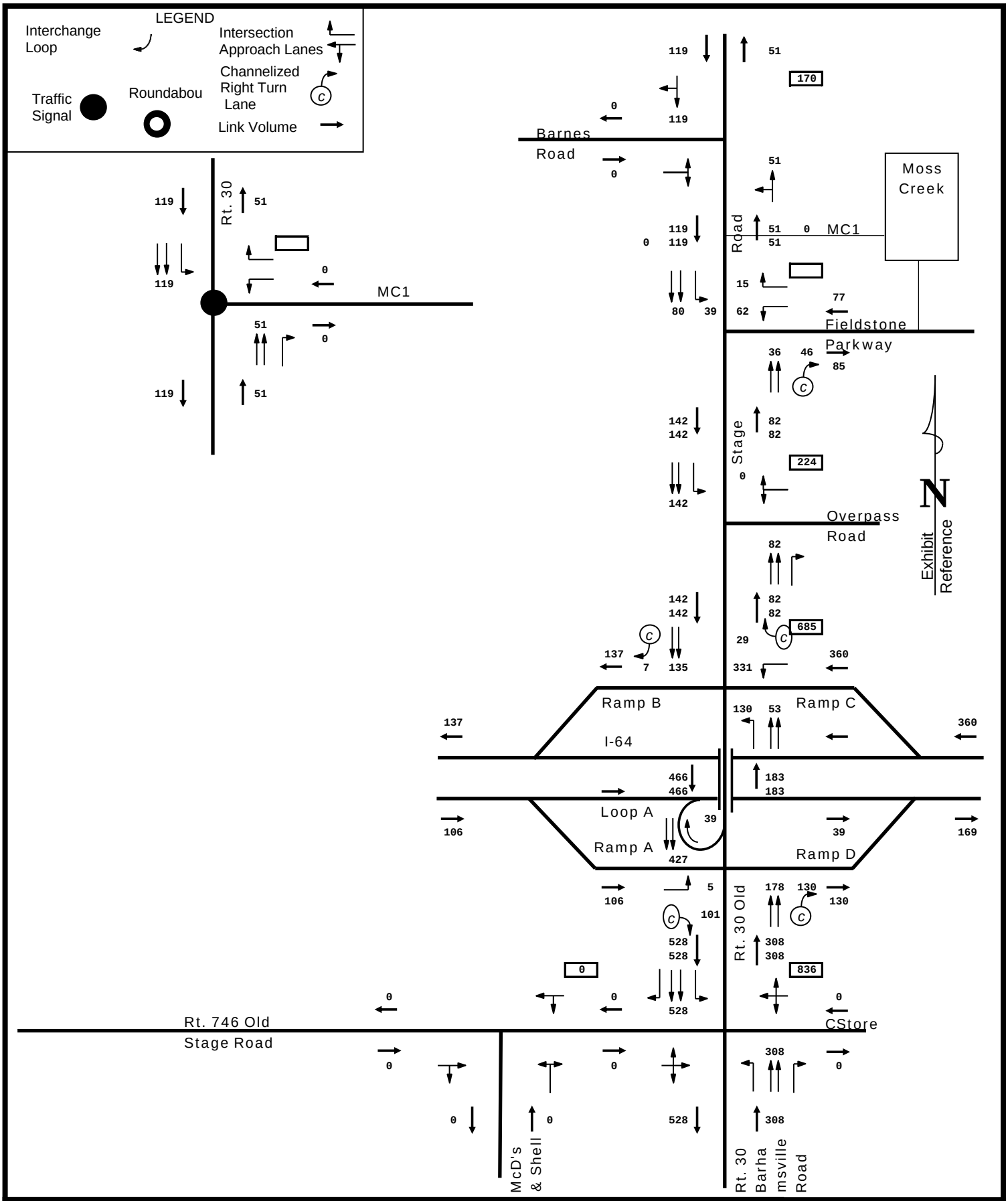
Exhibit 9b



MOSS CREEK DAILY TRAFFIC
SIDEWALKS, MULTI-USE (VDOT SHARED USE PATH), TRANSIT

DRW Consultants, LLC
804-794-7312

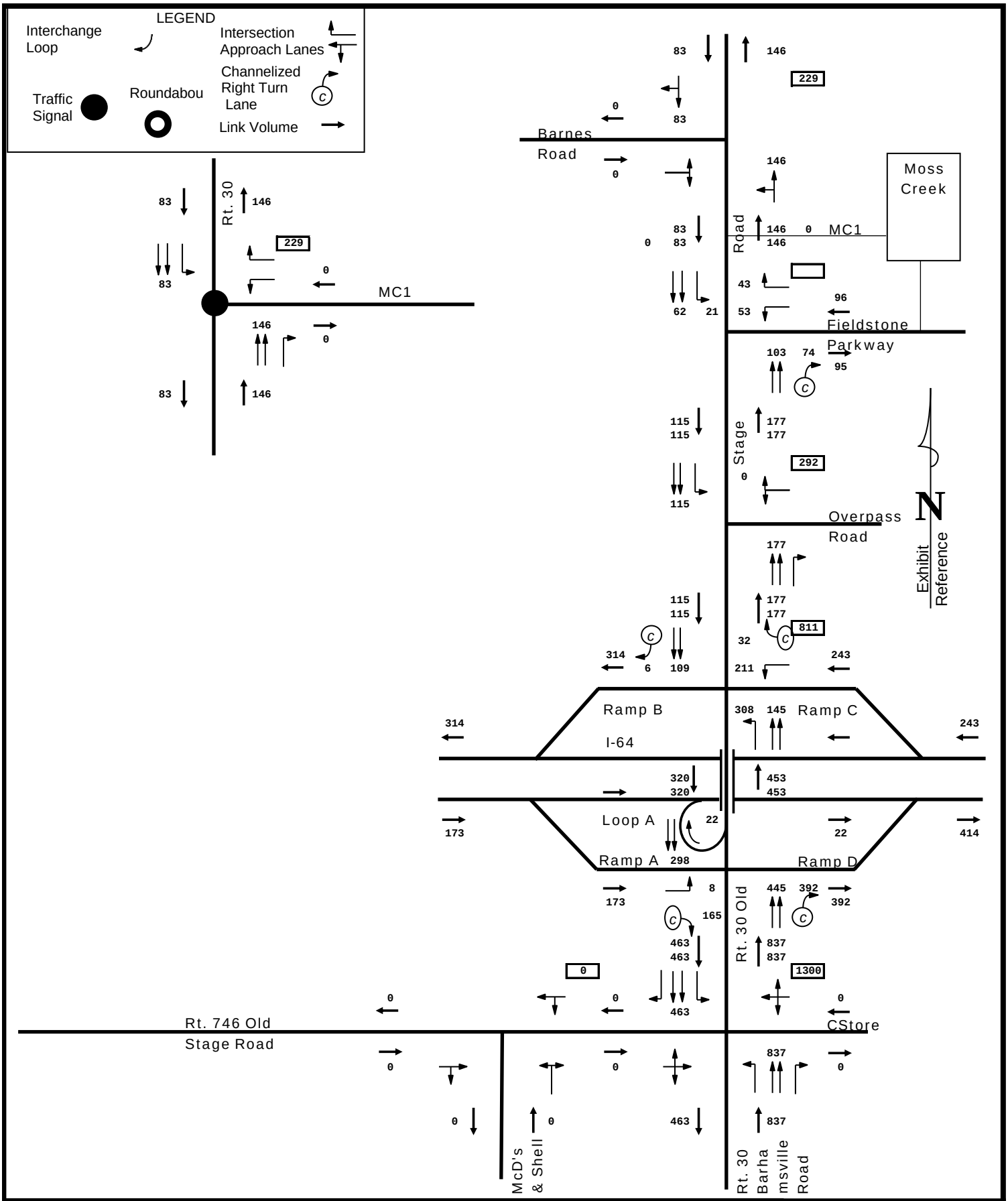
Exhibit 9c



STONEHOUSE PHASE 1 & 100% PHASE 2
AM PEAK HOUR

DRW Consultants, LLC
804-794-7312

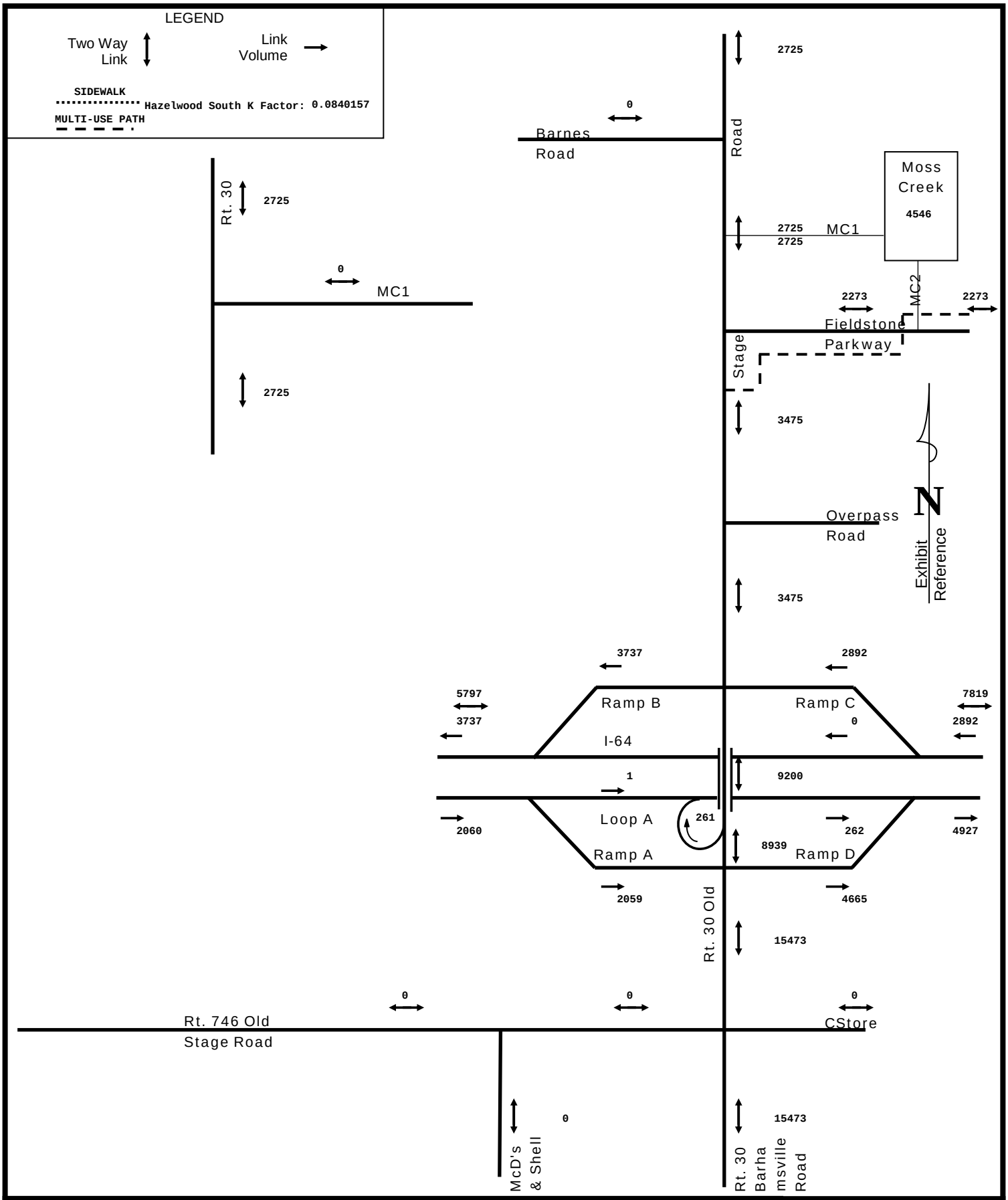
Exhibit 10a



STONEHOUSE PHASE 1 & 100% PHASE 2
PM PEAK HOUR

DRW Consultants, LLC
804-794-7312

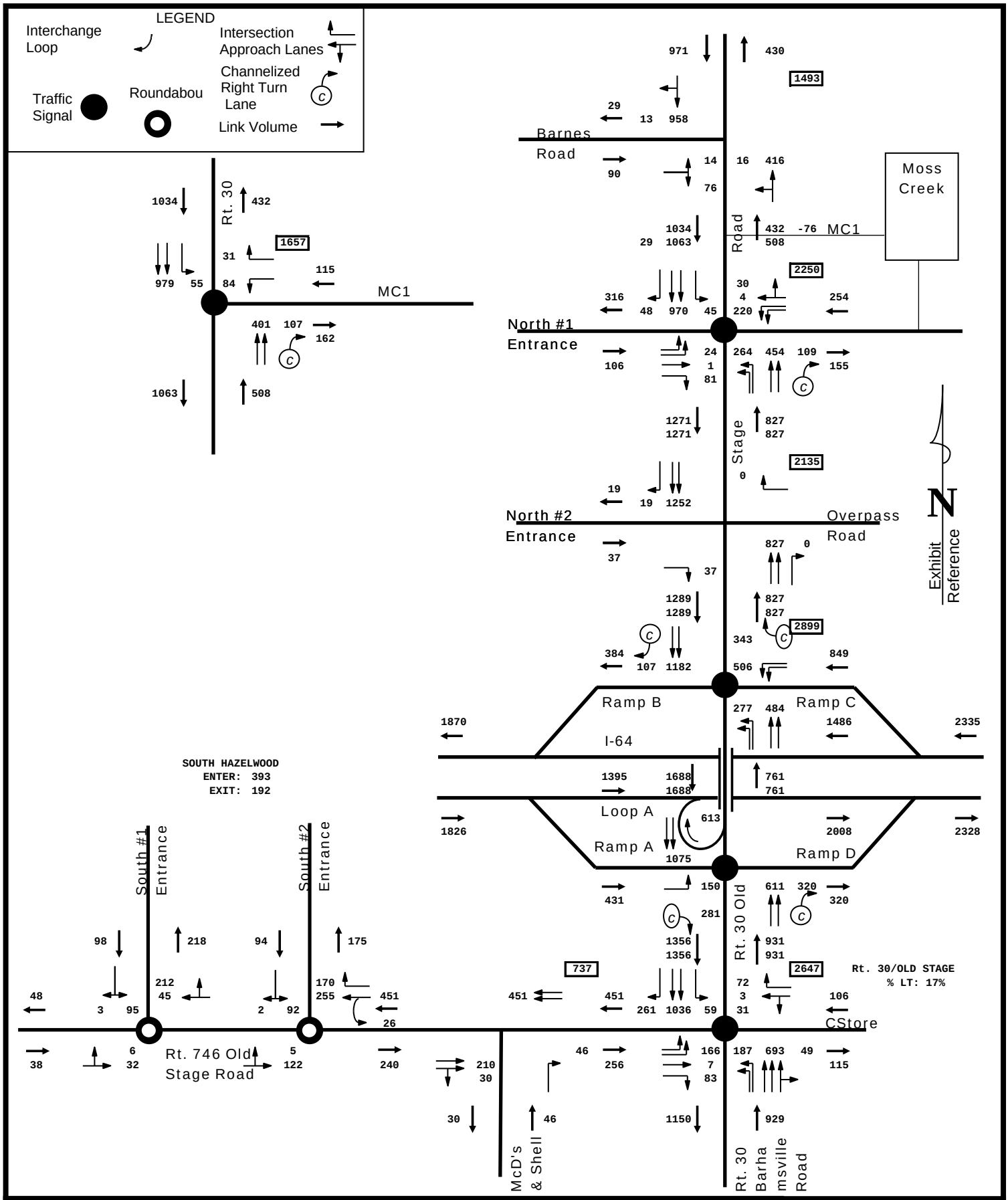
Exhibit 10b



STONEHOUSE PHASE 1 AND 100% PHASE 2 DAILY TRAFFIC
SIDEWALKS, MULTI-USE (VDOT SHARED USE PATH), TRANSIT

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804-794-7312

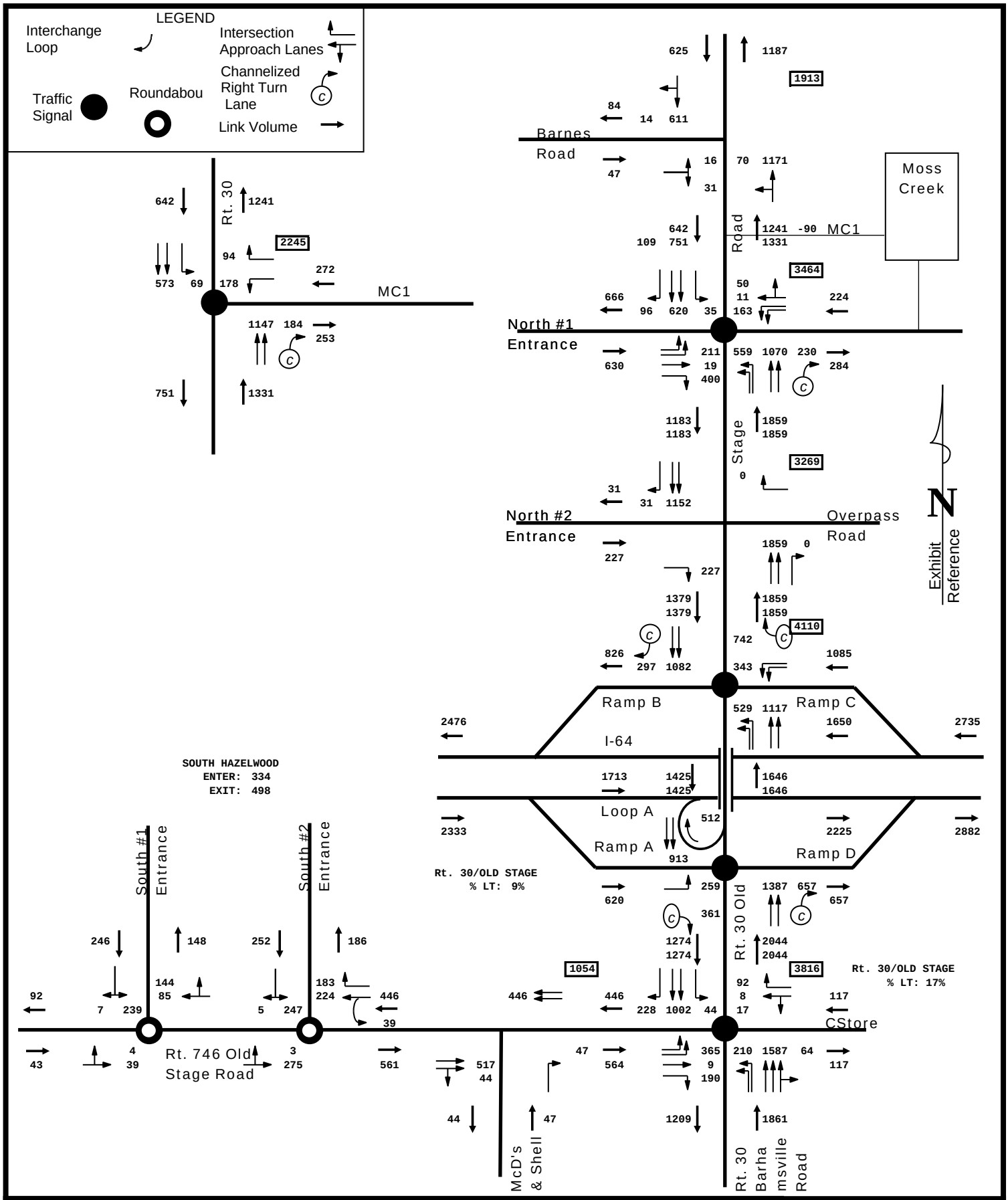
Exhibit 10c



2030 AM PEAK HOUR FORECAST
HAZELWOOD FARMS, STONEHOUSE & MOSS CREEK

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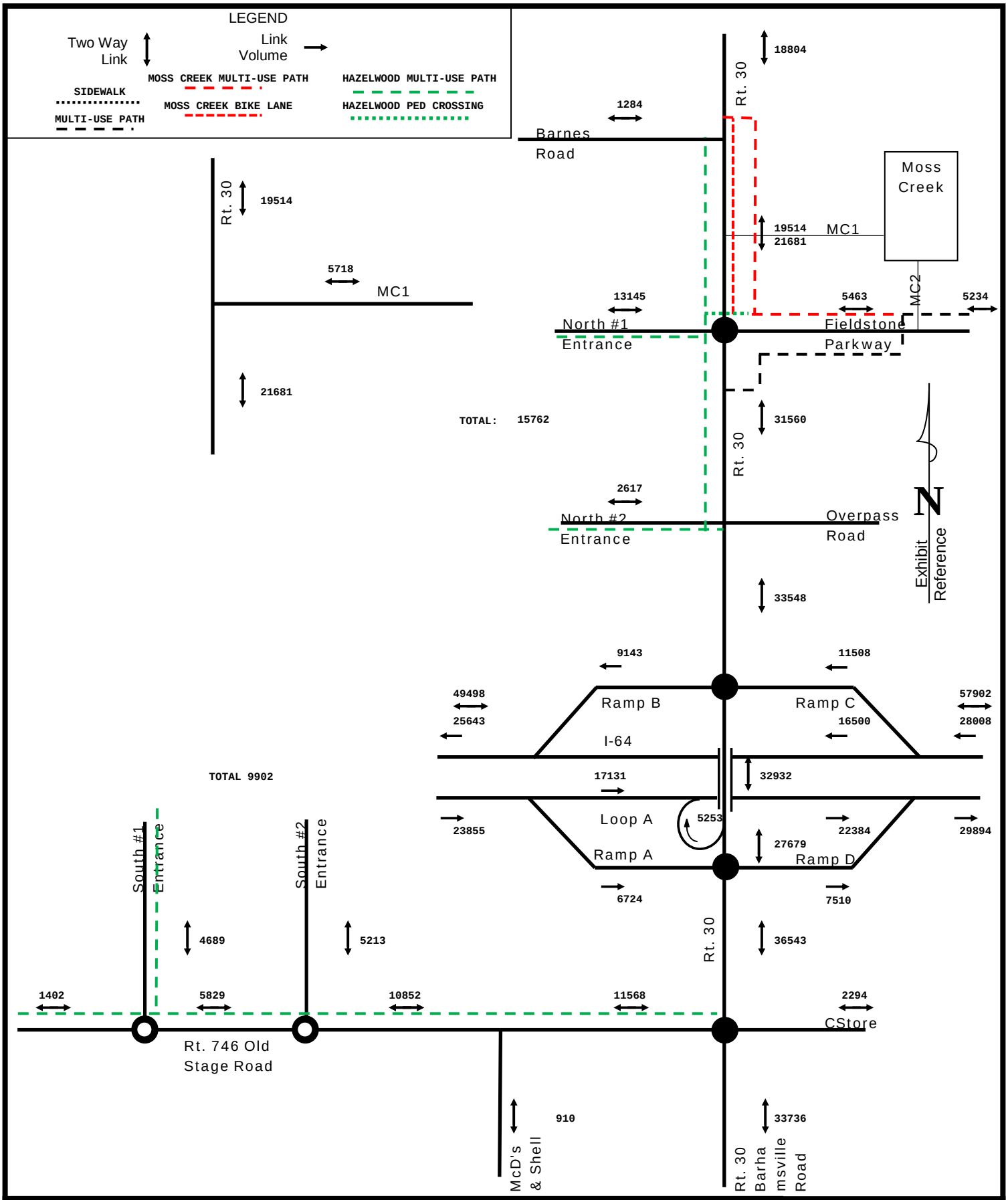
Exhibit 11a



2030 PM PEAK HOUR FORECAST
HAZELWOOD, STONE HOUSE AND MOSS CREEK

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804-794-7312

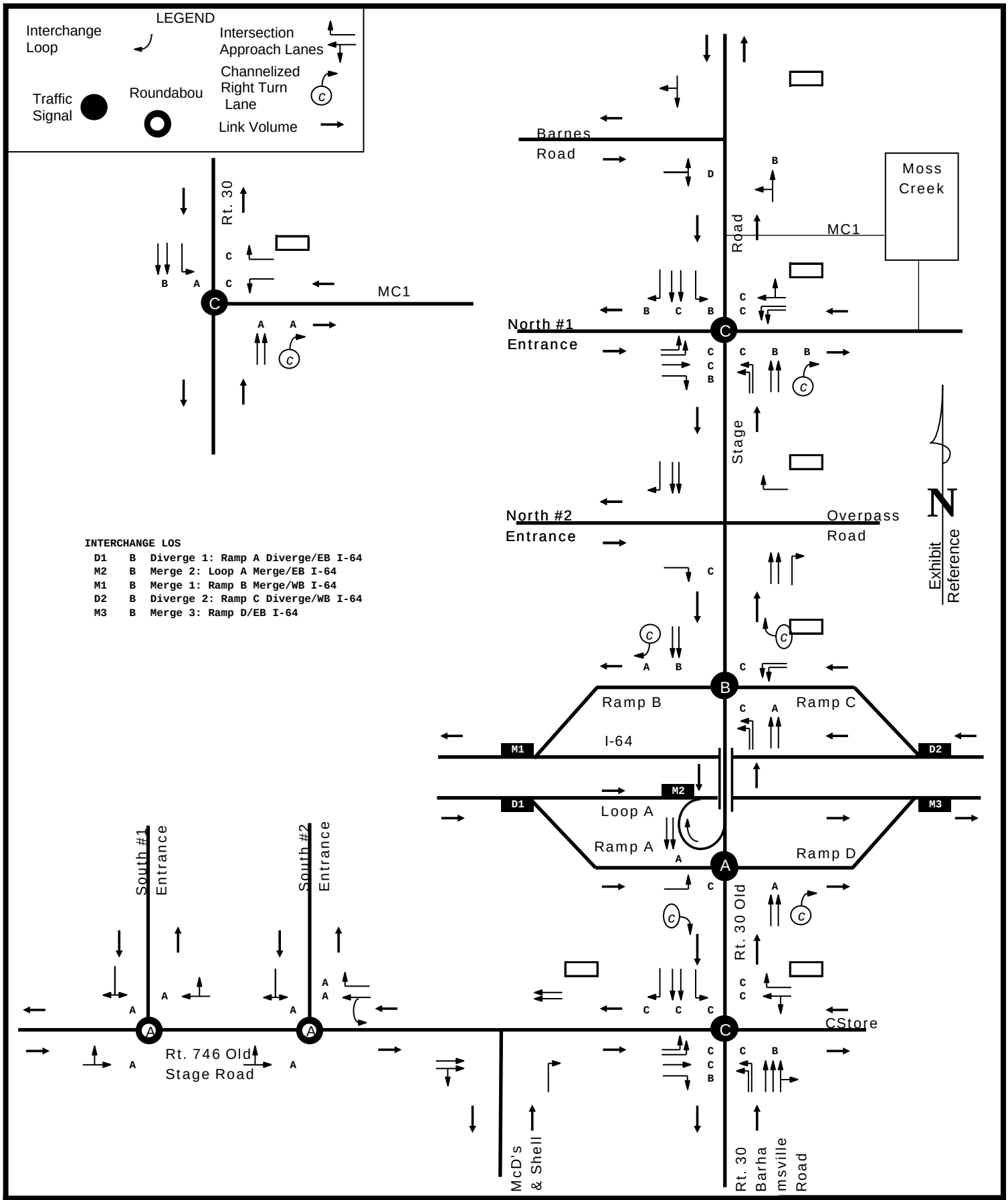
Exhibit 11b



2030 TOTAL DAILY TRAFFIC WITH HAZELWOOD FARMS AND STONEHOUSE
SIDEWALKS, MULTI-USE (VDOT SHARED USE PATH), TRANSIT

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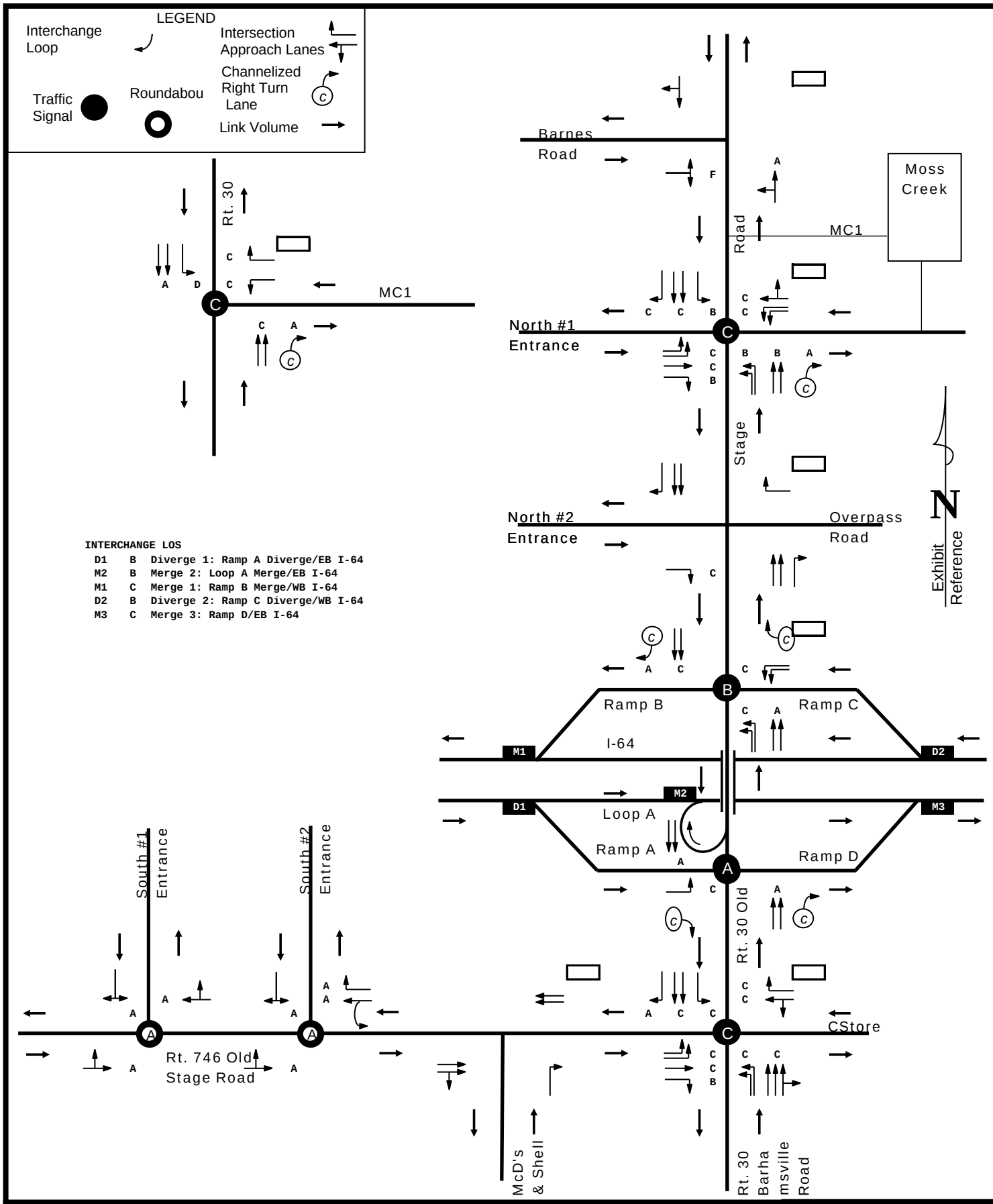
Exhibit 11c



2030 AM PEAK HOUR LEVEL OF SERVICE: 70 SECOND CYCLE
HAZELWOOD, STONEHOUSE AND MOSS CREEK

DRW Consultants, LLC
804-794-7312

Exhibit 11d



2030 PM PEAK HOUR LEVEL OF SERVICE: 70 SECOND CYCLE
HAZELWOOD, STONEHOUSE AND MOSS CREEK

DRW Consultants, LLC
804-794-7312

Exhibit 11e

DRW Consultants, LLC
Traffic Impact Studies
Development Access
Condemnation Damages

TO: Tim Trant, Esq.
FROM: Dexter R. Williams, P. E.
SUBJECT: Barnes Road Access Alternatives At Rt. 30
Response To Kimley-Horn & Assc. Inc. Letter Dated June 7, 2019, Comment 12
DATE: January 14, 2020

The existing Rt. 30/Barnes Road intersection is on a two-lane section of Rt. 30 with stop sign control for the single lane approach on Barnes Road. As traffic increases on Rt. 30, the level of service experience for the stop sign control on Barnes Road will decline.

The LOS F for Barnes Road at Rt. 30 shown in the January 2019 traffic study occurs in the PM peak hour with all development (Stonehouse, Moss Creek, Hazelwood Farms North and South) in place. Given the pace of development in Stonehouse to date, this extent of development will likely require decades for full development (e.g., Stonehouse was originally zoned in 1991 [29 years ago], has been rezoned three times, and to date there still is not enough traffic at the Fieldstone Drive and LaGrange Parkway intersections with Rt. 30 to warrant the envisioned traffic signals). At some point with all this development in place and if Barnes Road approach traffic at Rt. 30 is unchanged, then the result will be LOS F (73.7 seconds delay) primarily due to the 16 vehicles per hour (VPH), ~one vehicle every four minutes, continuing to make a left turn from Barnes Road to northbound Rt. 30.

With increasing traffic and improvements to the road network, the 16 VPH from Barnes Road to northbound Rt. 30 have an alternative route. The 16 VPH can avoid the forecast 1.2-minute delay at the Barnes Road stop sign by:

1. Turning right onto southbound Rt. 30.
2. Traveling approximately ¼ mile to U-turn at Fieldstone Parkway.
3. Continuing northbound on Rt. 30

With full development, there will be a signal at Rt. 30/Fieldstone Parkway to provide a safe and convenient, southbound to northbound U-turn on Rt. 30. With the 16 VPH utilizing this U-turn, the Barnes Road approach to Rt. 30 has a LOS B. Overall level of service at Rt. 30/Fieldstone Parkway/Hazelwood North Entrance #1 is unchanged by the Barnes Road diversion U-turn.

The Moss Creek development and its current access plan may change. The Moss Creek plan was zoned in 2006, with no development is the fourteen years since. The current Moss Creek plan signalized entrance on Rt. 30 is 920 feet from Fieldstone Parkway. This is less than the 1320 feet

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required by VDOT Minimum Spacing Standards for signalized intersections. Any new Moss Creek plan with a Rt. 30 signal will invariably prompt VDOT to require minimum spacing, which in turn puts any revised plan signal aligned at Barnes Road, which automatically relieves the inherent unsignalized intersection LOS problem.

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Traffic Impact Studies
Development Access
Condemnation Damages

TO: Tim Trant, Esq.
FROM: Dexter R. Williams, P. E.
SUBJECT: Hazelwood Farms Rt. 30 Shared Use Path
Response To Kimley-Horn & Assc. Inc. Letter Dated June 7, 2019, Comment 13
DATE: January 29, 2020

COMMENT 13 AND PRESUMED IMPROVEMENTS TO RT. 30 BRIDGE OVER I-64

Regarding the Rt. 30 bridge over I-64, Comment 13 included the following: "accommodation of dedicated bike lanes and a shared-use path across the overpass" in accordance with Exhibit 1g-3 in the 2019 Ch. 527 study for Hazelwood Farms. Exhibit 1g-3 is a section of the Regional Bikeway Plan for the I-64/Rt. 30 area. Exhibit 1g-4 in the 2019 Ch. 527 study is a section of the JCC Draft 2011 Pedestrian Accommodation Master Plan.

Following are the designations on the Regional Bikeway Plan and the JCC Draft 2011 Pedestrian Accommodation Master Plan plans for Rt. 30 from Barnes Road to Old Stage Road:

- Regional Bikeway Plan
  - Proposed Multi-Purpose Path
  - Proposed Bike Lane
- JCC Draft 2011 Pedestrian Accommodation Master Plan
  - Multi-Use on the west (Hazelwood) side of Rt. 30.

It is one thing for government to adopt a ped/bike facility showing facilities on one side of a road. It is something else entirely for Comment 13 to go beyond government master planning and imply some unconceivable presumptions of cost responsibility for property owners:

1. That property owners located the one side of road designated by a government plan for a shared use path should have to pay the cost for all of the shared use path.
2. That Hazelwood Farms should have to pay for both the multi-use path designated on its side of Rt. 30 in the Draft 2011 Plan and also pay for a bike lane on the Regional Bikeway Plan which doesn't have a designated side.
3. That any property owners, and one property owner in particular, should have to pay for Interstate bridge deck modifications for all users to correct a perceived lack of connectivity that was created by State condemnation of Hazelwood Farms for construction of I-64.

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For the record, KHA provided a preliminary plan for the VDOT Longhill Road Shared Use Path project. The "Shared Use Path" plan on the Longhill Road bridge over Rt. 199 has 7 feet 10 inches clearance from bridge parapet wall to wall divider from vehicle traffic. The VDOT specification for a shared use path lateral wall clearance on a bridge is 14 feet. On the preliminary drawing, the "Shared Use Path" is designated as a sidewalk.

The multi-use path and bike lane referenced above for the Rt. 30 bridge over I-64 would require ~20 feet clearance. The construction estimate to the Longhill project is $3.6 million, and I estimate the bridge deck at $2.5 million. Even if the inferior 7 feet 10-inch clearance is applied to the Rt. 30 bridge, the resulting cost is approximately $5 million.

PROPOSED SHARE USED PATH SYSTEM – HAZELWOOD FARMS

The Hazelwood Farms plans have been revised to include shared use paths along the west side Rt. 30 as follows:

- Village Center At Hazelwood Farms (North)
    - Barnes Road (Sta. 299+30) south to end of limited access fence (Sta 321+95): 2,300 feet
    - End of limited access fence (Sta 321+95) to south of Ramp B (Sta 337+25) located inside of limited access fence: 1,500 feet
    - Shared use path at Sta 337+25 connects to 10-foot shoulder along Rt. 30 north of I-64 bridge
    - Total: 3,800 feet
- Enterprise Center At Hazelwood Farms (South)
    - Old Stage Road (Sta 358+70) to north of Ramp A (Sta 348+10) located inside limited access fence: 1,000 feet
    - Shared use path at Sta 348+10 connects to 10-foot shoulder along Rt. 30 south of I-64 bridge

The total length of shared use path by Hazelwood Farms along the west side of Rt. 30 is 4,800 feet. Of the total, 2,500 feet is located within the limited access fence on Rt. 30. The Rt. 30 shared use paths on both sides of I-64 were deliberately designed to tie into the existing 10 foot paved shoulder lane that extends from the Village Center shared use path tie in (Sta 337+25) across the bridge to the Enterprise Center shared use path tie in (348+10). The Hazelwood Farms shared use path are located mostly in areas where there is little or no paved shoulder lane. With the Hazelwood Farms shared use paths, there is 10 feet of continuous pavement width outside of vehicular travel lanes to accommodate non-vehicular traffic from Barnes Road to Old Stage Road.

It should also be noted that shared use paths are provided along the Old Stage Road frontage for

Enterprise Center from Rt. 30 to Leisure Road (~1600 feet) and on Leisure Road from Old Stage Road to the Enterprise Center property limits near Upper County Park (~1400 feet). This is a total of approximately 7,800 feet of shared use path to be built along existing roads.

The shared use path system also includes a connection across Rt. 30 at Fieldstone Parkway to Moss Creek and by connection to Stonehouse. Given the total lack of pedestrian/bike accommodations along the Stonehouse frontage on Rt. 30 and south to the I-64 interchange, the shared use path system proposed by Hazelwood Farms provides a means to compensate for this oversight on the east side of Rt. 30.

HAZELWOOD FARMS MEASURES OF SEPARATION

KHA Comment 13 references a lack of "account for no connection between Hazelwood North and South". The two projects (Village Center and Enterprise Center) are just that: two separate projects with I-64 creating a vast chasm between the two separate projects. Following are dimensional measures of separation between the two developments:

- The distance from the end of limited access line at Village Center (North) to the end of limited access lane at Enterprise Center (South) is 3,675 feet, 0.7 miles.
- The walking/biking distance from the center of Village Center to the main access to Enterprise Center (South Entrance #2) on Old State Road is 6400 feet, 1.2 miles.
- Enterprise Center is approximately 1 mile deep, so the center to center distance between Village Center and Enterprise Center is 1.7 miles.

In summary, the two separate projects are well over 0.5 miles apart by the closest measure, and well over 1.5 miles apart measured by center of development.

EFFECTIVE CONNECTIVITY BETWEEN VILLAGE CENTER AND ENTERPRISE CENTER AND TRANSIT

These measures of separation between Village Center and Enterprise Center are far in excess of common planning standards for walking limits:

- "The transit industry widely applies the 400-meter (0.25-mile) and 800-meter (0.5-mile) rules of thumb when estimating service areas around bus and rail stations." — El-Geneidy et al. (2014)
- A 10-minute walk (0.5 mile) is also considered a reasonable distance for accessing public parks. This is the distance that The Trust for Public Land applies in their rating system developed to measure how well the 100 largest U.S. cities are meeting the need for parks.

Even the shortest measure of separation (0.7 mile) is in excess of the longer range of walking limits (0.5 mile). For non-automobile connectivity between these two separate developments and in fact the rest of James City County and the Williamsburg area, transit is the effective strategy.

The existing WATA 9 Purple 2 line currently terminates at Stonehouse Industrial Park. An extension of this line to Hazelwood Farms provides connectivity between the two separate developments and the balance of Williamsburg. Transit can provide effective connectivity for all income and health ranges. To this end, Hazelwood Farms proffers include a commitment to provide at least two bus stops within the development or on public road frontages and may be determined as feasible by WATA.

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Traffic Impact Studies
Development Access
Condemnation Damages

TO: Tim Trant, Esq.
FROM: Dexter R. Williams, P. E.
SUBJECT: Analysis Of 2030 traffic with Hazelwood Farms – 90/100 Second cycles
DATE: January 9, 2020

This memo and enclosed exhibits are provided as a supplement to the January 2019 Ch. 527 Traffic Impact Statement For Village Center And Enterprise Center At Hazelwood Farms (2019 study). This memo presents another scenario for the 2030 forecast year: background growth with Hazelwood Farms only using 90 cycle lengths for AM peak hour and 100 second cycle lengths for PM peak hour.

Total 2030 AM peak hour traffic with Hazelwood Farms is shown on enclosed Exhibit 1a. Total 2030 PM peak hour traffic with Hazelwood Farms is shown on enclosed Exhibit 1b. Also shown on Exhibits 1a and 1b are intersection lane configurations used in this analysis. Traffic analysis reports are enclosed as follows:

- HCM Signalized Intersection Capacity Analysis: ExJ7 for AM, Ex J8 for PM
- HCM 6th Two Way Stop: ExK7 for AM, Ex K8 for PM
- Synchro Queues: ExL7 for AM, ExL8 for PM
- SimTraffic Queuing and Blocking Report: ExM7 for AM, ExM8 for PM

Following are analysis results for each intersection:

RT. 30/FIELDSTONE PARKWAY- 2030 WITH HAZELWOOD FARMS

The following table shows signalized intersection LOS results at Rt. 30/Fieldstone Parkway:

TABLE 6-1 Rt. 30/FIELDSTONE PARKWAY
2030 HAZELWOOD ONLY 90/100 SECOND CYCLE

SIGNALIZED LOS And Seconds Delay					95th Percentile Queues By Lane Group				
	AM		PM		Storage	Synchro		SimTraffic Q&B	
Overall	C	23.4	C	21.9	Length	AM	PM	AM	PM
EBL2	C	28.5	C	32.4	150	31	172	46	193
EBT	D	39.6	D	35.6		5	30	6	94
EBR	C	22.8	C	20.8	200	0	86	90	236
WBL	D	36.5	D	46.8	250	122	65	156	100
WBT/R	D	43.0	D	50.1		24	31	38	42
NBL2	C	34.3	C	30.4	300	109	210	145	286
NBT2	A	9.9	B	10.1		107	148	106	427
NBR	A	8.6	A	1.4	350	1	2		
SBL	B	16.0	C	25.9	150	11	25	20	40
SBT2	C	23.5	C	28.6		276	183	182	169
SBR	B	16.1	C	24.4	200	0	0	41	64

SimTraffic queue shown is maximum report value for multi-lane groups

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Overall intersection LOS C and all lane groups are LOS C or better for Rt. 30 major streets and LOS D or better for minor street movements. Note: a single left turn lane is used on eastbound North #1 Entrance vs. two lane left turns used in previous analysis. All auxiliary lane queues are within storage length.

RT. 30/I-64 WESTBOUND RAMPS - 2030 WITH HAZELWOOD FARMS

The following table shows signalized intersection LOS results at Rt. 30/I-64 westbound ramps:

TABLE 6-2 Rt. 30/I-64 WESTBOUND RAMPS
2030 HAZELWOOD ONLY 90/100 SECOND CYCLE

SIGNALIZED LOS And Seconds Delay					95th Percentile Queues By Lane Group				
	AM		PM		Storage	Synchro		SimTraffic Q&B	
Overall	B	11.0	A	9.7	Length	AM	PM	AM	PM
WBL	D	42.3	D	46.1		166	144	112	111
NBL	C	32.3	A	9.9	200	141	93	169	165
NBT2	B	11.1	A	7.5		37	227	119	1536
SBT2	A	6.2	A	8.8		101	168	221	210
SBR	A	0.1	A	0.2	300	0	0		

SimTraffic queue shown is maximum report value for multi-lane groups

Overall intersection LOS A and B and all lane groups are LOS C or better for Rt. 30 major streets and LOS D or better for minor street movements. All auxiliary lane queues are within storage length.

RT. 30/I-64 EASTBOUND RAMP A - 2030 WITH HAZELWOOD FARMS

The following table shows signalized intersection LOS results at Rt. 30/I-64 eastbound ramp A:

TABLE 6-3 Rt. 30/I-64 EASTBOUND RAMP
2030 HAZELWOOD ONLY 90/100 SECOND CYCLE

SIGNALIZED LOS And Seconds Delay					95th Percentile Queues By Lane Group				
	AM		PM		Storage	Synchro		SimTraffic Q&B	
Overall	A	4.3	A	8.9	Length	AM	PM	AM	PM
EBL	D	42.9	D	45.5		106	183	101	168
NBT2	A	0.4	A	1.5		5	14	48	84
SBT2	A	0.5	A	8.4		0	157	68	95

SimTraffic queue shown is maximum report value for multi-lane groups

Overall intersection LOS A and B and all lane groups are LOS C or better for Rt. 30 major streets and LOS D or better for minor street movements.

RT. 30/OLD STAGE ROAD - 2030 WITH HAZELWOOD FARMS

The following table shows signalized intersection LOS results at Rt. 30/Old Stage Road:

TABLE 6-4 Rt. 30/OLD STAGE ROAD 2030 HAZELWOOD ONLY 90/100 SECOND CYCLE									
SIGNALIZED LOS And Seconds Delay					95th Percentile Queues By Lane Group				
	AM		PM		Storage	Synchro		SimTraffic Q&B	
Overall	B	19.0	C	23.0	Length	AM	PM	AM	PM
EBL2	D	38.0	D	40.1	200	80	162	119	192
EBT	D	35.2	C	33.2		17	19	26	29
EBR	C	22.8	C	23.4	200	0	29	99	167
WBL/T	D	40.9	D	45.9		49	43	63	51
WBR	D	39.2	D	44.4		0	22	61	69
NBL2	D	38.3	D	39.8	200	87	105	123	109
NBT2	B	17.0	B	17.5		129	257	101	166
NBR	B	15.2	B	13.5		0	3	19	14
SBL	C	20.4	D	46.7	200	51	68	83	61
SBT2	A	7.5	B	13.8		87	127	95	106
SBR	A	7.5	A	2.7		3	6	96	91

SimTraffic queue shown is maximum report value for multi-lane groups

Overall intersection LOS is LOS B and C and all lane groups are LOS D or better. All auxiliary lane queues are within storage length.

RT. 30/BARNES ROAD – 2030 WITH HAZELWOOD FARMS

The following table shows unsignalized intersection LOS results at Rt. 30/Barnes Road:

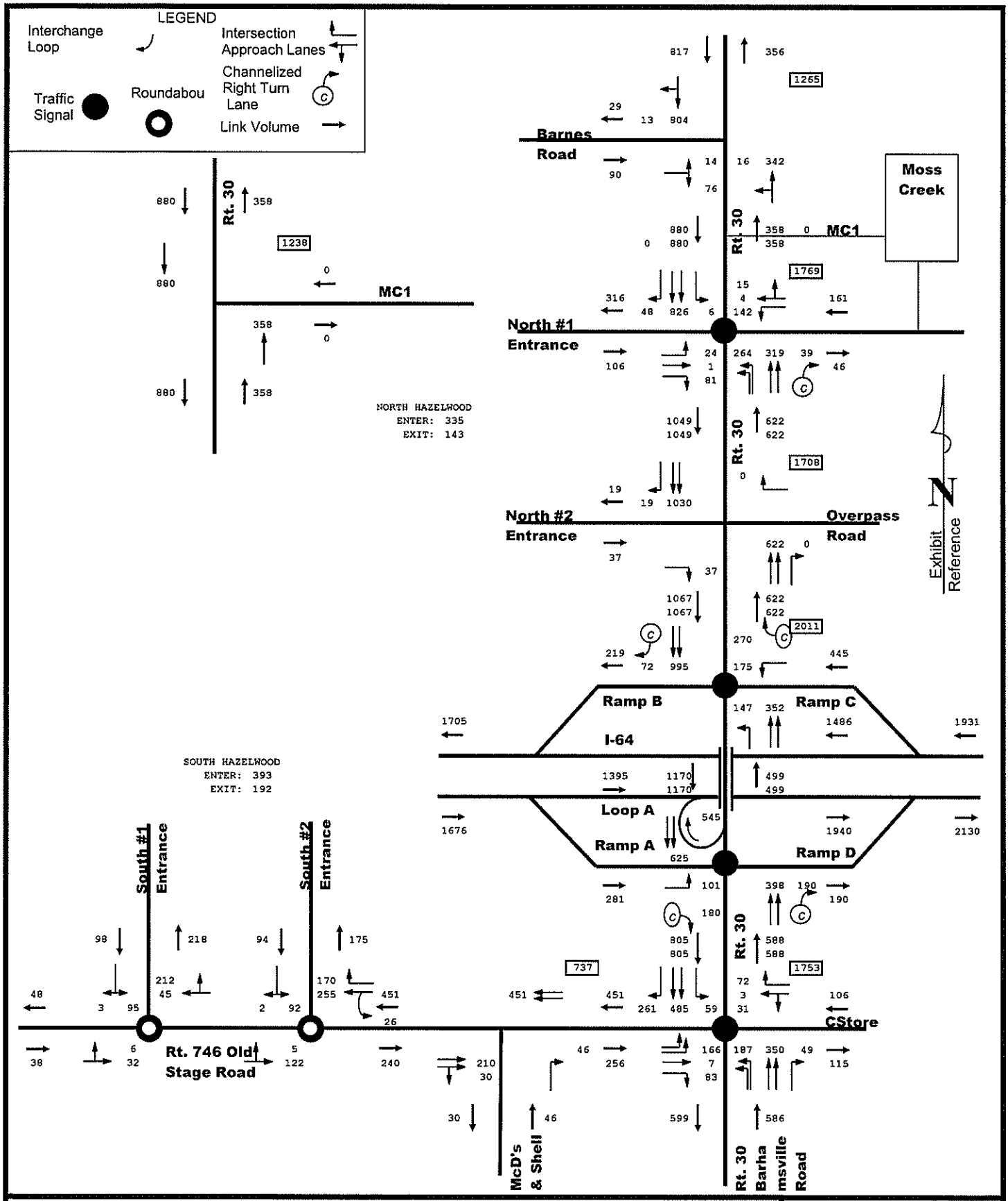
TABLE 6-5 RT. 30/BARNES ROAD 2030 HAZELWOOD ONLY UNSIGNALIZED									
UNSIGNALIZED LOS And Seconds Delay					95th Percentile Queues By Lane Group				
	AM		PM		Storage	HCM 6th		SimTraffic Q&B	
					Length	AM	PM	AM	PM
EBL/R	C	23.1	D	32.7		35	30	89	82
NBL/T	A	9.9	A	8.8		3	10		169

All lanes have LOS D or better.

SUMMARY COMMENTS - 2030 WITH HAZELWOOD FARMS

All signalized intersections have LOS C or better overall and LOS D or better for each turning movement. For unsignalized Barnes Road, eastbound AM was LOS C and PM is LOS D. All auxiliary lane queues are within storage length.

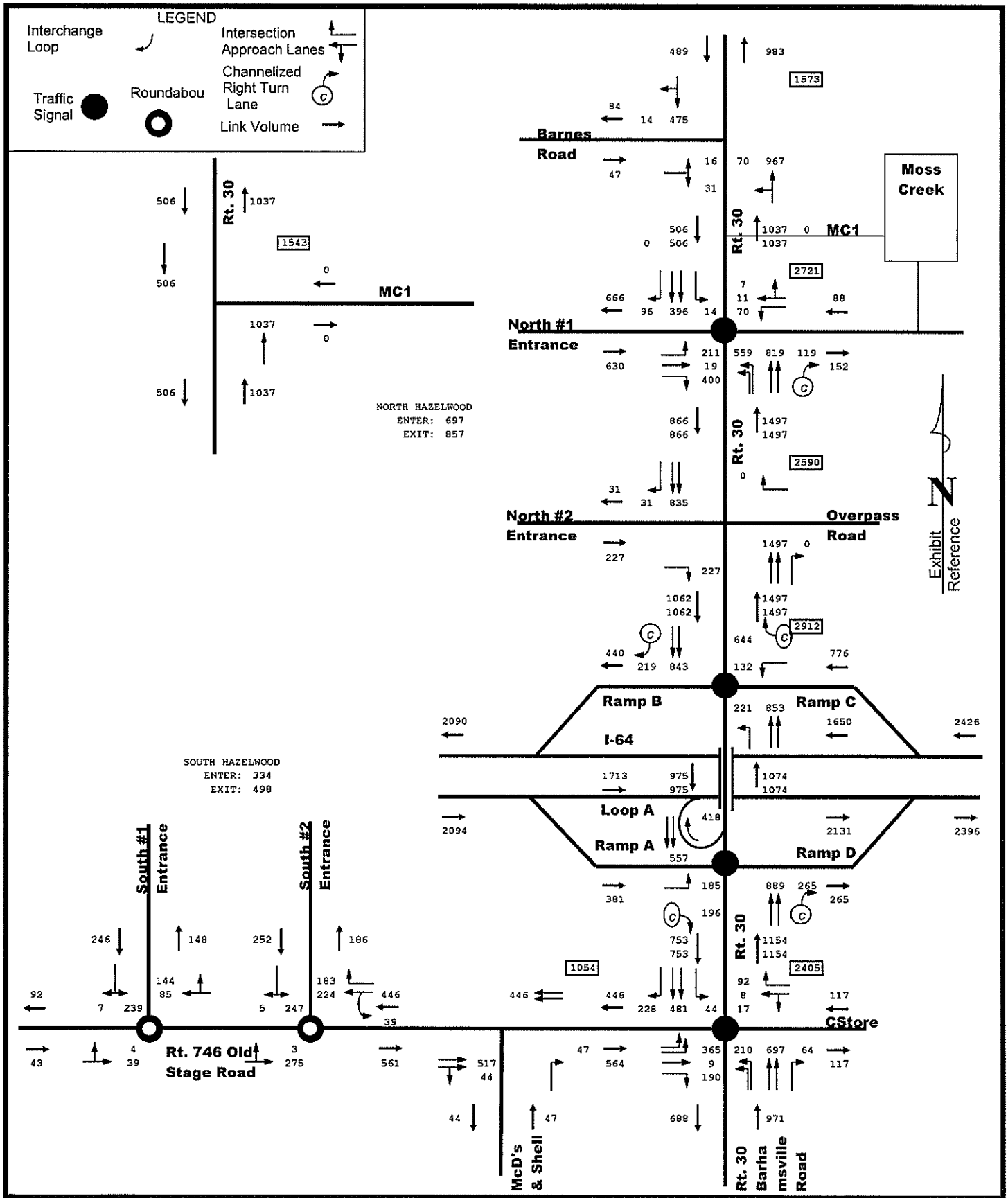
Exhibits 1c and 1d show LOS results on the network diagram.



2030 AM PEAK HOUR TOTAL TRAFFIC WITH HAZELWOOD FARMS
90 SECOND CYCLE ANALYSIS

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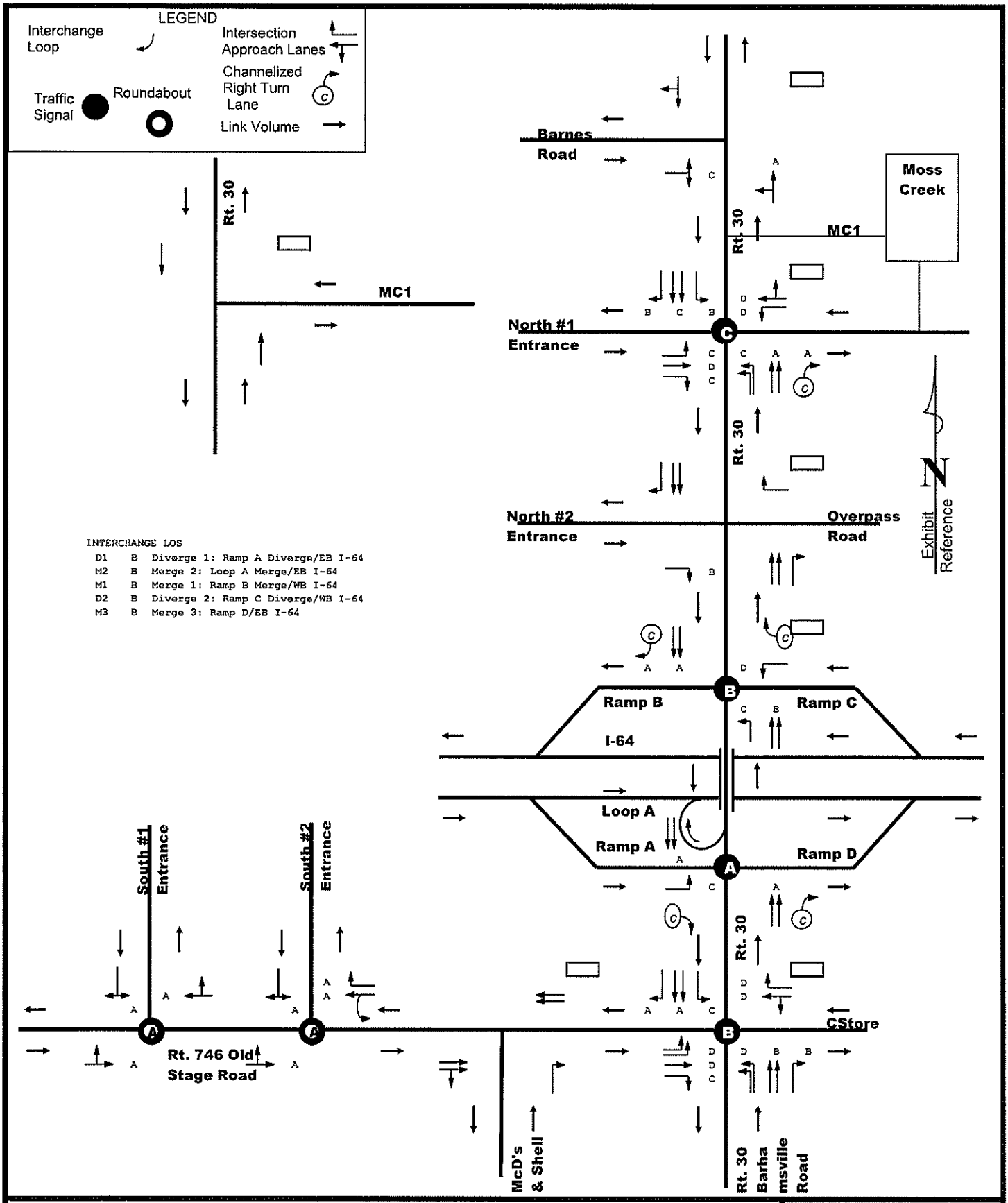
Exhibit 1a



2030 PM PEAK HOUR TOTAL TRAFFIC WITH HAZELWOOD FARMS
100 SECOND CYCLE ANALYSIS

DRW Consultants, LLC
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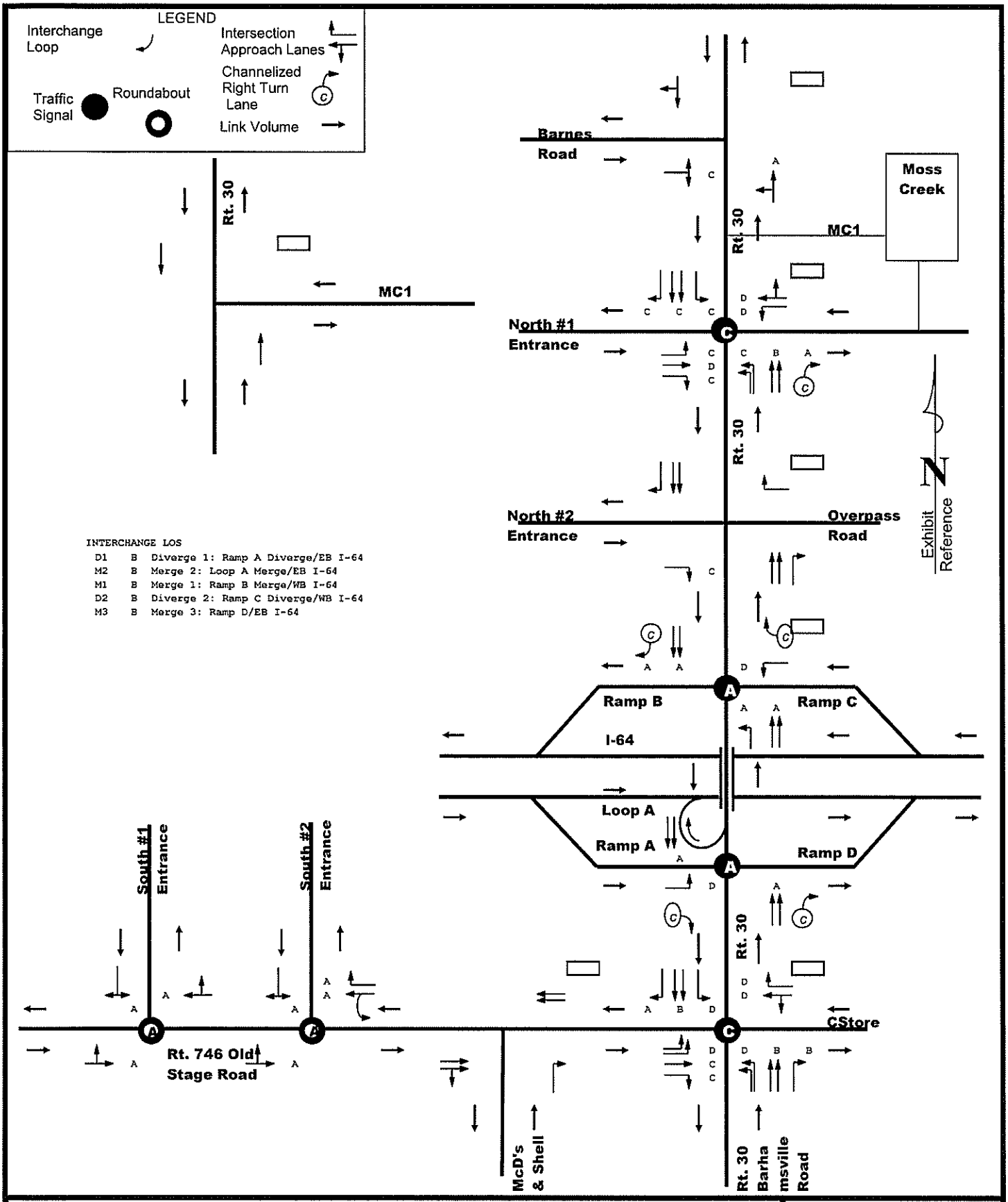
Exhibit 1b



2030 AM PEAK HOUR LEVEL OF SERVICE: 90 SECOND CYCLE
HAZELWOOD FARMS ONLY

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804-794-7312

Exhibit 1c



2030 PM PEAK HOUR LEVEL OF SERVICE: 100 SECOND CYCLE
HAZELWOOD FARMS ONLY

DRW Consultants, LLC
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Exhibit 1d

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	1	81	142	4	15	264	319	39	6	826	48
Future Volume (vph)	24	1	81	142	4	15	264	319	39	6	826	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0		5.0	6.0	6.0	5.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.97	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.88		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	1900	1568	1805	1672		3433	3406	1538	1543	3471	1583
Flt Permitted	0.74	1.00	1.00	1.00	1.00		0.95	1.00	1.00	0.47	1.00	1.00
Satd. Flow (perm)	1414	1900	1568	1900	1672		3433	3406	1538	758	3471	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	26	1	88	154	4	16	287	347	42	7	898	52
RTOR Reduction (vph)	0	0	62	0	15	0	0	0	18	0	0	31
Lane Group Flow (vph)	26	1	26	154	5	0	287	347	24	7	898	21
Heavy Vehicles (%)	0%	0%	3%	0%	0%	0%	2%	6%	5%	17%	4%	2%
Turn Type	pm+pt	NA	pt+ov	pm+pt	NA		Prot	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4	4 5	3	8		5	2		1	6	
Permitted Phases	4			8					2	6		6
Actuated Green, G (s)	19.1	5.6	26.5	13.7	2.9		15.9	51.2	51.2	36.7	36.7	36.7
Effective Green, g (s)	19.1	5.6	26.5	13.7	2.9		15.9	51.2	51.2	36.7	36.7	36.7
Actuated g/C Ratio	0.21	0.06	0.29	0.15	0.03		0.18	0.57	0.57	0.41	0.41	0.41
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	6.0	6.0	5.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	358	118	461	277	53		606	1937	874	321	1415	645
v/s Ratio Prot	c0.01	0.00	0.02	c0.07	0.00		c0.08	0.10		0.00	c0.26	
v/s Ratio Perm	0.00			c0.02					0.02	0.01		0.01
v/c Ratio	0.07	0.01	0.06	0.56	0.09		0.47	0.18	0.03	0.02	0.63	0.03
Uniform Delay, d1	28.4	39.6	22.8	34.1	42.3		33.3	9.3	8.5	16.0	21.3	16.0
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.01	1.04	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.0	0.1	2.4	0.7		0.6	0.2	0.1	0.0	2.2	0.1
Delay (s)	28.5	39.6	22.8	36.5	43.0		34.3	9.9	8.6	16.0	23.5	16.1
Level of Service	C	D	C	D	D		C	A	A	B	C	B
Approach Delay (s)		24.3			37.2			20.2			23.0	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	23.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	58.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	175	0	0	147	352	0	0	995	72
Future Volume (vph)	0	0	0	175	0	0	147	352	0	0	995	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.0			5.0	6.0			6.0	4.0
Lane Util. Factor				1.00			1.00	0.95			0.95	1.00
Frt				1.00			1.00	1.00			1.00	0.85
Flt Protected				0.95			0.95	1.00			1.00	1.00
Satd. Flow (prot)				1656			1719	3505			3471	1599
Flt Permitted				0.95			0.95	1.00			1.00	1.00
Satd. Flow (perm)				1656			1719	3505			3471	1599
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	190	0	0	160	383	0	0	1082	78
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	190	0	0	160	383	0	0	1082	78
Heavy Vehicles (%)	2%	2%	2%	9%	0%	0%	5%	3%	2%	2%	4%	1%
Turn Type				Perm			Prot	NA			NA	Free
Protected Phases							5	2			6	
Permitted Phases				8								Free
Actuated Green, G (s)				15.0			13.0	64.0			46.0	90.0
Effective Green, g (s)				15.0			13.0	64.0			46.0	90.0
Actuated g/C Ratio				0.17			0.14	0.71			0.51	1.00
Clearance Time (s)				5.0			5.0	6.0			6.0	
Vehicle Extension (s)				3.0			3.0	3.0			3.0	
Lane Grp Cap (vph)				276			248	2492			1774	1599
v/s Ratio Prot							c0.09	0.11			c0.31	
v/s Ratio Perm				c0.11								0.05
v/c Ratio				0.69			0.65	0.15			0.61	0.05
Uniform Delay, d1				35.3			36.3	4.2			15.6	0.0
Progression Factor				1.00			0.73	0.52			0.31	1.00
Incremental Delay, d2				7.0			5.6	0.1			1.4	0.1
Delay (s)				42.3			32.3	2.3			6.2	0.1
Level of Service				D			C	A			A	A
Approach Delay (s)		0.0			42.3			11.1			5.8	
Approach LOS		A			D			B			A	

Intersection Summary			
HCM 2000 Control Delay	11.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	57.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	101	0	0	398	625	0
Future Volume (vph)	101	0	0	398	625	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0			6.0	6.0	
Lane Util. Factor	1.00			0.95	0.95	
Frt	1.00			1.00	1.00	
Flt Protected	0.95			1.00	1.00	
Satd. Flow (prot)	1770			3438	3438	
Flt Permitted	0.95			1.00	1.00	
Satd. Flow (perm)	1770			3438	3438	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	110	0	0	433	679	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	110	0	0	433	679	0
Heavy Vehicles (%)	2%	2%	2%	5%	5%	0%
Turn Type	Prot			NA	NA	
Protected Phases	7			2	6	
Permitted Phases						
Actuated Green, G (s)	9.6			69.4	69.4	
Effective Green, g (s)	9.6			69.4	69.4	
Actuated g/C Ratio	0.11			0.77	0.77	
Clearance Time (s)	5.0			6.0	6.0	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	188			2651	2651	
v/s Ratio Prot	c0.06			0.13	c0.20	
v/s Ratio Perm						
v/c Ratio	0.59			0.16	0.26	
Uniform Delay, d1	38.3			2.7	2.9	
Progression Factor	1.00			0.11	0.10	
Incremental Delay, d2	4.6			0.1	0.2	
Delay (s)	42.9			0.4	0.5	
Level of Service	D			A	A	
Approach Delay (s)	42.9			0.4	0.5	
Approach LOS	D			A	A	

Intersection Summary			
HCM 2000 Control Delay	4.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	37.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	166	7	83	31	3	72	187	350	49	59	485	261
Future Volume (vph)	166	7	83	31	3	72	187	350	49	59	485	261
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0		5.0	5.0	5.0	6.0	6.0	5.0	6.0	6.0
Lane Util. Factor	0.97	1.00	1.00		1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3242	1900	1509		1817	1429	3183	3471	1392	1719	3406	1442
Flt Permitted	0.95	1.00	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3242	1900	1509		1817	1429	3183	3471	1392	1719	3406	1442
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	180	8	90	34	3	78	203	380	53	64	527	284
RTOR Reduction (vph)	0	0	63	0	0	72	0	0	30	0	0	121
Lane Group Flow (vph)	180	8	27	0	37	6	203	380	23	64	527	163
Heavy Vehicles (%)	8%	0%	7%	0%	0%	13%	10%	4%	16%	5%	6%	12%
Turn Type	Split	NA	pt+ov	Split	NA	Perm	Prot	NA	Perm	Prot	NA	pt+ov
Protected Phases	8	8	8 5	4	4		5	2		1	6	6 8
Permitted Phases						4			2			
Actuated Green, G (s)	10.6	10.6	26.6		6.4	6.4	11.0	38.4	38.4	13.6	41.0	51.6
Effective Green, g (s)	10.6	10.6	26.6		6.4	6.4	11.0	38.4	38.4	13.6	41.0	51.6
Actuated g/C Ratio	0.12	0.12	0.30		0.07	0.07	0.12	0.43	0.43	0.15	0.46	0.57
Clearance Time (s)	5.0	5.0			5.0	5.0	5.0	6.0	6.0	5.0	6.0	
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	381	223	445		129	101	389	1480	593	259	1551	826
v/s Ratio Prot	c0.06	0.00	0.02		c0.02		c0.06	0.11		0.04	c0.15	0.11
v/s Ratio Perm						0.00			0.02			
v/c Ratio	0.47	0.04	0.06		0.29	0.05	0.52	0.26	0.04	0.25	0.34	0.20
Uniform Delay, d1	37.1	35.2	22.7		39.6	39.0	37.0	16.6	15.0	33.7	15.8	9.2
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	0.59	0.44	0.81
Incremental Delay, d2	0.9	0.1	0.1		1.2	0.2	1.3	0.4	0.1	0.5	0.6	0.1
Delay (s)	38.0	35.2	22.8		40.9	39.2	38.3	17.0	15.2	20.4	7.5	7.6
Level of Service	D	D	C		D	D	D	B	B	C	A	A
Approach Delay (s)		33.0			39.7			23.7			8.5	
Approach LOS		C			D			C			A	

Intersection Summary			
HCM 2000 Control Delay	19.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	44.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

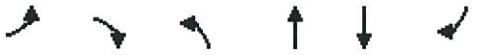
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	211	19	400	70	11	7	559	819	119	14	396	96
Future Volume (vph)	211	19	400	70	11	7	559	819	119	14	396	96
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0		5.0	6.0	6.0	5.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.97	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.94		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1787	1900	1583	1752	1786		3433	3471	1615	1805	3471	1599
Flt Permitted	0.51	1.00	1.00	1.00	1.00		0.95	1.00	1.00	0.15	1.00	1.00
Satd. Flow (perm)	965	1900	1583	1845	1786		3433	3471	1615	279	3471	1599
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	229	21	435	76	12	8	608	890	129	15	430	104
RTOR Reduction (vph)	0	0	127	0	8	0	0	0	59	0	0	72
Lane Group Flow (vph)	229	21	308	76	12	0	608	890	70	15	430	32
Heavy Vehicles (%)	1%	0%	2%	3%	0%	0%	2%	4%	0%	0%	4%	1%
Turn Type	pm+pt	NA	pt+ov	pm+pt	NA		Prot	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4	4 5	3	8		5	2		1	6	
Permitted Phases	4			8					2	6		6
Actuated Green, G (s)	26.8	16.2	42.8	8.4	2.8		26.6	54.4	54.4	30.6	30.6	30.6
Effective Green, g (s)	26.8	16.2	42.8	8.4	2.8		26.6	54.4	54.4	30.6	30.6	30.6
Actuated g/C Ratio	0.27	0.16	0.43	0.08	0.03		0.27	0.54	0.54	0.31	0.31	0.31
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	6.0	6.0	5.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	414	307	677	149	50		913	1888	878	128	1062	489
v/s Ratio Prot	c0.10	0.01	0.19	0.03	0.01		c0.18	c0.26		0.00	c0.12	
v/s Ratio Perm	c0.04			0.01					0.04	0.03		0.02
v/c Ratio	0.55	0.07	0.45	0.51	0.24		0.67	0.47	0.08	0.12	0.40	0.07
Uniform Delay, d1	30.8	35.5	20.3	43.9	47.6		32.7	14.0	10.9	25.4	27.5	24.6
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.87	0.66	0.11	1.00	1.00	1.00
Incremental Delay, d2	1.6	0.1	0.5	2.9	2.5		1.8	0.8	0.2	0.4	1.1	0.3
Delay (s)	32.4	35.6	20.8	46.8	50.1		30.4	10.1	1.4	25.9	28.6	24.8
Level of Service	C	D	C	D	D		C	B	A	C	C	C
Approach Delay (s)		25.1			47.5			17.0			27.8	
Approach LOS		C			D			B			C	

Intersection Summary			
HCM 2000 Control Delay	21.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	60.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	132	0	0	221	853	0	0	843	219
Future Volume (vph)	0	0	0	132	0	0	221	853	0	0	843	219
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.0			5.0	6.0			6.0	4.0
Lane Util. Factor				1.00			1.00	0.95			0.95	1.00
Frt				1.00			1.00	1.00			1.00	0.85
Flt Protected				0.95			0.95	1.00			1.00	1.00
Satd. Flow (prot)				1719			1703	3505			3505	1583
Flt Permitted				0.95			0.25	1.00			1.00	1.00
Satd. Flow (perm)				1719			445	3505			3505	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	143	0	0	240	927	0	0	916	238
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	143	0	0	240	927	0	0	916	238
Heavy Vehicles (%)	2%	2%	2%	5%	0%	0%	6%	3%	2%	2%	3%	2%
Turn Type				Perm			pm+pt	NA			NA	Free
Protected Phases							5	2			6	
Permitted Phases				8			2					Free
Actuated Green, G (s)				13.4			75.6	75.6			60.7	100.0
Effective Green, g (s)				13.4			75.6	75.6			60.7	100.0
Actuated g/C Ratio				0.13			0.76	0.76			0.61	1.00
Clearance Time (s)				5.0			5.0	6.0			6.0	
Vehicle Extension (s)				3.0			3.0	3.0			3.0	
Lane Grp Cap (vph)				230			460	2649			2127	1583
v/s Ratio Prot							c0.05	0.26			0.26	
v/s Ratio Perm				c0.08			c0.34					0.15
v/c Ratio				0.62			0.52	0.35			0.43	0.15
Uniform Delay, d1				40.9			5.0	4.0			10.5	0.0
Progression Factor				1.00			1.77	1.77			0.78	1.00
Incremental Delay, d2				5.1			1.0	0.3			0.6	0.2
Delay (s)				46.1			9.9	7.5			8.8	0.2
Level of Service				D			A	A			A	A
Approach Delay (s)		0.0			46.1			8.0			7.0	
Approach LOS		A			D			A			A	

Intersection Summary			
HCM 2000 Control Delay	9.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	55.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	185	0	0	889	557	0
Future Volume (vph)	185	0	0	889	557	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0			6.0	6.0	
Lane Util. Factor	1.00			0.95	0.95	
Frt	1.00			1.00	1.00	
Flt Protected	0.95			1.00	1.00	
Satd. Flow (prot)	1752			3505	3471	
Flt Permitted	0.95			1.00	1.00	
Satd. Flow (perm)	1752			3505	3471	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	201	0	0	966	605	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	201	0	0	966	605	0
Heavy Vehicles (%)	3%	2%	2%	3%	4%	0%
Turn Type	Prot			NA	NA	
Protected Phases	7			2	6	
Permitted Phases						
Actuated Green, G (s)	16.8			72.2	72.2	
Effective Green, g (s)	16.8			72.2	72.2	
Actuated g/C Ratio	0.17			0.72	0.72	
Clearance Time (s)	5.0			6.0	6.0	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	294			2530	2506	
v/s Ratio Prot	c0.11			c0.28	0.17	
v/s Ratio Perm						
v/c Ratio	0.68			0.38	0.24	
Uniform Delay, d1	39.1			5.3	4.7	
Progression Factor	1.00			0.22	1.75	
Incremental Delay, d2	6.4			0.4	0.2	
Delay (s)	45.5			1.5	8.4	
Level of Service	D			A	A	
Approach Delay (s)	45.5			1.5	8.4	
Approach LOS	D			A	A	

Intersection Summary			
HCM 2000 Control Delay	8.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	44.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	365	9	190	17	8	92	210	697	64	44	481	228
Future Volume (vph)	365	9	190	17	8	92	210	697	64	44	481	228
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0		5.0	5.0	5.0	6.0	6.0	5.0	6.0	6.0
Lane Util. Factor	0.97	1.00	1.00		1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3242	1712	1482		1762	1583	3367	3539	1538	1770	3505	1538
Flt Permitted	0.95	1.00	1.00		0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3242	1712	1482		1762	1583	3367	3539	1538	1770	3505	1538
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	397	10	207	18	9	100	228	758	70	48	523	248
RTOR Reduction (vph)	0	0	138	0	0	94	0	0	36	0	0	104
Lane Group Flow (vph)	397	10	69	0	27	6	228	758	34	48	523	144
Heavy Vehicles (%)	8%	11%	9%	0%	13%	2%	4%	2%	5%	2%	3%	5%
Turn Type	Split	NA	pt+ov	Split	NA	Perm	Prot	NA	Perm	Prot	NA	pt+ov
Protected Phases	8	8	8 5	4	4		5	2		1	6	6 8
Permitted Phases						4			2			
Actuated Green, G (s)	18.8	18.8	33.4		6.2	6.2	14.6	48.8	48.8	5.2	39.4	63.2
Effective Green, g (s)	18.8	18.8	33.4		6.2	6.2	14.6	48.8	48.8	5.2	39.4	58.2
Actuated g/C Ratio	0.19	0.19	0.33		0.06	0.06	0.15	0.49	0.49	0.05	0.39	0.58
Clearance Time (s)	5.0	5.0			5.0	5.0	5.0	6.0	6.0	5.0	6.0	
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	609	321	494		109	98	491	1727	750	92	1380	895
v/s Ratio Prot	c0.12	0.01	0.05		c0.02		c0.07	c0.21		0.03	0.15	0.09
v/s Ratio Perm						0.00			0.02			
v/c Ratio	0.65	0.03	0.14		0.25	0.06	0.46	0.44	0.05	0.52	0.38	0.16
Uniform Delay, d1	37.6	33.2	23.3		44.7	44.2	39.1	16.7	13.4	46.2	21.6	9.6
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	0.90	0.60	0.27
Incremental Delay, d2	2.5	0.0	0.1		1.2	0.3	0.7	0.8	0.1	5.2	0.8	0.1
Delay (s)	40.1	33.2	23.4		45.9	44.4	39.8	17.5	13.5	46.7	13.8	2.7
Level of Service	D	C	C		D	D	D	B	B	D	B	A
Approach Delay (s)		34.3			44.7			22.0			12.3	
Approach LOS		C			D			C			B	

Intersection Summary			
HCM 2000 Control Delay	23.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	55.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	14	76	16	342	804	13
Future Vol, veh/h	14	76	16	342	804	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	8	6	6	4	0
Mvmt Flow	15	83	17	372	874	14

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1287	881	888	0	-	0
Stage 1	881	-	-	-	-	-
Stage 2	406	-	-	-	-	-
Critical Hdwy	6.4	6.28	4.16	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.372	2.254	-	-	-
Pot Cap-1 Maneuver	183	337	746	-	-	-
Stage 1	408	-	-	-	-	-
Stage 2	677	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	178	337	746	-	-	-
Mov Cap-2 Maneuver	178	-	-	-	-	-
Stage 1	396	-	-	-	-	-
Stage 2	677	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	23.1	0.4	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	746	-	296	-	-
HCM Lane V/C Ratio	0.023	-	0.33	-	-
HCM Control Delay (s)	9.9	0	23.1	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.1	-	1.4	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	37	0	622	1030	19
Future Vol, veh/h	0	37	0	622	1030	19
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
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	3	3	3	3
Mvmt Flow	0	40	0	676	1120	21

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	560	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	472	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	472	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.3	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	472	-	-
HCM Lane V/C Ratio	-	0.085	-	-
HCM Control Delay (s)	-	13.3	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.3	-	-

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	16	31	70	967	475	14
Future Vol, veh/h	16	31	70	967	475	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	6	3	6	3	4	0
Mvmt Flow	17	34	76	1051	516	15

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1727	524	531	0	-	0
Stage 1	524	-	-	-	-	-
Stage 2	1203	-	-	-	-	-
Critical Hdwy	6.46	6.23	4.16	-	-	-
Critical Hdwy Stg 1	5.46	-	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-	-
Follow-up Hdwy	3.554	3.327	2.254	-	-	-
Pot Cap-1 Maneuver	95	551	1016	-	-	-
Stage 1	586	-	-	-	-	-
Stage 2	279	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	78	551	1016	-	-	-
Mov Cap-2 Maneuver	78	-	-	-	-	-
Stage 1	481	-	-	-	-	-
Stage 2	279	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	32.7	0.6	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1016	-	180	-	-
HCM Lane V/C Ratio	0.075	-	0.284	-	-
HCM Control Delay (s)	8.8	0	32.7	-	-
HCM Lane LOS	A	A	D	-	-
HCM 95th %tile Q(veh)	0.2	-	1.1	-	-

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↱		↑↑	↑↑	↱
Traffic Vol, veh/h	0	227	0	1497	778	31
Future Vol, veh/h	0	227	0	1497	778	31
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
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	3	3	3	3
Mvmt Flow	0	247	0	1627	846	34

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	423	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	579	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	579	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.8	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	579	-	-
HCM Lane V/C Ratio	-	0.426	-	-
HCM Control Delay (s)	-	15.8	-	-
HCM Lane LOS	-	C	-	-
HCM 95th %tile Q(veh)	-	2.1	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	26	1	88	154	20	287	347	42	7	898	52
v/c Ratio	0.12	0.01	0.15	0.55	0.14	0.63	0.16	0.04	0.02	0.56	0.06
Control Delay	30.1	38.0	0.6	39.9	22.9	44.1	9.3	0.1	15.2	20.5	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.1	38.0	0.6	39.9	22.9	44.1	9.3	0.1	15.2	20.5	0.1
Queue Length 50th (ft)	14	1	0	83	2	70	36	0	2	212	0
Queue Length 95th (ft)	31	5	0	122	24	109	107	1	11	276	0
Internal Link Dist (ft)		808			693		749			365	
Turn Bay Length (ft)			200			300		350	150		200
Base Capacity (vph)	214	147	548	342	273	495	2125	1037	420	1608	850
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.01	0.16	0.45	0.07	0.58	0.16	0.04	0.02	0.56	0.06

Intersection Summary



Lane Group	WBL	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	190	160	383	1082	78
v/c Ratio	0.69	0.65	0.15	0.61	0.05
Control Delay	47.9	38.6	2.5	6.8	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	47.9	38.6	2.5	6.8	0.1
Queue Length 50th (ft)	102	92	14	38	0
Queue Length 95th (ft)	166	141	37	101	m0
Internal Link Dist (ft)			858	722	
Turn Bay Length (ft)		200			300
Base Capacity (vph)	349	305	2491	1773	1599
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.54	0.52	0.15	0.61	0.05

Intersection Summary

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

Lane Group	EBL	NBT	SBT
Lane Group Flow (vph)	110	433	679
v/c Ratio	0.51	0.16	0.25
Control Delay	44.6	0.5	0.5
Queue Delay	0.0	0.0	0.0
Total Delay	44.6	0.5	0.5
Queue Length 50th (ft)	60	3	1
Queue Length 95th (ft)	106	5	0
Internal Link Dist (ft)	181	207	319
Turn Bay Length (ft)			
Base Capacity (vph)	472	2735	2735
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.23	0.16	0.25

Intersection Summary

Lane Group	EBL	EBT	EBR	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	180	8	90	37	78	203	380	53	64	527	284
v/c Ratio	0.47	0.04	0.16	0.24	0.23	0.52	0.24	0.07	0.22	0.33	0.29
Control Delay	40.8	34.0	0.6	41.7	1.6	41.7	19.9	0.2	19.8	8.1	1.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.8	34.0	0.6	41.7	1.6	41.7	19.9	0.2	19.8	8.1	1.5
Queue Length 50th (ft)	49	4	0	20	0	56	77	0	29	61	0
Queue Length 95th (ft)	80	17	0	49	0	87	129	0	51	87	3
Internal Link Dist (ft)		584		306			932			541	
Turn Bay Length (ft)	200		200			200		200	200		
Base Capacity (vph)	468	274	584	201	363	495	1627	736	310	1590	994
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.03	0.15	0.18	0.21	0.41	0.23	0.07	0.21	0.33	0.29

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	229	21	435	76	20	608	890	129	15	430	104
v/c Ratio	0.59	0.08	0.58	0.44	0.15	0.75	0.42	0.12	0.07	0.34	0.15
Control Delay	38.1	34.5	9.5	40.3	34.9	36.9	9.8	0.3	28.0	27.2	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.1	34.5	9.5	40.3	34.9	36.9	9.8	0.3	28.0	27.2	0.4
Queue Length 50th (ft)	133	13	77	48	7	194	91	1	6	99	0
Queue Length 95th (ft)	172	30	86	65	31	210	148	2	25	183	0
Internal Link Dist (ft)		808			693		749			365	
Turn Bay Length (ft)			200			300		350	150		200
Base Capacity (vph)	492	494	941	174	132	961	2095	1048	211	1269	709
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.04	0.46	0.44	0.15	0.63	0.42	0.12	0.07	0.34	0.15

Intersection Summary



Lane Group	WBL	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	143	240	927	916	238
v/c Ratio	0.62	0.52	0.35	0.43	0.15
Control Delay	52.3	10.3	8.2	9.7	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	52.3	10.3	8.2	9.7	0.2
Queue Length 50th (ft)	87	38	138	124	0
Queue Length 95th (ft)	144	93	227	168	0
Internal Link Dist (ft)			858	722	
Turn Bay Length (ft)		200			300
Base Capacity (vph)	309	630	2649	2126	1583
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.46	0.38	0.35	0.43	0.15

Intersection Summary

Lane Group	EBL	NBT	SBT
Lane Group Flow (vph)	201	966	605
v/c Ratio	0.68	0.38	0.24
Control Delay	50.5	1.7	9.3
Queue Delay	0.0	0.0	0.0
Total Delay	50.5	1.7	9.3
Queue Length 50th (ft)	122	6	147
Queue Length 95th (ft)	183	14	157
Internal Link Dist (ft)	181	207	319
Turn Bay Length (ft)			
Base Capacity (vph)	543	2529	2505
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.37	0.38	0.24

Intersection Summary

Lane Group	EBL	EBT	EBR	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	397	10	207	27	100	228	758	70	48	523	248
v/c Ratio	0.65	0.03	0.33	0.20	0.40	0.54	0.41	0.08	0.34	0.35	0.23
Control Delay	42.3	30.8	3.2	46.8	7.7	45.3	18.9	0.3	45.5	14.0	0.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.3	30.8	3.2	46.8	7.7	45.3	18.9	0.3	45.5	14.0	0.8
Queue Length 50th (ft)	121	5	0	17	0	70	173	0	32	48	2
Queue Length 95th (ft)	162	19	29	43	22	105	257	3	68	127	6
Internal Link Dist (ft)		584		306			932			541	
Turn Bay Length (ft)	200		200			200		200	200		
Base Capacity (vph)	745	393	683	158	271	486	1832	859	159	1496	1085
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.03	0.30	0.17	0.37	0.47	0.41	0.08	0.30	0.35	0.23

Intersection Summary

Intersection: 1: Route 30 & North #1/Fieldstone Pkwy

Movement	EB	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	TR	L	L	T	T	L	T	T
Maximum Queue (ft)	63	12	108	189	45	139	162	148	20	37	170	216
Average Queue (ft)	17	1	44	94	14	73	97	44	1	3	85	116
95th Queue (ft)	46	6	90	156	38	122	145	106	10	20	147	182
Link Distance (ft)	808	808		675	675			748	748		365	365
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)			200			300	300			150		
Storage Blk Time (%)											0	0
Queuing Penalty (veh)											0	0

Intersection: 1: Route 30 & North #1/Fieldstone Pkwy

Movement	SB
Directions Served	R
Maximum Queue (ft)	49
Average Queue (ft)	14
95th Queue (ft)	41
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	200
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 2: Route 30 & Ramp B To I-64 WB/Ramp From I-64 WB

Movement	WB	NB	NB	NB	SB	SB
Directions Served	L	L	T	T	T	T
Maximum Queue (ft)	106	198	167	80	145	265
Average Queue (ft)	88	96	45	13	42	119
95th Queue (ft)	112	169	119	49	105	221
Link Distance (ft)	89		869	869	700	700
Upstream Blk Time (%)	29					
Queuing Penalty (veh)	51					
Storage Bay Dist (ft)		200				
Storage Blk Time (%)		1	0		0	
Queuing Penalty (veh)		1	0		0	

Intersection: 3: Route 30 & Ramp From I-64 EB

Movement	EB	NB	NB	SB	SB
Directions Served	L	T	T	T	T
Maximum Queue (ft)	141	66	58	62	89
Average Queue (ft)	59	14	10	14	23
95th Queue (ft)	110	48	40	45	68
Link Distance (ft)	151	179	179	309	309
Upstream Blk Time (%)	0				
Queuing Penalty (veh)	0				
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 4: Route 30 & Old Stage Road/Convenience Store

Movement	EB	EB	EB	EB	WB	WB	NB	NB	NB	NB	NB	SB
Directions Served	L	L	T	R	LT	R	L	L	T	T	R	L
Maximum Queue (ft)	111	145	44	124	79	79	156	143	130	140	39	118
Average Queue (ft)	46	68	5	46	27	29	59	56	41	40	3	34
95th Queue (ft)	92	119	26	99	63	61	123	112	96	101	19	83
Link Distance (ft)		482	482		305	305			914	914		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	200			200			200	200			200	200
Storage Blk Time (%)		0					0		0			
Queuing Penalty (veh)		0					0		0			

Intersection: 4: Route 30 & Old Stage Road/Convenience Store

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	106	130	131
Average Queue (ft)	33	41	38
95th Queue (ft)	81	95	96
Link Distance (ft)	551	551	551
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: Route 30 & Ramp From I-64 EB/Ramp D To I-64 EB

Movement	EB
Directions Served	R
Maximum Queue (ft)	3
Average Queue (ft)	0
95th Queue (ft)	3
Link Distance (ft)	271
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 6: Route 30 & Loop A to I-64 EB

Movement	SB
Directions Served	R
Maximum Queue (ft)	67
Average Queue (ft)	10
95th Queue (ft)	41
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	50
Storage Blk Time (%)	0
Queuing Penalty (veh)	0

Intersection: 7: Route 30 & Barnes Road

Movement	EB	NB	B16	SB
Directions Served	LR	LT	T	TR
Maximum Queue (ft)	110	145	6	3
Average Queue (ft)	47	22	0	0
95th Queue (ft)	89	87	6	3
Link Distance (ft)	936	112	329	1180
Upstream Blk Time (%)		1		
Queuing Penalty (veh)		2		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: Route 30

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 13: Ramp C From I-64 WB & Ramp From I-64 WB

Movement	NW
Directions Served	L
Maximum Queue (ft)	188
Average Queue (ft)	59
95th Queue (ft)	162
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	400
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 14: Route 30 & Ramp From I-64 WB

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 17: Ramp From I-64 EB & Ramp A From I-64 EB

Movement	EB
Directions Served	TR
Maximum Queue (ft)	24
Average Queue (ft)	1
95th Queue (ft)	20
Link Distance (ft)	1148
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 27: Route 30 & North #2

Movement	EB
Directions Served	R
Maximum Queue (ft)	49
Average Queue (ft)	18
95th Queue (ft)	40
Link Distance (ft)	811
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 28: Old Stage Road & South #2

Movement	EB	WB	WB	SB
Directions Served	LT	UT	R	LR
Maximum Queue (ft)	65	34	5	56
Average Queue (ft)	11	2	0	15
95th Queue (ft)	42	16	5	42
Link Distance (ft)	385	482	482	916
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 34: Old Stage Road & South #1

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	42	20	49
Average Queue (ft)	3	1	4
95th Queue (ft)	21	9	24
Link Distance (ft)	403	385	895
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 55

Intersection: 1: Route 30 & North #1/Fieldstone Pkwy

Movement	EB	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	TR	L	L	T	T	L	T	T
Maximum Queue (ft)	211	160	274	115	56	229	395	508	434	50	166	195
Average Queue (ft)	115	18	138	53	14	133	165	237	36	13	80	103
95th Queue (ft)	193	94	236	100	42	204	286	427	215	40	136	169
Link Distance (ft)	808	808		675	675			748	748		365	365
Upstream Blk Time (%)								0	0			
Queuing Penalty (veh)								1	0			
Storage Bay Dist (ft)			200			300	300			150		
Storage Blk Time (%)			3					5	0		0	0
Queuing Penalty (veh)			1					30	0		0	0

Intersection: 1: Route 30 & North #1/Fieldstone Pkwy

Movement	SB
Directions Served	R
Maximum Queue (ft)	75
Average Queue (ft)	33
95th Queue (ft)	64
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	200
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 2: Route 30 & Ramp B To I-64 WB/Ramp From I-64 WB

Movement	WB	NB	NB	NB	SB	SB
Directions Served	L	L	T	T	T	T
Maximum Queue (ft)	100	197	193	136	141	252
Average Queue (ft)	79	91	74	39	51	117
95th Queue (ft)	111	165	153	99	114	210
Link Distance (ft)	89		869	869	700	700
Upstream Blk Time (%)	18					
Queuing Penalty (veh)	24					
Storage Bay Dist (ft)		200				
Storage Blk Time (%)		0	0		0	
Queuing Penalty (veh)		2	0		0	

Intersection: 3: Route 30 & Ramp From I-64 EB

Movement	EB	NB	NB	SB	SB
Directions Served	L	T	T	T	T
Maximum Queue (ft)	161	117	101	96	121
Average Queue (ft)	110	30	22	35	41
95th Queue (ft)	168	84	68	80	95
Link Distance (ft)	151	179	179	309	309
Upstream Blk Time (%)	4				
Queuing Penalty (veh)	7				
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 4: Route 30 & Old Stage Road/Convenience Store

Movement	EB	EB	EB	EB	WB	WB	NB	NB	NB	NB	NB	SB
Directions Served	L	L	T	R	LT	R	L	L	T	T	R	L
Maximum Queue (ft)	200	227	41	206	62	90	129	114	192	207	27	78
Average Queue (ft)	108	122	7	90	20	36	56	52	82	84	2	25
95th Queue (ft)	175	192	29	167	51	69	109	100	158	166	14	62
Link Distance (ft)		482	482		305	305			914	914		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	200			200			200	200			200	200
Storage Blk Time (%)	1	1		1					0	0		
Queuing Penalty (veh)	1	1		0					0	0		

Intersection: 4: Route 30 & Old Stage Road/Convenience Store

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (ft)	120	122	122
Average Queue (ft)	50	53	36
95th Queue (ft)	101	106	91
Link Distance (ft)	551	551	551
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: Route 30 & Ramp From I-64 EB/Ramp D To I-64 EB

Movement	SB
Directions Served	T
Maximum Queue (ft)	3
Average Queue (ft)	0
95th Queue (ft)	3
Link Distance (ft)	179
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 6: Route 30 & Loop A to I-64 EB

Movement	SB
Directions Served	R
Maximum Queue (ft)	40
Average Queue (ft)	2
95th Queue (ft)	17
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	50
Storage Blk Time (%)	0
Queuing Penalty (veh)	0

Intersection: 7: Route 30 & Barnes Road

Movement	EB	NB	B16	B8	SB
Directions Served	LR	LT	T	T	TR
Maximum Queue (ft)	109	184	139	10	6
Average Queue (ft)	36	70	7	0	0
95th Queue (ft)	82	169	71	10	6
Link Distance (ft)	936	112	317	539	1180
Upstream Blk Time (%)		2	0		
Queuing Penalty (veh)		25	1		
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 13: Ramp C From I-64 WB & Ramp From I-64 WB

Movement	NW
Directions Served	L
Maximum Queue (ft)	148
Average Queue (ft)	30
95th Queue (ft)	103
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	400
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 14: Route 30 & Ramp From I-64 WB

Movement	NB	NB	NW
Directions Served	T	T	R
Maximum Queue (ft)	47	16	57
Average Queue (ft)	2	1	3
95th Queue (ft)	23	10	32
Link Distance (ft)	700	700	773
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 17: Ramp From I-64 EB & Ramp A From I-64 EB

Movement	EB
Directions Served	TR
Maximum Queue (ft)	100
Average Queue (ft)	9
95th Queue (ft)	53
Link Distance (ft)	1148
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 27: Route 30 & North #2

Movement	EB	NB	NB	B9	B9	B9
Directions Served	R	T	T	T	T	
Maximum Queue (ft)	156	34	17	474	517	333
Average Queue (ft)	61	2	1	34	42	22
95th Queue (ft)	116	28	17	245	270	199
Link Distance (ft)	811	170	170	511	511	511
Upstream Blk Time (%)		0	0	0	0	0
Queuing Penalty (veh)		1	0	1	1	1
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 28: Old Stage Road & South #2

Movement	EB	WB	SB
Directions Served	LT	UT	LR
Maximum Queue (ft)	111	16	106
Average Queue (ft)	42	1	36
95th Queue (ft)	87	10	82
Link Distance (ft)	385	482	916
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

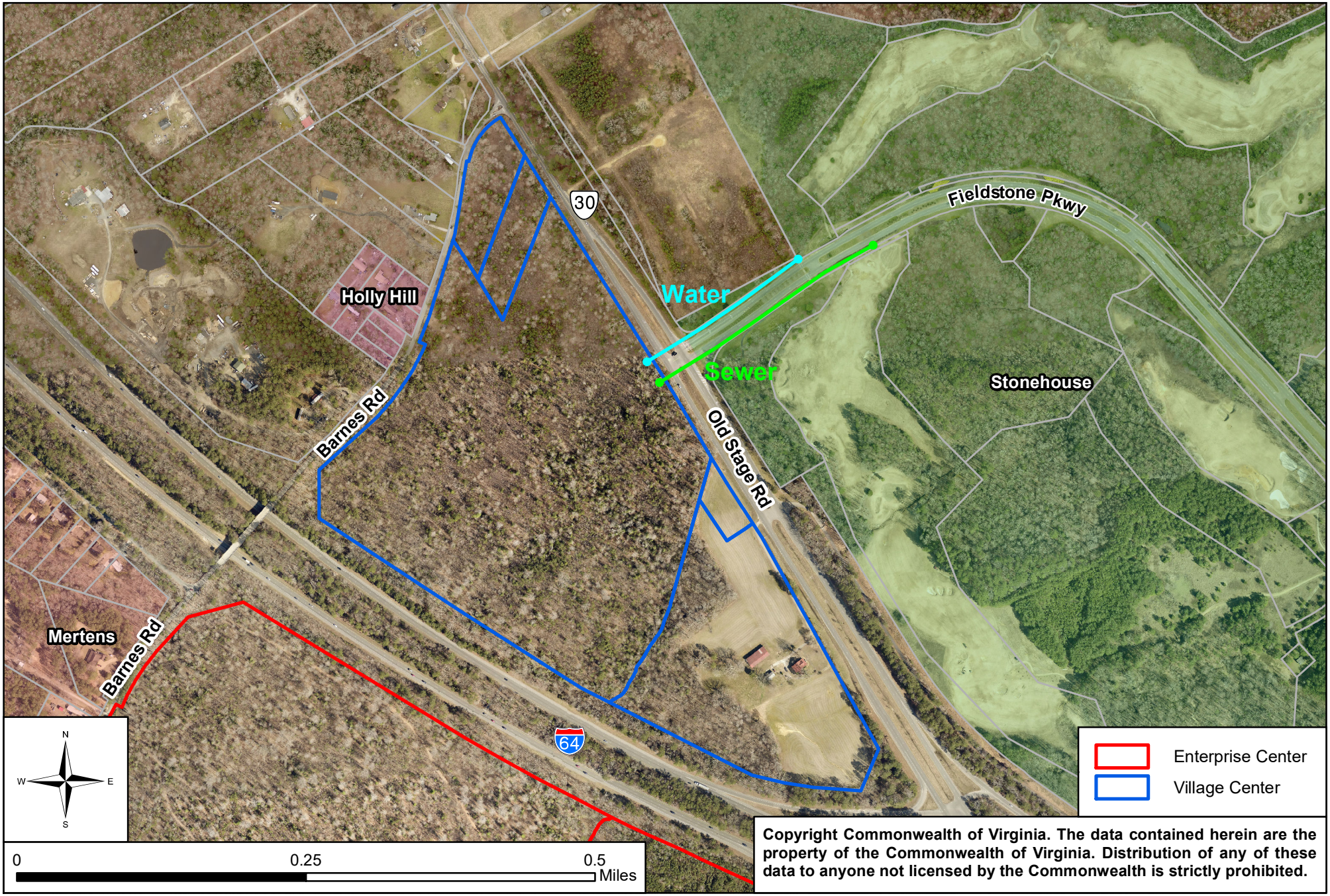
Intersection: 34: Old Stage Road & South #1

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	38	3	78
Average Queue (ft)	7	0	19
95th Queue (ft)	30	3	59
Link Distance (ft)	403	385	895
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

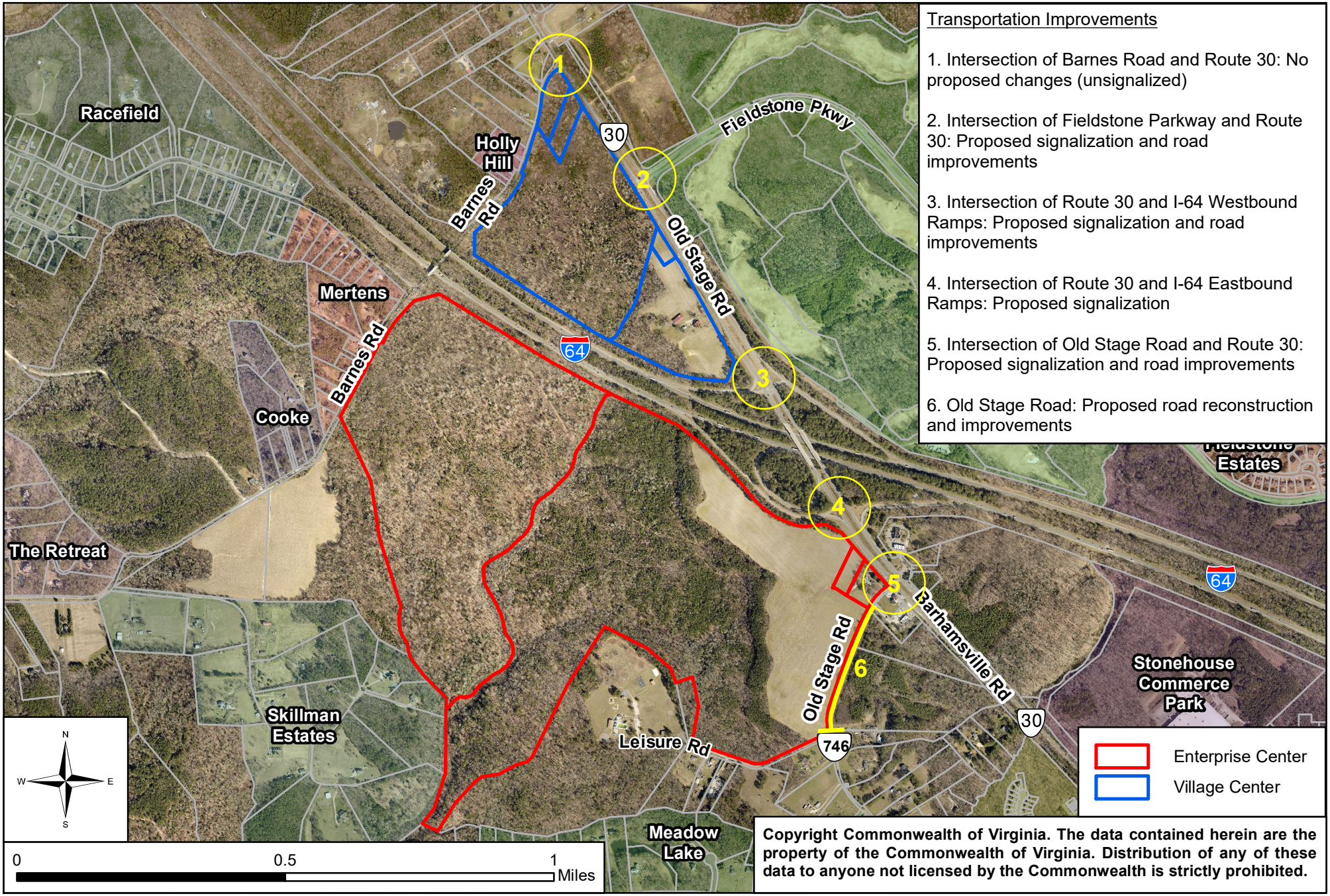
Network wide Queuing Penalty: 97

JCC Z-19-0006, SUP-19-0005 & SUP-19-0006: Hazelwood Enterprise Center & Village Center



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JCC Z-19-0006, SUP-19-0005 & SUP-19-0006: Hazelwood Enterprise Center & Village Center



N/F
ASSOCIATION AT STONEHOUSE INC (THE)
9330 FIELDSTONE PARKWAY
PARCEL ID:
0440100024B
ZONED PR PUD RESIDENTIAL

FIELDSTONE PARKWAY

SIGNALIZED INTERSECTION STA 313+08

STA 315+00

NORTH BOUND

STA 310+00

309+00

310+00

311+00

312+00

313+00

314+00

315+00

OLD STAGE ROAD
STATE ROUTE 30
VARIABLE WIDTH R/W

SOUTH BOUND

MATCHLINE – SEE BELOW

NORTH #1 ENTRANCE

GRAPHIC SCALE
20' 0' 20' 40'
SCALE: 1" = 20'

N/F
ASSOCIATION AT STONEHOUSE INC
9300 FIELDSTONE PARKWAY
PARCEL ID:
0440100027
ZONED PC PUD RESIDENTIAL

END TAPER
STA 321+09

GRAPHIC SCALE
20' 0' 20' 40'
SCALE: 1" = 20'

CLOSE CROSSOVER
STA 321+35

STA 320+00

NORTH BOUND

OLD STAGE ROAD
STATE ROUTE 30
VARIABLE WIDTH R/W

316+00

317+00

318+00

319+00

320+00

321+00

322+00

323+00

CLOSE CROSSOVER
AS DIRECTED BY VDOT

SOUTH BOUND

PROPOSED RIGHT IN/RIGHT OUT

MATCHLINE – SEE ABOVE

NORTH #2 ENTRANCE

Rev.	Date	Description	By
3	3/12/21	REVISED PER JCC COMMENTS	JAG
2	12/20/19	UPDATED PER JCC COMMENTS	JAG
1	8/20/19	UPDATED PER JCC COMMENTS	JAG

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AES CONSULTING ENGINEERS
Hampton Roads | Central Virginia | Middle Peninsula

SPECIAL USE PERMIT
FOR
VILLAGE CENTER
AT
HAZELWOOD FARMS
STONEHOUSE DISTRICT
JAMES CITY COUNTY
VIRGINIA

Project Contacts:	JAG
Project Number:	W10325-01
Scale: 1"=20'	Date: 2/7/19

Sheet Title:
CONCEPTUAL RT. 30 ROAD IMPROVEMENTS PLAN

Sheet Number
MP-6

S:\JOBS\W10325\01 Hazelwood Farms #10 acre\Plans\Rezone Plans #10 acre\Plans\Sheet Set\W10325-MP5-VDOT Improvements.dwg, 3/12/2021 4:39:34 PM, Danny Ayala

AGENDA ITEM NO. G.1.

ITEM SUMMARY

DATE: 10/6/2021

TO: The Planning Commission

FROM: Tom Leininger, Senior Planner

SUBJECT: James City County Parks Master Plan Update

ATTACHMENTS:

	Description	Type
🗋	Memorandum	Cover Memo
🗋	Proposed Master Plan Upper County Park	Backup Material
🗋	Proposed Master Plan JCC Recreation Center	Backup Material
🗋	Adopted 2016 Master Plan Warhill Sports Complex	Backup Material
🗋	Proposed Master Plan Warhill Sports Complex	Backup Material

REVIEWERS:

Department	Reviewer	Action	Date
Planning Commission	Holt, Paul	Approved	9/29/2021 - 1:22 PM
Planning Commission	Holt, Paul	Approved	9/29/2021 - 1:23 PM
Publication Management	Pobiak, Amanda	Approved	9/29/2021 - 2:01 PM
Planning Commission	Holt, Paul	Approved	9/29/2021 - 2:28 PM

M E M O R A N D U M

DATE: October 6, 2021

TO: The Planning Commission

FROM: Tom Leininger, Senior Planner

SUBJECT: James City County Parks Master Plan Update

On April 9, 2021, the James City County Board of Supervisors endorsed updating the master plans of three parks in the County. The three parks that have been identified for review in Fiscal Year 2021 (FY21) are Upper County Park (UCP), James City County Recreation Center Park (JCCRC), and the Warhill Sports Complex (WSC). Following the process created during the Shaping our Shores Master Plan update, an interdepartmental team was formed to review these plans. Employees were selected based on their area of expertise to ensure the final product would be inclusive of amenities that were important to the many different stakeholders within the County as well as the citizens they serve. The team, led by the Department of Parks & Recreation, included members from Planning, Parks & Recreation, and General Services.

The three parks being reviewed share some similarities, but are largely unique in amenities and past planning. For example, UCP and JCCRC do not have a formal, adopted master plan while the WSC plan has been updated on several occasions. Most of the park areas are largely developed, with the exception of a parcel adjacent to the JCCRC that was the former site of a James City County Service Authority (JCSA) water tower. With these differences in mind, the team took a slightly different approach for each park but adhered to the following goals for all three:

- Evaluate and confirm where existing park amenities are successfully meeting community needs.
- Identify unmet needs as illustrated in the 2017 Parks & Recreation Master Plan.
- Evaluate maintenance/conditions and longevity of park features.
- Learn from the community if facilities in the plan are no longer needed, feasible, or should be built in other parks.
- Create an updated master plan to guide development for the next decade and beyond.

The team began by conducting a site visit to each park. After those tours, the team agreed there were some modifications and changes needed to the master plans for the future at all three park locations. After visiting the three parks, the team met for several months to update the maps of the three parks. Each park was reviewed separately, taking into account water restrictions, equitable access, environmental concerns, resource protection areas issues, zoning, building codes, new trends, and patron requests.

Two public meetings were advertised and held, and the citizens participated in an online survey. The public feedback was collected and incorporated into the updated plans.

1. Upper County Park (UCP)

Opened in 1984, UCP is one of the oldest County parks. A draft master plan was created for the park in the early 1990s, but there is no current approved master plan for the site. The team used the existing, established park amenities as a starting point, and incorporated citizen feedback and data from the 2017 Parks & Recreation Master Plan as a guide to potential future amenities. The Parks and Recreation Master Plan classifies UCP as a community park, primarily serving residents at the upper end of the County. The Parks & Recreation Master Plan identified a lack of several park amenities in this region, notably hard surface trails, gymnasiums, recreation centers, and indoor pools. Current park amenities include a 25-meter outdoor

pool, toddler pool, basketball and sand volleyball courts, picnic shelters, a playground, multiuse/mountain biking trails, a primitive camping area, restrooms, and seasonal store/concessions.

The team is recommending the following additional amenities:

- Replacement of the toddler pool with a splash pad/sprayground feature
- 0.5-mile paved multiuse trail
- Community gymnasium with two full-sized indoor courts and fitness area
- Pickleball/tennis court
- Off-leash dog area
- Archery range
- Park maintenance/storage area; and
- Increased parking to support new amenities

2. James City County Recreation Center Park (JCCRC)

The James City County Recreation Center Park includes the recreation center and surrounding park amenities. Similar to UCP, this park does not have an existing master plan but is largely developed with existing amenities. An adjacent parcel is included in this draft plan, which was the former site of a JCSA water tower. Current park amenities include the recreation center, a skate park, two lighted softball and two lighted rectangular fields, a 2.1-mile multiuse paved trail, and an ADA accessible playground.

The team is recommending the following additional amenities:

- Future expansion of the James City County Recreation Center
- Expansion of the skate park
- Picnic shelter
- Off-leash dog area
- Restrooms and parking facility for the skate park, off-leash area, and picnic shelter; and
- Restroom/concession building near the athletic fields

3. Warhill Sports Complex (WSC)

The Warhill Sports Complex Master Plan was last updated in 2016. Since that time, new features such as a private indoor pool facility and community garden have been added to the park. Additionally, some amenities originally featured on the park master plan have been represented at other park locations, such as the potential running center at Jamestown Beach Event Park. Since the sports complex is used by a large variety of groups, staff held a meeting with all 22-community partner organizations in order to solicit feedback and determine needs for the park's future development. Participants expressed the need for more lighted rectangular fields, more full-sized baseball fields, and softball fields to support the growing participation in senior softball.

The team is recommending the following additional amenities to the 2016 Master Plan:

- Synthetic turf field complex featuring two lighted softball/multiuse fields, two lighted large baseball/multiuse fields
- Restrooms/concession (B)
- Stadium complex featuring one baseball and one softball field (D2)
- Re-designed connector road between the Longhill Road and Opportunity Way sides (E)
- Adding the existing private indoor pool facility (G2)
- Lighted pickleball/tennis courts (H)

- Adding the existing community garden (I)
- Adding the existing General Services grounds maintenance facility (O); and
- Parking to support additional amenities

The team is recommending eliminating the following amenities from the 2016 Master Plan:

- One large field from the baseball complex to expand parking (A)
- Seven multipurpose rectangle fields (E, F)
- The proposed indoor sports facility
- BMX park; and
- Running center

This item was placed on the July 21, 2021, Development Review Committee (DRC) agenda as a discussion item. All three parks were discussed individually with the DRC asking questions and providing feedback for staff.

The maps will also be brought before the James City County Parks & Recreation Advisory Committee for consideration.

Prior to consideration with the Board of Supervisors (BOS), staff has placed this item on the Planning Commission (PC) agenda in order to discuss the update and obtain input from the PC members. No action by the PC is required.

Once the master plans are approved by the BOS, a prioritized action plan will be developed that sets forth goals and recommendations to implement and guide the Capital Improvements Program. It will also provide the community with a strategic long-range vision for the future of these County parks, and provide a foundation for further support of future budget funding. Before any improvements are made, the Special Use Permits for each park would need to be amended to include the changes described above.

TL/ap
JCCParksUpdMPln-mem

Attachments:
1. Proposed Master Plan Upper County Park
2. Proposed Master Plan for James City County Recreation Center Park
3. Adopted 2016 Master Plan for Warhill Sports Complex
4. Proposed Master Plan for Warhill Sports Complex

Master Plan

Upper County Park

April 2021

James City County VIRGINIA Jamestown 1607

Code	Feature
A	Swimming Pool
A2	Splash Pad
B	Picnic Shelter
C	Playground
D	Sand Volleyball
E	Mountain Biking / Multi_Use Trails
F	Youth Group Primitive Camping Area
G	Proposed Paved Multi-Use Trail
H	Community Gym
I	Parking
J	Off Leash Area
K	Stormwater Management
L	Archery Range
M	Park Maintenance / Storage
N	Basketball / Pickleball / Tennis Courts

Property Line

Trail

N W E S

0 100 200 Feet

Leisure Rd

Master Plan

James City County Recreation Center

April 2021

Rolling Meadows Apts

Longhill Rd

Depue Rd

Eastern State Hospital

Code	Feature
A	James City County Recreation Center
B	Softball Fields
C	Multi-Purpose Grass Athletic Fields
D	MyPlace Playground
E	Parking (324 Spaces)
F	2-mile Paved Multi-Use Trail
G	Skate Park
G2	Skate Park Expansion
H	WATA Bus Stop
I	Building Expansion
J	Restrooms/Concessions/vending
K	Off Leash Area
L	Picnic Shelter

Property Lines

Trail

N W E S

0 80 160 320 Feet

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2016 Warhill Sports Complex
Master Plan



A- Baseball Complex
- 5 Baseball Fields, lighted
- 1 Multiuse Field for T-ball
- Parking- 260-400 Spaces
- Concession/Rest Room Building

B- Softball Complex
- 4 Large Softball/Baseball Fields
- Parking- 260-400 Spaces
- Concession/Rest Room Building

C- Soccer Complex
- 8 Soccer Fields, adjustable orientation
- 6 Multiuse Fields with Synthetic Turf
- Parking- 440 Spaces
- Concession/Rest Room Building

D- Stadium Complex
- Football, Soccer, Track and Field, lighted
- 600-1000 Stadium parking, some shared, some available in the utility corridor (N1)

E- Sports Field Complex
- 2 Multi-purpose Practice Fields
- 1 Lighted Competition Field
- Bleachers for 500
- Concession/Rest Room Building

Parking - 160 Spaces

F- Multi-purpose Field Complex
- 8 Multi-purpose Fields, adjustable orientation, lighted
- Parking - 400 Spaces
- Concession/Rest Room Building

G1- Existing WISC Building

G2- Proposed Indoor Sports Facility

J1, J2, J3, J4, J5, J6
Unprogrammed Open Space

K1- Multiuse Nature Trail, soft surface, 3.5 Miles around park perimeter with connections to
- Lafayette High School, Seasons Trace, and other neighborhoods

L- Paved Multiuse Trail in utility corridor

M- Paved Multiuse Trails around Soccer Complex- 1 mile
- and Baseball/Softball Complex- 1-mile

N2- Unprogrammed Open Space capable of supporting additional stadium parking.

N3- Dominion Power Substation

Q- BMX Park

AA - Running Center, multi-purpose room, office space, restrooms, multiuse filed area

BB – Williambsburg Area Transport

1 inch = 972 feet

0 950 1,900 Feet

9/19/2016

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This drawing is neither a legally recorded map nor a survey and is not intended to be used as such. The information displayed is a compilation of records, information,and data obtained from various sources, and James City County is not responsible for its accuracy or how current it may be.

A- Baseball Complex
4 Baseball Fields, lighted
1 Multiuse Field for T-ball
Parking- 260-400 Spaces
Concession/Rest Room Building
B- Softball/Baseball Complex
2 Large synthetic turf baseball fields, 2 synthetic turf softball/multi-use fields, lighted
Parking- 260-400 Spaces
Concession/Rest Room Building
C- Multi-use field Complex
8 Grass Fields, adjustable orientation
6 Multiuse Fields with Synthetic Turf, lighted
Parking- 440 Spaces
Concession/Rest Room Building
D- Stadium Complex
Football, Soccer, lighted
600-1000 Stadium parking, some shared,
some available in the utility corridor
D2- Baseball/Softball Stadium Complex
Baseball, softball, lighted
Parking - 400-600 Spaces
E- Connector Road
F- Multi-purpose Field Complex
4 Multi-purpose Fields, adjustable orientation, lighted
Parking - 200 Spaces
Concession/Rest Room Building
G1- Existing WISC Building
G2 – Existing Indoor pool facility
H- Athletic Courts
Basketball, Pickleball, Tennis, lighted
Parking- 75 spaces
I- Community Garden
J1, J2, J3, J4, J5, J6 – Un-programmed Open Space
K1- Multiuse Nature Trail
Soft surface, 3.5 Mile s around park perimeter
L- Paved Multiuse Trail in utility corridor
M- Paved Multiuse Trails
around Soccer Complex 1 mile and Baseball/Softball Complex- 1-mile
N2- Un-programmed Open Space capable of supporting additional stadium parking.
N3- Dominion Power Sub station
O - Grounds Maintenance Facility

Master Plan

Warhill Sports Complex
Sept 2021

James City County
VIRGINIA
Jamestown 1607

Property Lines
Trail
Water
Field
Trees
Grass
Athletic Courts
Pavement
Public Building

N
W E
S

0 300 600 1,200 Feet

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AGENDA ITEM NO. H.1.

ITEM SUMMARY

DATE: 10/6/2021

TO: The Planning Commission

FROM: Paul D. Holt, III, Director of Community Development and Planning

SUBJECT: Planning Director's Report - October 2021

ATTACHMENTS:

	Description	Type
🗋	Memorandum	Cover Memo
🗋	Spreadsheet Listing New Cases Received - September	Exhibit
🗋	Spreadsheet Listing New Cases Received - October	Exhibit

REVIEWERS:

Department	Reviewer	Action	Date
Planning Commission	Holt, Paul	Approved	9/29/2021 - 1:15 PM
Planning Commission	Holt, Paul	Approved	9/29/2021 - 1:16 PM
Publication Management	Pobiak, Amanda	Approved	9/29/2021 - 1:43 PM
Planning Commission	Holt, Paul	Approved	9/29/2021 - 2:29 PM

PLANNING DIRECTOR'S REPORT
October 2021

This report summarizes the status of selected Department of Community Development activities during the past month.

- **Planning**
  - **Monthly Case Report:** For a list of all cases received in the last two months, please see the attached documents.

  - **Board Action Results:**
    - **September 14, 2021**
      - Z-21-0013. 1826 Jamestown Road and 259 Sandy Bay Road Rezoning (Frothy Moon Brewhouse)
        (Approved 5-0)
      - SUP-21-0014. Busch Gardens Entertainment Event Facility
        (Approved 5-0)
      - SUP-21-0015. Crosswalk Community Church Daycare and School
        (Approved 5-0)
      - SUP-21-0013. 2631 Lake Powell Road, Tourist Home
        (Approved 5-0)

- **Community Development**

  - **Skiffes Creek Connector Update**
    Work continues at each bridge site, to place below-grade support piles as part of the reinforced concrete pier and abutment footings of the bridges. Motorists traveling along Route 143 may catch a view of the large red crane used to help place steel support piles for the bridge pier.



    Additionally, construction of the retaining walls has begun at each bridge. At the Skiffes Creek bridge, tiered concrete footers for cast-in-place concrete retaining walls have been poured trailing behind each of the bridge's abutment footing. Along Route 143 and the CSX railroad tracks, the erection of precast concrete panels that make up the mechanically stabilized earth retaining wall can be seen. These walls are supported with the placement of large stone beds, reinforced steel anchors and concrete panels. Work this fall will continue the construction of each bridge's columns, pier caps, and abutment caps to prepare for bridge girder and deck placement in late 2021 and early 2022.

  - **Jamestown High School Pedestrian Improvements Survey**
    From September 1st to 15th 2021, James City County received self-reported survey data from residents who live, work, and recreate in the greater Jamestown High School area. The goal of the survey was to determine opinion on the proposed installation of sidewalks and crosswalks in and around the Jamestown campus. There

were 135 respondents. These respondents—parents and community members alike—emphasized the current lack of pedestrian and bike infrastructure that would allow for the safe travel of students to school. The proposed infrastructure would directly address these concerns with five crosswalks and a contiguous sidewalk running from Fairway Villas to the Greensprings Trail.

- **A Bumper Crop of Fall Events**

  Applications are currently under review for the following events:

EVENT		DATE
SE-21-0044	Pumpkinville 2021	9/17/2021
SE-20-0033	Colonial Relay	9/25/2021
SE-21-0051	Oktoberfest 2021	10/2/2021
SE-21-0050	James City County's National Night Out	10/5/2021
SE-21-0045	Jamestown High School Homecoming Parade	10/7/2021
SE-21-0019	2021 Here for the Girls Run for the Hills	10/9/2021
SE-21-0042	Weighted Angels 5k	10/9/2021
SE-21-0043	Boo Bash at the Beach	10/16/2021
SE-21-0049	Mutts and Movies II	10/23/2021
SE-21-0031	2021 Williamsburg Walk to End Alzheimer's	10/23/2021
SE-21-0040	JLHR Jingle Jog 5K and 1 Mile Family Fun Run	12/18/2021

New Cases for September						
Plan Type	**Plan Number**	**Case Title**	**Main Address**	**Description**	**Assigned To**	**District**
Agricultural & Forestal District	AFD-21-0002	9958 Mill Pond Run Barnes Swamp AFD Addition	9958 Mill Pond Run	Addition of +/- 66.77 acres to the Barnes Swamp AFD.	Haynes, Tori	Stonehouse
Conceptual Plan	C-21-0070	9150 Croaker Rd Family Subdivision	9150 CROAKER RD	Family Subdivision consisting of house and drain field with parcel to be approximately 1 to 1 and a half acres.	Costello, Terry	Stonehouse
	C-21-0071	413 River's Edge BLA	413 RIVERS EDGE	Review to determine ability to rotate lot one one corner so as to align it with adjacent lots and structures.	Wysong, Thomas	Roberts
	C-21-0072	4679 Noland Blvd Doggie Day Care	4679 NOLAND BLVD	Potential Dog Park/Day Care/Kennel .	Haynes, Tori	Stonehouse
	C-21-0074	Christ Community Church Site Plan Revisions	9001 RICHMOND RD	Revisions to SP-19-0015 Including paving of parking lot.	Leininger, Thomas	Powhatan
Subdivision Plat	S-21-0049	4557 & 4589 The Foxes BLA	4557 THE FOXES	Proposed Boundary Line Adjustment Between Lots 10 & 11B, The Foxes.	Ribeiro, Jose	Jamestown
	S-21-0052	New Town Section 8, Parcel D, Phase 2a	5335 SETTLERS MARKET BLVD	Plat of Subdivision: Section 8, Parcel D, Phase 2a; New Town Lots 33-40 and 111-122.	Leininger, Thomas	Jamestown
	S-21-0055	204 William Spencer Minor Subdivision	204 WILLIAM SPENCER	Subdivision of lot 5 Spencer's Grant Kingsmill on the James creating lot 5 & lot 6.	Haynes, Tori	Roberts
	S-21-0056	4321 John Tyler Hwy JCSA BLE	4321 JOHN TYLER HWY	BLE between Parcel 2 (P.B. 47, PG. 68) & "Parcel 2" (P.B. 76, PG. 59), property of JCSA.	Leininger, Thomas	Berkeley
	S-21-0059	2611 Forge Road BLA Between Parcel 2 and Equestrian Lot A	2611 FORGE RD	Plat of Boundary Line Adjustment Lot 2 and Equestrian Lot A Willow Pond Estates Phase II.	Ribeiro, Jose	Stonehouse
	S-21-0061	The Promenade at John Tyler Phase 39 - Courthouse Plat	5304 JOHN TYLER HWY	The Promenade at John Tyler Phase 39 - Courthouse Plat.	Ribeiro, Jose	Berkeley
	S-21-0064	The Promenade at John Tyler Phase 38 - Courthouse Plat	5304 JOHN TYLER HWY	The Promenade at John Tyler Phase 38 - Courthouse Plat.	Ribeiro, Jose	Berkeley
	S-21-0065	6799 Richmond Road Subdivision (Virginia Health Services)	6799 RICHMOND RD	Plat of Subdivision Parcel A-1. See Civil Site Plan for VHS Williamsburg Case No. SP-20-0015 for topographic survey features and proposed features.	Haynes, Tori	Stonehouse

Plan Type	Plan Number	Case Title	Main Address	Description	Assigned To	District
Site Plan	SP-21-0064	185 Industrial Blvd. T-Mobile Tower SP Amend.	185 INDUSTRIAL BLVD	Remove (6) antennas, (9) RRUs, (4) Hybrid cables. Add (9) antennas, (6) RRUs, (4) Hybrid cables. Final Configuration: (9) antennas, (6) RRUs, (4) Hybrid cables, (1) MW, (1) ODU, (1) MW line.	Leininger, Thomas	Stonehouse
	SP-21-0069	The Maine at Williamsburg Site Plan Amendment for Monument Sign	2580 JOHN TYLER HWY	The Maine at Williamsburg Site Plan Amendment for Monument Sign.	Leininger, Thomas	Berkeley
	SP-21-0071	4315 John Tyler Highway Dish Wireless Co-Location	4315 JOHN TYLER HWY	Co-location on existing cell tower.	Leininger, Thomas	Berkeley
	SP-21-0072	4091 Ironbound Road Self Storage Facility Landscape Amendment	4091 IRONBOUND RD	Revision to tree species along the frontage of Ironbound road due to seasonal limitations.	Haynes, Tori	Jamestown
	SP-21-0073	Busch Gardens Entertainment Event Building	7851 POCAHONTAS TRL	The purpose of this project is to create various site improvements at the old Drachen Fire site in the Germany section of Busch Gardens Williamsburg (BGW). The site work will involve demolition and clearing of select existing features, drainage improvements, service road renovation, and utility removal and relocation.	Condon, Paxton	Roberts
	SP-21-0074	Iwo Jima Memorial Park Sign and Pedestal	1620 JAMESTOWN RD	Relocation and re-sizing of statue pedestal - related to approved SP-19-0004.	Leininger, Thomas	Berkeley
	SP-21-0075	3 Winster Fax Deck and Sunroom Addition	3 WINSTER FAX	Building sunroom and deck in the existing location of the deck which is to be razed. Exact same footprint.	Haynes, Tori	Roberts
	SP-21-0076	3470 Brick Bat Rd. T-Mobile Tower SP Amend.	3470 BRICK BAT RD 4420100018	T-Mobile is replacing antennas on the existing cell tower.	Leininger, Thomas	Berkeley
	SP-21-0077	CARE Vet clinic- 5295 John Tyler Highway	5295 JOHN TYLER HWY	Coastal Animal Referral and Emergency (CARE) Amendment #1.	Ribeiro, Jose	Berkeley

Plan Type	Plan Number	Case Title	Main Address	Description	Assigned To	District
Site Plan	SP-21-0078	Kingsmill Townhomes Water Meters	1010 KINGSMILL RD	This site plan amendment proposes the addition of 3 irrigation meters to the Kingsmill Parcel R-2B Townhomes Project located within Kingsmill.	Leininger, Thomas	Roberts
	SP-21-0079	Stonehouse Elementary School Learning Cottages Amendment	3651 ROCHAMBEAU DR	Site Plan Amendment to amend SP-21-0051. Changes are limited to deck and ramp re-alignment.	Risinger, John	Stonehouse
	SP-21-0080	Norge Elementary School Learning Cottages Amendment	7311 RICHMOND RD	Norge Elementary School Site Plan Amendment to amend approved SP-21-0048.	Risinger, John	Stonehouse
	SP-21-0081	185 Industrial Blvd. Dish Wireless Tower SP Amend.	185 INDUSTRIAL BLVD	DISH Wireless Co-location.	Leininger, Thomas	Stonehouse
	SP-21-0082	1700 Endeavor Dr. Site Improvements	1700 ENDEAVOR DR	This site plan amends SP-21-0018 to combine the fuel pad and wash bay floor drains into a common oil/water separator.	Wysong, Thomas	Roberts
	SP-21-0085	5301 Longhill Rd. Tower, Generator & Pad SP Amend.	5301 LONGHILL RD	AT&T is planning to install a generator with a 4"x10" concrete pad.	Pelletier, Katie	Jamestown
	SP-21-0086	4610 Monticello Ave. Chick-fil-A Redevelopment	4610 MONTICELLO AVE	The purpose of this project is to construct a new building, drive thru canopies, and associated parking.	Risinger, John	Jamestown
Zoning Verification Letter	ZVL-21-0021	Zoning Verification Letter for English Meadowa Senior Living	1807 JAMESTOWN RD	Verifying the Zoning, no violations and no pending changes.	Orne, Taylor	Berkeley
	ZVL-21-0022	Zoning Verification Letter forEdgeworth Park at New Town	5501 DISCOVERY PARK BLVD	Verifying Zoning and compliance with Zoning Ordinance.	Orne, Taylor	Jamestown
	ZVL-21-0023	Pointe at New Town	4375 NEW TOWN AVE	Verifyng Zoning , compliance with Zoning Ordinance, Existence of legislative approvals.	Orne, Taylor	Jamestown

New Cases for October

Plan Type	Plan Number	Case Title	Mail Address	Description	Assigned To	District
Conceptual Plan	C-21-0075	8575 Pocahontas Trail 2 Lot Subdivision	8575 POCAHONTAS TRL	A request to subdivide this property into two parcels and build a house on each one. The existing lot will be divided in half.	Risinger, John	Roberts
	C-21-0077	5109 Thomas Ct. Rental of Rooms	5109 THOMAS CT	Proposal continue the rental of one room through Airbnb.	Leininger, Thomas	Powhatan
	C-21-0078	7816 Richmond Rd. RV and Boat Storage Yard	7816 RICHMOND RD	Establish in the M-2 District an RV and Boat and Boat Trailer storage yard, secured and monitored, with both open and covered spaces on an approximately 4 acre portion of overall the 13.5 acre tract.	Ribeiro, Jose	Stonehouse
	C-21-0080	Fieldstone Parkway Intersection Signal Justification Report	9300 FIELDSTONE PKWY	Fieldstone Parkway Intersection Signal Justification Report	Wysong, Thomas	Stonehouse
	C-21-0081	2537 & 2549 William Tankard Dr. BLE	2537 WILLIAM TANKARD DR	Considering the the feasibility of purchasing two adjoining lots in Landfall Village and combining them into one lot.	Haynes, Tori	Berkeley
	C-21-0085	Sidewalk and Bike Lane Improvements Croaker Rd to Old Church Rd	7534 RICHMOND RD	Sidewalk and Bike Lane Improvements Croaker Rd to Old Church Rd	Leininger, Thomas	Stonehouse
Master Plan	MP-21-0004	Stonehouse Sanitary Sewer Master Plan	9354 FIELDSTONE PKWY	Sanitary Sewer Master Plan required per 2019 Stonehouse proffers.	Risinger, John	Stonehouse
Subdivision	S-21-0011	158 Saddletown Rd. Subdivision	158 SADDLETOWN RD	Proposed family subdivision.	Haynes, Tori	Stonehouse
	S-21-0066	3502 Dahlia Ct. Courthouse Plat	3502 DAHLIA CT	Courthouse Plat	Baruch, Alex	Stonehouse
	S-21-0067	104 Peyton Rd BLA	104 PEYTON RD	Boundary Line Adjustment between Lot 154, Southall Quarter, Section II & Country Road West Parcel Kingsmill Development	Haynes, Tori	Roberts
	S-21-0068	Lot Line Extinguishment 339, 341, 345 Farmville Rd	341 FARMVILLE LN	Lot Line Extinguishment 339, 341, 345 Farmville Rd	Leininger, Thomas	Stonehouse
	S-21-0069	2188 Lake Powell Road Family Subdivision	2188 LAKE POWELL RD	2188 Lake Powell Road Family Subdivision	Haynes, Tori	Roberts
	S-21-0071	The Promenade at John Tyler Phase 30 - Courthouse Plat	5304 JOHN TYLER HWY	Courthouse Plat.	Ribeiro, Jose	Berkeley
	S-21-0072	7751 Newman Rd Family Subdivision	7751 NEWMAN RD	7751 Newman Rd Family Subdivision	Wysong, Thomas	Stonehouse
	S-21-0073	7207 Merrimac Trail Subdivision	7207 MERRIMAC TRL	Proposed subdivision of 7207 Merrimac Trail into two lots.	Haynes, Tori	Roberts
Site Plan	SP-21-0093	JGG T-Hangar Site Preparation Phase II	100 MARCLAY RD	Site preparation for construction of a new 18-unit t-hangar building for aircraft storage at the Williamsburg-Jamestown Airport.	Costello, Terry	Roberts
	SP-21-0094	The Maine at Williamsburg Amendment #3	2580 JOHN TYLER HWY	Amendment for Generator Pad	Leininger, Thomas	Berkeley
Zoning Verification Letter	ZVL-21-0023	The Pointe at New Town	4375 NEW TOWN AVE	Request to verify existing use, identify building, zoning, fire code violations.	Orne, Taylor	Jamestown
	ZVL-21-0024	The Station at Norge	7721 CROAKER RD	Request to identify Zoning & Overlay Districts, building and zoning violations, Variances, Use Permits, Yard requirements, development requirements.	Orne, Taylor	Stonehouse
	ZVL-21-0025	Freedom Market	5534 CENTERVILLE RD	Verification of legal confirming or legal non-conforming status for setbacks, building height, etc., and current use.Certificate of Occupancy & approved site plans. Determination if lack of an occupancy permit is a violation and will give rise to an enforcement action.	Rogerson, John	Powhatan
	ZVL-21-0026	278 & 280 Ivy Hill Road	278 IVY HILL RD	Verification of zoning classification, Permitted Uses, Existence of Zoning Violations	Orne, Taylor	Powhatan
	ZVL-21-0027	Williamsburg Landing	5700 WILLIAMSBURG LANDING DR	A zoning classification of the subject property and a description of allowed use; applicability of any existing proffers; existence of any zoning violations; whether the subject property is legally subdivided and meets minimum lot area and width requirements required in the applicable zoning district.	Rogerson, John	Roberts
	ZVL-21-0028	Whitlock Bros.	248 INDUSTRIAL BLVD	Request for a zoning letter confirming the continued right to conduct the existing business from that location.	Orne, Taylor	Stonehouse