

Appendix A

U.S. Route 60 East Corridor Advance Planning Study

ROUTE 60 EAST CORRIDOR ADVANCE PLANNING STUDY

JULY 12, 2016



PREPARED FOR:

Powhatan County
Department of Community Development

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SUMMARY

Powhatan seeks to best provide a future for Route 60 that protects the ability for its citizens to live and work in an environment that it has been known for, including its beautiful character while proximate to the state's metropolitan capital. Because of the significant commuter population, Powhatan hopes to identify a corridor strategy that will provide the best balance between economic development that is anticipated and the desire to maintain its rural character.

To achieve this strategy, Powhatan conducted a dual purpose study to identify both land use issues that may impact the future corridor and the transportation network required to achieve the growth anticipated. The first part of this study, and contained in this report, is the evaluation of the current land use plan categories in the Route 60 East Corridor Plan. The second, through a study enabled through VDOT grant funding, is the evaluation of what the future transportation corridor can expect with respect to capacity and level of service (referred to in this report as VDOT Study).

POWHATAN STUDY (this report)

This study and report center on the expectation of the development capacity and potential of the twenty-three communities of land use in the Comprehensive Plan area known as the Route 60 East Corridor. Each of these communities is made up of one of four land use types, Commerce Center (abbreviated in this report as C), Village Commercial (VC), Village Residential (VR), and Low-Density Residential (R). The twenty-three communities are shown and labeled in *Exhibit A*.

Each community has been evaluated on several criteria, including location, topography, current development, and other characteristics, and from those elements, an expected ultimate buildout scenario has been developed. These buildout scenarios are used in assisting with the traffic generation modelling of the VDOT Study.

Additionally, this study includes an evaluation of whether there are any concerns to be considered regarding the categorization of the various land use types, and where appropriate, recommendations for potential changes in areas to better complete the buildout of each area in the corridor.

Ultimately, this report evaluates areas that show particular opportunity for enhancing the Route 60 Corridor that will allow the dual purpose of economic development and rural preservation throughout the county to be achieved.

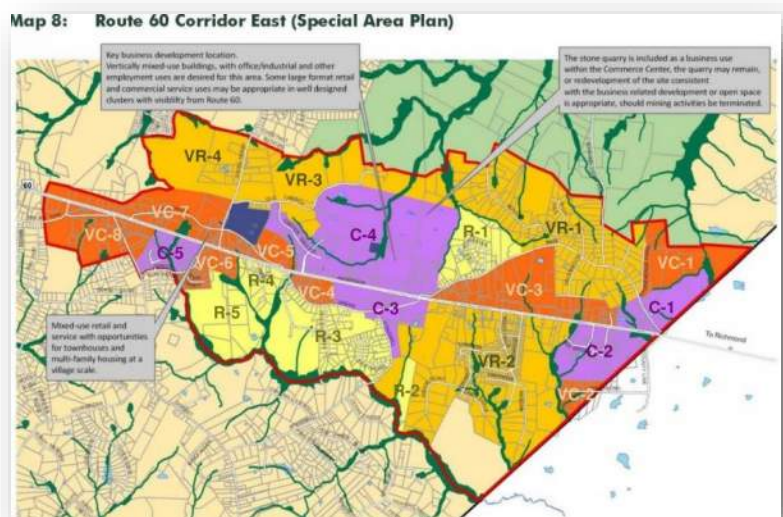


Figure 1-Map Showing Communities of Route 60 East Corridor

VDOT STUDY

Subsequent to this study is a vehicular-based study for the Route 60 East Corridor centered on the access to Route 60. The VDOT Study will include information from this report that will help inform a more reasonably accurate prediction of transportation metrics and create a more responsible expectation of future capacity issues that Powhatan County may face as the county grows.

THE PROCESS

STUDY AREA

The study area for this report was taken from the current Powhatan County Comprehensive Plan special area plan known as the Route 60 East Corridor. This area and the stated goals of this area are shown in *Exhibit B* of this report.

COMMUNITY AREAS

The study area is made up of multiple segments, or communities, consisting of multiple parcels that are grouped and recommended for a specific category of future land use. In all, there are twenty-three areas of land use, and each is shown and identified in *Exhibit A*.

The community areas are divided into the following categories that are consistent with the description found in the Comprehensive Land Use Plan. There are four categories found in the Route 69 East Corridor. They are as follows, further described by their intent (from the Comprehensive Land Use Plan):

Commerce Center - Commerce centers should be established at targeted locations along the Route 60 Corridor to accommodate business and industrial development in a location conducive to both the local and regional markets. Commerce centers should be well designed to accommodate these uses in a manner that has limited impact on the surrounding development including but not limited to sustainable stormwater management practices, local roads, and open spaces.

Village Center - Quaint village centers should be established in the targeted growth areas of the county to accommodate local business growth and provide services and employment to the local population of Powhatan County. Village centers will serve as an integral component of complete communities within the county and be within walking distance of many village residential neighborhoods

Village Residential - Village residential should include walkable neighborhoods with diverse housing options and integrated parks, and public uses, which are compatible with the residential qualities of the neighborhood

Low-Density Residential - Low-density residential may be permitted at the edges of the village to allow a transition from the more intense village residential areas and the surrounding rural area. Low-density

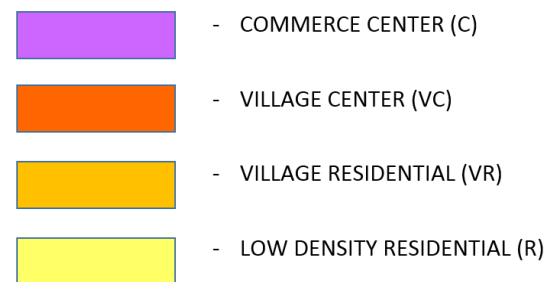


Figure 2-Land Use Designations

residential should be permitted in limited areas of the county and used as transitional areas only. Isolated pockets of low-density residential are not appropriate

Note: the detailed description of these four specific land use types is taken directly from the Powhatan County Comprehensive Plan and is shown in Exhibit C.

COMMUNITY AREA CHARACTERISTICS

In each of the community areas, several characteristics were evaluated. These characteristics include Development, Topographical/Environmental, and Road Connections.

Development – For each area, the existing development scenario is identified. The existing development character, potentially more than any other criteria, impacts the capacity to which the remainder of the land area can be developed. In turn, this actual capacity then impacts the maximum traffic that should be expected from each land area.

Development Characteristics & Constraints

Development

C-1 is generally not developed, with only modest homesites and a Route 60. Overhead transmission lines and a significant power easement are located 1500 feet north of Route 60.

Topographical/Environmental

C-1 is generally rolling throughout, with few natural development patterns. The goal is to maximize the development opportunities sought in this land use category.

Road Connections

Bounded to the south by Route 60, C-1 is bisected by Route 675 (and challenges for development as it is the first departure road from the area) such as Manakintown Ferry Road. As such, separate development is required for each side of the road.

Figure 3-Evaluation of Community Characteristics

For instance, the development potential of a community that is identified as VC is significantly reduced if development of single family residential is already occupied by single family homes and lots because it will be very difficult to secure property needed to form future connected property that will allow for VC uses to be designed and constructed that will accomplish the intent of VC.

Topographical/Environmental

Further affecting the buildout potential of each community are the physical characteristics of the land. Steep slopes can impact the areas where development is feasible. Environmentally sensitive and protected areas, such as wetlands and waters of the US, can produce barriers to connections for development.

Road Connections – Significant to the buildout potential of a community is its proximity to Route 60 and its potential points of connection. These points are limited to those that are existing, or locations of potential future connection. Because VDOT's Access Management Regulations limit the spacing of new connections, there is a limited access potential to Route 60 for future collector and arterial roads that will serve beyond properties immediately adjacent to Route 60.

The Thoroughfare Plan of Powhatan County shows the configuration of existing and proposed access points to Route 60. It is attached as Exhibit D.

DETERMINATION OF BUILDOUT POTENTIAL

Based on the community characteristics, the buildout potential of the communities is determined using approximate limits of anticipated boundaries to development, including, but not limited to, easements, buffers from wetlands, and setbacks from highways.

These estimates are not based on current zoning conditions of individual properties, nor does it derive from any preliminary projected designs for any of the parcels within the communities. Rather, it is a general area analysis, when combined with the area already develops, generates the ultimate expected capacity (future development area) that can be developed.

These projections of future buildout potential are expressed in percentage of total buildout, and are shown for each community in *Exhibit E*, along with the other input characteristics that helped to develop the buildout percentage.

LAND BAY DATA

Overall Acreage	155± Ac.
Ex. Built (%)	20%
Fut. Buildout (%)	60%
Total Parcels	20
Parcels > 50 Ac.	1
Parcels > 100 Ac.	0

Figure 4-Current and Future Buildout

TRANSPORTATION FLOW

Each community was analyzed to identify its relationship to Route 60 from an access standpoint. Wherever the community, each was evaluated as to what existing points of connection with Route 60 are available to those communities. Where more than one access to Route 60 is available, an approximation of the estimated percentage of motorist use accesses each point of access.

Additionally, an evaluation is made of the potential for future access to Route 60 from the communities that are immediately adjacent to Route 60. Included in this evaluation is a reference to the Thoroughfare Plan (*Exhibit D*) to determine where potential goals of access are in the current Comprehensive Plan.

The recommended land use for each community is also considered in evaluating the potential future points of access not currently built, since those uses may actually benefit from locational access that differs from the current Comprehensive Plan.

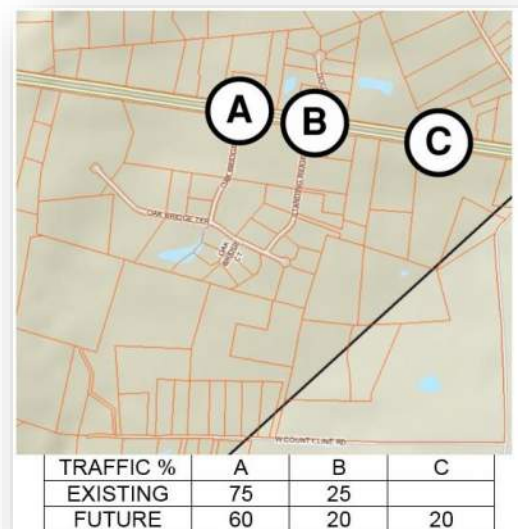


Figure 5-Existing and Future Traffic Flow

For each community this evaluation was done, and the resulting percentages of future buildout traffic flow is shown in *Exhibit F*.

USING THE TRANSPORTATION ELEMENTS TO ASSIST IN VDOT STUDY

From the observations and approximations made in the traffic characteristics of the communities in the Route 60 corridor, this information is used to inform the VDOT Study in areas where the actual percentage buildout is significantly different than would be estimated using standard trip generation methods, such as the ITE Trip Generation method. By using the information from this study, the VDOT Study can expect a result more closely estimating the ultimate expected buildout, rather than the maximum possible buildout.

By using this information for the VDOT Study, there is a reduced chance of overbuilding and overallocating lanes for trips that may never materialize from future development.

AREAS WARRANTING FURTHER EVALUATION

In some cases throughout the corridor, the existing Comprehensive Plan designation for the future land use is inconsistent with what the physical features and/or the development trends and existing uses will allow. It is important for the county to have a Comprehensive Plan that is not only aspirational in what it can be, but it needs to be tethered to the reality of what those communities actually are already and subsequently what their potential really is.

To that end, each community was evaluated to identify whether the County should in the future pay attention to these details and potentially change their designation from the current land use to another one after the proper public input.

Exhibit G shows the communities where concerns exist with the existing category of land use, along with a recommendation change that the County could consider at the appropriate time in the Comprehensive Plan Update.

Recommendation for Comprehensive

Concerns

VC-1 is generally accessible only by way of Stonehenge internally by several intermittent stream draws. The east is more accessible through property from that county that

These issues make for a very difficult development potential development pattern.

Consideration

Even with the potentiality for a parallel collector road north surroundings and would likely best be reconsidered as a continuation of the residential corridor found to the west

Figure 6-Areas of Concern Recommended

NEXT STEPS

This report performed a “reality check” to inform appropriate future land use, and associated traffic impacts, to the various communities in Route 60 East Corridor. It will help to identify future traffic patterns and potential needs for the County to plan for. The information here will be incorporated into the VDOT Study.

Additionally, it is recommended that the information in this report be incorporated into future planning of the next Comprehensive Plan Update. Two areas in particular appear to have great potential for future development as cohesive and community-centered communities, based on their location, topography, and generally large parcel configurations, which increases the potential for successful acquisition needed to create such communities.

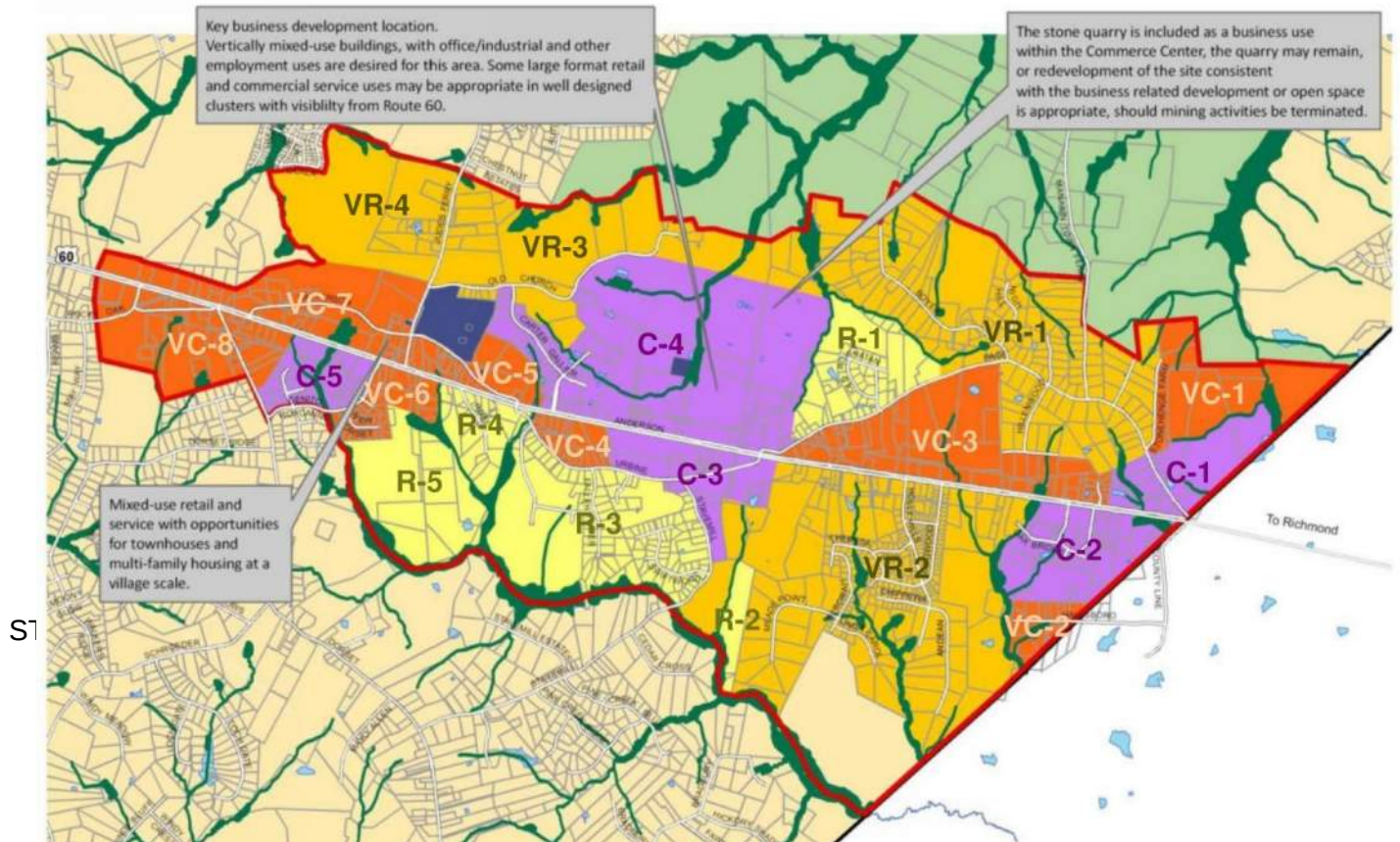
Those two areas are VC-8 and the combined areas of VC-7 and VR-4. The County should endeavor to make the most of this area in future Plan updates as it provides the most significant opportunity for placemaking in the Route 60 East Corridor.



Figure 7-VC-8 Showing Potential Interconnected Development Pattern

THE ROUTE 60 EAST CORRIDOR

Map 8: Route 60 Corridor East (Special Area Plan)



- COMMERCE CENTER (C)



- VILLAGE CENTER (VC)



- VILLAGE RESIDENTIAL (VR)



- LOW DENSITY RESIDENTIAL (R)

Adopted – July 12, 2010

Route 60 Corridor East Special Area

The Route 60 Corridor East Special Area is located in the eastern portion of the county centered on Route 60, and extends southward along the Chesterfield County border and approximately 5,000 feet north to follow natural changes in topography and the water flow pattern. The depth from the right-of-way is important to accommodate districts or compact patterns of growth, rather than stripping commercial development along the entire U.S. Route 60 Corridor.

The Route 60 Corridor East Special Area provides the best opportunity for key business development locations and residential growth. The concept includes village centers where local business uses can be accommodated in small-scale buildings in a main street setting with areas designated for the highest density residential up to eight units per acre that may include vertically mixed-use structures, small multi-family buildings, and townhouses. The commerce centers are the appropriate locations for offices, higher intensity retail, and industrial development. This location could support suburban density developments with available sewer and water services.

Surrounding the village and commerce centers are locations of village residential and low-density residential. Village residential should include single-family detached residential at the highest densities in the county with up to four units per acre. These areas should be designed as

traditional neighborhoods and include transitions from the high intensity mixed-use town centers areas along the corridor to the rural residential areas outside of the corridor.

The corridor also includes areas recommended for commerce centers and includes the Luck Stone stone quarry currently operating in the county. Commerce centers allow for business and industrial development. The industrial uses can be accommodated with future development through site design and buffering, or if the operations are discontinued, redevelopment of this area with compatible uses would be appropriate.

A small portion of the Route 60 Corridor East Special Area is identified for low-density residential that includes established low-density residential development and could include additional subdivisions at densities of one unit per two acres to one unit per five acres.

Roadways will need to be improved to accommodate increased densities. Sewer and water utilities will not be initially available but may be extended in the period beyond that which is addressed by this plan. Phasing of growth in the Route 60 Corridor East Special Area should be moderated by the **Sewer and Water Phasing Plan** included on page 39.

Land use descriptions shown on the following pages

Low-Density Residential

Description

Low-density residential is based on a suburban residential subdivision pattern. This development design describes an irregular configuration of lots and streets to accommodate small single-family residential properties in a semi-rural setting. Low-density residential is a single-use pattern and does not include businesses, institutional or other uses. The pattern is established by local roads branching off state routes to accommodate the subdivision for residential development. New roads are often curvilinear and cul-de-sacs or stub streets are used to end roads at the edge of the subdivision. This development pattern is the most common style for new residential development in the past few years. The general density in low-density residential should be between one unit per two acres and one unit per five acres.

Intent

Low-density residential may be permitted at the edges of the village to allow a transition from the more intense village residential areas and the surrounding rural area. Low-density residential should be permitted in limited areas of the county and used as transitional areas only. Isolated pockets of low-density residential are not appropriate.

Low-Density Residential Policies

- 1) Residents in low-density residential areas should not expect urban services. Rural levels-of-service will not include public water, sanitary sewer, and stormwater drainage facilities other than ditches, or sidewalks.
- 2) The road network in low-density areas will require improvements to serve the increased population. New roads must connect from one existing public road to another to improve the frequency of connections as the low-density residential areas become more populated and to provide multiple routes in and out of a subdivision. Adjacent subdivisions should have connected streets to promote this concept. Stub streets should be provided to allow future connections.
- 3) The desired character for this area is low-density semi-suburban. New residential development will be accommodated on lots of two or more acres.
- 4) When possible open spaces should be preserved through conservation easements, conservation subdivisions and easements, or donation of land to the county. The goal of open space preservation is to create an open space network. Therefore, when possible, land adjacent to the natural conservation areas should be of high priority for preservation followed closely by locations where links between existing open spaces can be established.
- 5) Stream corridors, woodlands, landmarks, historic sites, notable viewsheds, and other valuable natural or cultural resources should be maintained as part of the dedicated open space.
- 6) Homesteads, historic sites, landmarks and other historic resources should be protected through the design and development process.
- 7) Roadways and house lots should be located to respect natural features and to maximize exposure of lots to open space (directly abutting or across the street). “Single-loaded” streets (with homes on one side only) can be used to maximize open space visibility, thus increasing real estate values and sales, while costing no more than streets in conventional subdivisions (due to savings from narrower lot frontages).

- 8) Open space should be used as part of an integrated stormwater management approach to maintain natural drainage patterns, attenuate water quality impacts, replenish groundwater (e.g., through bio-retention facilities such as infiltration trenches and “rain gardens”) and incorporate detention facilities as visual and environmental amenities such as ponds.
- 9) Open space should be carefully located between housing lots, particularly those adjacent to working farms, and other sensitive uses to provide buffers.
- 10) Roadways should be designed to standards appropriate to the rural context (narrower widths, drainage swales, shade trees, gravel footpaths, etc.).

- 11) Pedestrian/bike and equestrian trail systems are encouraged in low-density residential areas to provide recreation and mobility options.

Appropriate Land Uses in Low-Density Residential

- Single-family uses, and accessory dwellings
- Institutional uses, such as schools, churches, public safety facilities, and similar uses
- Parks and recreation uses

Village Residential

Description

Village residential generally applies to large areas of land that could be developed under a unified planned development. Village residential recommends thoughtful design to provide a variety of housing options in a layout that respects the low intensity single-family character of adjacent rural areas while providing slightly more intense development. The gross density in these areas may vary by special area between one-half and four units per acre and could include single-family detached, single-family attached, and three- to four-unit multi-family buildings. The average lot size would range between one-fourth acre and two acres.

The primary location for village residential in Powhatan is near the courthouse in the central portion of the county, at the 711/288 interchange, and along the eastern portions of the Route 60 Corridor. Village residential is part of a complete community that occurs at a larger scale than a crossroad. A complete village includes residential neighborhoods, and village centers, with parks and open spaces and places for institutional uses like churches and schools. The village residential represents the residential only neighborhood component of a village.

Intent

Village residential should include walkable neighborhoods with diverse housing options and integrated parks, and public uses, which are compatible with the residential qualities of the neighborhoods.

Village Residential Land Use Policies

- 1) New village residential development should occur only pursuant to the special area plan and land use, development, and design standards or guidelines adopted by the county.
- 2) A master plan or planned unit development process should be used to ensure a coordinated plan is prepared for the village residential development.

- 3) Open spaces and riparian corridors should be included as design considerations in the subdivision of land for village residential.
- 4) Public sewer and water should be available to support the increased density of development in village residential areas.
- 5) A subdivision or master plan for village residential areas should provide for a minimum of thirty percent of the site in open spaces or parks.
- 6) The boundary between village residential and rural areas should be clearly defined. When the line becomes blurred and unclear, villages will begin to lose their sense of identity and community character, and the growth will be perceived as sprawling and losing its quaint character.
- 7) Transitions from village residential to low-density residential or rural areas should be accomplished through heavily landscaped buffers or location of similarly sized lots of single-family homes at the perimeter of the site.
- 8) The cross section of new streets in village residential should include sidewalks or paths and moderately narrow street widths that allow parking on at least one side.
- 9) The street system should allow for multiple opportunities for people to walk to local destinations by a variety of routes. Streets should be designed for lower speeds to allow for mixing of vehicular and pedestrian traffic.
- 10) Village residential should include semi-regular blocks based on a grid or modified grid street network, with variation in front yard setbacks within a block to provide green space and avoid monotony.
- 11) A consistent pattern of streets should be established between phases of projects in the various special areas. (See Route 60 Corridor East on page 84, Courthouse Village on page 86, and 711 Village on page 88.)

- 12) The streets and pedestrian paths should connect with other village residential districts, village centers, or portions of the commerce centers.
- 13) Appropriate types of attached single-family homes include duplexes or two-family units.
- 14) Multi-family buildings should resemble large single-family homes.
- 15) Homes should be designed to relate to the street. The fronts of buildings should be oriented to the street, and the progression of public to private spaces should be characteristic of traditional neighborhoods—street- sidewalk-front yard-front porch.
- 16) Traditional style homes with detached, side, or rear loading garages are preferred.
- 17) The façade of a garage should be set back from the primary façade of the home, and all detached garages should be located in the side or rear yard only. Front porches are encouraged on homes in village residential areas.
- 18) Village residential areas should be located within short distances to amenities; sites should be designated for parks, schools, churches, and other public gathering places within a five to ten minute walk (approximately ¼ mile).
- 19) Village residential areas should be located within ¼ mile of village centers or services and retail in commerce centers to provide destinations for commercial activity, and create an integrated comprehensive community.
- 20) Residential densities may vary from one village residential area to another. See special area plans for more specific density/intensity recommendations for the village residential areas.
- 21) New development should be coordinated and timed relative to public infrastructure. Infrastructure, particularly sewer and water service, and road improvements should be available concurrently with new development.
- 22) New infrastructure should be planned to be adequate for both the proposed development and any additional planned growth in the village. Level-of-service standards should be developed to ensure that adequate public facilities are provided in both the short- and long-term.
- 23) New development should pay for itself regarding necessary improvements to public infrastructure including but not limited to new roads, sewer and water services, and schools.
- 24) Parks and sidewalks should be provided with each phase of development within the villages to create a pedestrian network that ties the neighborhoods together. Particular attention should be paid to links that connect to a countywide green network and connect residential neighborhoods to schools.
- 25) Villages should have coordinated stormwater management plans. This includes ensuring stormwater impacts of individual developments are properly mitigated, and those local stormwater management efforts are coordinated with countywide efforts.
- 26) When possible village residential should be designed to meet LEED ND standards and include sustainable features like rain gardens and green roof buildings.
- 27) As the county begins creating master plans for the special areas it may become feasible to add village centers in the areas designated for village residential. These modifications are appropriate and support the vision of creating complete neighborhoods that promote walking and provide local business in a close proximity to residential areas in a manner, which is architecturally compatible with the neighborhood.

Appropriate Land Uses in Village Residential

- Single-family detached residential with accessory residential structures
- Two- to four-family residential structures (apartments, condominiums, townhouses)
- Bed and breakfasts
- Public and institutional uses including: schools, churches, and community centers
- Parks and recreation
- Village center uses may be appropriate as part of a master plan.

Village Center

Description

A village center indicates land designated for future moderate to high intensity residential, commercial, office, and institutional growth. These areas are currently characterized by limited commercial and moderate density residential development along the Route 60 Corridor, the Courthouse Village, and the 711 Village. These areas should be intensified to take advantage of available sewer and water services and transportation infrastructure, and to create a center for walkable communities with an identity. The village centers are a primary growth area for economic development that has a local focus but may include office uses serving a larger market. Efforts should be made to encourage appropriate scaled development in these areas.

The primary focus of these areas should include a mixture of retail, office, services, and civic uses such as gathering spaces, recreation centers, and open spaces like plazas or greens. These features should be organized and developed in a coordinated manner to provide a focus for neighborhood activities. The central areas should be designed to be pedestrian-friendly with connections via sidewalks and paths to surrounding village residential neighborhoods.

Village center areas typically have a moderate concentration of nonresidential uses to provide services and activities to the immediate vicinity (service radius of approximately one to three miles) but are still of a scale and intensity that is compatible with surrounding village residential neighborhoods. Individual buildings are typically small with maximum footprints of around 15,000 square feet. Total concentrations of commercial building areas in an individual village center should range between 10,000 and 75,000 square feet total, with the balance of the village center form filled out with residential development.

Intent

Quaint village centers should be established in the targeted growth areas of the county to accommodate local business growth and provide services and employment to the local population of Powhatan County. Village centers will serve as an integral component of complete communities within the county and be within walking distance of many village residential neighborhoods.

Village Center Land Use Policies

- 1) New growth and development in a village center should occur only pursuant to the special area plan and an approved master plan for that development. The plan must establish appropriate development pattern, and land uses, development standards, design guidelines, and adequate public facility requirements.
- 2) New development in a village center should respect the existing context or the context of the planned village residential neighborhoods. It should help maintain the “small town” feel of the community. The special area plans will define the recommended size parameters for each village center.
- 3) The street systems in village centers should have multiple interconnections. This allows multiple opportunities for people to walk to local destinations by a variety of routes. Streets should be designed for slower speeds to allow for mixing of vehicular and pedestrian traffic. The network should extend beyond the village center and connect to adjacent village residential areas. See village residential land use policy # 9.

- 4) Complete streets including on street parking, street trees and sidewalks should be provided with development in village centers.
- 5) Curbs should be provided where on street parking is permitted within village centers; however, in most cases open channel drainage is appropriate.
- 6) There should be a short distance between village centers and village residential areas. See village residential land use policy 19.
- 7) The density of village centers should be relatively high in comparison to what the county has historically supported.
- 8) Villages are recognized as locations for future growth and development in the county.
- 9) A mix of commercial, office, service, public and residential uses should be accommodated in village centers with vertical mixed-use buildings being a preferred form.
- 10) The scale of buildings in village centers should maintain a small town feel, and be limited to buildings with small footprints of 15,000 square feet or less. Buildings should be limited to a maximum height of thirty-five feet or a maximum of three stories for a total area not to exceed 45,000 square feet. Additional study of building scale thresholds should be coordinated with an economic development strategy and study to determine a targeted building size appropriate to achieve the land use and community character goals and vision for this area, and the economic development objectives stated in chapter 4.
- 11) A central focal point, square, or “main street” should be established as the heart of the village center and development intensities should be graduated from most intense in these areas to less intense residential uses further from the center.
- 12) Townhouses and larger apartment buildings (four to twelve units per structure) with an average density of four to eight residential units per acre for the whole village center⁵, can be accommodated. Expansion of the housing types available in the county and higher-density development encouraged in the villages should help increase the supply of affordable housing.
- 13) Buildings should be designed to relate to the street. The fronts of buildings should be oriented to the street, and the progression of public to private spaces should be created based on traditional neighborhood models.
- 14) Village center buildings that are mixed-use or nonresidential should be set to the sidewalk.
- 15) Awnings and covered sidewalks should be encouraged.
- 16) Adequate landscape buffering should be provided adjacent to any residential properties, and building design should be compatible with surrounding residential areas in regard to materials, building scale, massing, and the relationship to the streets.
- 17) The commercial/civic centers are most appropriate near intersections of a collector or arterial street.
- 18) Signage and lighting should be limited to reduce impacts on surrounding residential areas.

⁵ The residential density in a village center is not based on the same basic density assumptions as a purely residential area, because village centers are intended to include a mix of uses with some uses being stacked vertically in mixed-use structures. The recommendation of four units per acre is a gross density recommendation for the whole village center, meaning if a 100 acre site was considered for a village center, the maximum residential unit yield would be 400 residential units. Those units could be developed in a combination of large-lot single-family homes, attached units, and units located above ground floor commercial or office. They would not necessarily all be accommodated on 10,000 square foot lots. An increase of up to eight units per acre gross density could be appropriate in these areas particularly if attained as part of a Transfer of Development Rights program.

- 19) Depending on the size of a property considered for village centers, they may contain varying amounts of attached residential units. A small development of around twenty acres may be almost entirely nonresidential and serve as a center, while larger areas within this category may include phases of residential development in addition to a commercial center.
- 20) A village center should be planned with well-defined character that promotes walkability and includes open and green spaces throughout the area.
- 21) New development should be coordinated and timed relative to public infrastructure. Infrastructure, particularly sewer and water service, and road improvements should be available concurrently with new development.
- 22) New infrastructure should be planned to be adequate for both the proposed development and any additional planned growth in the village proximity. Level-of-service⁶ standards should be developed to ensure adequate public facilities are provided in both the short- and long-term.
- 23) New development should pay for itself in regard to provision of necessary improvements to public infrastructure including but not limited to new roads, sewer and water services, and schools.
- 24) Village centers should have coordinated stormwater management plans. This includes ensuring stormwater impacts of individual developments are properly mitigated, and those local stormwater management efforts are coordinated with countywide efforts.
- 25) When possible, village centers should be designed to meet LEED ND standards and include sustainable features like rain gardens and green roof buildings.
- 26) Village centers should have a coordinated architectural form, and spatial feel to the village residential areas in the immediate proximity.

- 27) Village centers should be designed to include a minimum of twenty percent open space in each development or phase of development. Open spaces should be required in addition to areas required for stormwater management. Open spaces should be usable spaces which contribute pervious surfaces, allow for trees, landscaping, and water features, and/or outdoor activities. They may be naturalized or more formal and include plazas, small parks, squares, or greens.

Appropriate Land Uses in a Village Center

- Attached townhouse residential
- Medium scale multi-family residential in neighborhood pattern
- Small- to medium-scale commercial, retail
- Office
- Services including restaurants
- Vertically mixed-use buildings
- Public institutional including government facilities and offices, fire stations
- Plazas, squares, open space

⁶ See Implementation Tools on page 110 for more information on Level-of-Service Standards.

Commerce Centers

Description

Commerce centers are designed to accommodate large-scale uses like warehouses or manufacturing facilities that need extensive floor areas. The blocks in these areas are typically based on a campus-like design with large green areas, landscaping and water detention areas surrounding large structures with accessory surface parking. The commerce centers are appropriate where nonresidential uses should be somewhat segregated from residential uses due to potential impacts from noise, dust, or heavy traffic. Although larger in scale than other land use classifications, and more accommodating of automobile traffic, pedestrian areas are still an important component in commerce centers.

Commerce centers include a wide range of office, business, light industrial, research and development uses, and ancillary uses such as restaurants that offer services to the employees of the other businesses. These centers can best be described as a business version of a “subdivision.” The term “campus” is used often in that it implies a sense of integration and coordination of uses and a certain quality and character of development. Commerce centers are generally large, unified, and integrated; like a residential subdivision, they are usually developed by a single entity, and as such can be designed in a coordinated way. As a general consideration, a commerce center would typically need to be at least thirty to fifty acres to accommodate several large format businesses.

Commerce centers involve a significant number of vehicle trips, particularly in the morning and evening peak hours. They involve a mixture of passenger vehicle and heavy truck traffic. Access to multi-modal transportation such as rail or water may be an influencing factor on the location of a commerce center. They are typically located near highway access such as along Route 60.

Intent

Commerce centers should be established at targeted locations along the Route 60 Corridor to accommodate business and industrial development in a location conducive to both the local and regional markets. Commerce centers should be well designed to accommodate these uses in a manner that has limited impact on the surrounding development including but not limited to sustainable stormwater management practices, local roads, and open spaces.

Commerce Center Land Use Policies

- 1) Commerce centers should meet quality standards related to site layout; building configuration, materials, massing, shape, and height; landscaping; signage; parking lot aesthetic and functional design; vehicular and pedestrian circulation; trash removal; lighting; stormwater management; environmental protection; and others.
- 2) Commerce centers should accommodate large-scale commercial/retail development in clustered centers located near Route 60. However, these uses should not be stripped along the frontage of the commerce centers for their whole length along Route 60. Visibility to other business uses should be prioritized to promote economic development in sectors other than retail and service.
- 3) Additional study of building scale thresholds should be coordinated with an economic development strategy and study to determine a targeted building size appropriate to achieve the land use and community character goals and vision for this area, and the economic development objectives stated in chapter 4.

- 4) Commerce centers should be approved only upon a demonstration that adequate public facilities exist or will be established by the time of opening.
- 5) Commerce centers should be subject to land use impact review and mitigation through the proffer system for topics such as traffic, stormwater, lighting, fiscal impact, noise, and odors.
- 6) Vehicular access should be designed to maximize efficiency and minimize negative impacts on levels-of-service on adjacent roads.
- 7) Local roadways should be designed to separate retail/commercial passenger traffic flows from delivery and distribution truck traffic generated in mixed retail/industrial areas.
- 8) Local roadways should be designed and built to standards to accommodate heavy truck traffic, including load bearing, and turning radius dimensions.
- 9) Communication technology and utility services should be available in locations indicated for commerce centers.
- 10) On-site amenities such as walking trails and eating areas are encouraged. Local trails should connect to the proposed regional greenways and trails system.
- 11) Commerce centers should be designed to include a minimum of twenty percent open space in each development or phase of development. Open spaces should be required in addition to areas required for stormwater management. Open spaces should be usable spaces which contribute pervious surfaces, allow for trees, landscaping, and water features, and/or outdoor activities. They may be naturalized or more formal and include plazas, small parks, squares, or greens.
- 12) Commerce centers should be encouraged to reuse existing industrial properties and integrate existing mining or industrial operations.
- 13) Site configuration, landscaping, and maintenance of existing tree cover and topography should be used to buffer commerce centers from adjacent development. However, vehicular and pedestrian connections should be provided between various uses to promote better access.
- 14) When possible commerce centers should be designed to meet LEED ND and LEED building standards and include sustainable features like rain gardens and green roof buildings.

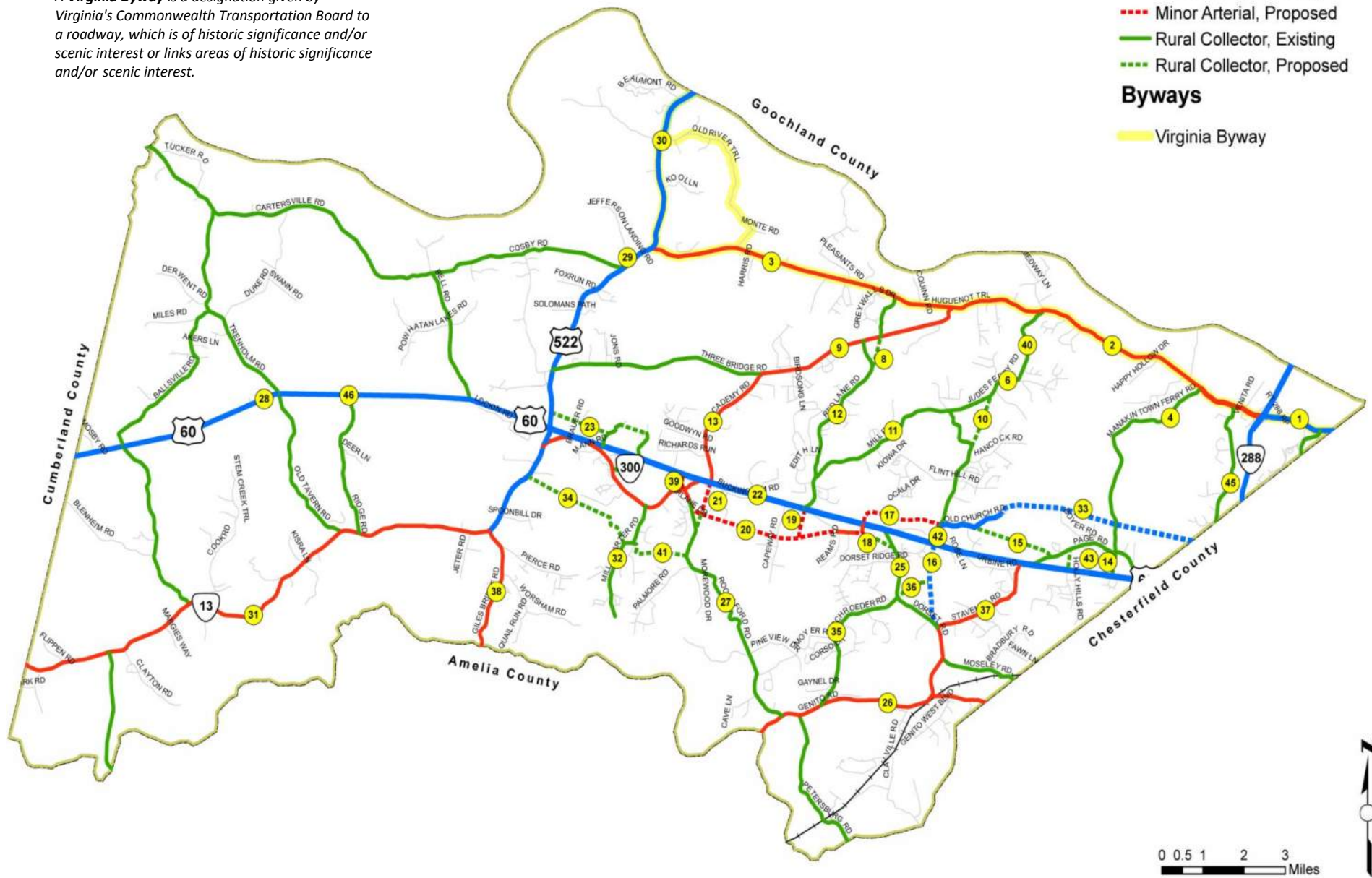
Appropriate Land Uses in Commerce Centers

- Offices
- Large Scale Commercial/Retail
- Services
- Clean Manufacturing
- Distribution
- Warehousing
- Existing Mining Facilities
- Institutional uses, such as schools, churches, public safety facilities, and similar uses
- Parks, open space, recreation

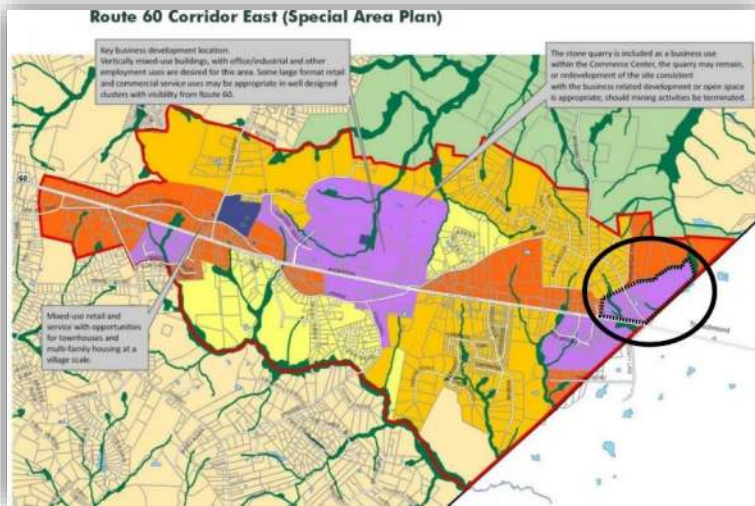
Thoroughfare Map shown on the following page

Map 11: Major Thoroughfare Plan

A **Virginia Byway** is a designation given by Virginia's Commonwealth Transportation Board to a roadway, which is of historic significance and/or scenic interest or links areas of historic significance and/or scenic interest.



COMMERCE CENTER C-1



Boundaries of significance - Chesterfield County line (East); Route 60 (South)

Existing Improvements include – no significant development; power transmission lines

Development Characteristics & Constraints

Development

C-1 is generally not developed, with only modest home sites and a few small commercial establishments along Route 60. Overhead transmission lines and a significant power easement run east/west generally parallel to and 1500 feet north of Route 60.

Topographical/Environmental

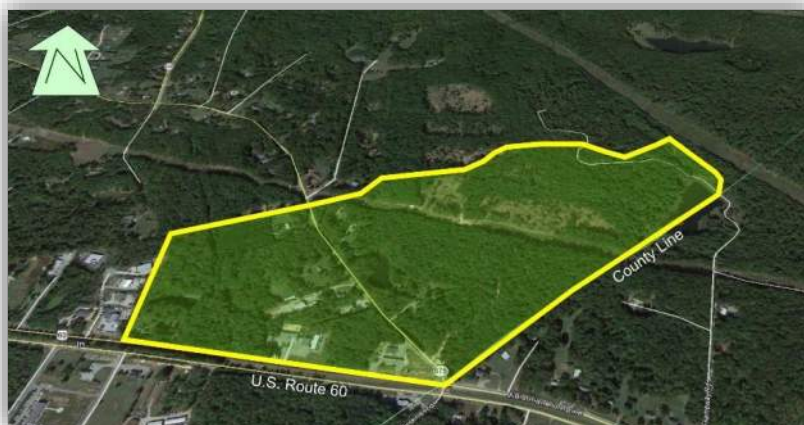
C-1 is generally rolling throughout, with few natural development plateaus. Significant grading is likely necessary to maximize the development opportunities sought in this land use category.

Road Connections

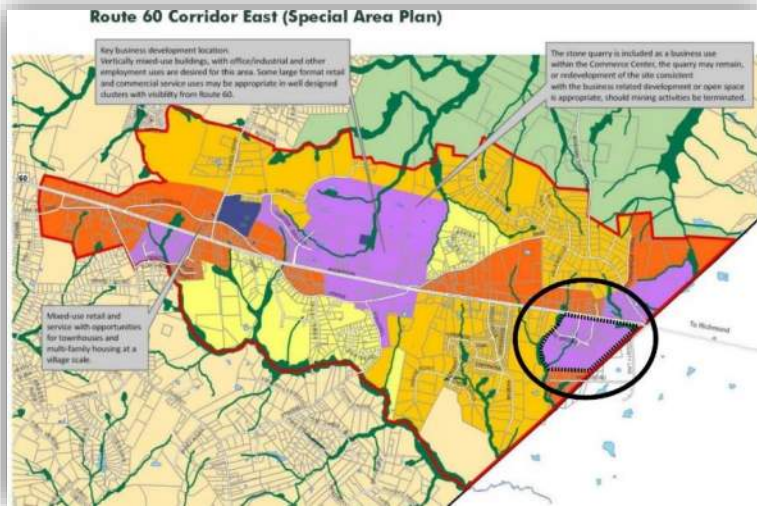
Bounded to the south by Route 60, C-1 is bisected by Route 675 (Page Road), which presents both opportunities and challenges for development as it is the first departure road from the eastern county line and connects to roads such as Manakintown Ferry Road. As such, separate developments will likely occur to the north and south of Page Road.

COMMUNITY DATA

Overall Acreage	155± Ac.
Ex. Built (%)	20%
Fut. Buildout (%)	60%
Total Parcels	20
Parcels > 50 Ac.	1
Parcels > 100 Ac.	0



COMMERCE CENTER C-2



Boundaries of significance - Chesterfield County line (East); Route 60 (North)

Existing Improvements include – Oakbridge Business Park

Development Characteristics & Constraints

Development

C-2 is significantly developed as an industrial/commercial site, most notably Oakbridge Business Park. Based on the infrastructure and zoning in place, it is expected that the long term development prospects of the future mirror those that are already in place. This community should expect efficient development patterns and yield a good taxable base of business use for the County.

Topographical/Environmental

C-2 is generally level to rolling, with a significant development acreage and relatively low environmental encumbrances.

Road Connections

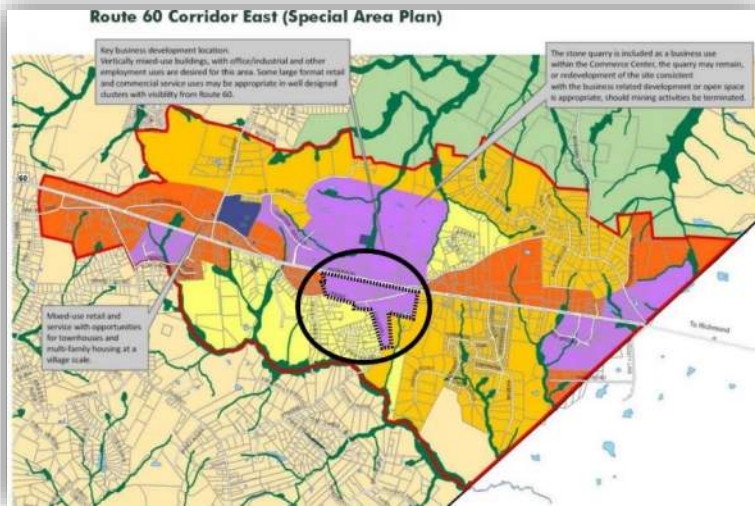
The development of Oakbridge Business Park has brought significant road access to the communities. Future development should continue this pattern of access to Route 60 via Oakbridge Drive and Standing Ridge Drive, with no further access points to Route 60 required for the full development of the community.

COMMUNITY DATA

Overall Acreage	270± Ac.
Ex. Built (%)	55%
Fut. Buildout (%)	75%
Total Parcels	48
Parcels > 50 Ac.	0
Parcels > 100 Ac.	0



COMMERCE CENTER C-3



Boundaries of significance – Stavemill Road and Urbine Road (through); Route 60 (North)

Existing Improvements include – Blue Gray Storage, Bojangles, Advance Auto, Goodwill

Development Characteristics & Constraints

Development

Significant development is underway on this piece served generally by Stavemill Road and Route 60. Several restaurants and the redevelopment of the Texaco-anchored strip center set in place the general density of this community for the next several decades. A new self-storage facility is located on the western edge of the Stavemill/Urbine Road development corridor.

Topographical/Environmental

Completely graded to the conditions of the current development projects in the area, neither topography nor other environmental constraints should cause a reduction in the maximum potential use of the properties in this area.

Road Connections

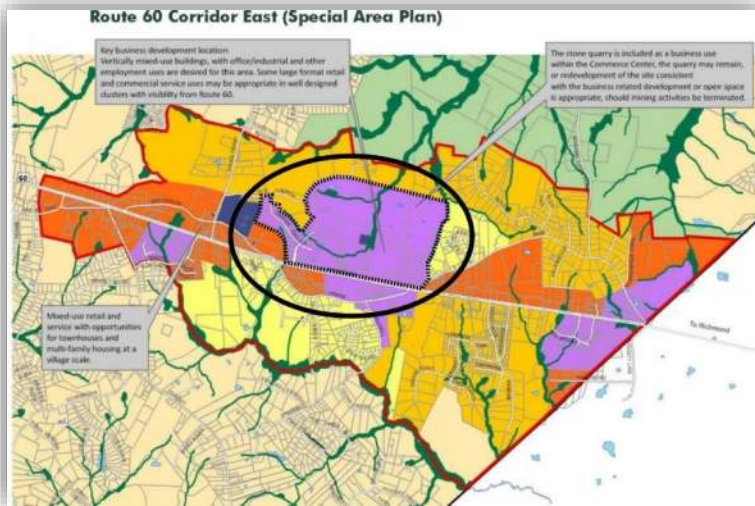
C-3 is significantly developed with the current projects complete and underway. The area is well linked to the Route 60 corridor via Urbine Road and Stavemill Roads.

COMMUNITY DATA

Overall Acreage	160± Ac.
Ex. Built (%)	30%
Fut. Buildout (%)	85%
Total Parcels	34
Parcels > 50 Ac.	1
Parcels > 100 Ac.	0



COMMERCE CENTER C-4



Boundaries of significance – Old Church Road (West) (East); Route 60 (South)

Existing Improvements include – Luck Stone Quarry, Walmart Supcenter

Development Characteristics & Constraints

Development

C-4 is partially developed with some of the County's most significant landmarks, principally the Walmart Supercenter and the Luck Stone Quarry. C-4 Extends west to the South Creek Shopping Center along Route 60 and several small industrial development sites to the north of the shopping center.

Topographical/Environmental

C-4 has significant topographic change throughout the community, with several steep and expansive streams and wetlands and waters of the U.S. (WOUS). These topographic features will limit the ability for future development to be connected.

Road Connections

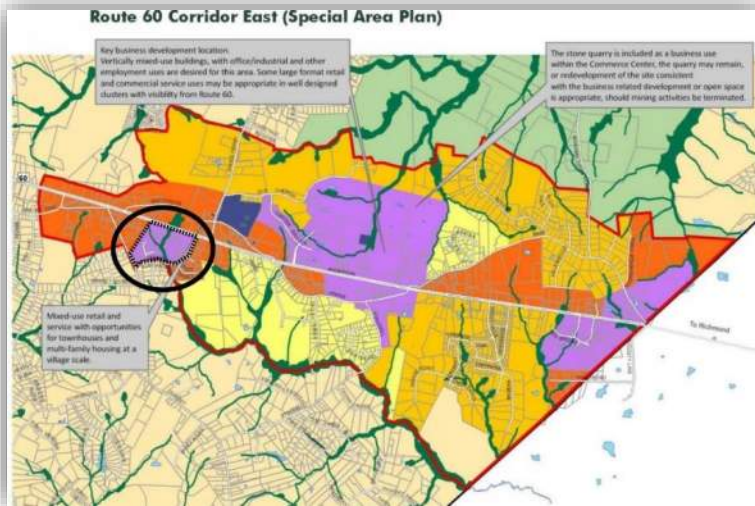
C-4 developments are served primarily directly onto Route 60 via two roads, South Creek One to the west and Luck Stone Road to the east.

COMMUNITY DATA

Overall Acreage	730± Ac.
Ex. Built (%)	40%
Fut. Buildout (%)	45%
Total Parcels	83
Parcels > 50 Ac.	0
Parcels > 100 Ac.	1



COMMERCE CENTER C-5



Boundaries of significance – New Dorset Road (South and East); Route 60 (North); Dorset Road (Southwest)

Existing Improvements include – C&F Headquarters, Genito Station Subdivision

Development Characteristics & Constraints

Development

C-5 has mostly small parcel development directed to Route 60, most notably the Central Virginia Bank headquarters building. Genito Station Subdivision is located to the southern extent of the community.

Topographical/Environmental

C-5 has two significant valleys cutting north to south through the community, with its tributary streams joining and continuing south through C-5 and across New Dorset Road. These valleys will make development of C-5 as a cohesive development challenging.

Road Connections

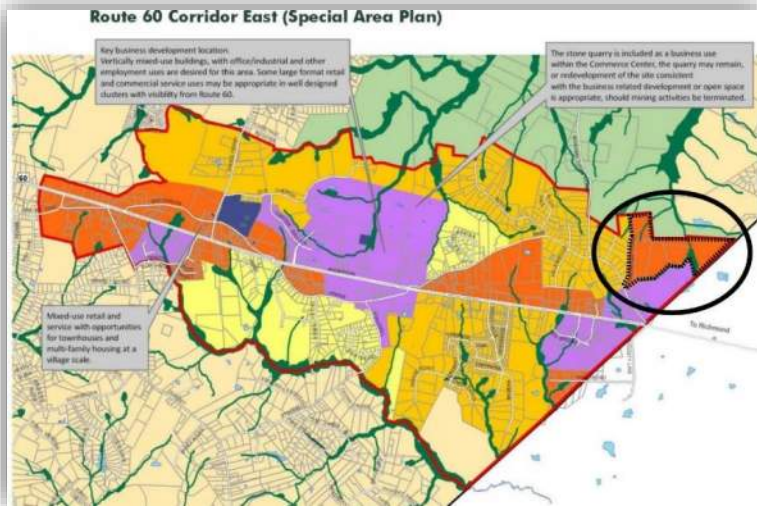
C-5 is bounded by Route 60 to the north, New Dorset Road running south and east, and Dorset Road to the southwest. Existing crossover spacing limits the ability for new significant development entrances to be included without modifications to Route 60 crossovers.

COMMUNITY DATA

Overall Acreage	105± Ac.
Ex. Built (%)	75%
Fut. Buildout (%)	30%
Total Parcels	48
Parcels > 50 Ac.	0
Parcels > 100 Ac.	0



VILLAGE CENTER VC-1



Boundaries of significance - Chesterfield County line (East); Stonehenge Farm Road (West)

Existing Improvements include – no significant development; power transmission lines

Development Characteristics & Constraints

Development

VC-1 is generally undeveloped. Several private homes are in the community that access onto Stonehenge Farm Road.

Topographical/Environmental

VC-1 slopes generally from the high along Stonehenge Farm Road to a low on the eastern boundary of the community. Property to the east of the tributary channel is remote due to significant environmental impacts to cross from the Powhatan side.

Road Connections

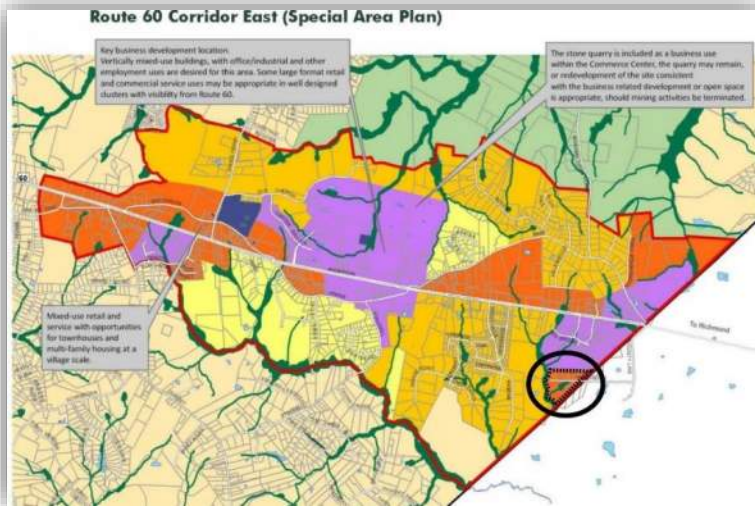
Road access to VC-1 is severely limited, with its main access road being Stonehenge Farm Road. Development connections will be limited, if at all, and the segment adjacent to Chesterfield is likely undevelopable (feasibly) without accessing from the Chesterfield direction.

COMMUNITY DATA

Overall Acreage	180± Ac.
Ex. Built (%)	10%
Fut. Buildout (%)	40%
Total Parcels	12
Parcels > 50 Ac.	0
Parcels > 100 Ac.	0



VILLAGE CENTER VC-2



Boundaries of significance - Chesterfield County line (East)

Existing Improvements include – Individual parcel residential development

Development Characteristics & Constraints

Development

VC-2 is fully developed as private parcel subdivisions that are mostly occupied by single family homes. There is no anticipated future development of this site in the next 30 years due to the cost of land/improvements in order to develop.

Topographical/Environmental

VC-2 is relatively free from environmental constraints to development.

Road Connections

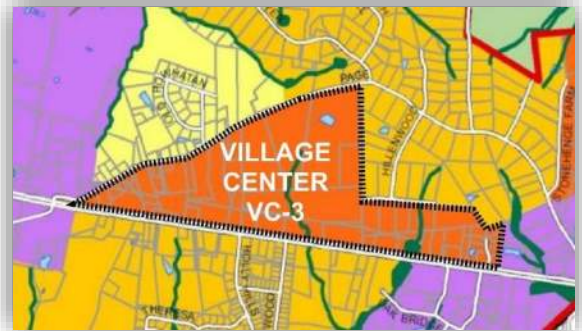
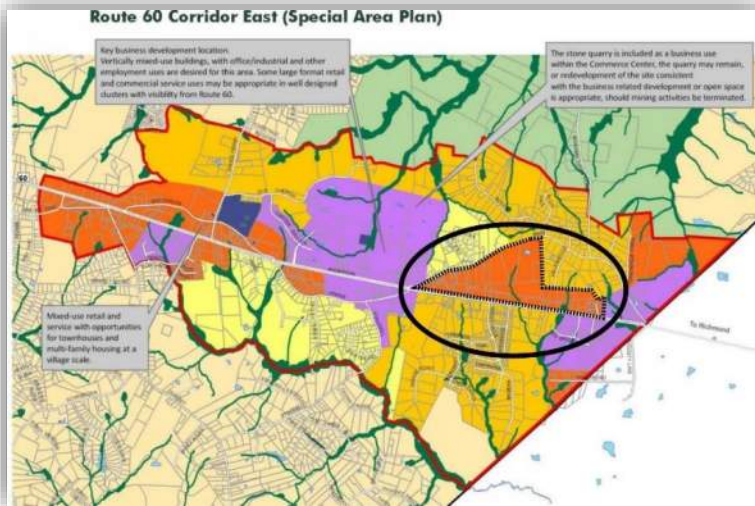
VC-2 accesses only from County Line Road, a road that originates in Chesterfield County and terminates in a cul-de-sac in VC-2. Development potential is significantly constrained for this parcel as a result.

COMMUNITY DATA

Overall Acreage	60± Ac.
Ex. Built (%)	95%
Fut. Buildout (%)	5%
Total Parcels	27
Parcels > 50 Ac.	0
Parcels > 100 Ac.	0



VILLAGE CENTER VC-3



Boundaries of significance – Page Road (North); Route 60 (South)

Existing Improvements include – existing subdivision lots at eastern end of community

Development Characteristics & Constraints

Development

VC-3 is generally not developed, with only parcel lot homes and a few small commercial establishments along Route 60. Overhead transmission lines and a significant power easement run east/west generally parallel to and 1500 feet north of Route 60. Homes of significant value are located on the south line of Greenberry Road and pose concern to fully developing the eastern properties between Greenberry and Route 60.

Topographical/Environmental

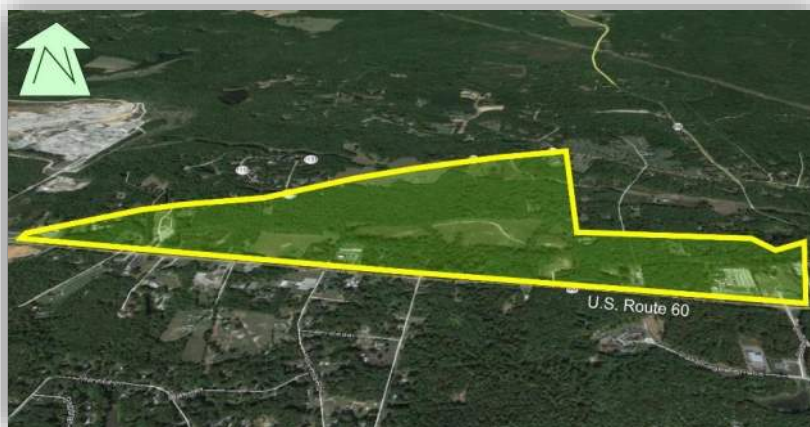
Two significant ravines challenge the full development of VC-3 and will limit future connected development to the western half of the community.

Road Connections

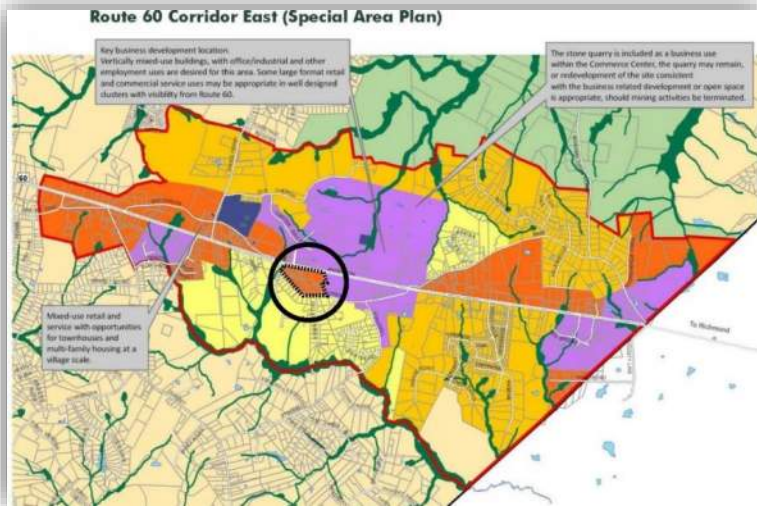
VC-3 is bounded along its entirety to the south by Route 60 and to its northwestern edge by Page Road. Greenberry Road bounds the eastern portion of the community to the north.

COMMUNITY DATA

Overall Acreage	340± Ac.
Ex. Built (%)	25%
Fut. Buildout (%)	75%
Total Parcels	67
Parcels > 50 Ac.	0
Parcels > 100 Ac.	0



VILLAGE CENTER VC-4



Boundaries of significance – Urbine Road (South); Route 60 (North)

Existing Improvements include – church fronting Route 60, residential fronting Urbine

Development Characteristics & Constraints

Development

VC-4 is partially developed, with homesites along Urbine Road and a church (First Baptist) along Route 60. The abundance of small parcels with improvements already built making a connected development challenging from a feasible acquisition perspective. Location is otherwise good due to proximity to South Creek Shopping Center.

Topographical/Environmental

VC-4 is generally rolling with no major environmental barriers to future development.

Road Connections

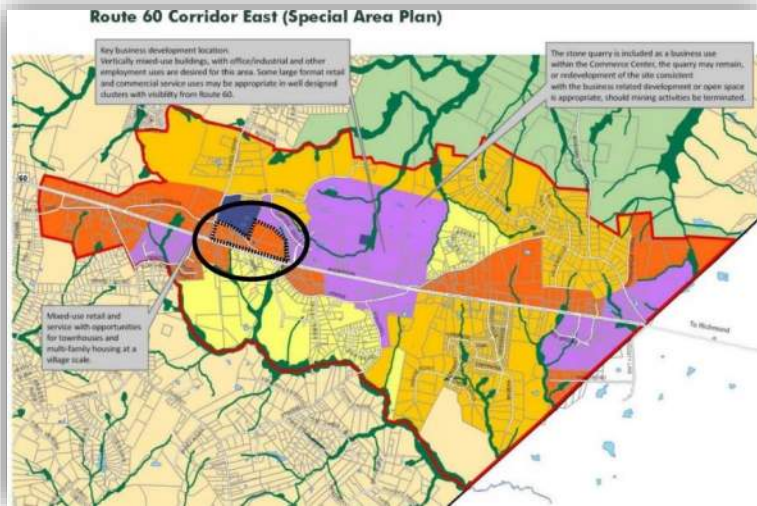
Significant road improvements at Route 60 might prove cost prohibitive to a single and complete development project, likely lining development with the South Creek Shopping Center.

COMMUNITY DATA

Overall Acreage	52± Ac.
Ex. Built (%)	15%
Fut. Buildout (%)	85%
Total Parcels	26
Parcels > 50 Ac.	0
Parcels > 100 Ac.	0



VILLAGE CENTER VC-5



Boundaries of significance – Batterson Road (North and through); Route 60 (South); Jude's Ferry Road (West)

Existing Improvements include – Flat Rock Elementary School (adjacent)

Development Characteristics & Constraints

Development

VC-5 is generally known for Flat Rock Elementary School. The local landmark Frisbee's is also in this community. The remainder of the property is generally undeveloped with exception of a few large parcel homesites and a small warehouse on Batterson Road.

Topographical/Environmental

The undeveloped western parcels (between Batterson and Route 60) have a tributary draw that bisects the properties, but does not appear to be significant enough to limit future development options.

Road Connections

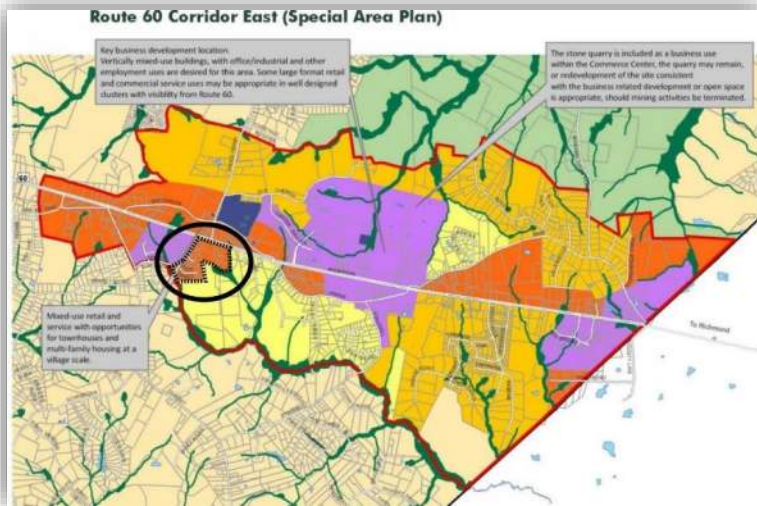
Batterson Road provides very good access to nearly all of the developed and undeveloped properties in this community, providing a good opportunity to take advantage of connected development as the Plan calls for. Due to VDOT's access management regulations, new development accessing onto Route 60 can and should be limited to access points at Batterson and at Jude's Ferry Road, as well as the current crossover located ¼ mile east of Jude's Ferry Road.

COMMUNITY DATA

Overall Acreage	85± Ac.
Ex. Built (%)	40%
Fut. Buildout (%)	80%
Total Parcels	26
Parcels > 50 Ac.	1
Parcels > 100 Ac.	0



VILLAGE CENTER VC-6



Boundaries of significance – Route 60 (North); New Dorset Road (West)

Existing Improvements include industrial development along New Dorset Road.

Development Characteristics & Constraints

Development

Properties on Route 60 in VC-6, particularly those opposite the Jude's Ferry Road intersection, are undeveloped or with only single-family large parcel home sites. VC-6 has considerable development accessing onto New Dorset Road. The scale of these industrial and warehousing sites makes redevelopment into village-style development unlikely in the next several decades.

Topographical/Environmental

VC-6 is not challenged environmentally and should not have many environmental or stormwater challenges to future development.

Road Connections

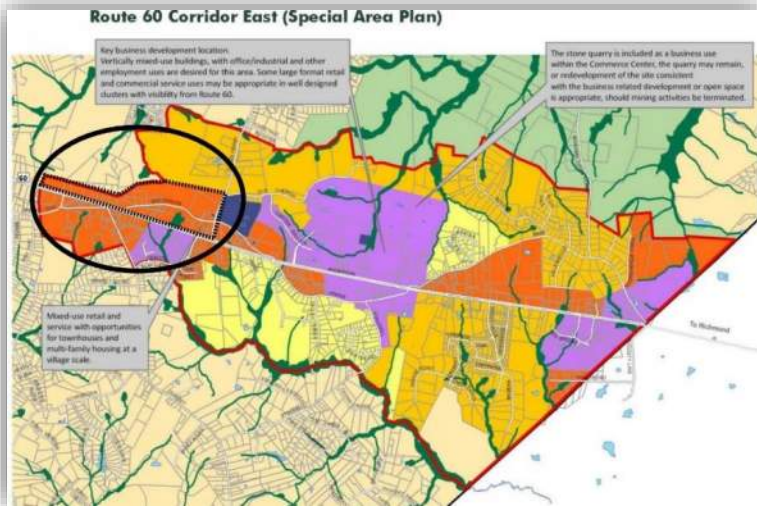
VC-6 is generally accessed from the north by Route 60 and from New Dorset Road. Although the configuration of development on New Dorset Terrace is a cul-de-sac, extension of the road is possible to access the undeveloped parcels, along with a principal access from Jude's Ferry intersection.

COMMUNITY DATA

Overall Acreage	80± Ac.
Ex. Built (%)	55%
Fut. Buildout (%)	70%
Total Parcels	40
Parcels > 50 Ac.	0
Parcels > 100 Ac.	0



VILLAGE CENTER VC-7



Boundaries of significance – Route 60 (South); Judes Ferry Road (East)

Existing Improvements include – Flatrock Village; St. John Neumann Catholic Church; Essex Bank, Sheetz

Development Characteristics & Constraints

Development

With the general exception of the Flatrock Village area and Essex Bank, VC-7 is generally undeveloped. Because of the alignment of Batterson running through the community, significant opportunities exist for developing a well-connected village-style development in this community. Significant Route 60-frontage development runs along the western portion of VC-7, including a convenience store and an auto dealership.

Topographical/Environmental

A roughly five-acre pond fronting Route 60 provides the only significant environmental feature in this community. Integrated properly, this feature can be integrated into both stormwater programs and as an amenity to a future connected development. The relatively narrow development strip along Route 60 provides a challenge to development in anything but a Route 60-oriented manner.

Road Connections

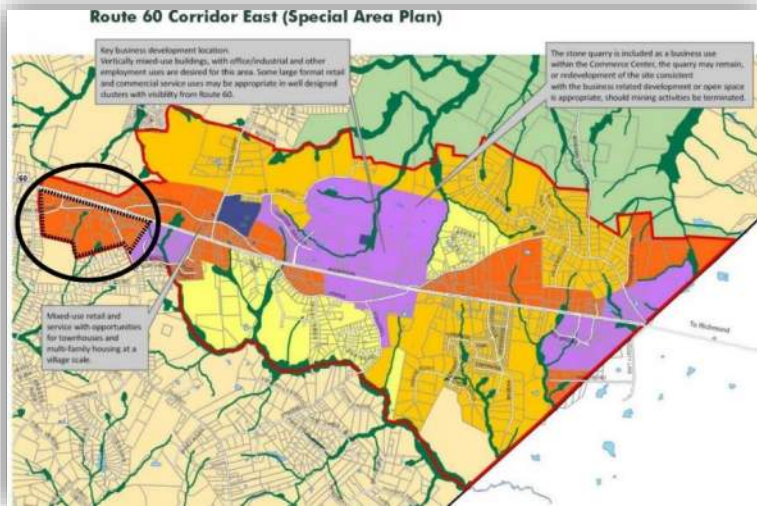
Batterson Road provides good access throughout the community and access points to Route 60 at both its western terminus and Judes Ferry Road make this community one of the highest value potential development sites based on vehicular access alone.

COMMUNITY DATA

Overall Acreage	280± Ac.
Ex. Built (%)	20%
Fut. Buildout (%)	80%
Total Parcels	46
Parcels > 50 Ac.	0
Parcels > 100 Ac.	0



VILLAGE CENTER VC-8



Boundaries of significance – Route 60 (North); Dorset Road (East)

Existing Improvements include – Flat Rock development intersection businesses

Development Characteristics & Constraints

Development

VC-8 comprises the developments centered on the Dorset/Route 60 intersection. Included are Napier Realty, Davis Merchant Equipment.

Topographical/Environmental

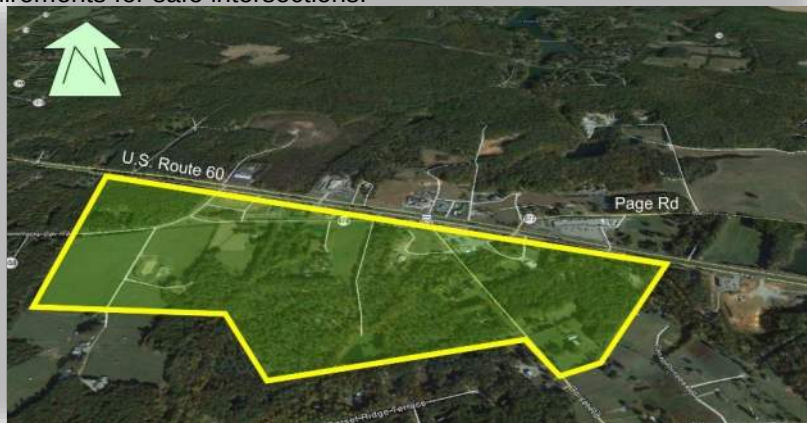
Two significant environmental constraints in the form of farm ponds and their channels impact this community and present challenges for the connecting of future development throughout. The most significant is a farm pond at the southern boundary that shows significant wetlands upstream. Additionally, a smaller farm pond south of Rocky Oak Road indicates wetlands downstream that would provide permitting challenges in that area of the community. Both ponds would likely be useful as future stormwater structures and should be considered.

Road Connections

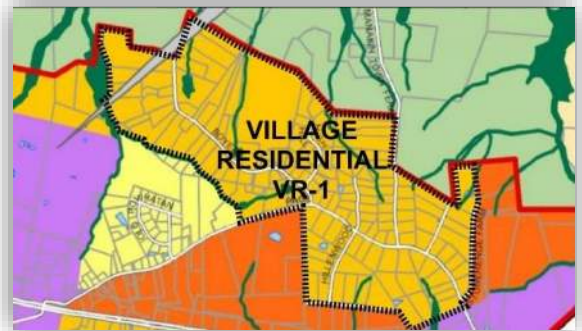
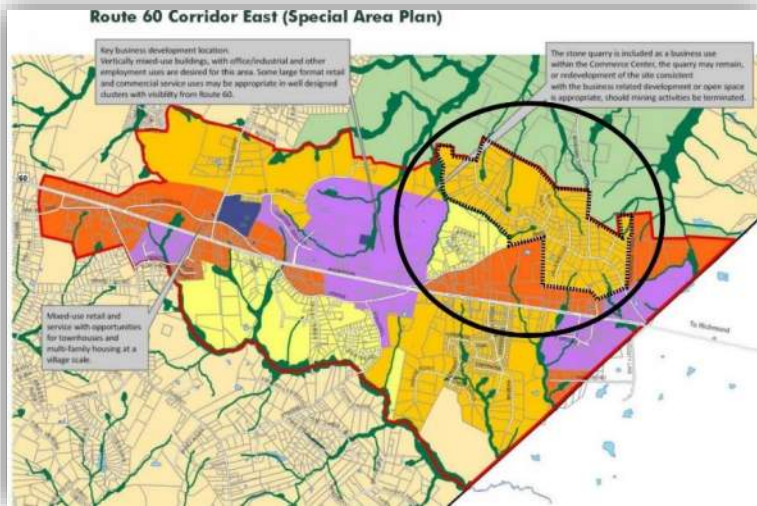
The connections to roads in VC-8 are good, with Dorset and Rocky Oak providing good non-Route 60 access. However, any significant development at this intersection will require realignment to better accommodate VDOT requirements for safe intersections.

COMMUNITY DATA

Overall Acreage	240± Ac.
Ex. Built (%)	15%
Fut. Buildout (%)	75%
Total Parcels	45
Parcels > 50 Ac.	2
Parcels > 100 Ac.	0



VILLAGE RESIDENTIAL VR-1



Boundaries of significance – Page Road (through)

Existing Improvements include – Branch Creek, Woolridge, The Grange, High Hill, and Stonehenge Farm subdivisions

Development Characteristics & Constraints

Development

VR-1 is effectively fully developed with single family home subdivisions. No redevelopment of this area is likely in the next thirty years. The classification of VR-1 is appropriate, given the goal of

Topographical/Environmental

Numerous topographical changes, including existing ponds, wetlands, and steep slopes make development of anything other than the current development pattern of single family homes.

Road Connections

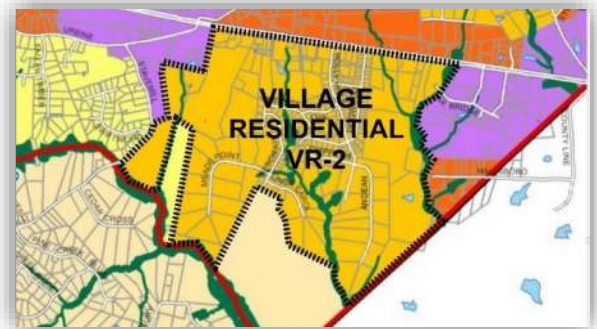
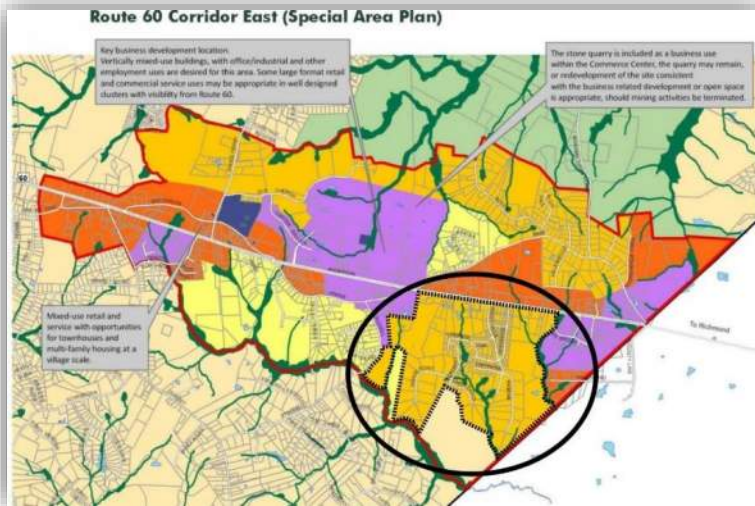
The subdivisions of VR-1 are served by Page Road as the collector, feeding to Boyer Road, Boyer Way, High Hill Drive, Hillenwood Drive, Manakin Town Ferry Road, and Stonehenge Farm Road.

COMMUNITY DATA

Overall Acreage	800± Ac.
Ex. Built (%)	100%
Fut. Buildout (%)	0%
Total Parcels	173
Parcels > 50 Ac.	0
Parcels > 100 Ac.	0



VILLAGE RESIDENTIAL VR-2



Boundaries of significance – Route 60 (North)

Existing Improvements include – Holly Hills, Hollymeade, Tamrick Subdivisions

Development Characteristics & Constraints

Development

VR-2 is significantly, though not completely, built out as single family subdivisions. Known as the Holly Hills area, these residential communities combine smaller lot (1 acre) to larger (10 acre plus) home sites. Undeveloped acreage lies generally to the far west and far east on parcels fronting Route 60. A portion of this community includes the Stavemill corridor.

Topographical/Environmental

Moderately rolling to steep, this community has several environmental features, including BMPs designed with the various subdivisions served.

Road Connections

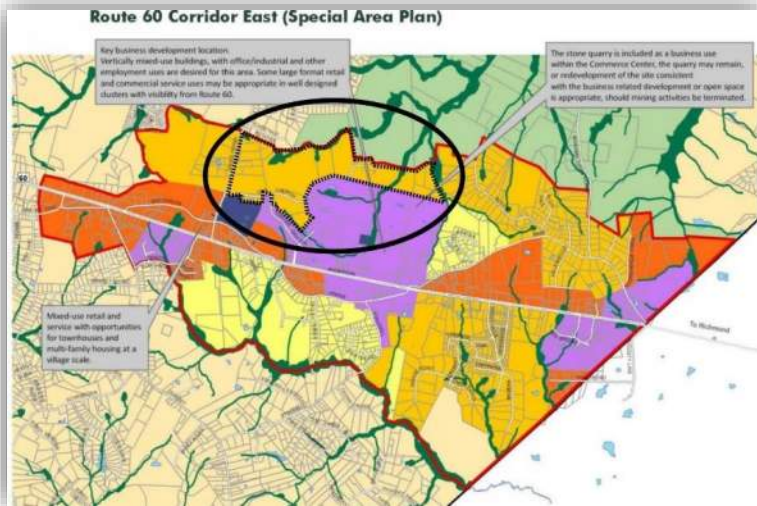
Connectivity is limited for the undeveloped parcels except through stub road access points in Holly Hills and Hollymeade subdivisions. There are other challenges to road connectivity for development include lack of crossovers on Route 60, and development (homes) along Route 60.

COMMUNITY DATA

Overall Acreage	1,030±Ac.
Ex. Built (%)	85%
Fut. Buildout (%)	95%
Total Parcels	307
Parcels > 50 Ac.	0
Parcels > 100 Ac.	0



VILLAGE RESIDENTIAL VR-3



Boundaries of significance – Jude's Ferry Road (West); Old Church Road (South); Luck Stone Quarry (South)

Existing Improvements include – Old Powhatan Baptist Church

Development Characteristics & Constraints

Development

VR-3 is undeveloped with the exception of Old Powhatan Baptist Church and cemetery at the terminus of Old Church Road.

Topographical/Environmental

The topography of this community generally falls from the high along Old Church Road to the north.

Road Connections

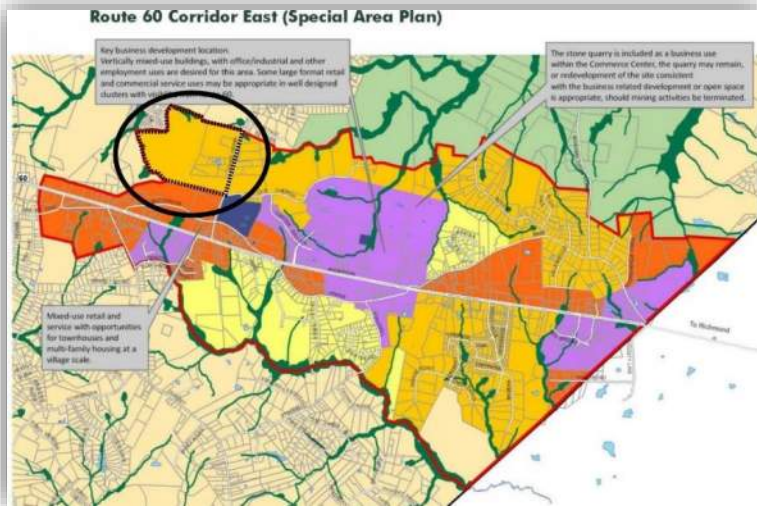
The community has been identified largely through its length by Old Church Road, accessed from Jude's Ferry Road. Land use is limited to accessing via Old Church Road, with a secondary access provided by Carter Gallier Boulevard through the South Creek Industrial Park.

COMMUNITY DATA

Overall Acreage	470± Ac.
Ex. Built (%)	10%
Fut. Buildout (%)	65%
Total Parcels	51
Parcels > 50 Ac.	0
Parcels > 100 Ac.	1



VILLAGE RESIDENTIAL VR-4



Boundaries of significance – Judes Ferry Road (East);
Lake Shawnee Subdivision (North)

Existing Improvements include – small single family lots
on Judes Ferry Road

Development Characteristics & Constraints

Development

Development of VR-4 is currently limited to residential single family parcels along Jude's Ferry Road. Significant frontage on this road reduces the impact that these already developed lots will have on the viability of future development.

Topographical/Environmental

Topographically, the parcels in this community vary from rolling to steep, with the steepest portions to the north and west in the drainage ways feeding to Lake Shawnee. Only modest jurisdictional wetlands and Waters of the US (WOUS) appear to be present, along with several farm ponds.

Road Connections

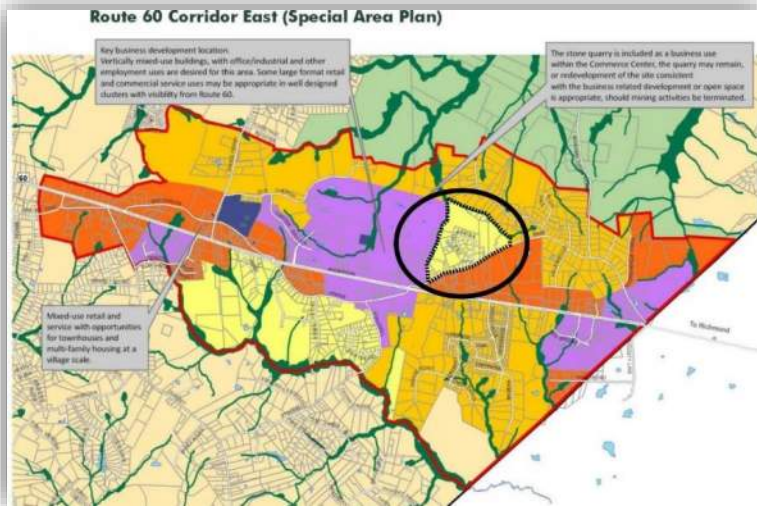
Parcels in VR-4 are nearly entirely accessed to the east by Jude's Ferry Road. Private roads access the property from the south, but significant public road infrastructure will be required to access the large parcels that make up this community.

COMMUNITY DATA

Overall Acreage	320± Ac.
Ex. Built (%)	10%
Fut. Buildout (%)	85%
Total Parcels	27
Parcels > 50 Ac.	1
Parcels > 100 Ac.	1



LOW DENSITY RESIDENTIAL R-1



Boundaries of significance – Page Road (south)

Existing Improvements include – Existing single family residential homes.

Development Characteristics & Constraints

Development

R-1 is generally established residential homes and the neighborhood of Old Powhatan Estates. Overhead transmission lines and a significant power easement run east/west just north of the subdivision and limit the viability of development not already in place.

Topographical/Environmental

R-1 is generally rolling and is framed by modest drainage divides that separate it from two other communities, C-4 to the west and VR-1 to the northwest.

Road Connections

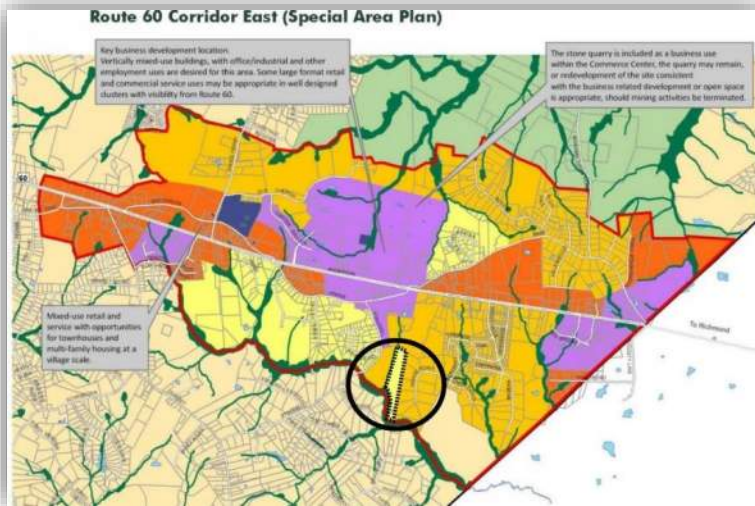
R-1 is bound to the south and accessible only to Page Road. While Luck Stone Road provides a potential access to the community from the west, the limited development potential of the remaining community area limits the feasibility of this connection.

COMMUNITY DATA

Overall Acreage	199± Ac.
Ex. Built (%)	50%
Fut. Buildout (%)	65%
Total Parcels	67
Parcels > 50 Ac.	0
Parcels > 100 Ac.	0



LOW DENSITY RESIDENTIAL R-2



Boundaries of significance – property is landlocked from public access. Significant stream boundary to the south.

Existing Improvements include – no significant development.

Development Characteristics & Constraints

Development

R-2 is not a community, but a parcel with little potential for development other than an attachment to development to the west that fronts on Stavemill Road.

Topographical/Environmental

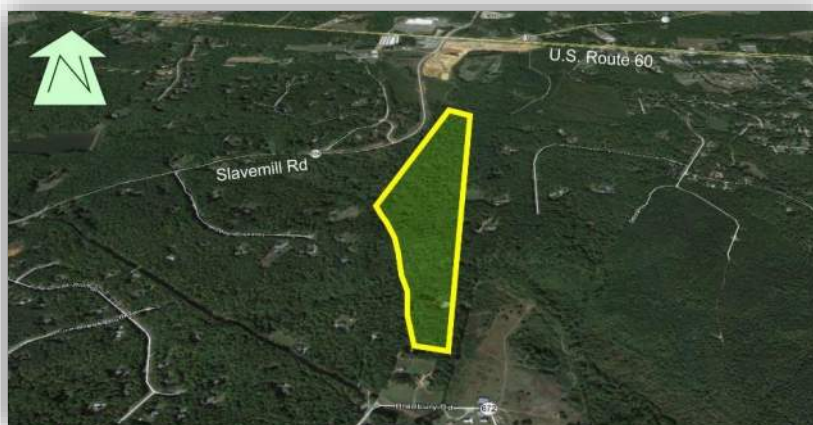
Geometry of R-2 presents the greatest challenge for the site as it is narrow and as such will have difficulty being developed because of necessary setbacks. As mentioned above, this leaves viability for development largely tethered to development to the west.

Road Connections

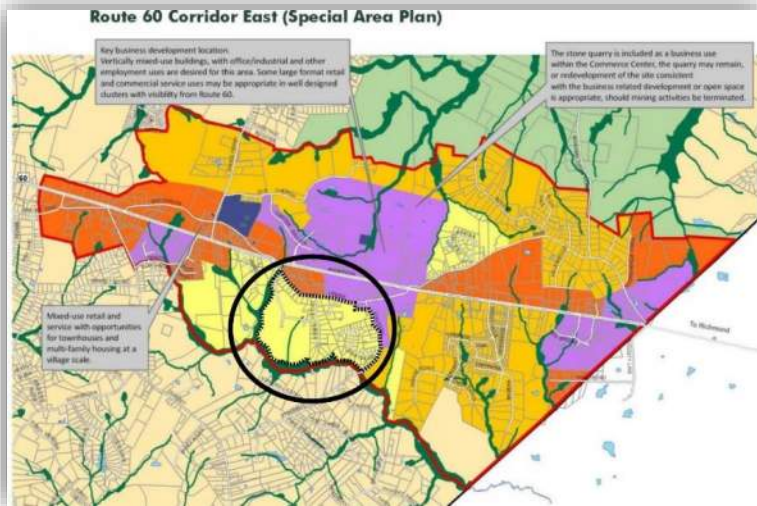
R-2 is essentially landlocked from a perspective of public access. Development will need to include public access provided from Stavemill Road.

COMMUNITY DATA

Overall Acreage	39± Ac.
Ex. Built (%)	0%
Fut. Buildout (%)	10%
Total Parcels	2
Parcels > 50 Ac.	0
Parcels > 100 Ac.	0



LOW DENSITY RESIDENTIAL R-3



Boundaries of significance – Urbine Road (north); significant creek and environmental features frame the west and south.

Existing Improvements include – Huntington and Swiftwood Subdivisions; Powhatan EMS building at eastern boundary.

Development Characteristics & Constraints

Development

Development in R-3 is largely identified by the Huntington Subdivision fronting on Urbine Road. Proposed development plans have generally locked in the future build-out of this community. The existing classification of low residential is entirely appropriate, given the permitting activity and construction to date.

Topographical/Environmental

Topography in R-3 is generally rolling and appropriate for the development plans for the subdivision community.

Road Connections

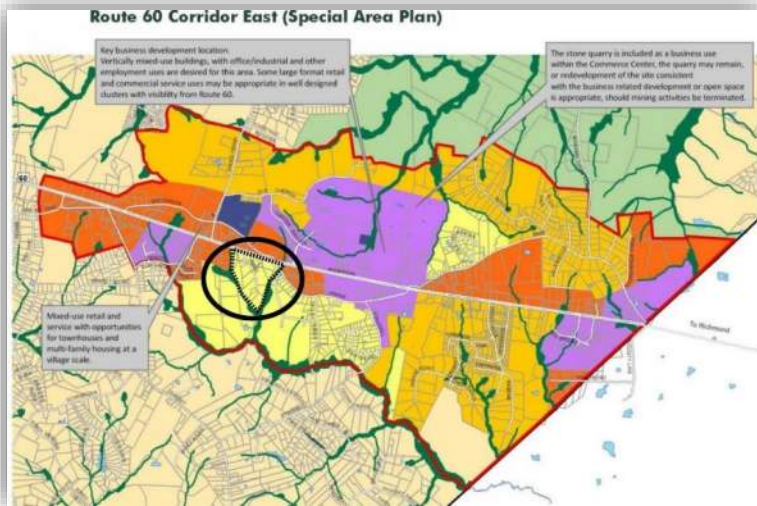
R-3 is bound to the north by public access to Urbine Road. Plans approved by the county call for all development in this community to tie into Urbine Road in the future.

COMMUNITY DATA

Overall Acreage	430± Ac.
Ex. Built (%)	55%
Fut. Buildout (%)	65%
Total Parcels	140
Parcels > 50 Ac.	1
Parcels > 100 Ac.	1



LOW DENSITY RESIDENTIAL R-4



Boundaries of significance – Route 60 (north)

Existing Improvements include – large parcel residential homesites, some undeveloped parcels

Development Characteristics & Constraints

Development

Development of R-4 is limited to existing residential homes and some undeveloped parcels.

Topographical/Environmental

R-4 parcels have a generally rolling topography. Major streams and wetlands form the southeastern and southwestern boundary.

Road Connections

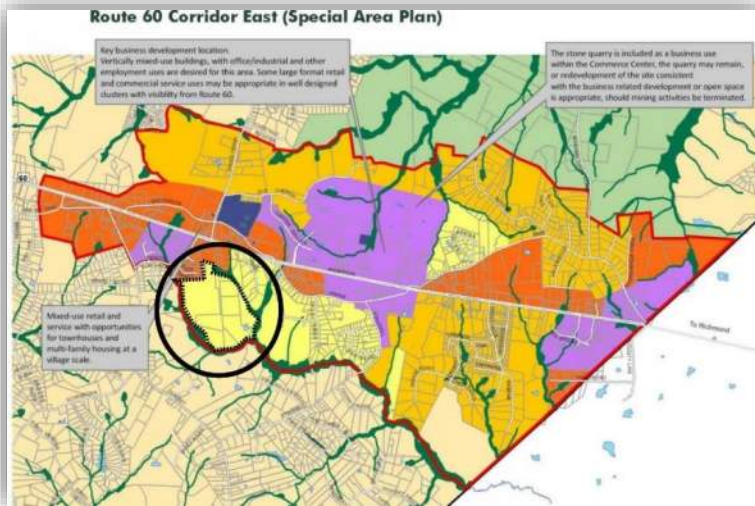
The only connection for the parcels of this community is Rose Lane. Due to the extent of residential activity and the limited accessibility to the parcels, the existing land use category of low density residential is appropriate.

COMMUNITY DATA

Overall Acreage	105± Ac.
Ex. Built (%)	10%
Fut. Buildout (%)	50%
Total Parcels	29
Parcels > 50 Ac.	1
Parcels > 100 Ac.	0



LOW DENSITY RESIDENTIAL R-5



Boundaries of significance - Chesterfield County line (East); Route 60 (South)

Existing Improvements include – no significant development; power transmission lines

Development Characteristics & Constraints

Development

R-5 is comprised of large parcels, mostly open or wooded, with several homesites.

Topographical/Environmental

R-5 is bound on nearly all sides by significant environmental features, streams and wetlands. The northern part of this community is adjacent to the industrial parcels accessing New Dorset Road.

Road Connections

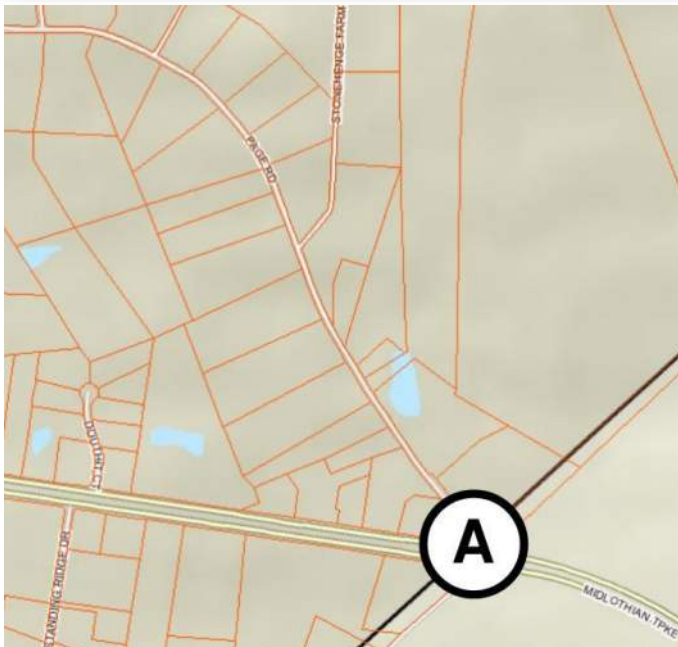
R-5 is inaccessible to any major road without connecting through other communities. VC-6 lies to the north of R-5, through which a private road accessing from Route 60 to the parcels. Because of this configuration and due to the environmental constraints bounding the community, the existing land use category of low density residential is appropriate.

COMMUNITY DATA

Overall Acreage	249± Ac.
Ex. Built (%)	15%
Fut. Buildout (%)	75%
Total Parcels	20
Parcels > 50 Ac.	1
Parcels > 100 Ac.	0

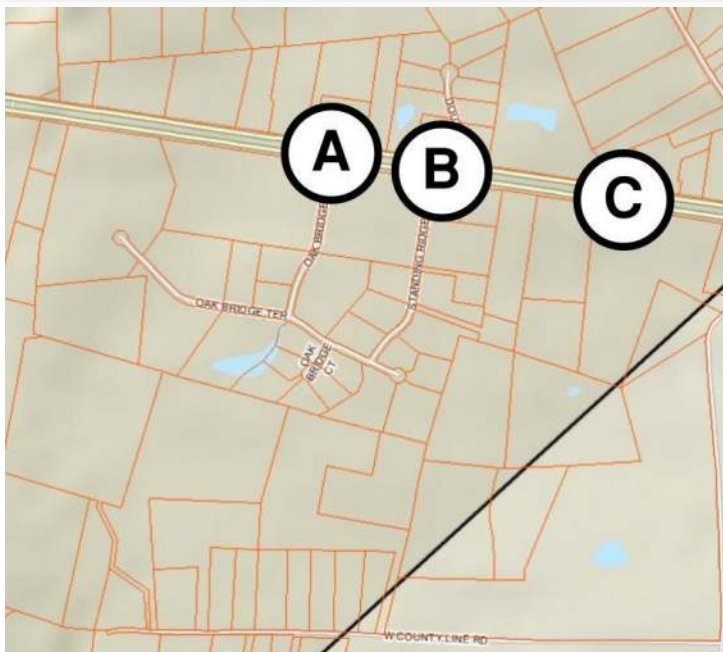
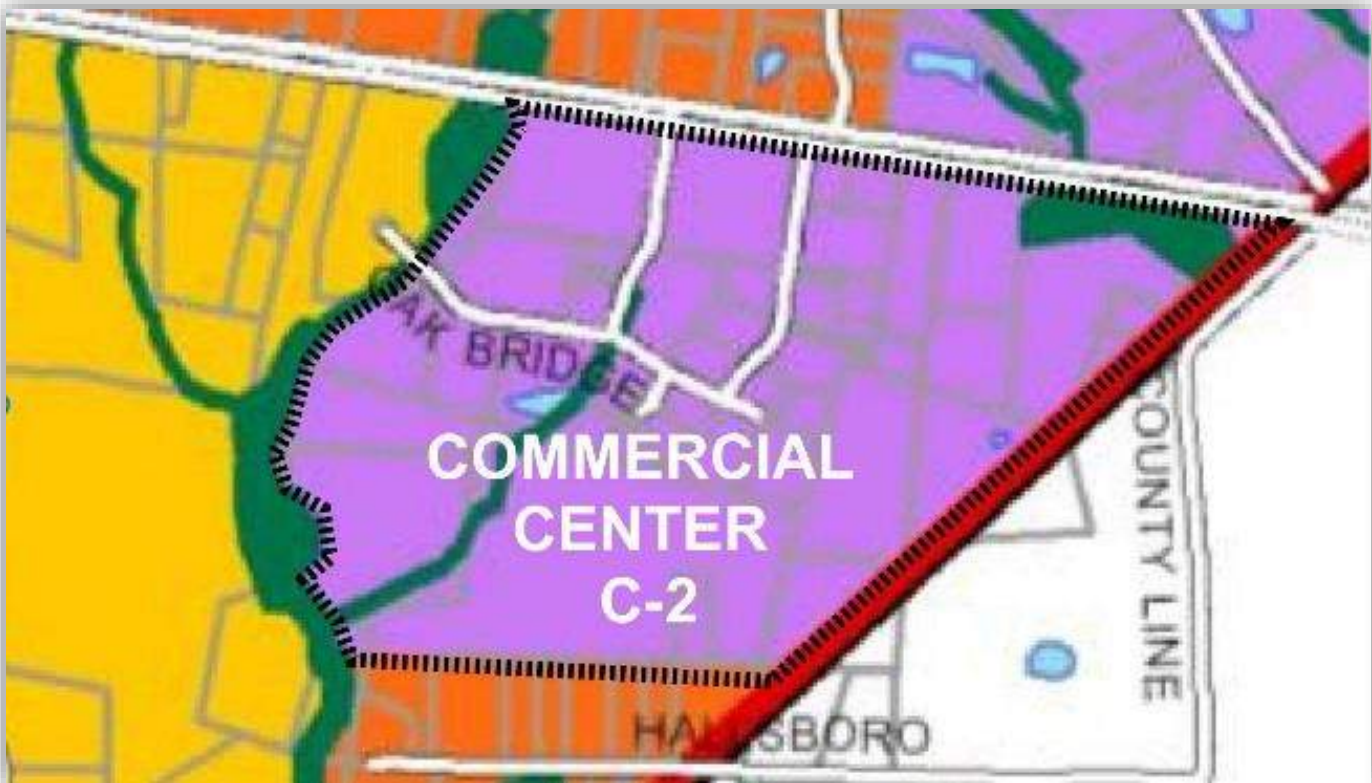


COMMERCIAL CENTER C-1



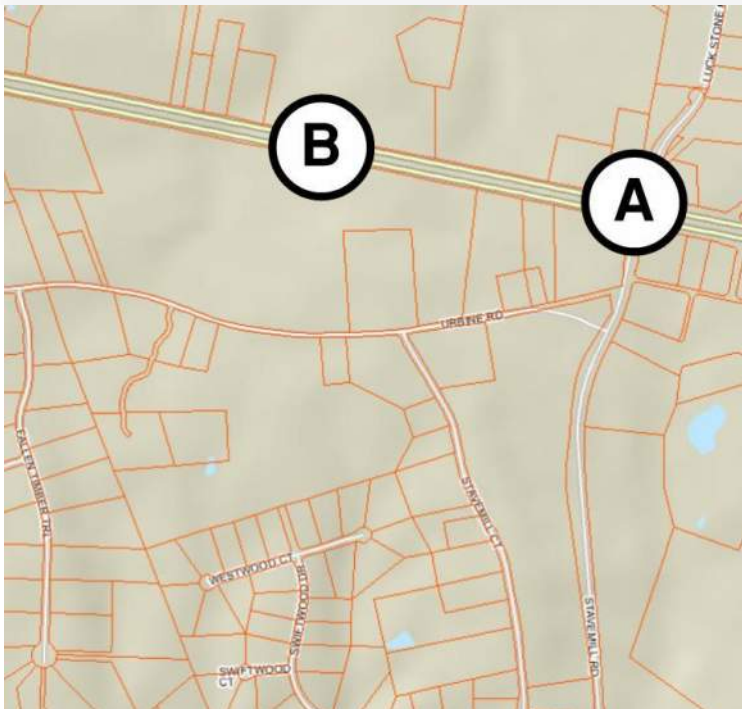
TRAFFIC %	A	B	C
EXISTING	100		
FUTURE	100		

COMMERCIAL CENTER C-2

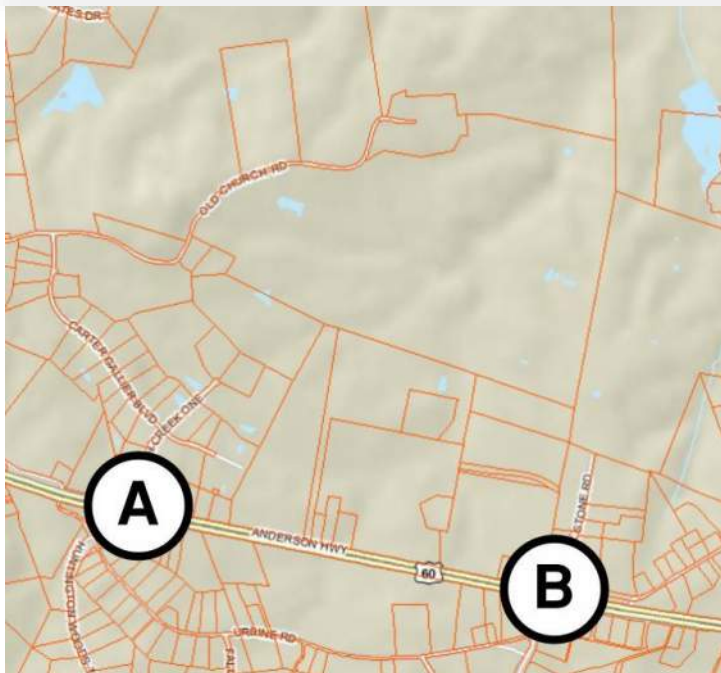


TRAFFIC %	A	B	C
EXISTING	75	25	
FUTURE	60	20	20

COMMERCIAL CENTER C-3

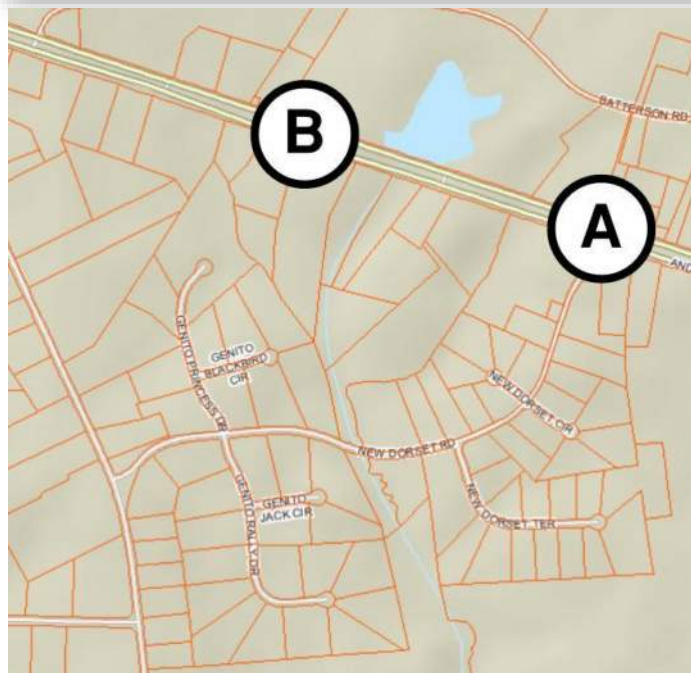


TRAFFIC %	A	B	C
EXISTING	100		
FUTURE	60	40	



TRAFFIC %	A	B	C
EXISTING	40	60	
FUTURE	40	60	

COMMERCIAL CENTER C-5



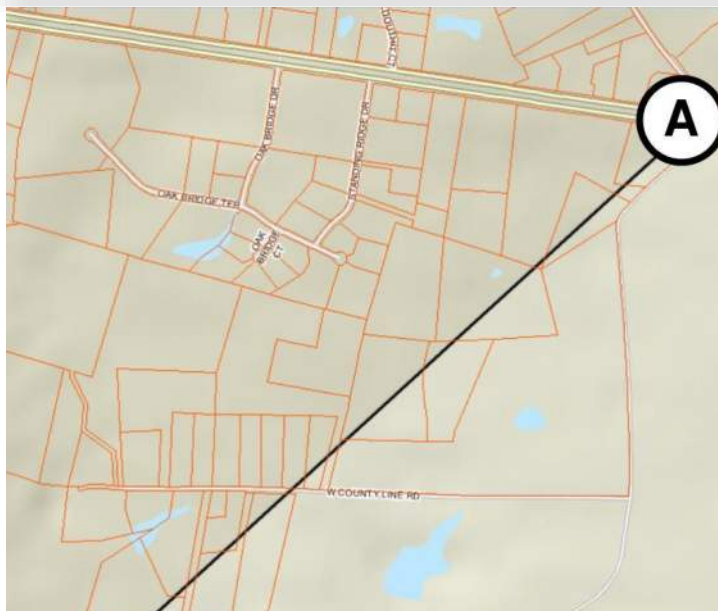
TRAFFIC %	A	B	C
EXISTING	100		
FUTURE	90	10	

VILLAGE CENTER VC-1



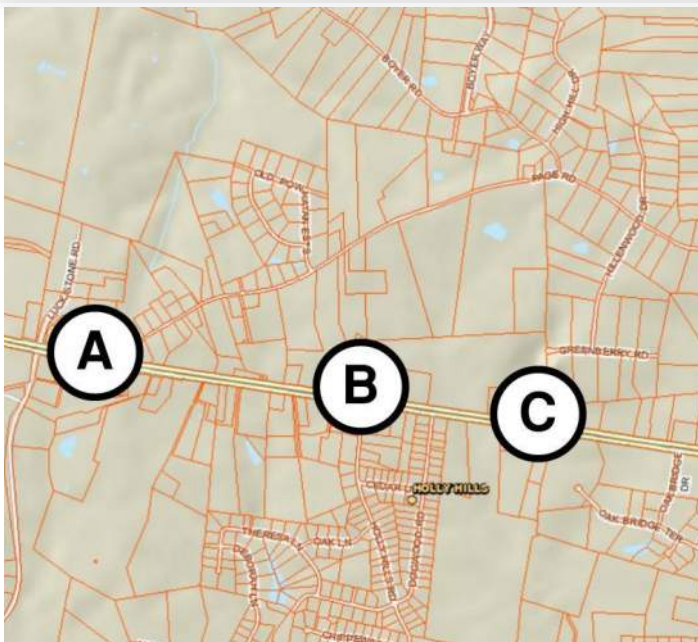
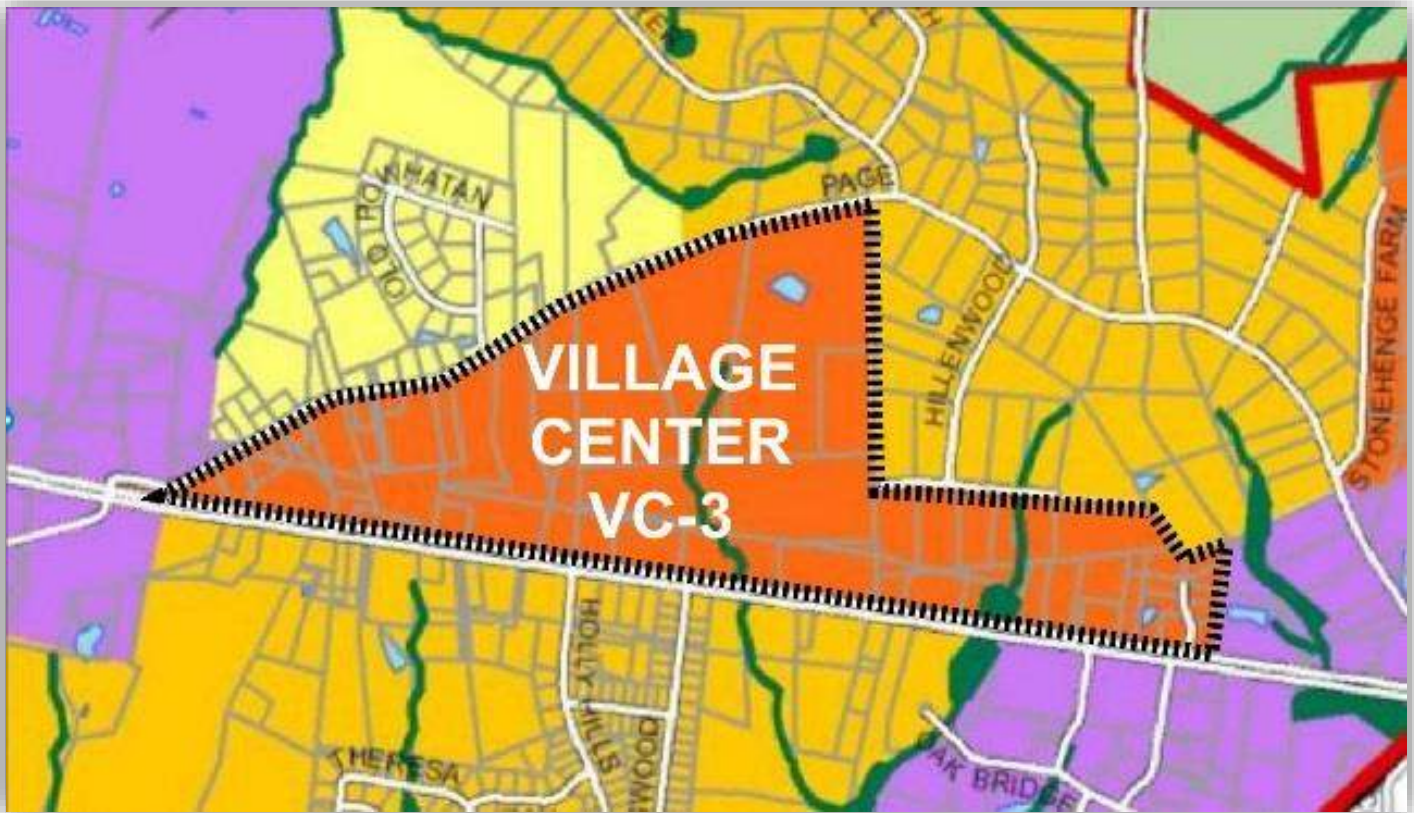
TRAFFIC %	A	B	C
EXISTING	100		
FUTURE	100		

VILLAGE CENTER VC-2



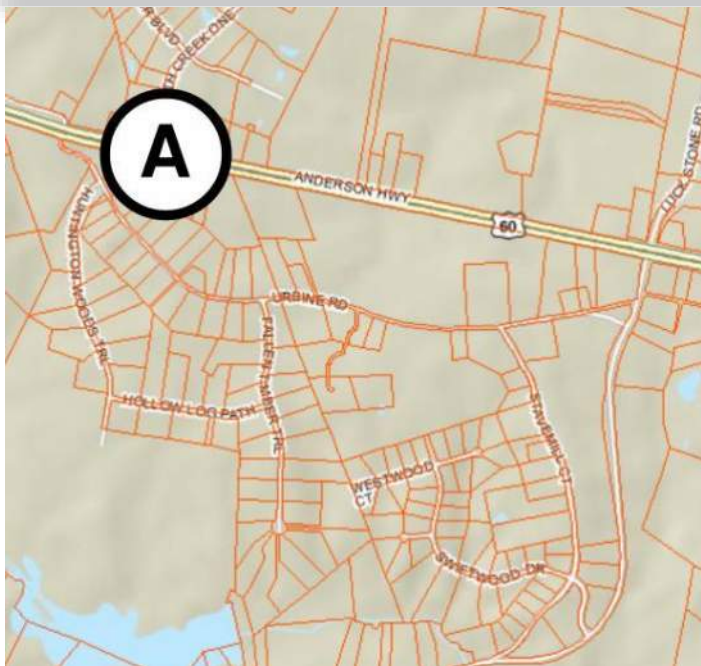
TRAFFIC %	A	B	C
EXISTING	100		
FUTURE	100		

VILLAGE CENTER VC-3



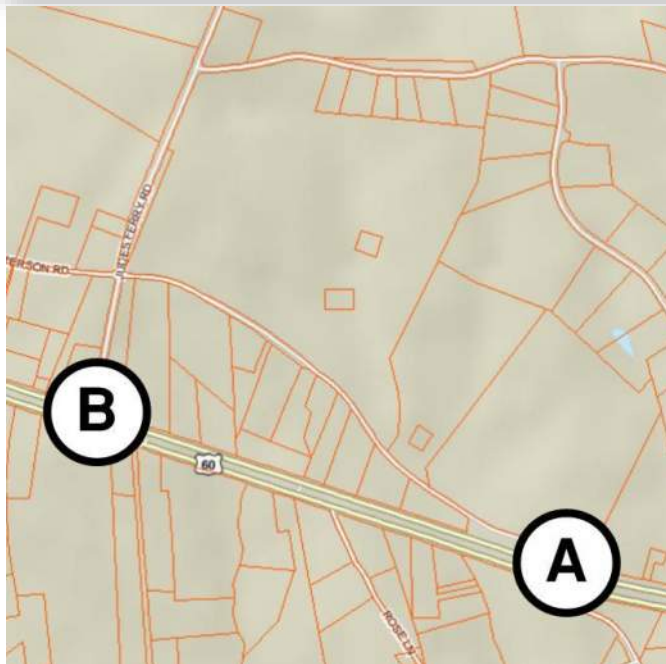
TRAFFIC %	A	B	C
EXISTING	100		
FUTURE	60	25	15

VILLAGE CENTER VC-4



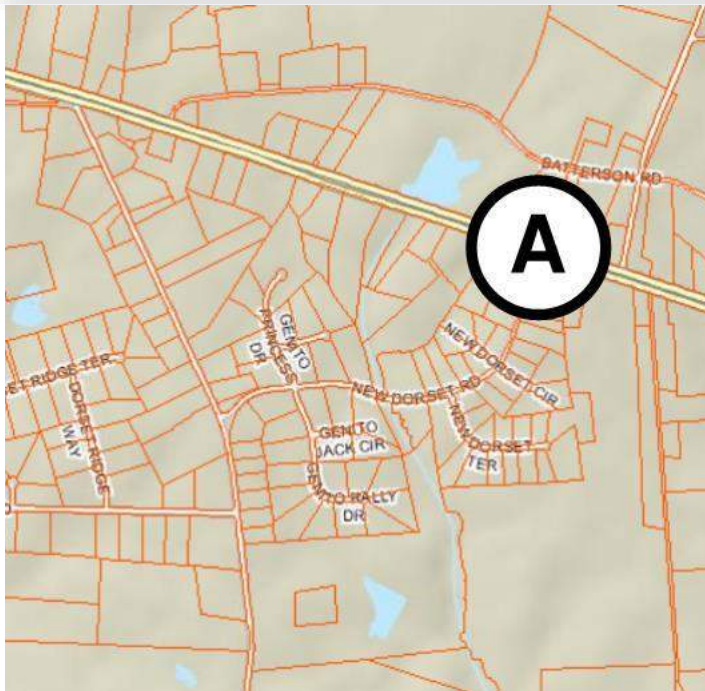
TRAFFIC %	A	B	C
EXISTING	0		
FUTURE	100		

VILLAGE CENTER VC-5



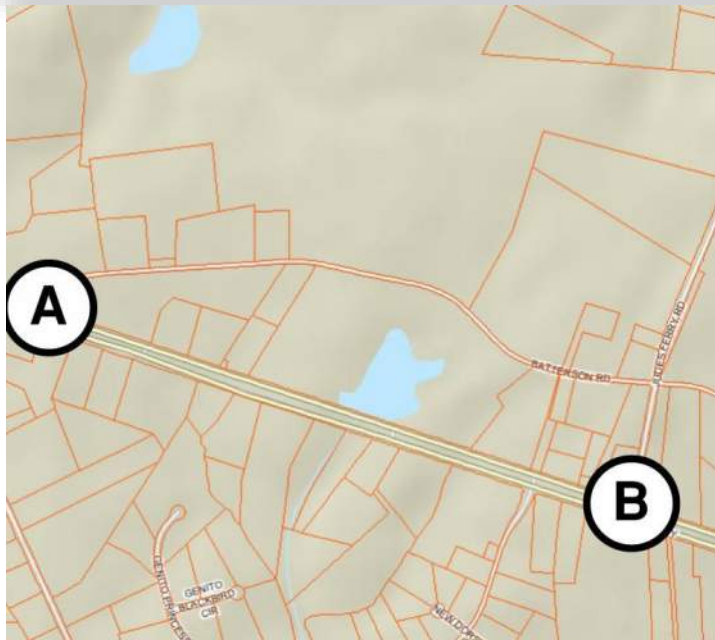
TRAFFIC %	A	B	C
EXISTING	30	70	
FUTURE	40	60	

VILLAGE CENTER VC-6



TRAFFIC %	A	B	C
EXISTING	100		
FUTURE	100		

VILLAGE CENTER VC-7

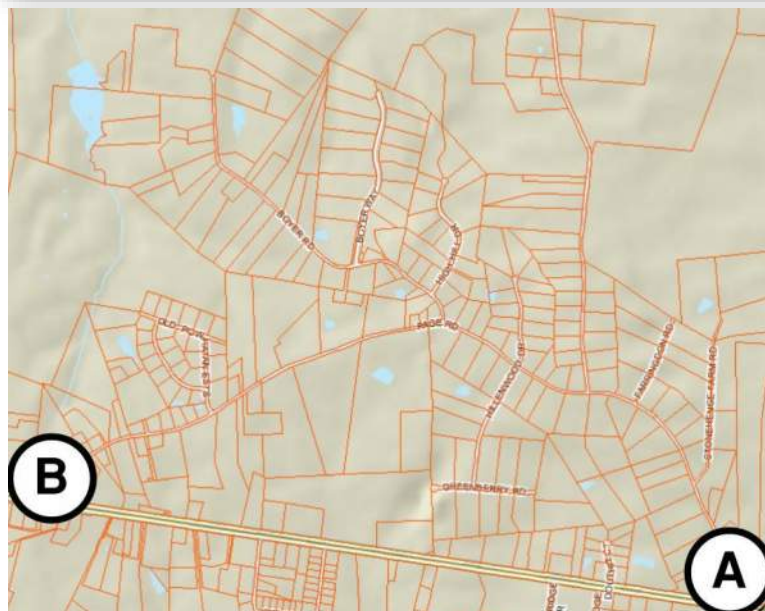
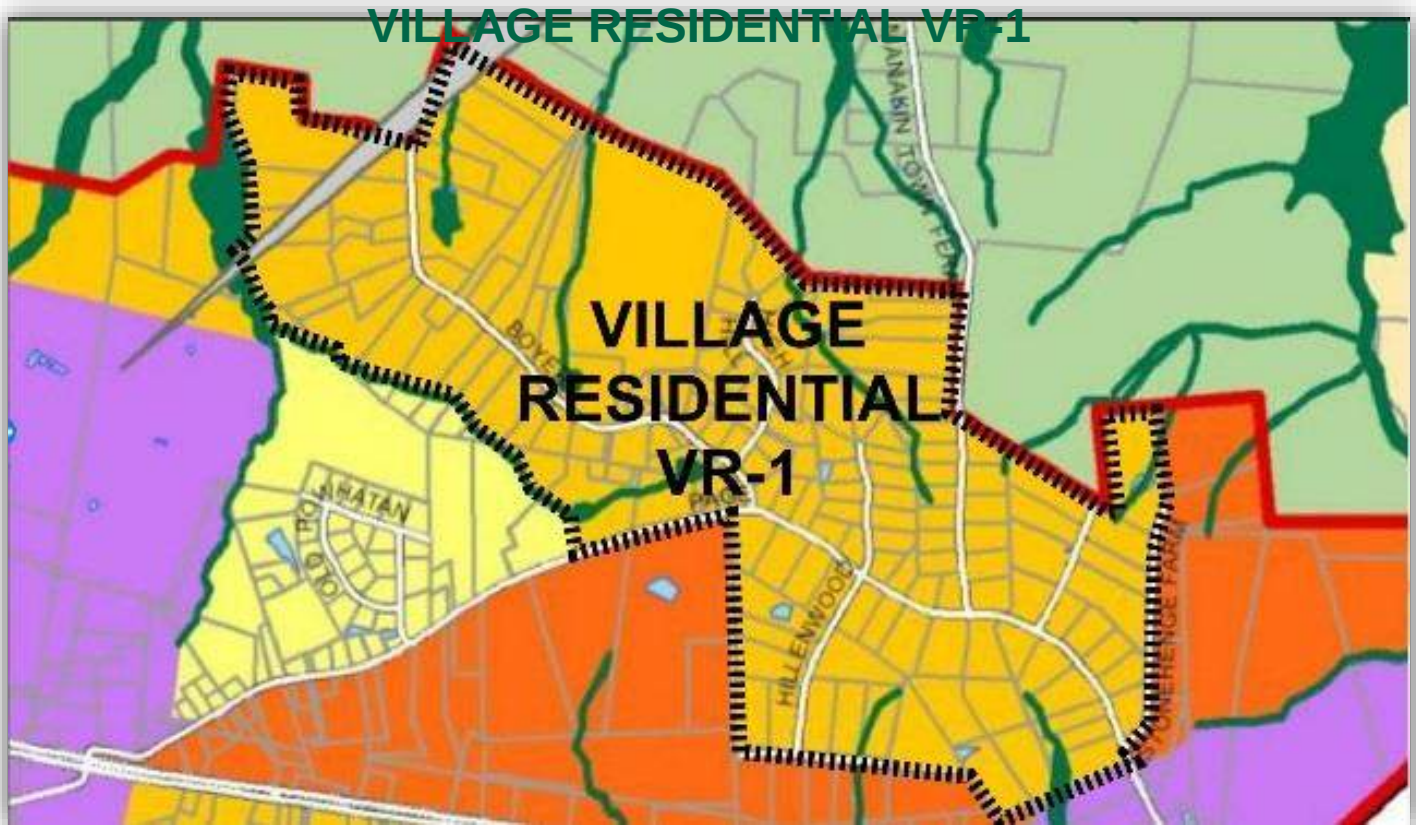


TRAFFIC %	A	B	C
EXISTING	40	60	
FUTURE	50	50	

VILLAGE CENTER VC-8

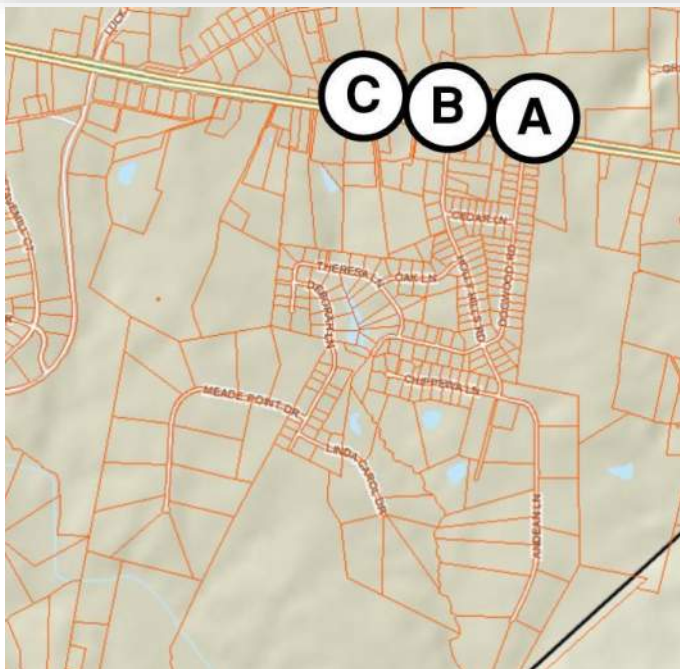
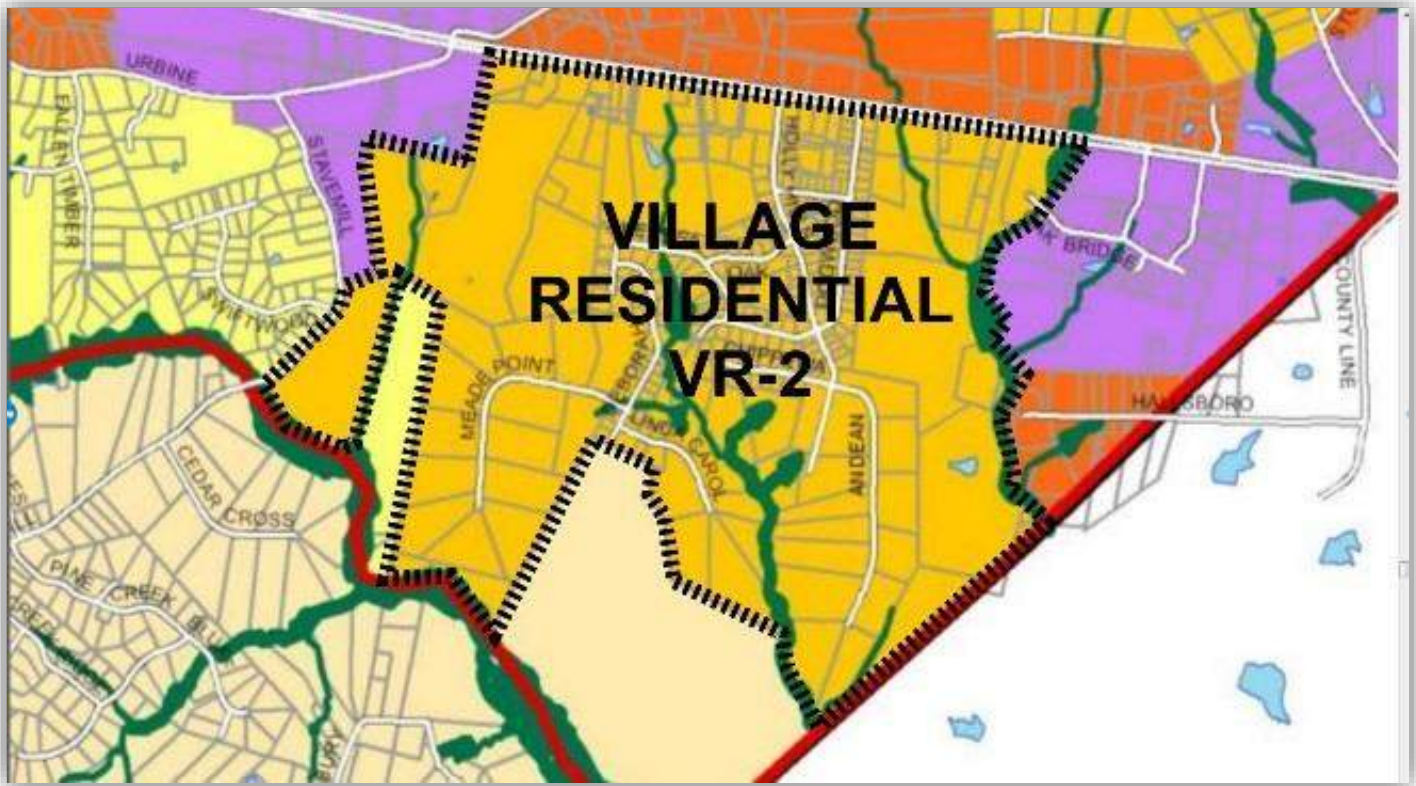


TRAFFIC %	A	B	C
EXISTING	80	20	
FUTURE	75	25	



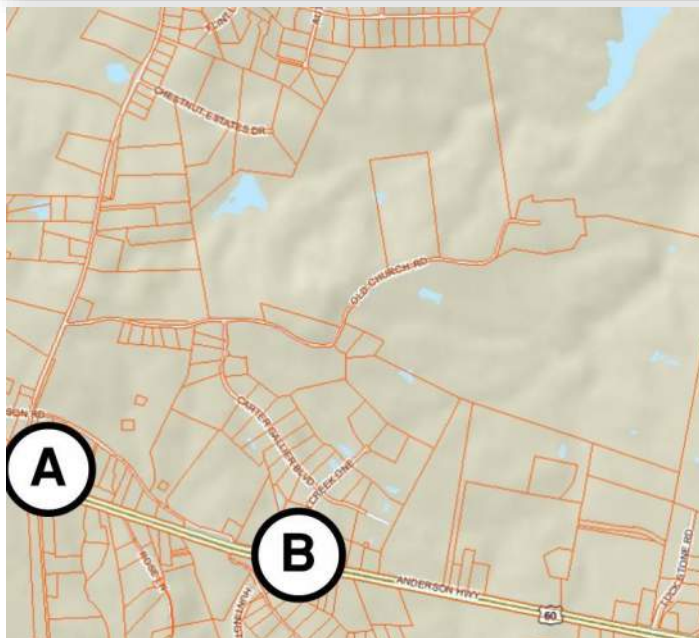
TRAFFIC %	A	B	C
EXISTING	85	15	
FUTURE	75	25	

VILLAGE RESIDENTIAL VR-2



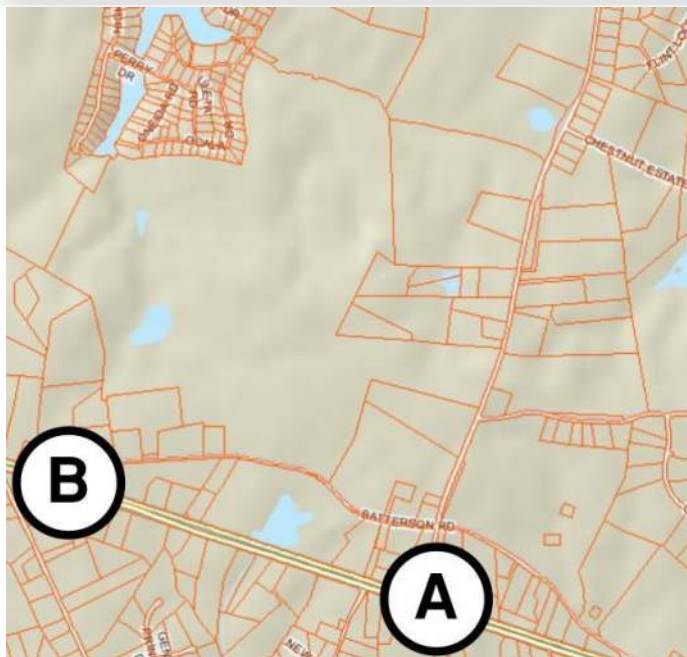
TRAFFIC %	A	B	C
EXISTING	45	45	10
FUTURE	40	40	20

VILLAGE RESIDENTIAL VR-3



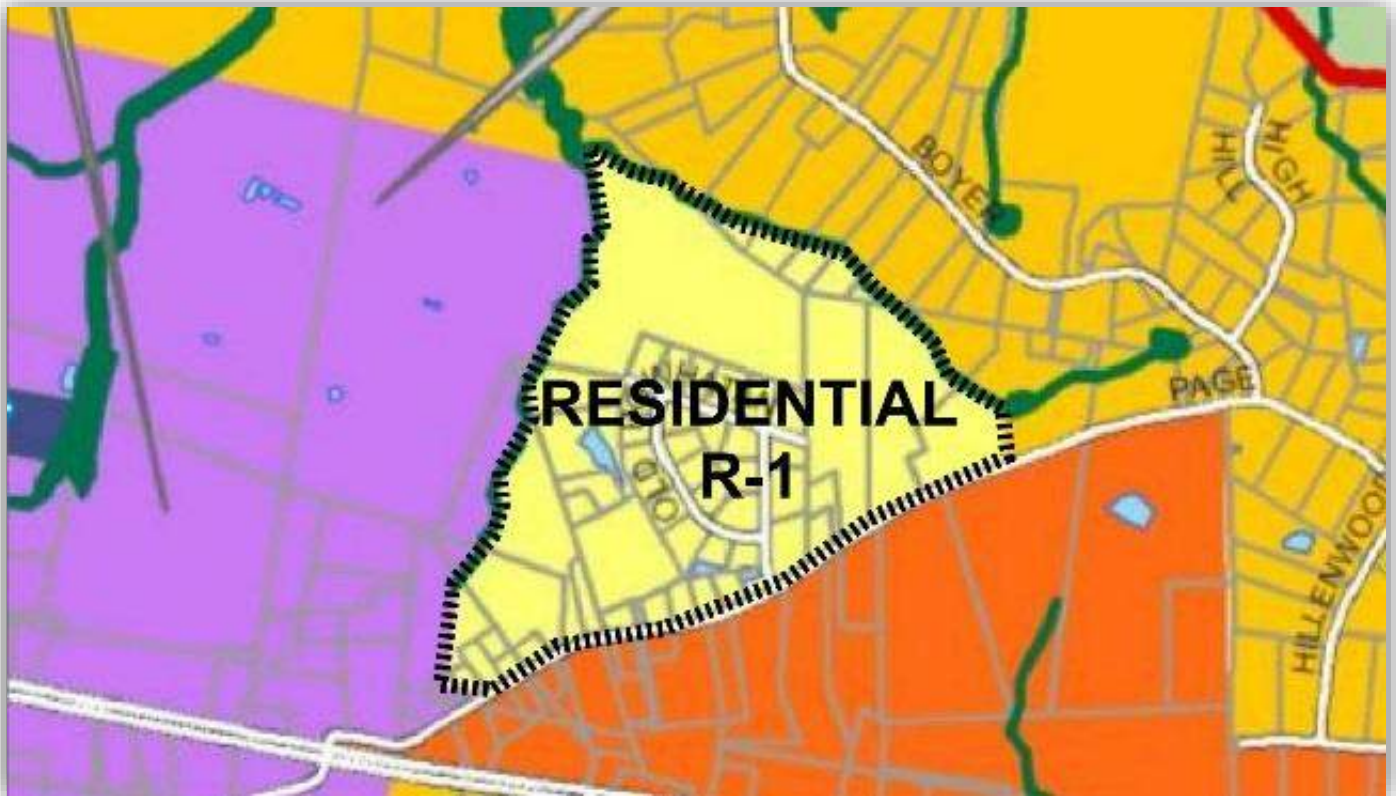
TRAFFIC %	A	B	C
EXISTING	50	50	
FUTURE	30	70	

VILLAGE RESIDENTIAL VR-4



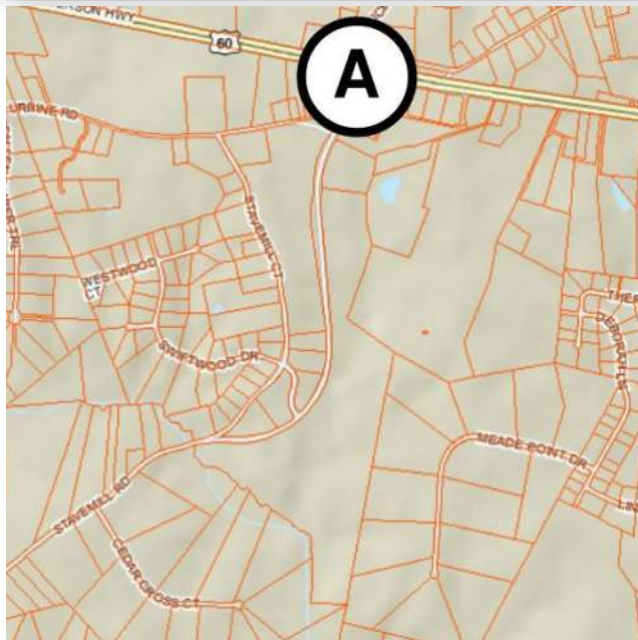
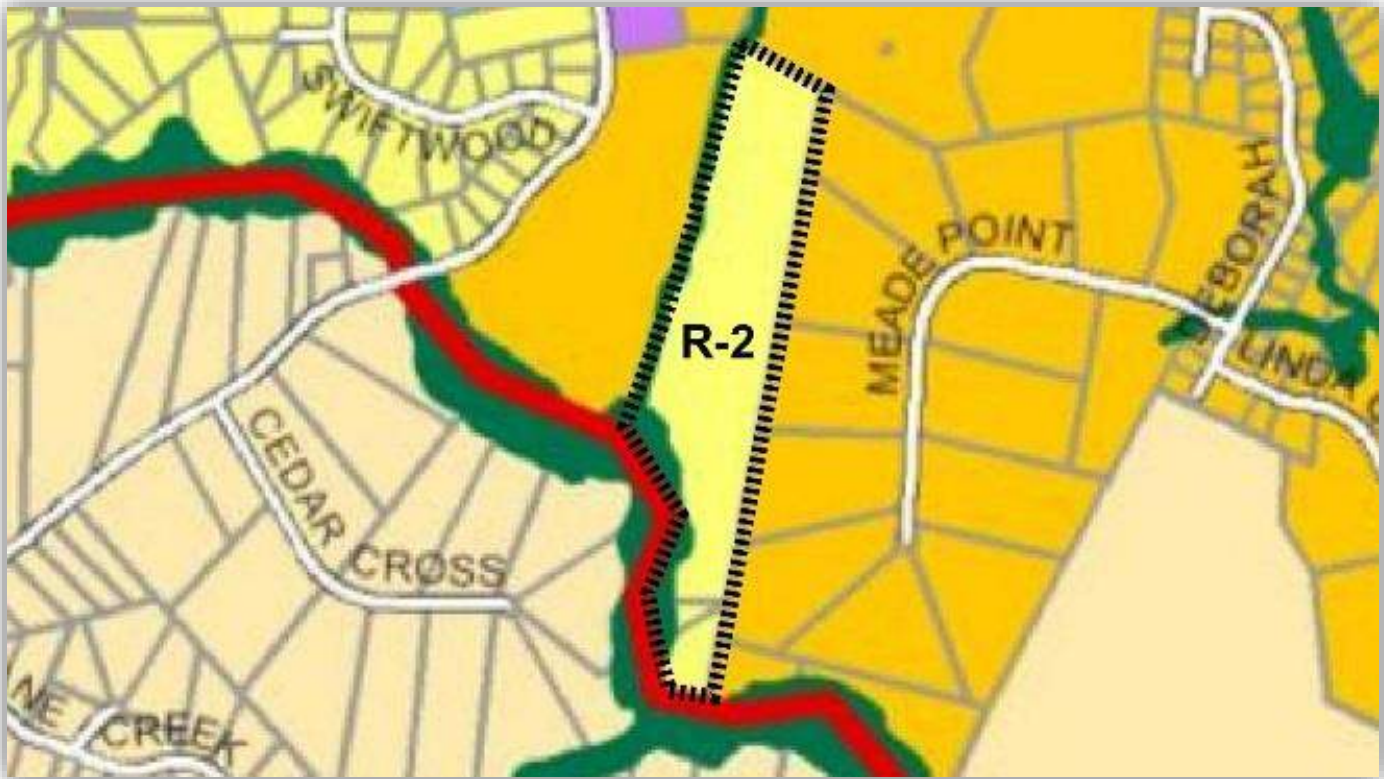
TRAFFIC %	A	B	C
EXISTING	100		
FUTURE	80	20	

LOW DENSITY RESIDENTIAL R-1



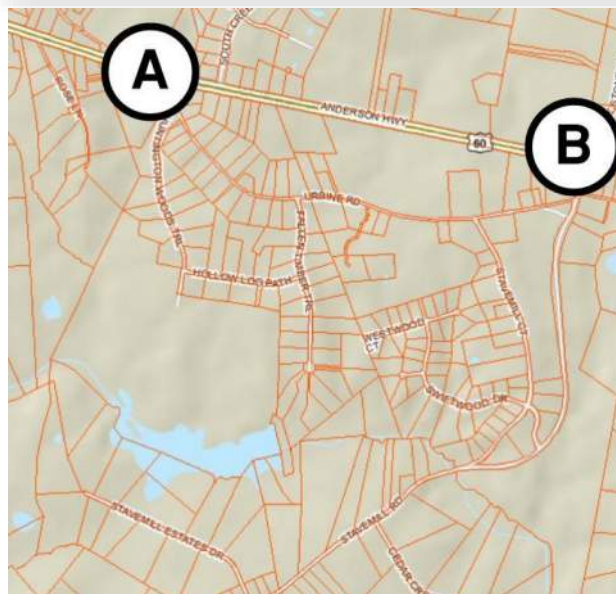
TRAFFIC %	A	B	C
EXISTING	100		
FUTURE	100		

LOW DENSITY RESIDENTIAL R-2



TRAFFIC %	A	B	C
EXISTING	100		
FUTURE	100		

LOW DENSITY RESIDENTIAL R-3



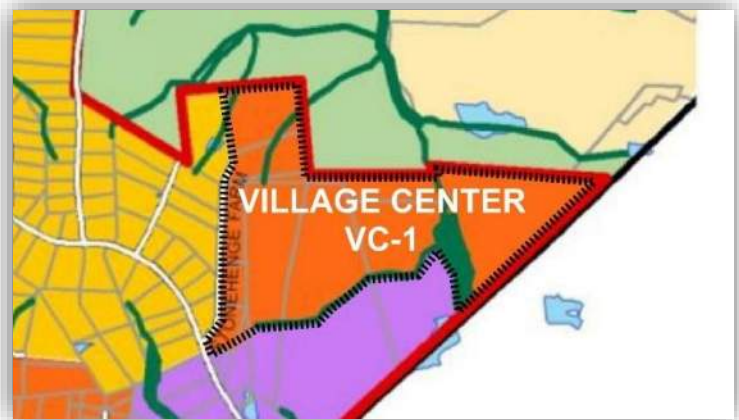
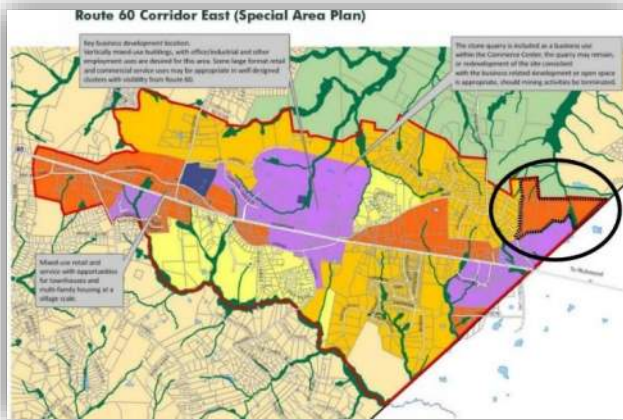
TRAFFIC %	A	B	C
EXISTING	85	15	
FUTURE	75	25	

LOW DENSITY RESIDENTIAL R-4



TRAFFIC %	A	B	C
EXISTING	100		
FUTURE	100		

VILLAGE CENTER VC-1



Recommendation for Comprehensive Plan Adjustment

Concerns

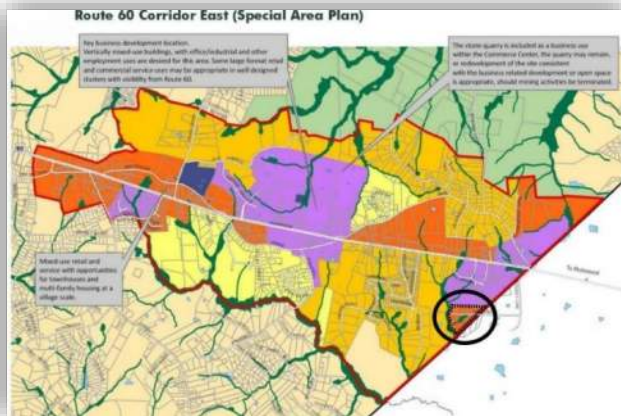
VC-1 is generally accessible only by way of Stonehenge Farm Road. Topographically, VC-1 is isolated and divided internally by several intermittent stream draws. The eastern border of VC-1 abuts the Chesterfield County line and is more accessible through property from that county than internal to Powhatan.

These issues make for a very difficult development potential, and particularly difficult for a Village Center development pattern.

Consideration

Even with the potentiality for a parallel collector road north of Route 60, VC-1 would prove difficult with its surroundings and would likely best be reconsidered as Commercial (tied to C-1 to the south) or VR (as a continuation of the residential corridor found to the west of Stonehenge Farm Road).

VILLAGE CENTER VC-2



Recommendation for Comprehensive Plan Adjustment

Concerns

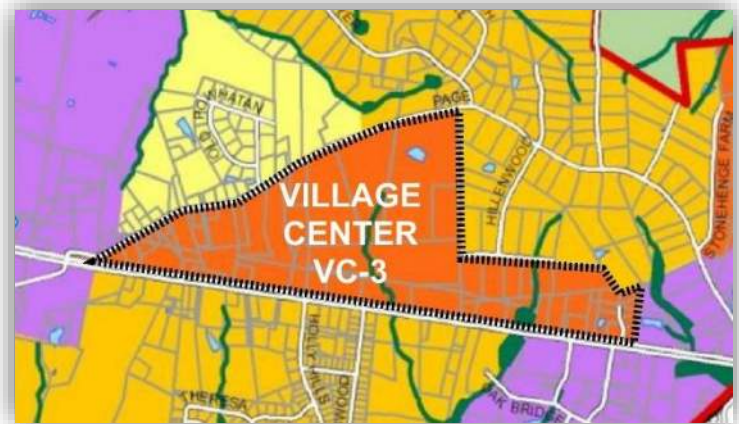
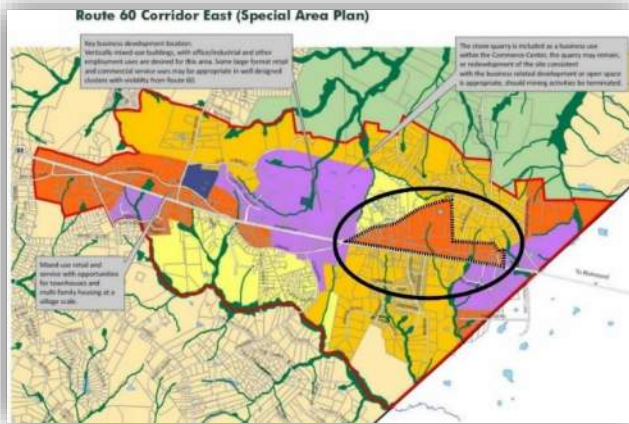
The Village Center district designation for VC-2 is a misdesignation. The requirement for VC success is the access for the ability to mix residential, business, and sometimes, civic uses. VC-2 is currently a residential use that has little opportunity to evolve to a different use in the future.

Additionally, access to VC-2 is only available by traveling through Chesterfield County, not Powhatan.

Consideration

Consideration should be given to the future use designation of VC-2 to a residential designation, either VR or R.

VILLAGE CENTER VC-3



Recommendation for Comprehensive Plan Adjustment

Concerns

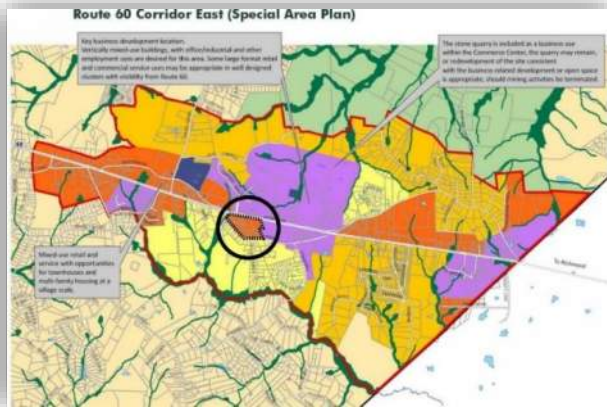
VC-3 has significant opportunity, coupled with challenges to achieving its highest and best use. Two challenges in particular should be referenced for future consideration:

1. The eastern “stem” of VC-3, defined as the land parcels south of Greenberry Road and north of Route 60, is an area where the depth of the land is insufficient to create opportunities that will provide a setting where pedestrian-centered activity can happen. Additionally, this area is bisected by significant environmental drainage way and further divides the property. The parcels directly fronting on Greenberry Road are part of a residential subdivision so there is little potential for redevelopment into a larger planned development.
2. There are over sixty parcels that make up the whole of VC-3, and amassing the required parcels to create meaningful placemaking will be a challenge.

Consideration

The “stem” of VC-3 should be reconsidered as something other than Village Center use.

VILLAGE CENTER VC-4



Recommendation for Comprehensive Plan Adjustment

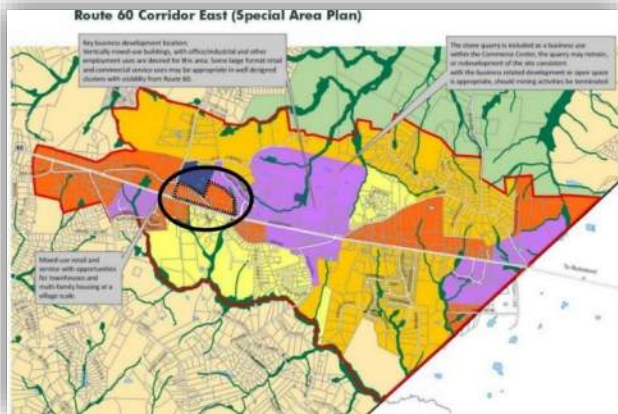
Concerns

The primary concern of VC-4 as a potential Village Center style development is the nature of the parcel division that already exists in the community and existing number of homes already in place. The significant division of the community in small and dependent lots that must be consolidated in order for a cohesive development in the VC style will be difficult and expensive due to the various ownership interests. The location otherwise works well for VC, including being directly across from the South Creek development, but that may not be enough to overcome the parcel divisions.

Consideration

Either Commerce Center or Village Residential use may be reasonable alternatives to Village Center use. Commerce Center use allows for the more cost-effective acquisition of property for larger scale users that it would attract. Village Center use would allow for the development to occur largely as is without further subdivision.

VILLAGE CENTER VC-5



Recommendation for Comprehensive Plan Adjustment

Concerns

The challenge with developing VC-5 is a two-fold problem of area geometry and proximity to Route 60.

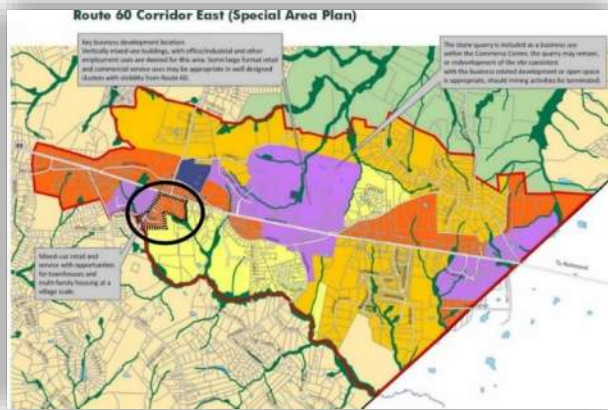
First, the slim geometry from west to east, framed by Batterson and Route 60 create very inefficient spaces that would require a complete shift in Batterson to achieve efficiency needed to create connected communities. This is a cost that would unlikely be feasible to be done as either a privately or publicly funded project. Further, the adjacency of over half of the parcels makes difficult the creation of walkable spaces that will not be functionally auto-dependent.

Consideration

VC-5 is a particular challenge to categorize, and the public process will be needed if and when there is a change made.

One possibility, though not a listed category in this study, is the potential for some or all of the property to build on the public uses already present in the school uses adjacent to VC-5. Potential uses could include park spaces, both active uses like athletic fields, as well as passive spaces. Properly done, the addition of public spaces can create a “center” atmosphere in an area that becomes a community draw and helps the surrounding areas to develop more densely.

VILLAGE CENTER VC-6



Recommendation for Comprehensive Plan Adjustment

Concerns

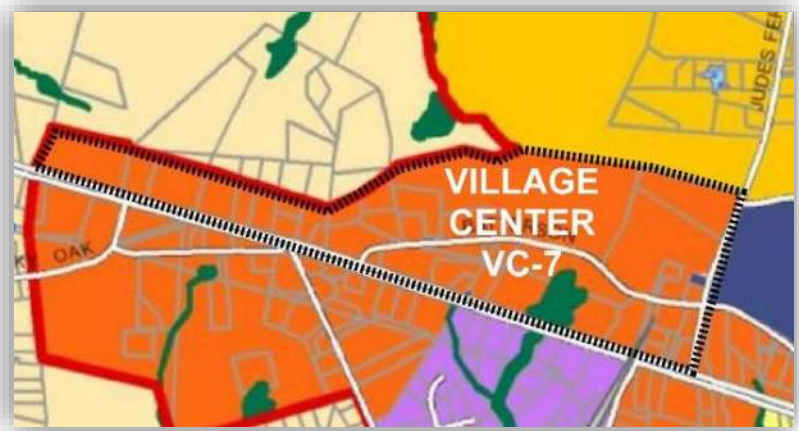
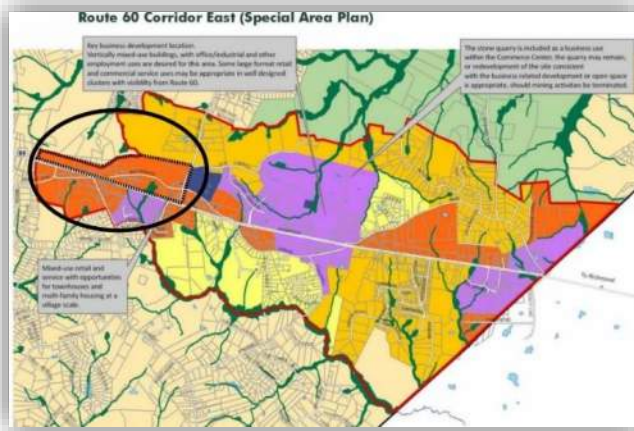
VC-6 is challenged in that it is made of up two “sub-areas.” One area, serviced by New Dorset Road, is generally complete as a business park, and should be identified as commercial, not village center since redevelopment into a different and cohesive pedestrian-style community is financially prohibitive to achieve.

Consideration

VC-6 has potential for a continued commercial growth “hub” fronting on Route 60 across from Jude’s Ferry. Access is good here due to the existing signalized intersection and can be utilized to further development in a concentrated pattern, reducing the need for commercial activity to sprawl along Route 60 to serve the needs of the county citizens.

It is recommended that the County consider the reclassifying the VC-6 community from the current Village Commercial to Commerce Center designation.

VILLAGE CENTER VC-7



Recommendation for Comprehensive Plan Adjustment

Concerns

VC-7 is unique in its geometry and significantly tethered to the Batterson and Route 60 corridor alignments. The community west of Batterson is generally a “finger” of Route 60 frontage parcels and a question of County leadership is whether there should be a deeper development strategy, incorporating some of the property to the north of VC-7 to allow for more comprehensive planning and development options.

While it is certainly possible to extend the boundary of VC-7 northward to incorporate more land and thus more development opportunity, there are numerous considerations that should be considered before doing so.

First, the topography becomes challenging as the line moves northward, and several stream divides create a need for segregating some of the parcels for development.

A second and more prominent challenge is the potential overplanning of Village districts for the population expectation of the County. Because of the significant opportunities already found in the eastern section of VC-7 and VC-8 (south of Route 60) the expansion of VC-7 comes at the expense of appropriately densified communities nearby. Market realities will likely dictate that the Route 60 East Corridor has more than enough village-planned spaces, and the need for commuter-based commercial activity is appropriately offered in the western “finger” of VC-7.

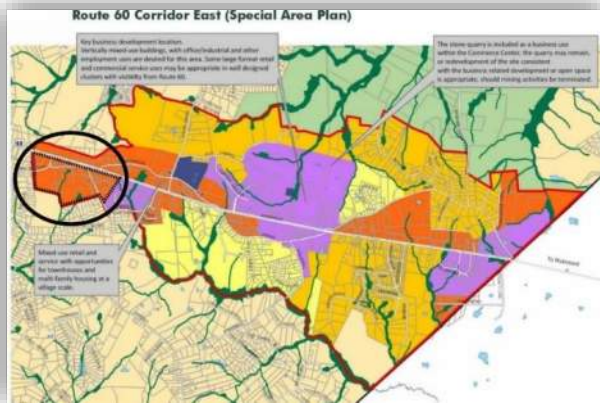
Finally, a commercial component of a village center is limited, and there is already ample space for such commercial activity to happen at the eastern half of VC-7. Extension of the VC-7 line northward on the western half would likely result in high density residential uses, rather than a mixed-use community.

Consideration

There is significant potential for a cohesive village-style community at the eastern half of the VC-7, where Batterson connects between Route 60 and Jude’s Ferry. Village Center designation is entirely appropriate in this area.

The finger of Route 60 fronting parcels along the western half of VC-7 may be better designated as Commerce Center.

VILLAGE CENTER VC-8



Recommendation for Comprehensive Plan Adjustment

Concerns

VC-8 represents the most significant potential for the Route 60 East Corridor. It's combination of land mass, existing access, large parcels, and existing development and identity (Flat Rock) enable it to build on its current character in an economically feasible manner.

There are many concerns that match the opportunities that, if not properly identified and considered, may render the opportunity as one that was missed. The principal concern that exists for the community is the existing road network, including geometries of highly traveled Dorset Road, creating an irregular (and inefficient) connection with Route 60. Careful planning of a future road network that incorporates an east-west local road that connects Rocky Oak to Dorset should be considered, along with a realigned access road from Route 60 to the new east-west road.

Another concern is the location of existing stormwater ponds. Handled correctly, these ponds could be enhanced and planned into the fabric of the future mixed-use community. Mishandled, it could become a dividing element that keeps the developments from properly connecting to one another. Permitting considerations are important to be handled early in the process.

Consideration

In addition to the comments above, because of the significant opportunity for a vibrant mixed-use community that favors pedestrian style business and residential uses, the County would be prudent in hosting a special meeting or series of meetings for the public to participate in envisioning the community of VC-8. These meetings would yield great value and buy-in from those who will be important in the process when procuring necessary right-of-way and other major land decisions will be needed.

Flat Rock in general, and VC-8 in particular, are well suited to be the significant mixed-use village growth hub for Powhatan in the future, and every effort should be made to ensuring its success.

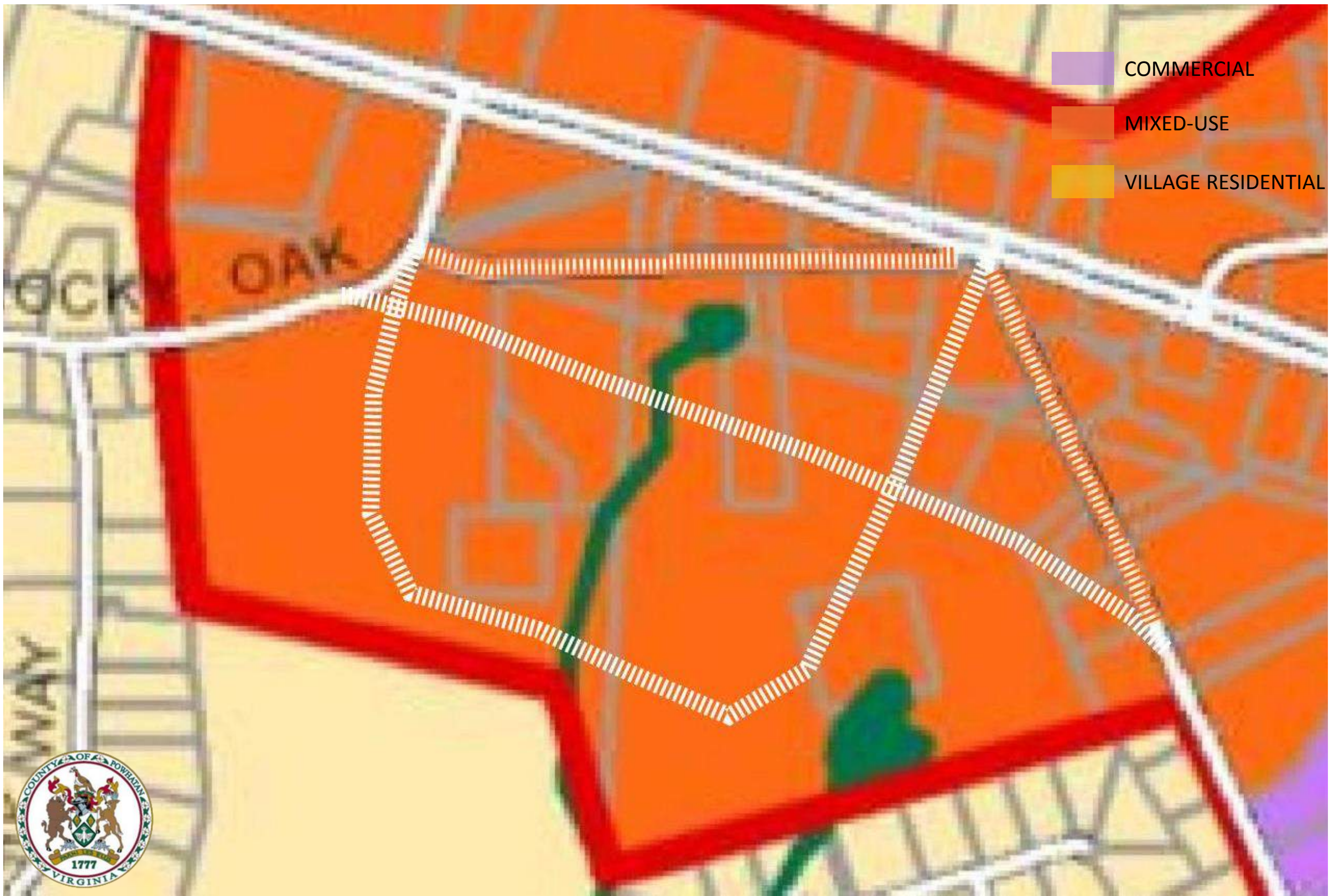


ROUTE 60 EAST CORRIDOR STUDY

VC-8 – Current Comprehensive Plan Designation

NO SCALE

Disclaimer: The development scenarios depicted on this page are identified as possible development scenarios only. The purpose of these development scenarios are to show how development patterns affect the needed land-use categories to encourage them. None of the scenarios are recommended or implied to be recommended, nor do they represent a guidance document to build future land use plans such as Comprehensive Plan Amendments.



ROUTE 60 EAST CORRIDOR STUDY

VC-8 Transportation Configuration Scenario

NO SCALE

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TIMMONS GROUP
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ROUTE 60 EAST CORRIDOR STUDY

VC-8 Detailed Potential Transportation Scenario

NO SCALE

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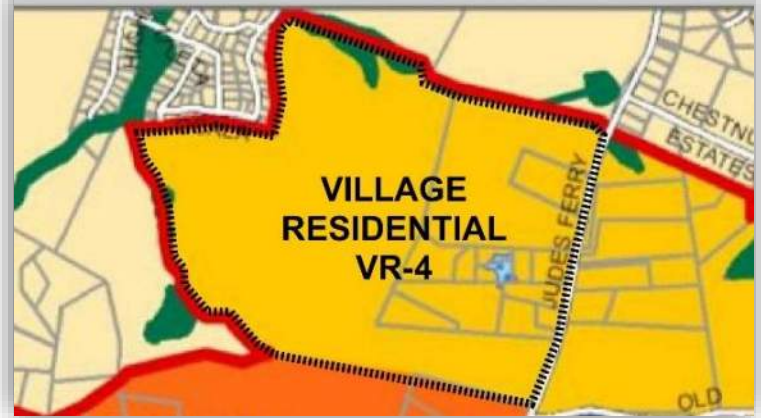
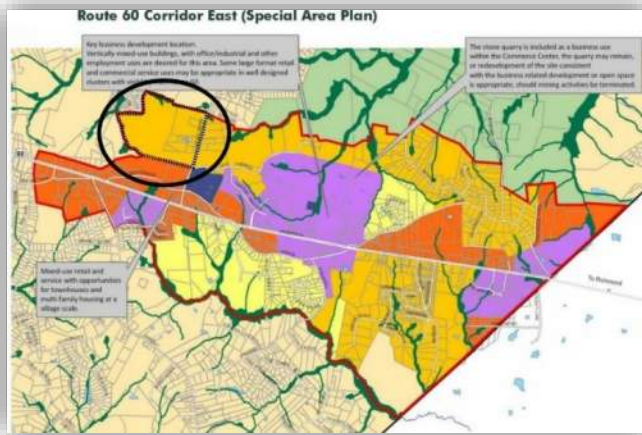
ROUTE 60 EAST CORRIDOR STUDY

VC-8 Land Use Consideration for Transportation Scenario

NO SCALE

Disclaimer: The development scenarios depicted on this page are identified as possible development scenarios only. The purpose of these development scenarios are to show how development patterns affect the needed land-use categories to encourage them. None of the scenarios are recommended or implied to be recommended, nor do they represent a guidance document to build future land use plans such as Comprehensive Plan Amendments.

VILLAGE RESIDENTIAL VR-4



Recommendation for Comprehensive Plan Adjustment

Concerns

VR-4 has much going for it regarding development potential, including large parcels, relatively few landowners for the bulk of the land, and proximity to an active part of the Route 60 East Corridor.

Concerns for this community in its current category include the potential for single family residential (even as higher density) to crowd out the potential synergy with its southern neighbor development of VC-7. Stand alone subdivisions in this prominent location would be an underutilization of the opportunity of this community has at its core.

Consideration

While the total acreage is far greater a scale of development than would be marketable for a village style community, the County may consider the inclusion of some of VR-4, particularly the southern third of the property and eastern edge framing Jude's Ferry Road, as a continuation of VC-7. This will allow for more potential pedestrian friendly development near some of the county's most active areas, including the two schools just east of VR-4.

VR-4 ranks only behind VC-8 as one of the most significant development opportunities, properly designed and implemented, for the county to create places of destination and civic pride, not to mention value for the tenants, owners, and businesses that participate here.

Appendix B

2016 Traffic Data

Peggy Malone & Associates, Inc.

(888) 247-8602

File Name : 1-Stavemill_Lock Stone and US 60 AM

Site Code :

Start Date : 3/3/2016

Page No : 1

Groups Printed- Car

	Luck Stone Rd. Southbound					US 60 Westbound					Stavemill Rd. Northbound					US 60 Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
07:00 AM	1	1	6	0	8	7	117	18	4	146	96	1	6	0	103	1	397	8	1	407	664
07:15 AM	1	2	9	0	12	6	130	17	5	158	112	4	11	0	127	1	402	10	1	414	711
07:30 AM	1	1	12	0	14	6	170	13	3	192	83	5	15	2	105	1	447	5	2	455	766
07:45 AM	0	1	13	0	14	10	143	14	2	169	83	3	20	0	106	6	325	9	2	342	631
Total	3	5	40	0	48	29	560	62	14	665	374	13	52	2	441	9	1571	32	6	1618	2772
08:00 AM	1	0	8	0	9	10	124	15	4	153	69	4	7	0	80	7	303	12	2	324	566
08:15 AM	0	1	10	0	11	11	123	22	4	160	76	3	10	0	89	1	279	5	1	286	546
08:30 AM	1	2	8	0	11	8	130	11	5	154	70	6	12	0	88	1	287	6	0	294	547
08:45 AM	2	3	5	0	10	8	140	17	5	170	44	5	16	0	65	2	273	20	5	300	545
Total	4	6	31	0	41	37	517	65	18	637	259	18	45	0	322	11	1142	43	8	1204	2204
Grand Total	7	11	71	0	89	66	1077	127	32	1302	633	31	97	2	763	20	2713	75	14	2822	4976
Apprch %	7.9	12.4	79.8	0		5.1	82.7	9.8	2.5		83	4.1	12.7	0.3		0.7	96.1	2.7	0.5		
Total %	0.1	0.2	1.4	0	1.8	1.3	21.6	2.6	0.6	26.2	12.7	0.6	1.9	0	15.3	0.4	54.5	1.5	0.3	56.7	

	Luck Stone Rd. Southbound				US 60 Westbound				Stavemill Rd. Northbound				US 60 Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	1	1	6	8	7	117	18	142	96	1	6	103	1	397	8	406	659
07:15 AM	1	2	9	12	6	130	17	153	112	4	11	127	1	402	10	413	705
07:30 AM	1	1	12	14	6	170	13	189	83	5	15	103	1	447	5	453	759
07:45 AM	0	1	13	14	10	143	14	167	83	3	20	106	6	325	9	340	627
Total Volume	3	5	40	48	29	560	62	651	374	13	52	439	9	1571	32	1612	2750
% App. Total	6.2	10.4	83.3		4.5	86	9.5		85.2	3	11.8		0.6	97.5	2		
PHF	.750	.625	.769	.857	.725	.824	.861	.861	.835	.650	.650	.864	.375	.879	.800	.890	.906

Peggy Malone & Associates, Inc.

(888) 247-8602

File Name : 1-Stavemill_Lock Stone and US 60 AM

Site Code :

Start Date : 3/3/2016

Page No : 1

Groups Printed- Truck

	Luck Stone Rd. Southbound					US 60 Westbound					Stavemill Rd. Northbound					US 60 Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
07:00 AM	2	0	4	0	6	4	9	1	0	14	1	1	0	0	2	1	7	3	0	11	33
07:15 AM	3	0	8	0	11	3	5	1	0	9	2	1	0	0	3	1	9	1	0	11	34
07:30 AM	0	1	5	0	6	4	7	3	0	14	0	0	0	0	0	1	14	1	0	16	36
07:45 AM	4	1	9	0	14	3	17	0	0	20	0	2	0	0	2	0	30	6	0	36	72
Total	9	2	26	0	37	14	38	5	0	57	3	4	0	0	7	3	60	11	0	74	175
08:00 AM	4	0	4	0	8	5	17	3	0	25	0	0	1	0	1	0	9	4	0	13	47
08:15 AM	5	0	9	0	14	10	7	2	0	19	1	1	0	0	2	0	13	2	1	16	51
08:30 AM	1	0	6	0	7	5	17	0	0	22	2	0	0	0	2	0	14	4	0	18	49
08:45 AM	4	0	7	0	11	3	17	0	0	20	1	0	0	0	1	1	13	1	0	15	47
Total	14	0	26	0	40	23	58	5	0	86	4	1	1	0	6	1	49	11	1	62	194
Grand Total	23	2	52	0	77	37	96	10	0	143	7	5	1	0	13	4	109	22	1	136	369
Apprch %	29.9	2.6	67.5	0		25.9	67.1	7	0		53.8	38.5	7.7	0		2.9	80.1	16.2	0.7		
Total %	6.2	0.5	14.1	0	20.9	10	26	2.7	0	38.8	1.9	1.4	0.3	0	3.5	1.1	29.5	6	0.3	36.9	

	Luck Stone Rd. Southbound				US 60 Westbound				Stavemill Rd. Northbound				US 60 Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	4	1	9	14	3	17	0	20	0	2	0	2	0	30	6	36	72
08:00 AM	4	0	4	8	5	17	3	25	0	0	1	1	0	9	4	13	47
08:15 AM	5	0	9	14	10	7	2	19	1	1	0	2	0	13	2	15	50
08:30 AM	1	0	6	7	5	17	0	22	2	0	0	2	0	14	4	18	49
Total Volume	14	1	28	43	23	58	5	86	3	3	1	7	0	66	16	82	218
% App. Total	32.6	2.3	65.1		26.7	67.4	5.8		42.9	42.9	14.3		0	80.5	19.5		
PHF	.700	.250	.778	.768	.575	.853	.417	.860	.375	.375	.250	.875	.000	.550	.667	.569	.757

File Name : 1-Stavemill_Lock Stone and US 60 AM
Site Code :
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	Luck Stone Rd. Southbound					US 60 Westbound				Stavemill Rd. Northbound					US 60 Eastbound						
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch % Total %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		

[illegible]

Peggy Malone & Associates, Inc.

(888) 247-8602

File Name : 1-Stavemill_Lock Stone and US 60 AM

Site Code :

Start Date : 3/3/2016

Page No : 1

Groups Printed- Combined

	Luck Stone Rd. Southbound					US 60 Westbound					Stavemill Rd. Northbound					US 60 Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
07:00 AM	3	1	10	0	14	11	126	19	4	160	97	2	6	0	105	2	404	11	1	418	697
07:15 AM	4	2	17	0	23	9	135	18	5	167	114	5	11	0	130	2	411	11	1	425	745
07:30 AM	1	2	17	0	20	10	177	16	3	206	83	5	15	2	105	2	461	6	2	471	802
07:45 AM	4	2	22	0	28	13	160	14	2	189	83	5	20	0	108	6	355	15	2	378	703
Total	12	7	66	0	85	43	598	67	14	722	377	17	52	2	448	12	1631	43	6	1692	2947
08:00 AM	5	0	12	0	17	15	141	18	4	178	69	4	8	0	81	7	312	16	2	337	613
08:15 AM	5	1	19	0	25	21	130	24	4	179	77	4	10	0	91	1	292	7	2	302	597
08:30 AM	2	2	14	0	18	13	147	11	5	176	72	6	12	0	90	1	301	10	0	312	596
08:45 AM	6	3	12	0	21	11	157	17	5	190	45	5	16	0	66	3	286	21	5	315	592
Total	18	6	57	0	81	60	575	70	18	723	263	19	46	0	328	12	1191	54	9	1266	2398
Grand Total	30	13	123	0	166	103	1173	137	32	1445	640	36	98	2	776	24	2822	97	15	2958	5345
Apprch %	18.1	7.8	74.1	0		7.1	81.2	9.5	2.2		82.5	4.6	12.6	0.3		0.8	95.4	3.3	0.5		
Total %	0.6	0.2	2.3	0	3.1	1.9	21.9	2.6	0.6	27	12	0.7	1.8	0	14.5	0.4	52.8	1.8	0.3	55.3	

	Luck Stone Rd. Southbound				US 60 Westbound				Stavemill Rd. Northbound				US 60 Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	3	1	10	14	11	126	19	156	97	2	6	105	2	404	11	417	692
07:15 AM	4	2	17	23	9	135	18	162	114	5	11	130	2	411	11	424	739
07:30 AM	1	2	17	20	10	177	16	203	83	5	15	103	2	461	6	469	795
07:45 AM	4	2	22	28	13	160	14	187	83	5	20	108	6	355	15	376	699
Total Volume	12	7	66	85	43	598	67	708	377	17	52	446	12	1631	43	1686	2925
% App. Total	14.1	8.2	77.6		6.1	84.5	9.5		84.5	3.8	11.7		0.7	96.7	2.6		
PHF	.750	.875	.750	.759	.827	.845	.882	.872	.827	.850	.650	.858	.500	.884	.717	.899	.920

Peggy Malone & Associates, Inc.

(888) 247-8602

File Name : 1-Stavemill_Lock Stone and US 60 PM

Site Code :

Start Date : 3/3/2016

Page No : 1

Groups Printed- Car

	Luck Stone Rd. Southbound					US 60 Westbound					Stavemill Rd. Northbound					US 60 Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
04:00 PM	8	7	11	0	26	40	291	74	5	410	27	1	14	0	42	11	218	27	1	257	735
04:15 PM	8	5	18	0	31	36	328	70	6	440	25	3	6	0	34	7	215	17	3	242	747
04:30 PM	9	8	22	0	39	36	335	64	17	452	29	7	11	0	47	7	220	25	6	258	796
04:45 PM	7	6	10	0	23	47	388	85	7	527	25	4	10	0	39	6	182	20	5	213	802
Total	32	26	61	0	119	159	1342	293	35	1829	106	15	41	0	162	31	835	89	15	970	3080
05:00 PM	14	11	24	0	49	45	409	82	6	542	34	12	11	0	57	9	227	25	1	262	910
05:15 PM	11	14	14	0	39	46	380	78	6	510	17	14	16	0	47	16	203	20	3	242	838
05:30 PM	9	11	9	0	29	40	408	81	17	546	23	11	8	0	42	13	187	26	2	228	845
05:45 PM	9	17	6	0	32	35	336	60	14	445	25	16	11	0	52	8	176	24	2	210	739
Total	43	53	53	0	149	166	1533	301	43	2043	99	53	46	0	198	46	793	95	8	942	3332
Grand Total	75	79	114	0	268	325	2875	594	78	3872	205	68	87	0	360	77	1628	184	23	1912	6412
Apprch %	28	29.5	42.5	0		8.4	74.3	15.3	2		56.9	18.9	24.2	0		4	85.1	9.6	1.2		
Total %	1.2	1.2	1.8	0	4.2	5.1	44.8	9.3	1.2	60.4	3.2	1.1	1.4	0	5.6	1.2	25.4	2.9	0.4	29.8	

	Luck Stone Rd. Southbound				US 60 Westbound				Stavemill Rd. Northbound				US 60 Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	7	6	10	23	47	388	85	520	25	4	10	39	6	182	20	208	790
05:00 PM	14	11	24	49	45	409	82	536	34	12	11	57	9	227	25	261	903
05:15 PM	11	14	14	39	46	380	78	504	17	14	16	47	16	203	20	239	829
05:30 PM	9	11	9	29	40	408	81	529	23	11	8	42	13	187	26	226	826
Total Volume	41	42	57	140	178	1585	326	2089	99	41	45	185	44	799	91	934	3348
% App. Total	29.3	30	40.7		8.5	75.9	15.6		53.5	22.2	24.3		4.7	85.5	9.7		
PHF	.732	.750	.594	.714	.947	.969	.959	.974	.728	.732	.703	.811	.688	.880	.875	.895	.927

Peggy Malone & Associates, Inc.

(888) 247-8602

File Name : 1-Stavemill_Lock Stone and US 60 PM
 Site Code :
 Start Date : 3/3/2016
 Page No : 1

Groups Printed- Truck

	Luck Stone Rd. Southbound					US 60 Westbound					Stavemill Rd. Northbound					US 60 Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
04:00 PM	4	0	3	0	7	6	17	0	0	23	0	0	0	0	0	1	12	0	0	13	43
04:15 PM	1	0	4	0	5	3	14	4	0	21	1	0	0	0	1	0	12	0	1	13	40
04:30 PM	0	0	3	0	3	3	22	1	0	26	0	0	0	0	0	0	11	0	0	11	40
04:45 PM	3	0	2	0	5	2	26	1	0	29	1	0	1	0	2	0	8	1	0	9	45
Total	8	0	12	0	20	14	79	6	0	99	2	0	1	0	3	1	43	1	1	46	168
05:00 PM	0	0	0	0	0	0	17	2	0	19	1	0	0	0	1	0	8	0	0	8	28
05:15 PM	0	0	0	0	0	0	14	1	1	16	0	0	0	0	0	0	11	0	0	11	27
05:30 PM	0	0	1	0	1	1	14	0	0	15	0	0	0	0	0	0	7	0	0	7	23
05:45 PM	0	0	0	0	0	0	9	3	0	12	0	0	0	0	0	0	7	0	0	7	19
Total	0	0	1	0	1	1	54	6	1	62	1	0	0	0	1	0	33	0	0	33	97
Grand Total	8	0	13	0	21	15	133	12	1	161	3	0	1	0	4	1	76	1	1	79	265
Apprch %	38.1	0	61.9	0		9.3	82.6	7.5	0.6		75	0	25	0		1.3	96.2	1.3	1.3		
Total %	3	0	4.9	0	7.9	5.7	50.2	4.5	0.4	60.8	1.1	0	0.4	0	1.5	0.4	28.7	0.4	0.4	29.8	

	Luck Stone Rd. Southbound				US 60 Westbound				Stavemill Rd. Northbound				US 60 Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	4	0	3	7	6	17	0	23	0	0	0	0	1	12	0	13	43
04:15 PM	1	0	4	5	3	14	4	21	1	0	0	1	0	12	0	12	39
04:30 PM	0	0	3	3	3	22	1	26	0	0	0	0	0	11	0	11	40
04:45 PM	3	0	2	5	2	26	1	29	1	0	1	2	0	8	1	9	45
Total Volume	8	0	12	20	14	79	6	99	2	0	1	3	1	43	1	45	167
% App. Total	40	0	60		14.1	79.8	6.1		66.7	0	33.3		2.2	95.6	2.2		
PHF	.500	.000	.750	.714	.583	.760	.375	.853	.500	.000	.250	.375	.250	.896	.250	.865	.928

File Name : 1-Stavemill_Lock Stone and US 60 PM
Site Code :
Start Date : 3/3/2016
Page No : 1

	Luck Stone Rd. Southbound					US 60 Westbound					Stavemill Rd. Northbound					US 60 Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch % Total %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		

[illegible]

File Name : 1-Stavemill_Lock Stone and US 60 PM
Site Code :
Start Date : 3/3/2016
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	Luck Stone Rd. Southbound					US 60 Westbound					Stavemill Rd. Northbound					US 60 Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch % Total %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		

[illegible]

Peggy Malone & Associates, Inc.

(888) 247-8602

File Name : 1-Stavemill_Lock Stone and US 60 PM

Site Code :

Start Date : 3/3/2016

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Groups Printed- Combined

	Luck Stone Rd. Southbound					US 60 Westbound					Stavemill Rd. Northbound					US 60 Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
04:00 PM	12	7	14	0	33	46	308	74	5	433	27	1	14	0	42	12	230	27	1	270	778
04:15 PM	9	5	22	0	36	39	342	74	6	461	26	3	6	0	35	7	227	17	4	255	787
04:30 PM	9	8	25	0	42	39	357	65	17	478	29	7	11	0	47	7	231	25	6	269	836
04:45 PM	10	6	12	0	28	49	414	86	7	556	26	4	11	0	41	6	190	21	5	222	847
Total	40	26	73	0	139	173	1421	299	35	1928	108	15	42	0	165	32	878	90	16	1016	3248
05:00 PM	14	11	24	0	49	45	426	84	6	561	35	12	11	0	58	9	235	25	1	270	938
05:15 PM	11	14	14	0	39	46	394	79	7	526	17	14	16	0	47	16	214	20	3	253	865
05:30 PM	9	11	10	0	30	41	422	81	17	561	23	11	8	0	42	13	194	26	2	235	868
05:45 PM	9	17	6	0	32	35	345	63	14	457	25	16	11	0	52	8	183	24	2	217	758
Total	43	53	54	0	150	167	1587	307	44	2105	100	53	46	0	199	46	826	95	8	975	3429
Grand Total	83	79	127	0	289	340	3008	606	79	4033	208	68	88	0	364	78	1704	185	24	1991	6677
Apprch %	28.7	27.3	43.9	0		8.4	74.6	15	2		57.1	18.7	24.2	0		3.9	85.6	9.3	1.2		
Total %	1.2	1.2	1.9	0	4.3	5.1	45.1	9.1	1.2	60.4	3.1	1	1.3	0	5.5	1.2	25.5	2.8	0.4	29.8	

	Luck Stone Rd. Southbound				US 60 Westbound				Stavemill Rd. Northbound				US 60 Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	10	6	12	28	49	414	86	549	26	4	11	41	6	190	21	217	835
05:00 PM	14	11	24	49	45	426	84	555	35	12	11	58	9	235	25	269	931
05:15 PM	11	14	14	39	46	394	79	519	17	14	16	47	16	214	20	250	855
05:30 PM	9	11	10	30	41	422	81	544	23	11	8	42	13	194	26	233	849
Total Volume	44	42	60	146	181	1656	330	2167	101	41	46	188	44	833	92	969	3470
% App. Total	30.1	28.8	41.1		8.4	76.4	15.2		53.7	21.8	24.5		4.5	86	9.5		
PHF	.786	.750	.625	.745	.923	.972	.959	.976	.721	.732	.719	.810	.688	.886	.885	.901	.932

Peggy Malone & Associates, Inc.

(888) 247-8602

File Name : 2-South Creek One and US 60 AM
 Site Code :
 Start Date : 3/3/2016
 Page No : 1

Groups Printed- Car

	South Creek One Southbound					US 60 Westbound					Driveway Northbound					US 60 Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
07:00 AM	3	0	9	0	12	15	107	0	0	122	0	0	0	1	1	0	413	2	0	415	550
07:15 AM	5	0	11	0	16	23	119	0	0	142	0	0	0	0	0	0	430	10	2	442	600
07:30 AM	3	0	13	0	16	17	163	0	0	180	0	0	0	0	0	0	376	7	0	383	579
07:45 AM	12	0	17	0	29	21	169	0	0	190	0	0	0	0	0	0	313	12	0	325	544
Total	23	0	50	0	73	76	558	0	0	634	0	0	0	1	1	0	1532	31	2	1565	2273
08:00 AM	8	0	19	0	27	9	116	0	0	125	0	0	0	0	0	0	286	5	1	292	444
08:15 AM	4	0	8	0	12	11	134	0	2	147	0	0	0	0	0	0	277	12	0	289	448
08:30 AM	8	0	20	0	28	13	124	0	0	137	0	0	0	0	0	0	267	17	0	284	449
08:45 AM	12	0	5	0	17	16	150	0	0	166	0	0	0	0	0	0	280	11	0	291	474
Total	32	0	52	0	84	49	524	0	2	575	0	0	0	0	0	0	1110	45	1	1156	1815
Grand Total	55	0	102	0	157	125	1082	0	2	1209	0	0	0	1	1	0	2642	76	3	2721	4088
Apprch %	35	0	65	0		10.3	89.5	0	0.2		0	0	0	100		0	97.1	2.8	0.1		
Total %	1.3	0	2.5	0	3.8	3.1	26.5	0	0	29.6	0	0	0	0	0	0	64.6	1.9	0.1	66.6	

	South Creek One Southbound				US 60 Westbound				Driveway Northbound				US 60 Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	3	0	9	12	15	107	0	122	0	0	0	0	0	413	2	415	549
07:15 AM	5	0	11	16	23	119	0	142	0	0	0	0	0	430	10	440	598
07:30 AM	3	0	13	16	17	163	0	180	0	0	0	0	0	376	7	383	579
07:45 AM	12	0	17	29	21	169	0	190	0	0	0	0	0	313	12	325	544
Total Volume	23	0	50	73	76	558	0	634	0	0	0	0	0	1532	31	1563	2270
% App. Total	31.5	0	68.5		12	88	0		0	0	0		0	98	2		
PHF	.479	.000	.735	.629	.826	.825	.000	.834	.000	.000	.000	.000	.000	.891	.646	.888	.949

Peggy Malone & Associates, Inc.
(888) 247-8602

File Name : 2-South Creek One and US 60 AM
Site Code :
Start Date : 3/3/2016
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Groups Printed- Truck

	South Creek One Southbound					US 60 Westbound					Driveway Northbound					US 60 Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
07:00 AM	3	0	2	0	5	0	8	0	0	8	0	0	0	0	0	0	8	1	0	9	22
07:15 AM	1	0	2	0	3	0	10	0	0	10	0	0	0	0	0	0	7	1	0	8	21
07:30 AM	3	0	5	0	8	0	7	0	0	7	0	0	0	0	0	0	12	0	0	12	27
07:45 AM	3	0	3	0	6	1	22	0	0	23	0	0	0	0	0	0	26	0	0	26	55
Total	10	0	12	0	22	1	47	0	0	48	0	0	0	0	0	0	53	2	0	55	125
08:00 AM	1	0	2	0	3	1	19	0	0	20	0	0	0	0	0	0	13	0	0	13	36
08:15 AM	2	0	1	0	3	2	10	0	0	12	0	0	0	0	0	0	17	1	0	18	33
08:30 AM	0	0	4	0	4	2	13	0	0	15	0	0	0	0	0	0	11	1	0	12	31
08:45 AM	2	0	1	0	3	5	20	0	0	25	0	0	0	0	0	0	19	1	0	20	48
Total	5	0	8	0	13	10	62	0	0	72	0	0	0	0	0	0	60	3	0	63	148
Grand Total	15	0	20	0	35	11	109	0	0	120	0	0	0	0	0	0	113	5	0	118	273
Apprch %	42.9	0	57.1	0		9.2	90.8	0	0		0	0	0	0		0	95.8	4.2	0		
Total %	5.5	0	7.3	0	12.8	4	39.9	0	0	44	0	0	0	0	0	0	41.4	1.8	0	43.2	

	South Creek One Southbound				US 60 Westbound				Driveway Northbound				US 60 Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	3	0	3	6	1	22	0	23	0	0	0	0	0	26	0	26	55
08:00 AM	1	0	2	3	1	19	0	20	0	0	0	0	0	13	0	13	36
08:15 AM	2	0	1	3	2	10	0	12	0	0	0	0	0	17	1	18	33
08:30 AM	0	0	4	4	2	13	0	15	0	0	0	0	0	11	1	12	31
Total Volume	6	0	10	16	6	64	0	70	0	0	0	0	0	67	2	69	155
% App. Total	37.5	0	62.5		8.6	91.4	0		0	0	0		0	97.1	2.9		
PHF	.500	.000	.625	.667	.750	.727	.000	.761	.000	.000	.000	.000	.000	.644	.500	.663	.705

File Name : 2-South Creek One and US 60 AM
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[illegible]

File Name : 2-South Creek One and US 60 AM
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	South Creek One Southbound					US 60 Westbound				Driveway Northbound					US 60 Eastbound						
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch % Total %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		

[illegible]

Peggy Malone & Associates, Inc.

(888) 247-8602

File Name : 2-South Creek One and US 60 AM
 Site Code :
 Start Date : 3/3/2016
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Groups Printed- Combined

	South Creek One Southbound					US 60 Westbound					Driveway Northbound					US 60 Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
07:00 AM	6	0	11	0	17	15	115	0	0	130	0	0	0	1	1	0	421	3	0	424	572
07:15 AM	6	0	13	0	19	23	129	0	0	152	0	0	0	0	0	0	437	11	2	450	621
07:30 AM	6	0	18	0	24	17	170	0	0	187	0	0	0	0	0	0	388	7	0	395	606
07:45 AM	15	0	20	0	35	22	191	0	0	213	0	0	0	0	0	0	339	12	0	351	599
Total	33	0	62	0	95	77	605	0	0	682	0	0	0	1	1	0	1585	33	2	1620	2398
08:00 AM	9	0	21	0	30	10	135	0	0	145	0	0	0	0	0	0	299	5	1	305	480
08:15 AM	6	0	9	0	15	13	144	0	2	159	0	0	0	0	0	0	294	13	0	307	481
08:30 AM	8	0	24	0	32	15	137	0	0	152	0	0	0	0	0	0	278	18	0	296	480
08:45 AM	14	0	6	0	20	21	170	0	0	191	0	0	0	0	0	0	299	12	0	311	522
Total	37	0	60	0	97	59	586	0	2	647	0	0	0	0	0	0	1170	48	1	1219	1963
Grand Total	70	0	122	0	192	136	1191	0	2	1329	0	0	0	1	1	0	2755	81	3	2839	4361
Apprch %	36.5	0	63.5	0		10.2	89.6	0	0.2		0	0	0	100		0	97	2.9	0.1		
Total %	1.6	0	2.8	0	4.4	3.1	27.3	0	0	30.5	0	0	0	0	0	0	63.2	1.9	0.1	65.1	

	South Creek One Southbound				US 60 Westbound				Driveway Northbound				US 60 Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	6	0	11	17	15	115	0	130	0	0	0	0	0	421	3	424	571
07:15 AM	6	0	13	19	23	129	0	152	0	0	0	0	0	437	11	448	619
07:30 AM	6	0	18	24	17	170	0	187	0	0	0	0	0	388	7	395	606
07:45 AM	15	0	20	35	22	191	0	213	0	0	0	0	0	339	12	351	599
Total Volume	33	0	62	95	77	605	0	682	0	0	0	0	0	1585	33	1618	2395
% App. Total	34.7	0	65.3		11.3	88.7	0		0	0	0		0	98	2		
PHF	.550	.000	.775	.679	.837	.792	.000	.800	.000	.000	.000	.000	.000	.907	.688	.903	.967

Peggy Malone & Associates, Inc.
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File Name : 2-South Creek One and US 60 PM
Site Code :
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Groups Printed- Car

	South Creek One Southbound					US 60 Westbound					Driveway Northbound					US 60 Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
04:00 PM	58	0	36	0	94	44	311	0	2	357	0	0	0	0	0	0	211	26	1	238	689
04:15 PM	60	0	26	0	86	50	308	0	6	364	0	0	0	0	0	0	215	27	0	242	692
04:30 PM	61	0	33	0	94	57	349	0	1	407	0	0	0	0	0	0	205	26	0	231	732
04:45 PM	64	0	21	0	85	63	373	0	0	436	0	0	0	0	0	0	196	30	0	226	747
Total	243	0	116	0	359	214	1341	0	9	1564	0	0	0	0	0	0	827	109	1	937	2860
05:00 PM	55	0	21	0	76	63	432	0	2	497	0	0	0	0	0	0	242	38	0	280	853
05:15 PM	68	0	33	0	101	64	380	0	1	445	0	0	0	0	0	0	230	37	2	269	815
05:30 PM	76	0	25	0	101	69	435	0	6	510	0	0	0	0	0	0	184	29	0	213	824
05:45 PM	57	0	22	0	79	51	367	0	0	418	0	0	0	0	0	0	198	27	0	225	722
Total	256	0	101	0	357	247	1614	0	9	1870	0	0	0	0	0	0	854	131	2	987	3214
Grand Total	499	0	217	0	716	461	2955	0	18	3434	0	0	0	0	0	0	1681	240	3	1924	6074
Apprch %	69.7	0	30.3	0		13.4	86.1	0	0.5		0	0	0	0		0	87.4	12.5	0.2		
Total %	8.2	0	3.6	0	11.8	7.6	48.6	0	0.3	56.5	0	0	0	0	0	0	27.7	4	0	31.7	

	South Creek One Southbound				US 60 Westbound				Driveway Northbound				US 60 Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	64	0	21	85	63	373	0	436	0	0	0	0	0	196	30	226	747
05:00 PM	55	0	21	76	63	432	0	495	0	0	0	0	0	242	38	280	851
05:15 PM	68	0	33	101	64	380	0	444	0	0	0	0	0	230	37	267	812
05:30 PM	76	0	25	101	69	435	0	504	0	0	0	0	0	184	29	213	818
Total Volume	263	0	100	363	259	1620	0	1879	0	0	0	0	0	852	134	986	3228
% App. Total	72.5	0	27.5		13.8	86.2	0		0	0	0		0	86.4	13.6		
PHF	.865	.000	.758	.899	.938	.931	.000	.932	.000	.000	.000	.000	.000	.880	.882	.880	.948

Peggy Malone & Associates, Inc.
(888) 247-8602

File Name : 2-South Creek One and US 60 PM
Site Code :
Start Date : 3/3/2016
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Groups Printed- Truck

	South Creek One Southbound					US 60 Westbound					Driveway Northbound					US 60 Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
04:00 PM	1	0	2	0	3	3	19	0	0	22	0	0	0	0	0	0	14	4	0	18	43
04:15 PM	2	0	1	0	3	3	13	0	0	16	0	0	0	0	0	0	12	1	0	13	32
04:30 PM	0	0	2	0	2	3	17	0	0	20	0	0	0	0	0	0	7	1	0	8	30
04:45 PM	0	0	1	0	1	1	30	0	0	31	0	0	0	0	0	0	6	0	0	6	38
Total	3	0	6	0	9	10	79	0	0	89	0	0	0	0	0	0	39	6	0	45	143
05:00 PM	1	0	1	0	2	1	18	0	0	19	0	0	0	0	0	0	9	1	0	10	31
05:15 PM	2	0	1	0	3	1	9	0	0	10	0	0	0	0	0	0	7	1	0	8	21
05:30 PM	1	0	1	0	2	0	14	0	0	14	0	0	0	0	0	0	4	0	0	4	20
05:45 PM	0	0	0	0	0	1	8	0	0	9	0	0	0	0	0	0	7	1	0	8	17
Total	4	0	3	0	7	3	49	0	0	52	0	0	0	0	0	0	27	3	0	30	89
Grand Total	7	0	9	0	16	13	128	0	0	141	0	0	0	0	0	0	66	9	0	75	232
Apprch %	43.8	0	56.2	0		9.2	90.8	0	0		0	0	0	0		0	88	12	0		
Total %	3	0	3.9	0	6.9	5.6	55.2	0	0	60.8	0	0	0	0	0	0	28.4	3.9	0	32.3	

	South Creek One Southbound				US 60 Westbound				Driveway Northbound				US 60 Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	1	0	2	3	3	19	0	22	0	0	0	0	0	14	4	18	43
04:15 PM	2	0	1	3	3	13	0	16	0	0	0	0	0	12	1	13	32
04:30 PM	0	0	2	2	3	17	0	20	0	0	0	0	0	7	1	8	30
04:45 PM	0	0	1	1	1	30	0	31	0	0	0	0	0	6	0	6	38
Total Volume	3	0	6	9	10	79	0	89	0	0	0	0	0	39	6	45	143
% App. Total	33.3	0	66.7		11.2	88.8	0		0	0	0		0	86.7	13.3		
PHF	.375	.000	.750	.750	.833	.658	.000	.718	.000	.000	.000	.000	.000	.696	.375	.625	.831

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	South Creek One Southbound					US 60 Westbound					Driveway Northbound					US 60 Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch % Total %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		

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	South Creek One Southbound					US 60 Westbound					Driveway Northbound					US 60 Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
04:00 PM	59	0	38	0	97	47	330	0	2	379	0	0	0	0	0	0	225	30	1	256	732
04:15 PM	62	0	27	0	89	53	321	0	6	380	0	0	0	0	0	0	227	28	0	255	724
04:30 PM	61	0	35	0	96	60	366	0	1	427	0	0	0	0	0	0	212	27	0	239	762
04:45 PM	64	0	22	0	86	64	403	0	0	467	0	0	0	0	0	0	202	30	0	232	785
Total	246	0	122	0	368	224	1420	0	9	1653	0	0	0	0	0	0	866	115	1	982	3003
05:00 PM	56	0	22	0	78	64	450	0	2	516	0	0	0	0	0	0	251	39	0	290	884
05:15 PM	70	0	34	0	104	65	389	0	1	455	0	0	0	0	0	0	237	38	2	277	836
05:30 PM	77	0	26	0	103	69	449	0	6	524	0	0	0	0	0	0	188	29	0	217	844
05:45 PM	57	0	22	0	79	52	375	0	0	427	0	0	0	0	0	0	205	28	0	233	739
Total	260	0	104	0	364	250	1663	0	9	1922	0	0	0	0	0	0	881	134	2	1017	3303
Grand Total	506	0	226	0	732	474	3083	0	18	3575	0	0	0	0	0	0	1747	249	3	1999	6306
Apprch %	69.1	0	30.9	0		13.3	86.2	0	0.5		0	0	0	0		0	87.4	12.5	0.2		
Total %	8	0	3.6	0	11.6	7.5	48.9	0	0.3	56.7	0	0	0	0	0	0	27.7	3.9	0	31.7	

	South Creek One Southbound				US 60 Westbound				Driveway Northbound				US 60 Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	64	0	22	86	64	403	0	467	0	0	0	0	0	202	30	232	785
05:00 PM	56	0	22	78	64	450	0	514	0	0	0	0	0	251	39	290	882
05:15 PM	70	0	34	104	65	389	0	454	0	0	0	0	0	237	38	275	833
05:30 PM	77	0	26	103	69	449	0	518	0	0	0	0	0	188	29	217	838
Total Volume	267	0	104	371	262	1691	0	1953	0	0	0	0	0	878	136	1014	3338
% App. Total	72	0	28		13.4	86.6	0		0	0	0		0	86.6	13.4		
PHF	.867	.000	.765	.892	.949	.939	.000	.943	.000	.000	.000	.000	.000	.875	.872	.874	.946

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Groups Printed- Car

	Batterson Rd. Southbound					US 60 Westbound					Urbine Rd. Northbound					US 60 Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
07:00 AM	3	0	6	0	9	8	99	1	0	108	1	2	2	0	5	0	421	4	0	425	547
07:15 AM	3	0	7	0	10	14	109	0	2	125	0	1	0	0	1	1	449	4	0	454	590
07:30 AM	1	0	7	0	8	31	128	0	2	161	1	0	2	0	3	3	376	4	0	383	555
07:45 AM	5	0	17	0	22	38	139	0	2	179	0	6	1	0	7	3	323	8	0	334	542
Total	12	0	37	0	49	91	475	1	6	573	2	9	5	0	16	7	1569	20	0	1596	2234
08:00 AM	5	1	11	0	17	8	118	0	1	127	0	0	2	0	2	0	281	2	0	283	429
08:15 AM	1	0	6	0	7	12	129	0	0	141	0	2	2	0	4	2	282	8	0	292	444
08:30 AM	0	0	2	0	2	23	106	0	2	131	0	0	2	0	2	1	291	12	1	305	440
08:45 AM	3	1	22	0	26	27	135	0	1	163	4	0	1	0	5	1	272	15	0	288	482
Total	9	2	41	0	52	70	488	0	4	562	4	2	7	0	13	4	1126	37	1	1168	1795
Grand Total	21	2	78	0	101	161	963	1	10	1135	6	11	12	0	29	11	2695	57	1	2764	4029
Apprch %	20.8	2	77.2	0		14.2	84.8	0.1	0.9		20.7	37.9	41.4	0		0.4	97.5	2.1	0		
Total %	0.5	0	1.9	0	2.5	4	23.9	0	0.2	28.2	0.1	0.3	0.3	0	0.7	0.3	66.9	1.4	0	68.6	

	Batterson Rd. Southbound				US 60 Westbound				Urbine Rd. Northbound				US 60 Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	3	0	6	9	8	99	1	108	1	2	2	5	0	421	4	425	547
07:15 AM	3	0	7	10	14	109	0	123	0	1	0	1	1	449	4	454	588
07:30 AM	1	0	7	8	31	128	0	159	1	0	2	3	3	376	4	383	553
07:45 AM	5	0	17	22	38	139	0	177	0	6	1	7	3	323	8	334	540
Total Volume	12	0	37	49	91	475	1	567	2	9	5	16	7	1569	20	1596	2228
% App. Total	24.5	0	75.5		16	83.8	0.2		12.5	56.2	31.2		0.4	98.3	1.3		
PHF	.600	.000	.544	.557	.599	.854	.250	.801	.500	.375	.625	.571	.583	.874	.625	.879	.947

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Groups Printed- Truck

	Batterson Rd. Southbound					US 60 Westbound					Urbine Rd. Northbound					US 60 Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	11	0	0	11	0	0	0	0	0	0	10	0	0	10	21
07:15 AM	0	0	0	0	0	0	12	0	0	12	0	0	0	0	0	0	9	0	0	9	21
07:30 AM	0	0	0	0	0	1	9	0	0	10	0	0	1	0	1	0	13	0	0	13	24
07:45 AM	0	0	0	0	0	0	21	0	0	21	0	0	0	0	0	0	27	1	0	28	49
Total	0	0	0	0	0	1	53	0	0	54	0	0	1	0	1	0	59	1	0	60	115
08:00 AM	1	0	1	0	2	0	20	0	0	20	0	0	0	0	0	0	12	0	0	12	34
08:15 AM	1	0	0	0	1	0	11	1	0	12	0	0	0	0	0	0	16	1	0	17	30
08:30 AM	0	0	0	0	0	3	10	0	0	13	0	1	0	0	1	0	11	1	0	12	26
08:45 AM	0	0	3	0	3	4	17	0	0	21	0	0	0	0	0	0	16	1	0	17	41
Total	2	0	4	0	6	7	58	1	0	66	0	1	0	0	1	0	55	3	0	58	131
Grand Total	2	0	4	0	6	8	111	1	0	120	0	1	1	0	2	0	114	4	0	118	246
Apprch %	33.3	0	66.7	0		6.7	92.5	0.8	0		0	50	50	0		0	96.6	3.4	0		
Total %	0.8	0	1.6	0	2.4	3.3	45.1	0.4	0	48.8	0	0.4	0.4	0	0.8	0	46.3	1.6	0	48	

	Batterson Rd. Southbound				US 60 Westbound				Urbine Rd. Northbound				US 60 Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	0	0	0	0	21	0	21	0	0	0	0	0	27	1	28	49
08:00 AM	1	0	1	2	0	20	0	20	0	0	0	0	0	12	0	12	34
08:15 AM	1	0	0	1	0	11	1	12	0	0	0	0	0	16	1	17	30
08:30 AM	0	0	0	0	3	10	0	13	0	1	0	1	0	11	1	12	26
Total Volume	2	0	1	3	3	62	1	66	0	1	0	1	0	66	3	69	139
% App. Total	66.7	0	33.3		4.5	93.9	1.5		0	100	0		0	95.7	4.3		
PHF	.500	.000	.250	.375	.250	.738	.250	.786	.000	.250	.000	.250	.000	.611	.750	.616	.709

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	Batterson Rd. Southbound					US 60 Westbound					Urbine Rd. Northbound					US 60 Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch % Total %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		

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	Batterson Rd. Southbound					US 60 Westbound					Urbine Rd. Northbound					US 60 Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
07:00 AM	3	0	6	0	9	8	110	1	0	119	1	2	2	0	5	0	431	4	0	435	568
07:15 AM	3	0	7	0	10	14	121	0	2	137	0	1	0	0	1	1	458	4	0	463	611
07:30 AM	1	0	7	0	8	32	137	0	2	171	1	0	3	0	4	3	389	4	0	396	579
07:45 AM	5	0	17	0	22	38	160	0	2	200	0	6	1	0	7	3	350	9	0	362	591
Total	12	0	37	0	49	92	528	1	6	627	2	9	6	0	17	7	1628	21	0	1656	2349
08:00 AM	6	1	12	0	19	8	138	0	1	147	0	0	2	0	2	0	293	2	0	295	463
08:15 AM	2	0	6	0	8	12	140	1	0	153	0	2	2	0	4	2	298	9	0	309	474
08:30 AM	0	0	2	0	2	26	116	0	2	144	0	1	2	0	3	1	302	13	1	317	466
08:45 AM	3	1	25	0	29	31	152	0	1	184	4	0	1	0	5	1	288	16	0	305	523
Total	11	2	45	0	58	77	546	1	4	628	4	3	7	0	14	4	1181	40	1	1226	1926
Grand Total	23	2	82	0	107	169	1074	2	10	1255	6	12	13	0	31	11	2809	61	1	2882	4275
Apprch %	21.5	1.9	76.6	0		13.5	85.6	0.2	0.8		19.4	38.7	41.9	0		0.4	97.5	2.1	0		
Total %	0.5	0	1.9	0	2.5	4	25.1	0	0.2	29.4	0.1	0.3	0.3	0	0.7	0.3	65.7	1.4	0	67.4	

	Batterson Rd. Southbound				US 60 Westbound				Urbine Rd. Northbound				US 60 Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	3	0	6	9	8	110	1	119	1	2	2	5	0	431	4	435	568
07:15 AM	3	0	7	10	14	121	0	135	0	1	0	1	1	458	4	463	609
07:30 AM	1	0	7	8	32	137	0	169	1	0	3	4	3	389	4	396	577
07:45 AM	5	0	17	22	38	160	0	198	0	6	1	7	3	350	9	362	589
Total Volume	12	0	37	49	92	528	1	621	2	9	6	17	7	1628	21	1656	2343
% App. Total	24.5	0	75.5		14.8	85	0.2		11.8	52.9	35.3		0.4	98.3	1.3		
PHF	.600	.000	.544	.557	.605	.825	.250	.784	.500	.375	.500	.607	.583	.889	.583	.894	.962

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Groups Printed- Car

	Batterson Rd. Southbound					US 60 Westbound					Urbine Rd. Northbound					US 60 Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
04:00 PM	8	3	26	0	37	10	359	1	1	371	3	0	3	0	6	1	206	2	0	209	623
04:15 PM	4	1	5	0	10	8	357	1	2	368	0	0	1	0	1	2	248	2	2	254	633
04:30 PM	1	0	9	0	10	14	388	2	1	405	0	1	3	0	4	4	223	3	0	230	649
04:45 PM	1	0	6	0	7	19	412	1	1	433	0	0	0	0	0	2	212	0	0	214	654
Total	14	4	46	0	64	51	1516	5	5	1577	3	1	7	0	11	9	889	7	2	907	2559
05:00 PM	2	1	10	0	13	20	460	0	1	481	1	0	0	0	1	0	265	2	0	267	762
05:15 PM	4	1	7	0	12	15	422	3	1	441	2	0	1	0	3	2	258	2	0	262	718
05:30 PM	9	1	12	0	22	8	480	4	0	492	0	2	2	0	4	6	201	3	0	210	728
05:45 PM	4	0	11	0	15	13	401	0	1	415	1	0	2	0	3	3	213	2	0	218	651
Total	19	3	40	0	62	56	1763	7	3	1829	4	2	5	0	11	11	937	9	0	957	2859
Grand Total	33	7	86	0	126	107	3279	12	8	3406	7	3	12	0	22	20	1826	16	2	1864	5418
Apprch %	26.2	5.6	68.3	0		3.1	96.3	0.4	0.2		31.8	13.6	54.5	0		1.1	98	0.9	0.1		
Total %	0.6	0.1	1.6	0	2.3	2	60.5	0.2	0.1	62.9	0.1	0.1	0.2	0	0.4	0.4	33.7	0.3	0	34.4	

	Batterson Rd. Southbound				US 60 Westbound				Urbine Rd. Northbound				US 60 Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	1	0	6	7	19	412	1	432	0	0	0	0	2	212	0	214	653
05:00 PM	2	1	10	13	20	460	0	480	1	0	0	1	0	265	2	267	761
05:15 PM	4	1	7	12	15	422	3	440	2	0	1	3	2	258	2	262	717
05:30 PM	9	1	12	22	8	480	4	492	0	2	2	4	6	201	3	210	728
Total Volume	16	3	35	54	62	1774	8	1844	3	2	3	8	10	936	7	953	2859
% App. Total	29.6	5.6	64.8		3.4	96.2	0.4		37.5	25	37.5		1	98.2	0.7		
PHF	.444	.750	.729	.614	.775	.924	.500	.937	.375	.250	.375	.500	.417	.883	.583	.892	.939

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	Batterson Rd. Southbound					US 60 Westbound					Urbine Rd. Northbound					US 60 Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
04:00 PM	0	1	4	0	5	1	15	0	0	16	0	0	0	0	0	0	15	0	0	15	36
04:15 PM	0	0	0	0	0	2	15	0	0	17	0	0	0	0	0	0	12	0	0	12	29
04:30 PM	1	0	0	0	1	3	13	0	0	16	0	0	0	0	0	0	8	0	0	8	25
04:45 PM	0	0	0	0	0	9	21	0	0	30	0	0	0	0	0	0	6	0	0	6	36
Total	1	1	4	0	6	15	64	0	0	79	0	0	0	0	0	0	41	0	0	41	126
05:00 PM	0	0	0	0	0	5	13	0	1	19	0	0	0	0	0	1	10	1	0	12	31
05:15 PM	0	0	0	0	0	1	12	0	0	13	0	0	0	0	0	0	8	0	0	8	21
05:30 PM	0	0	0	0	0	1	13	1	0	15	0	0	0	0	0	0	4	0	0	4	19
05:45 PM	0	0	0	0	0	1	8	0	0	9	0	0	0	0	0	0	7	0	0	7	16
Total	0	0	0	0	0	8	46	1	1	56	0	0	0	0	0	1	29	1	0	31	87
Grand Total	1	1	4	0	6	23	110	1	1	135	0	0	0	0	0	1	70	1	0	72	213
Apprch %	16.7	16.7	66.7	0		17	81.5	0.7	0.7		0	0	0	0		1.4	97.2	1.4	0		
Total %	0.5	0.5	1.9	0	2.8	10.8	51.6	0.5	0.5	63.4	0	0	0	0	0	0.5	32.9	0.5	0	33.8	

	Batterson Rd. Southbound				US 60 Westbound				Urbine Rd. Northbound				US 60 Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	1	4	5	1	15	0	16	0	0	0	0	0	15	0	15	36
04:15 PM	0	0	0	0	2	15	0	17	0	0	0	0	0	12	0	12	29
04:30 PM	1	0	0	1	3	13	0	16	0	0	0	0	0	8	0	8	25
04:45 PM	0	0	0	0	9	21	0	30	0	0	0	0	0	6	0	6	36
Total Volume	1	1	4	6	15	64	0	79	0	0	0	0	0	41	0	41	126
% App. Total	16.7	16.7	66.7		19	81	0		0	0	0		0	100	0		
PHF	.250	.250	.250	.300	.417	.762	.000	.658	.000	.000	.000	.000	.000	.683	.000	.683	.875

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	Batterson Rd. Southbound					US 60 Westbound					Urbine Rd. Northbound					US 60 Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch % Total %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		

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	Batterson Rd. Southbound					US 60 Westbound					Urbine Rd. Northbound					US 60 Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
04:00 PM	8	4	30	0	42	11	374	1	1	387	3	0	3	0	6	1	221	2	0	224	659
04:15 PM	4	1	5	0	10	10	372	1	2	385	0	0	1	0	1	2	260	2	2	266	662
04:30 PM	2	0	9	0	11	17	401	2	1	421	0	1	3	0	4	4	231	3	0	238	674
04:45 PM	1	0	6	0	7	28	433	1	1	463	0	0	0	0	0	2	218	0	0	220	690
Total	15	5	50	0	70	66	1580	5	5	1656	3	1	7	0	11	9	930	7	2	948	2685
05:00 PM	2	1	10	0	13	25	473	0	2	500	1	0	0	0	1	1	275	3	0	279	793
05:15 PM	4	1	7	0	12	16	434	3	1	454	2	0	1	0	3	2	266	2	0	270	739
05:30 PM	9	1	12	0	22	9	493	5	0	507	0	2	2	0	4	6	205	3	0	214	747
05:45 PM	4	0	11	0	15	14	409	0	1	424	1	0	2	0	3	3	220	2	0	225	667
Total	19	3	40	0	62	64	1809	8	4	1885	4	2	5	0	11	12	966	10	0	988	2946
Grand Total	34	8	90	0	132	130	3389	13	9	3541	7	3	12	0	22	21	1896	17	2	1936	5631
Apprch %	25.8	6.1	68.2	0		3.7	95.7	0.4	0.3		31.8	13.6	54.5	0		1.1	97.9	0.9	0.1		
Total %	0.6	0.1	1.6	0	2.3	2.3	60.2	0.2	0.2	62.9	0.1	0.1	0.2	0	0.4	0.4	33.7	0.3	0	34.4	

	Batterson Rd. Southbound				US 60 Westbound				Urbine Rd. Northbound				US 60 Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	1	0	6	7	28	433	1	462	0	0	0	0	2	218	0	220	689
05:00 PM	2	1	10	13	25	473	0	498	1	0	0	1	1	275	3	279	791
05:15 PM	4	1	7	12	16	434	3	453	2	0	1	3	2	266	2	270	738
05:30 PM	9	1	12	22	9	493	5	507	0	2	2	4	6	205	3	214	747
Total Volume	16	3	35	54	78	1833	9	1920	3	2	3	8	11	964	8	983	2965
% App. Total	29.6	5.6	64.8		4.1	95.5	0.5		37.5	25	37.5		1.1	98.1	0.8		
PHF	.444	.750	.729	.614	.696	.930	.450	.947	.375	.250	.375	.500	.458	.876	.667	.881	.937

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Groups Printed- Car

	Jude's Ferry Rd. Southbound				US 60 Westbound				US 60 Eastbound				
Start Time	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Int. Total
07:00 AM	21	35	0	56	4	98	0	102	387	34	0	421	579
07:15 AM	34	48	0	82	7	108	0	115	392	102	0	494	691
07:30 AM	40	45	0	85	13	112	0	125	327	166	0	493	703
07:45 AM	52	49	0	101	7	129	0	136	289	146	0	435	672
Total	147	177	0	324	31	447	0	478	1395	448	0	1843	2645
08:00 AM	16	35	0	51	3	134	0	137	233	18	0	251	439
08:15 AM	18	17	0	35	4	129	1	134	280	22	0	302	471
08:30 AM	12	27	0	39	6	99	0	105	270	48	0	318	462
08:45 AM	19	32	0	51	10	132	0	142	258	48	0	306	499
Total	65	111	0	176	23	494	1	518	1041	136	0	1177	1871
Grand Total	212	288	0	500	54	941	1	996	2436	584	0	3020	4516
Apprch %	42.4	57.6	0		5.4	94.5	0.1		80.7	19.3	0		
Total %	4.7	6.4	0	11.1	1.2	20.8	0	22.1	53.9	12.9	0	66.9	

	Jude's Ferry Rd. Southbound				US 60 Westbound				US 60 Eastbound				
Start Time	Right	Left	App. Total		Right	Thru	App. Total		Thru	Left	App. Total		Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:00 AM													
07:00 AM	21	35	56		4	98	102		387	34	421		579
07:15 AM	34	48	82		7	108	115		392	102	494		691
07:30 AM	40	45	85		13	112	125		327	166	493		703
07:45 AM	52	49	101		7	129	136		289	146	435		672
Total Volume	147	177	324		31	447	478		1395	448	1843		2645
% App. Total	45.4	54.6			6.5	93.5			75.7	24.3			
PHF	.707	.903	.802		.596	.866	.879		.890	.675	.933		.941

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Groups Printed- Truck

	Jude's Ferry Rd. Southbound				US 60 Westbound				US 60 Eastbound				
Start Time	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Int. Total
07:00 AM	3	2	0	5	0	11	0	11	7	0	0	7	23
07:15 AM	4	0	0	4	0	11	0	11	8	1	0	9	24
07:30 AM	1	0	0	1	3	9	1	13	13	17	0	30	44
07:45 AM	12	4	0	16	2	18	0	20	25	1	0	26	62
Total	20	6	0	26	5	49	1	55	53	19	0	72	153
08:00 AM	3	0	0	3	1	19	0	20	12	1	0	13	36
08:15 AM	1	1	0	2	0	12	0	12	16	3	0	19	33
08:30 AM	0	1	0	1	2	9	0	11	12	0	0	12	24
08:45 AM	5	1	0	6	1	16	0	17	15	3	0	18	41
Total	9	3	0	12	4	56	0	60	55	7	0	62	134
Grand Total	29	9	0	38	9	105	1	115	108	26	0	134	287
Apprch %	76.3	23.7	0		7.8	91.3	0.9		80.6	19.4	0		
Total %	10.1	3.1	0	13.2	3.1	36.6	0.3	40.1	37.6	9.1	0	46.7	

	Jude's Ferry Rd. Southbound			US 60 Westbound			US 60 Eastbound			
Start Time	Right	Left	App. Total	Right	Thru	App. Total	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:30 AM										
07:30 AM	1	0	1	3	9	12	13	17	30	43
07:45 AM	12	4	16	2	18	20	25	1	26	62
08:00 AM	3	0	3	1	19	20	12	1	13	36
08:15 AM	1	1	2	0	12	12	16	3	19	33
Total Volume	17	5	22	6	58	64	66	22	88	174
% App. Total	77.3	22.7		9.4	90.6		75	25		
PHF	.354	.313	.344	.500	.763	.800	.660	.324	.733	.702

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Groups Printed- Combined

	Jude's Ferry Rd. Southbound				US 60 Westbound				US 60 Eastbound				
Start Time	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Int. Total
07:00 AM	24	37	0	61	4	109	0	113	394	34	0	428	602
07:15 AM	38	48	0	86	7	119	0	126	400	103	0	503	715
07:30 AM	41	45	0	86	16	121	1	138	340	183	0	523	747
07:45 AM	64	53	0	117	9	147	0	156	314	147	0	461	734
Total	167	183	0	350	36	496	1	533	1448	467	0	1915	2798
08:00 AM	19	35	0	54	4	153	0	157	245	19	0	264	475
08:15 AM	19	18	0	37	4	141	1	146	296	25	0	321	504
08:30 AM	12	28	0	40	8	108	0	116	282	48	0	330	486
08:45 AM	24	33	0	57	11	148	0	159	273	51	0	324	540
Total	74	114	0	188	27	550	1	578	1096	143	0	1239	2005
Grand Total	241	297	0	538	63	1046	2	1111	2544	610	0	3154	4803
Apprch %	44.8	55.2	0		5.7	94.1	0.2		80.7	19.3	0		
Total %	5	6.2	0	11.2	1.3	21.8	0	23.1	53	12.7	0	65.7	

	Jude's Ferry Rd. Southbound			US 60 Westbound			US 60 Eastbound			
Start Time	Right	Left	App. Total	Right	Thru	App. Total	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	24	37	61	4	109	113	394	34	428	602
07:15 AM	38	48	86	7	119	126	400	103	503	715
07:30 AM	41	45	86	16	121	137	340	183	523	746
07:45 AM	64	53	117	9	147	156	314	147	461	734
Total Volume	167	183	350	36	496	532	1448	467	1915	2797
% App. Total	47.7	52.3		6.8	93.2		75.6	24.4		
PHF	.652	.863	.748	.563	.844	.853	.905	.638	.915	.937

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Groups Printed- Car

	Jude's Ferry Rd. Southbound				US 60 Westbound				US 60 Eastbound				
Start Time	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Int. Total
04:00 PM	38	24	0	62	34	343	0	377	203	21	0	224	663
04:15 PM	33	21	0	54	35	316	0	351	208	24	0	232	637
04:30 PM	38	22	0	60	44	346	0	390	219	24	0	243	693
04:45 PM	36	20	0	56	29	376	0	405	197	34	0	231	692
Total	145	87	0	232	142	1381	0	1523	827	103	0	930	2685
05:00 PM	41	24	0	65	34	433	0	467	256	34	1	291	823
05:15 PM	54	34	0	88	30	394	0	424	208	35	0	243	755
05:30 PM	60	32	0	92	45	446	0	491	182	38	0	220	803
05:45 PM	36	19	0	55	28	378	0	406	194	34	0	228	689
Total	191	109	0	300	137	1651	0	1788	840	141	1	982	3070
Grand Total	336	196	0	532	279	3032	0	3311	1667	244	1	1912	5755
Apprch %	63.2	36.8	0		8.4	91.6	0		87.2	12.8	0.1		
Total %	5.8	3.4	0	9.2	4.8	52.7	0	57.5	29	4.2	0	33.2	

	Jude's Ferry Rd. Southbound				US 60 Westbound				US 60 Eastbound				
Start Time	Right	Left	App. Total		Right	Thru	App. Total		Thru	Left	App. Total		Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:45 PM													
04:45 PM	36	20	56		29	376	405		197	34	231		692
05:00 PM	41	24	65		34	433	467		256	34	290		822
05:15 PM	54	34	88		30	394	424		208	35	243		755
05:30 PM	60	32	92		45	446	491		182	38	220		803
Total Volume	191	110	301		138	1649	1787		843	141	984		3072
% App. Total	63.5	36.5			7.7	92.3			85.7	14.3			
PHF	.796	.809	.818		.767	.924	.910		.823	.928	.848		.934

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Groups Printed- Truck

	Jude's Ferry Rd. Southbound				US 60 Westbound				US 60 Eastbound				
Start Time	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Int. Total
04:00 PM	9	3	0	12	2	15	0	17	13	2	0	15	44
04:15 PM	1	1	0	2	0	13	0	13	11	0	0	11	26
04:30 PM	0	2	0	2	2	13	0	15	6	4	0	10	27
04:45 PM	3	2	0	5	1	22	0	23	4	0	0	4	32
Total	13	8	0	21	5	63	0	68	34	6	0	40	129
05:00 PM	0	1	0	1	0	12	0	12	8	3	0	11	24
05:15 PM	0	0	0	0	0	12	0	12	9	1	0	10	22
05:30 PM	0	0	0	0	1	12	0	13	5	0	0	5	18
05:45 PM	1	1	0	2	0	8	0	8	6	0	0	6	16
Total	1	2	0	3	1	44	0	45	28	4	0	32	80
Grand Total	14	10	0	24	6	107	0	113	62	10	0	72	209
Apprch %	58.3	41.7	0		5.3	94.7	0		86.1	13.9	0		
Total %	6.7	4.8	0	11.5	2.9	51.2	0	54.1	29.7	4.8	0	34.4	

	Jude's Ferry Rd. Southbound			US 60 Westbound			US 60 Eastbound			
Start Time	Right	Left	App. Total	Right	Thru	App. Total	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	9	3	12	2	15	17	13	2	15	44
04:15 PM	1	1	2	0	13	13	11	0	11	26
04:30 PM	0	2	2	2	13	15	6	4	10	27
04:45 PM	3	2	5	1	22	23	4	0	4	32
Total Volume	13	8	21	5	63	68	34	6	40	129
% App. Total	61.9	38.1		7.4	92.6		85	15		
PHF	.361	.667	.438	.625	.716	.739	.654	.375	.667	.733

File Name : 4-Jude's Ferry and US 60 PM
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File Name : 4-Jude's Ferry and US 60 PM
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	Jude's Ferry Rd. Southbound				US 60 Westbound				US 60 Eastbound				
Start Time	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch % Total %	0	0	0		0	0	0		0	0	0		

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File Name : 4-Jude's Ferry and US 60 PM
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Groups Printed- Combined

	Jude's Ferry Rd. Southbound				US 60 Westbound				US 60 Eastbound				
Start Time	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Int. Total
04:00 PM	47	27	0	74	36	358	0	394	216	23	0	239	707
04:15 PM	34	22	0	56	35	329	0	364	219	24	0	243	663
04:30 PM	38	24	0	62	46	359	0	405	225	28	0	253	720
04:45 PM	39	22	0	61	30	398	0	428	201	34	0	235	724
Total	158	95	0	253	147	1444	0	1591	861	109	0	970	2814
05:00 PM	41	25	0	66	34	445	0	479	264	37	1	302	847
05:15 PM	54	34	0	88	30	406	0	436	217	36	0	253	777
05:30 PM	60	32	0	92	46	458	0	504	187	38	0	225	821
05:45 PM	37	20	0	57	28	386	0	414	200	34	0	234	705
Total	192	111	0	303	138	1695	0	1833	868	145	1	1014	3150
Grand Total	350	206	0	556	285	3139	0	3424	1729	254	1	1984	5964
Apprch %	62.9	37.1	0		8.3	91.7	0		87.1	12.8	0.1		
Total %	5.9	3.5	0	9.3	4.8	52.6	0	57.4	29	4.3	0	33.3	

	Jude's Ferry Rd. Southbound			US 60 Westbound			US 60 Eastbound			
Start Time	Right	Left	App. Total	Right	Thru	App. Total	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:45 PM										
04:45 PM	39	22	61	30	398	428	201	34	235	724
05:00 PM	41	25	66	34	445	479	264	37	301	846
05:15 PM	54	34	88	30	406	436	217	36	253	777
05:30 PM	60	32	92	46	458	504	187	38	225	821
Total Volume	194	113	307	140	1707	1847	869	145	1014	3168
% App. Total	63.2	36.8		7.6	92.4		85.7	14.3		
PHF	.808	.831	.834	.761	.932	.916	.823	.954	.842	.936

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Groups Printed- Car

	New Dorset Rd. Southbound					US 60 Westbound					New Dorset Rd. Northbound					US 60 Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	99	20	1	120	62	0	2	0	64	13	357	0	0	370	554
07:15 AM	0	0	0	0	0	0	119	17	0	136	59	0	3	0	62	8	444	0	0	452	650
07:30 AM	0	0	0	0	0	0	139	12	0	151	42	0	1	0	43	10	454	0	1	465	659
07:45 AM	0	0	0	0	0	0	166	21	0	187	43	0	2	0	45	7	379	0	2	388	620
Total	0	0	0	0	0	0	523	70	1	594	206	0	8	0	214	38	1634	0	3	1675	2483
08:00 AM	0	0	0	0	0	0	125	25	0	150	43	0	1	0	44	6	221	0	1	228	422
08:15 AM	0	0	0	0	0	0	126	18	1	145	43	0	6	0	49	10	262	0	1	273	467
08:30 AM	0	0	0	0	0	0	103	14	0	117	52	0	9	0	61	4	260	0	0	264	442
08:45 AM	0	0	0	0	0	0	138	15	0	153	55	0	5	0	60	2	249	0	0	251	464
Total	0	0	0	0	0	0	492	72	1	565	193	0	21	0	214	22	992	0	2	1016	1795
Grand Total	0	0	0	0	0	0	1015	142	2	1159	399	0	29	0	428	60	2626	0	5	2691	4278
Apprch %	0	0	0	0		0	87.6	12.3	0.2		93.2	0	6.8	0		2.2	97.6	0	0.2		
Total %	0	0	0	0		0	23.7	3.3	0	27.1	9.3	0	0.7	0	10	1.4	61.4	0	0.1	62.9	

	New Dorset Rd. Southbound				US 60 Westbound				New Dorset Rd. Northbound				US 60 Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	99	20	119	62	0	2	64	13	357	0	370	553
07:15 AM	0	0	0	0	0	119	17	136	59	0	3	62	8	444	0	452	650
07:30 AM	0	0	0	0	0	139	12	151	42	0	1	43	10	454	0	464	658
07:45 AM	0	0	0	0	0	166	21	187	43	0	2	45	7	379	0	386	618
Total Volume	0	0	0	0	0	523	70	593	206	0	8	214	38	1634	0	1672	2479
% App. Total	0	0	0		0	88.2	11.8		96.3	0	3.7		2.3	97.7	0		
PHF	.000	.000	.000	.000	.000	.788	.833	.793	.831	.000	.667	.836	.731	.900	.000	.901	.942

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Groups Printed- Truck

	New Dorset Rd. Southbound					US 60 Westbound					New Dorset Rd. Northbound					US 60 Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	13	0	0	13	1	1	0	0	2	0	6	0	0	6	21
07:15 AM	0	0	0	0	0	0	16	0	0	16	2	0	0	0	2	1	8	0	0	9	27
07:30 AM	0	0	0	0	0	0	10	0	0	10	2	0	0	0	2	0	29	0	0	29	41
07:45 AM	0	0	0	0	0	0	29	3	0	32	11	1	1	0	13	0	16	0	0	16	61
Total	0	0	0	0	0	0	68	3	0	71	16	2	1	0	19	1	59	0	0	60	150
08:00 AM	0	0	0	0	0	0	23	1	0	24	4	0	0	0	4	1	9	0	0	10	38
08:15 AM	0	0	0	0	0	0	7	4	0	11	1	0	0	0	1	0	19	0	0	19	31
08:30 AM	0	0	0	0	0	0	7	3	0	10	3	0	3	0	6	0	9	0	0	9	25
08:45 AM	0	0	0	0	0	0	21	0	0	21	8	0	0	0	8	0	10	0	0	10	39
Total	0	0	0	0	0	0	58	8	0	66	16	0	3	0	19	1	47	0	0	48	133
Grand Total	0	0	0	0	0	0	126	11	0	137	32	2	4	0	38	2	106	0	0	108	283
Apprch %	0	0	0	0		0	92	8	0		84.2	5.3	10.5	0		1.9	98.1	0	0		
Total %	0	0	0	0	0	0	44.5	3.9	0	48.4	11.3	0.7	1.4	0	13.4	0.7	37.5	0	0	38.2	

	New Dorset Rd. Southbound				US 60 Westbound				New Dorset Rd. Northbound				US 60 Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	0	0	0	0	10	0	10	2	0	0	2	0	29	0	29	41
07:45 AM	0	0	0	0	0	29	3	32	11	1	1	13	0	16	0	16	61
08:00 AM	0	0	0	0	0	23	1	24	4	0	0	4	1	9	0	10	38
08:15 AM	0	0	0	0	0	7	4	11	1	0	0	1	0	19	0	19	31
Total Volume	0	0	0	0	0	69	8	77	18	1	1	20	1	73	0	74	171
% App. Total	0	0	0		0	89.6	10.4		90	5	5		1.4	98.6	0		
PHF	.000	.000	.000	.000	.000	.595	.500	.602	.409	.250	.250	.385	.250	.629	.000	.638	.701

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File Name : 5-New Dorset and US 60 AM

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Groups Printed- Bicycles on Crosswalk

[illegible][illegible]

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	New Dorset Rd. Southbound					US 60 Westbound				New Dorset Rd. Northbound					US 60 Eastbound						
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch % Total %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		

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File Name : 5-New Dorset and US 60 AM
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Groups Printed- Combined

	New Dorset Rd. Southbound					US 60 Westbound					New Dorset Rd. Northbound					US 60 Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	112	20	1	133	63	1	2	0	66	13	363	0	0	376	575
07:15 AM	0	0	0	0	0	0	135	17	0	152	61	0	3	0	64	9	452	0	0	461	677
07:30 AM	0	0	0	0	0	0	149	12	0	161	44	0	1	0	45	10	483	0	1	494	700
07:45 AM	0	0	0	0	0	0	195	24	0	219	54	1	3	0	58	7	395	0	2	404	681
Total	0	0	0	0	0	0	591	73	1	665	222	2	9	0	233	39	1693	0	3	1735	2633
08:00 AM	0	0	0	0	0	0	148	26	0	174	47	0	1	0	48	7	230	0	1	238	460
08:15 AM	0	0	0	0	0	0	133	22	1	156	44	0	6	0	50	10	281	0	1	292	498
08:30 AM	0	0	0	0	0	0	110	17	0	127	55	0	12	0	67	4	269	0	0	273	467
08:45 AM	0	0	0	0	0	0	159	15	0	174	63	0	5	0	68	2	259	0	0	261	503
Total	0	0	0	0	0	0	550	80	1	631	209	0	24	0	233	23	1039	0	2	1064	1928
Grand Total	0	0	0	0	0	0	1141	153	2	1296	431	2	33	0	466	62	2732	0	5	2799	4561
Apprch %	0	0	0	0		0	88	11.8	0.2		92.5	0.4	7.1	0		2.2	97.6	0	0.2		
Total %	0	0	0	0		0	25	3.4	0	28.4	9.4	0	0.7	0	10.2	1.4	59.9	0	0.1	61.4	

	New Dorset Rd. Southbound				US 60 Westbound				New Dorset Rd. Northbound				US 60 Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	112	20	132	63	1	2	66	13	363	0	376	574
07:15 AM	0	0	0	0	0	135	17	152	61	0	3	64	9	452	0	461	677
07:30 AM	0	0	0	0	0	149	12	161	44	0	1	45	10	483	0	493	699
07:45 AM	0	0	0	0	0	195	24	219	54	1	3	58	7	395	0	402	679
Total Volume	0	0	0	0	0	591	73	664	222	2	9	233	39	1693	0	1732	2629
% App. Total	0	0	0		0	89	11		95.3	0.9	3.9		2.3	97.7	0		
PHF	.000	.000	.000	.000	.000	.758	.760	.758	.881	.500	.750	.883	.750	.876	.000	.878	.940

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Groups Printed- Car

	New Dorset Rd. Southbound					US 60 Westbound					New Dorset Rd. Northbound					US 60 Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	333	47	2	382	32	0	8	0	40	9	196	0	0	205	627
04:15 PM	0	0	0	0	0	0	304	65	0	369	34	0	11	0	45	2	186	0	0	188	602
04:30 PM	0	0	0	0	0	0	347	51	0	398	44	0	21	0	65	3	199	0	1	203	666
04:45 PM	0	0	0	0	0	0	369	48	0	417	47	0	10	0	57	1	192	0	1	194	668
Total	0	0	0	0	0	0	1353	211	2	1566	157	0	50	0	207	15	773	0	2	790	2563
05:00 PM	0	0	0	0	0	1	408	66	1	476	62	0	15	0	77	7	217	0	1	225	778
05:15 PM	0	0	0	0	0	0	378	74	0	452	34	0	15	0	49	9	213	0	0	222	723
05:30 PM	0	0	0	0	0	0	432	73	1	506	36	0	12	0	48	1	177	1	0	179	733
05:45 PM	0	0	0	0	0	0	379	38	2	419	31	0	13	0	44	2	195	0	0	197	660
Total	0	0	0	0	0	1	1597	251	4	1853	163	0	55	0	218	19	802	1	1	823	2894
Grand Total	0	0	0	0	0	1	2950	462	6	3419	320	0	105	0	425	34	1575	1	3	1613	5457
Apprch %	0	0	0	0		0	86.3	13.5	0.2		75.3	0	24.7	0		2.1	97.6	0.1	0.2		
Total %	0	0	0	0	0	0	54.1	8.5	0.1	62.7	5.9	0	1.9	0	7.8	0.6	28.9	0	0.1	29.6	

	New Dorset Rd. Southbound				US 60 Westbound				New Dorset Rd. Northbound				US 60 Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	0	0	0	0	369	48	417	47	0	10	57	1	192	0	193	667
05:00 PM	0	0	0	0	0	1	408	475	62	0	15	77	7	217	0	224	776
05:15 PM	0	0	0	0	0	0	378	74	34	0	15	49	9	213	0	222	723
05:30 PM	0	0	0	0	0	0	432	73	36	0	12	48	1	177	1	179	732
Total Volume	0	0	0	0	1	1587	261	1849	179	0	52	231	18	799	1	818	2898
% App. Total	0	0	0		0.1	85.8	14.1		77.5	0	22.5		2.2	97.7	0.1		
PHF	.000	.000	.000	.000	.250	.918	.882	.915	.722	.000	.867	.750	.500	.921	.250	.913	.934

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Groups Printed- Truck

	New Dorset Rd. Southbound					US 60 Westbound					New Dorset Rd. Northbound					US 60 Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	16	6	0	22	2	0	0	0	2	0	14	0	0	14	38
04:15 PM	0	0	0	0	0	0	13	3	0	16	1	0	0	0	1	1	9	0	0	10	27
04:30 PM	0	0	0	0	0	0	10	1	0	11	0	0	1	0	1	1	9	0	0	10	22
04:45 PM	0	0	0	0	0	0	18	8	0	26	1	0	0	0	1	0	3	0	0	3	30
Total	0	0	0	0	0	0	57	18	0	75	4	0	1	0	5	2	35	0	0	37	117
05:00 PM	0	0	0	0	0	0	10	2	0	12	2	0	0	0	2	0	8	0	0	8	22
05:15 PM	0	0	0	0	0	0	12	0	0	12	0	0	0	0	0	0	10	0	0	10	22
05:30 PM	0	0	0	0	0	0	11	1	0	12	0	0	0	0	0	0	5	0	0	5	17
05:45 PM	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	0	7	0	0	7	16
Total	0	0	0	0	0	0	42	3	0	45	2	0	0	0	2	0	30	0	0	30	77
Grand Total	0	0	0	0	0	0	99	21	0	120	6	0	1	0	7	2	65	0	0	67	194
Apprch %	0	0	0	0	0	0	82.5	17.5	0		85.7	0	14.3	0		3	97	0	0		
Total %	0	0	0	0	0	0	51	10.8	0	61.9	3.1	0	0.5	0	3.6	1	33.5	0	0	34.5	

	New Dorset Rd. Southbound				US 60 Westbound				New Dorset Rd. Northbound				US 60 Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	16	6	22	2	0	0	2	0	14	0	14	38
04:15 PM	0	0	0	0	0	13	3	16	1	0	0	1	1	9	0	10	27
04:30 PM	0	0	0	0	0	10	1	11	0	0	1	1	1	9	0	10	22
04:45 PM	0	0	0	0	0	18	8	26	1	0	0	1	0	3	0	3	30
Total Volume	0	0	0	0	0	57	18	75	4	0	1	5	2	35	0	37	117
% App. Total	0	0	0		0	76	24		80	0	20		5.4	94.6	0		
PHF	.000	.000	.000	.000	.000	.792	.563	.721	.500	.000	.250	.625	.500	.625	.000	.661	.770

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	New Dorset Rd. Southbound					US 60 Westbound				New Dorset Rd. Northbound				US 60 Eastbound							
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch % Total %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		

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	New Dorset Rd. Southbound					US 60 Westbound					New Dorset Rd. Northbound					US 60 Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	349	53	2	404	34	0	8	0	42	9	210	0	0	219	665
04:15 PM	0	0	0	0	0	0	317	68	0	385	35	0	11	0	46	3	195	0	0	198	629
04:30 PM	0	0	0	0	0	0	357	52	0	409	44	0	22	0	66	4	208	0	1	213	688
04:45 PM	0	0	0	0	0	0	387	56	0	443	48	0	10	0	58	1	195	0	1	197	698
Total	0	0	0	0	0	0	1410	229	2	1641	161	0	51	0	212	17	808	0	2	827	2680
05:00 PM	0	0	0	0	0	1	418	68	1	488	64	0	15	0	79	7	225	0	1	233	800
05:15 PM	0	0	0	0	0	0	390	74	0	464	34	0	15	0	49	9	223	0	0	232	745
05:30 PM	0	0	0	0	0	0	443	74	1	518	36	0	12	0	48	1	182	1	0	184	750
05:45 PM	0	0	0	0	0	0	388	38	2	428	31	0	13	0	44	2	202	0	0	204	676
Total	0	0	0	0	0	1	1639	254	4	1898	165	0	55	0	220	19	832	1	1	853	2971
Grand Total	0	0	0	0	0	1	3049	483	6	3539	326	0	106	0	432	36	1640	1	3	1680	5651
Apprch %	0	0	0	0		0	86.2	13.6	0.2		75.5	0	24.5	0		2.1	97.6	0.1	0.2		
Total %	0	0	0	0	0	0	54	8.5	0.1	62.6	5.8	0	1.9	0	7.6	0.6	29	0	0.1	29.7	

	New Dorset Rd. Southbound				US 60 Westbound				New Dorset Rd. Northbound				US 60 Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	0	0	0	0	387	56	443	48	0	10	58	1	195	0	196	697
05:00 PM	0	0	0	0	1	418	68	487	64	0	15	79	7	225	0	232	798
05:15 PM	0	0	0	0	0	390	74	464	34	0	15	49	9	223	0	232	745
05:30 PM	0	0	0	0	0	443	74	517	36	0	12	48	1	182	1	184	749
Total Volume	0	0	0	0	1	1638	272	1911	182	0	52	234	18	825	1	844	2989
% App. Total	0	0	0		0.1	85.7	14.2		77.8	0	22.2		2.1	97.7	0.1		
PHF	.000	.000	.000	.000	.250	.924	.919	.924	.711	.000	.867	.741	.500	.917	.250	.909	.936

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Groups Printed- Car

	Batterson Rd. W Southbound				US 60 Westbound				US 60 Eastbound				
Start Time	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Int. Total
07:00 AM	2	0	0	2	0	91	0	91	364	7	3	374	467
07:15 AM	5	1	0	6	0	116	0	116	432	1	0	433	555
07:30 AM	4	0	0	4	0	124	0	124	447	2	0	449	577
07:45 AM	13	0	0	13	0	176	0	176	367	1	0	368	557
Total	24	1	0	25	0	507	0	507	1610	11	3	1624	2156
08:00 AM	5	0	0	5	0	131	1	132	223	4	1	228	365
08:15 AM	2	0	0	2	1	121	0	122	269	0	0	269	393
08:30 AM	4	0	0	4	0	116	1	117	270	1	1	272	393
08:45 AM	4	0	0	4	1	133	0	134	251	5	2	258	396
Total	15	0	0	15	2	501	2	505	1013	10	4	1027	1547
Grand Total	39	1	0	40	2	1008	2	1012	2623	21	7	2651	3703
Apprch %	97.5	2.5	0		0.2	99.6	0.2		98.9	0.8	0.3		
Total %	1.1	0	0	1.1	0.1	27.2	0.1	27.3	70.8	0.6	0.2	71.6	

	Batterson Rd. W Southbound			US 60 Westbound			US 60 Eastbound			
Start Time	Right	Left	App. Total	Right	Thru	App. Total	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	2	0	2	0	91	91	364	7	371	464
07:15 AM	5	1	6	0	116	116	432	1	433	555
07:30 AM	4	0	4	0	124	124	447	2	449	577
07:45 AM	13	0	13	0	176	176	367	1	368	557
Total Volume	24	1	25	0	507	507	1610	11	1621	2153
% App. Total	96	4		0	100		99.3	0.7		
PHF	.462	.250	.481	.000	.720	.720	.900	.393	.903	.933

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Groups Printed- Truck

	Batterson Rd. W Southbound				US 60 Westbound				US 60 Eastbound				
Start Time	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Int. Total
07:00 AM	0	0	0	0	0	14	0	14	6	0	0	6	20
07:15 AM	0	0	0	0	1	17	0	18	8	0	0	8	26
07:30 AM	0	0	0	0	0	10	0	10	27	0	0	27	37
07:45 AM	0	0	0	0	0	27	0	27	19	0	0	19	46
Total	0	0	0	0	1	68	0	69	60	0	0	60	129
08:00 AM	0	0	0	0	0	29	0	29	11	0	0	11	40
08:15 AM	0	0	0	0	0	6	0	6	17	0	0	17	23
08:30 AM	0	0	0	0	0	14	0	14	10	0	0	10	24
08:45 AM	0	0	0	0	1	18	0	19	11	0	0	11	30
Total	0	0	0	0	1	67	0	68	49	0	0	49	117
Grand Total	0	0	0	0	2	135	0	137	109	0	0	109	246
Apprch %	0	0	0		1.5	98.5	0		100	0	0		
Total %	0	0	0	0	0.8	54.9	0	55.7	44.3	0	0	44.3	

	Batterson Rd. W Southbound			US 60 Westbound			US 60 Eastbound			
Start Time	Right	Left	App. Total	Right	Thru	App. Total	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:15 AM										
07:15 AM	0	0	0	1	17	18	8	0	8	26
07:30 AM	0	0	0	0	10	10	27	0	27	37
07:45 AM	0	0	0	0	27	27	19	0	19	46
08:00 AM	0	0	0	0	29	29	11	0	11	40
Total Volume	0	0	0	1	83	84	65	0	65	149
% App. Total	0	0		1.2	98.8		100	0		
PHF	.000	.000	.000	.250	.716	.724	.602	.000	.602	.810

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Groups Printed- Combined

	Batterson Rd. W Southbound				US 60 Westbound				US 60 Eastbound				
Start Time	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Int. Total
07:00 AM	2	0	0	2	0	105	0	105	370	7	3	380	487
07:15 AM	5	1	0	6	1	133	0	134	440	1	0	441	581
07:30 AM	4	0	0	4	0	134	0	134	474	2	0	476	614
07:45 AM	13	0	0	13	0	203	0	203	386	1	0	387	603
Total	24	1	0	25	1	575	0	576	1670	11	3	1684	2285
08:00 AM	5	0	0	5	0	160	1	161	234	4	1	239	405
08:15 AM	2	0	0	2	1	127	0	128	286	0	0	286	416
08:30 AM	4	0	0	4	0	130	1	131	280	1	1	282	417
08:45 AM	4	0	0	4	2	151	0	153	262	5	2	269	426
Total	15	0	0	15	3	568	2	573	1062	10	4	1076	1664
Grand Total	39	1	0	40	4	1143	2	1149	2732	21	7	2760	3949
Apprch %	97.5	2.5	0		0.3	99.5	0.2		99	0.8	0.3		
Total %	1	0	0	1	0.1	28.9	0.1	29.1	69.2	0.5	0.2	69.9	

	Batterson Rd. W Southbound			US 60 Westbound			US 60 Eastbound			
Start Time	Right	Left	App. Total	Right	Thru	App. Total	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	2	0	2	0	105	105	370	7	377	484
07:15 AM	5	1	6	1	133	134	440	1	441	581
07:30 AM	4	0	4	0	134	134	474	2	476	614
07:45 AM	13	0	13	0	203	203	386	1	387	603
Total Volume	24	1	25	1	575	576	1670	11	1681	2282
% App. Total	96	4		0.2	99.8		99.3	0.7		
PHF	.462	.250	.481	.250	.708	.709	.881	.393	.883	.929

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Groups Printed- Car

	Batterson Rd. W Southbound				US 60 Westbound				US 60 Eastbound				
Start Time	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Int. Total
04:00 PM	11	0	0	11	0	341	0	341	206	6	0	212	564
04:15 PM	10	1	0	11	1	295	0	296	184	4	1	189	496
04:30 PM	4	0	0	4	3	339	1	343	205	7	0	212	559
04:45 PM	11	1	0	12	4	382	1	387	190	6	1	197	596
Total	36	2	0	38	8	1357	2	1367	785	23	2	810	2215
05:00 PM	13	0	0	13	1	408	3	412	218	9	0	227	652
05:15 PM	16	0	0	16	1	407	2	410	223	3	1	227	653
05:30 PM	10	1	0	11	0	430	1	431	180	9	0	189	631
05:45 PM	7	0	0	7	1	396	1	398	203	7	0	210	615
Total	46	1	0	47	3	1641	7	1651	824	28	1	853	2551
Grand Total	82	3	0	85	11	2998	9	3018	1609	51	3	1663	4766
Apprch %	96.5	3.5	0		0.4	99.3	0.3		96.8	3.1	0.2		
Total %	1.7	0.1	0	1.8	0.2	62.9	0.2	63.3	33.8	1.1	0.1	34.9	

	Batterson Rd. W Southbound			US 60 Westbound			US 60 Eastbound			
Start Time	Right	Left	App. Total	Right	Thru	App. Total	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 05:00 PM										
05:00 PM	13	0	13	1	408	409	218	9	227	649
05:15 PM	16	0	16	1	407	408	223	3	226	650
05:30 PM	10	1	11	0	430	430	180	9	189	630
05:45 PM	7	0	7	1	396	397	203	7	210	614
Total Volume	46	1	47	3	1641	1644	824	28	852	2543
% App. Total	97.9	2.1		0.2	99.8		96.7	3.3		
PHF	.719	.250	.734	.750	.954	.956	.924	.778	.938	.978

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Groups Printed- Truck

	Batterson Rd. W Southbound				US 60 Westbound				US 60 Eastbound				
Start Time	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Int. Total
04:00 PM	0	1	0	1	0	16	0	16	13	0	0	13	30
04:15 PM	0	0	0	0	0	9	0	9	10	0	0	10	19
04:30 PM	0	0	0	0	0	13	0	13	13	0	0	13	26
04:45 PM	0	0	0	0	0	11	0	11	6	0	1	7	18
Total	0	1	0	1	0	49	0	49	42	0	1	43	93
05:00 PM	0	0	0	0	0	13	0	13	7	0	0	7	20
05:15 PM	0	0	0	0	0	11	0	11	9	0	0	9	20
05:30 PM	0	0	0	0	0	11	0	11	5	0	0	5	16
05:45 PM	0	0	0	0	0	8	0	8	6	0	0	6	14
Total	0	0	0	0	0	43	0	43	27	0	0	27	70
Grand Total	0	1	0	1	0	92	0	92	69	0	1	70	163
Apprch %	0	100	0		0	100	0		98.6	0	1.4		
Total %	0	0.6	0	0.6	0	56.4	0	56.4	42.3	0	0.6	42.9	

	Batterson Rd. W Southbound			US 60 Westbound			US 60 Eastbound			
Start Time	Right	Left	App. Total	Right	Thru	App. Total	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	1	1	0	16	16	13	0	13	30
04:15 PM	0	0	0	0	9	9	10	0	10	19
04:30 PM	0	0	0	0	13	13	13	0	13	26
04:45 PM	0	0	0	0	11	11	6	0	6	17
Total Volume	0	1	1	0	49	49	42	0	42	92
% App. Total	0	100		0	100		100	0		
PHF	.000	.250	.250	.000	.766	.766	.808	.000	.808	.767

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	Batterson Rd. W Southbound				US 60 Westbound				US 60 Eastbound				
Start Time	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Thru	Left	U-Turn	App. Total	Int. Total
04:00 PM	11	1	0	12	0	357	0	357	219	6	0	225	594
04:15 PM	10	1	0	11	1	304	0	305	194	4	1	199	515
04:30 PM	4	0	0	4	3	352	1	356	218	7	0	225	585
04:45 PM	11	1	0	12	4	393	1	398	196	6	2	204	614
Total	36	3	0	39	8	1406	2	1416	827	23	3	853	2308
05:00 PM	13	0	0	13	1	421	3	425	225	9	0	234	672
05:15 PM	16	0	0	16	1	418	2	421	232	3	1	236	673
05:30 PM	10	1	0	11	0	441	1	442	185	9	0	194	647
05:45 PM	7	0	0	7	1	404	1	406	209	7	0	216	629
Total	46	1	0	47	3	1684	7	1694	851	28	1	880	2621
Grand Total	82	4	0	86	11	3090	9	3110	1678	51	4	1733	4929
Apprch %	95.3	4.7	0		0.4	99.4	0.3		96.8	2.9	0.2		
Total %	1.7	0.1	0	1.7	0.2	62.7	0.2	63.1	34	1	0.1	35.2	

	Batterson Rd. W Southbound			US 60 Westbound			US 60 Eastbound			
Start Time	Right	Left	App. Total	Right	Thru	App. Total	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 05:00 PM										
05:00 PM	13	0	13	1	421	422	225	9	234	669
05:15 PM	16	0	16	1	418	419	232	3	235	670
05:30 PM	10	1	11	0	441	441	185	9	194	646
05:45 PM	7	0	7	1	404	405	209	7	216	628
Total Volume	46	1	47	3	1684	1687	851	28	879	2613
% App. Total	97.9	2.1		0.2	99.8		96.8	3.2		
PHF	.719	.250	.734	.750	.955	.956	.917	.778	.935	.975

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Groups Printed- Car

	Dorset Rd. Southbound					US 60 Westbound					Dorset Rd. Northbound					US 60 Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
07:00 AM	4	0	35	0	39	13	80	5	6	104	9	9	20	0	38	22	371	30	0	423	604
07:15 AM	1	6	35	0	42	5	99	0	2	106	14	16	41	0	71	13	383	18	0	414	633
07:30 AM	4	0	38	0	42	14	123	4	4	145	12	8	25	0	45	23	434	28	1	486	718
07:45 AM	9	5	24	0	38	20	136	6	0	162	18	10	31	0	59	18	298	19	0	335	594
Total	18	11	132	0	161	52	438	15	12	517	53	43	117	0	213	76	1486	95	1	1658	2549
08:00 AM	5	3	18	0	26	9	125	2	0	136	4	5	11	0	20	15	223	14	0	252	434
08:15 AM	1	5	25	0	31	13	96	6	5	120	7	2	17	0	26	16	225	25	0	266	443
08:30 AM	1	4	32	0	37	18	100	5	2	125	2	10	21	0	33	10	271	23	0	304	499
08:45 AM	5	3	26	0	34	15	123	3	2	143	9	9	28	0	46	8	224	15	0	247	470
Total	12	15	101	0	128	55	444	16	9	524	22	26	77	0	125	49	943	77	0	1069	1846
Grand Total	30	26	233	0	289	107	882	31	21	1041	75	69	194	0	338	125	2429	172	1	2727	4395
Apprch %	10.4	9	80.6	0		10.3	84.7	3	2		22.2	20.4	57.4	0		4.6	89.1	6.3	0		
Total %	0.7	0.6	5.3	0	6.6	2.4	20.1	0.7	0.5	23.7	1.7	1.6	4.4	0	7.7	2.8	55.3	3.9	0	62	

	Dorset Rd. Southbound				US 60 Westbound				Dorset Rd. Northbound				US 60 Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	4	0	35	39	13	80	5	98	9	9	20	38	22	371	30	423	598
07:15 AM	1	6	35	42	5	99	0	104	14	16	41	71	13	383	18	414	631
07:30 AM	4	0	38	42	14	123	4	141	12	8	25	45	23	434	28	485	713
07:45 AM	9	5	24	38	20	136	6	162	18	10	31	59	18	298	19	335	594
Total Volume	18	11	132	161	52	438	15	505	53	43	117	213	76	1486	95	1657	2536
% App. Total	11.2	6.8	82		10.3	86.7	3		24.9	20.2	54.9		4.6	89.7	5.7		
PHF	.500	.458	.868	.958	.650	.805	.625	.779	.736	.672	.713	.750	.826	.856	.792	.854	.889

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Groups Printed- Truck

	Dorset Rd. Southbound					US 60 Westbound					Dorset Rd. Northbound					US 60 Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	10	4	0	14	1	0	2	0	3	1	6	0	0	7	24
07:15 AM	1	0	0	0	1	2	11	2	0	15	2	1	1	0	4	0	6	0	0	6	26
07:30 AM	0	0	2	0	2	0	8	1	0	9	3	1	0	0	4	2	28	1	0	31	46
07:45 AM	0	0	0	0	0	4	19	4	1	28	1	2	1	0	4	2	16	1	0	19	51
Total	1	0	2	0	3	6	48	11	1	66	7	4	4	0	15	5	56	2	0	63	147
08:00 AM	1	0	0	0	1	1	20	5	0	26	1	0	1	0	2	1	13	0	0	14	43
08:15 AM	1	1	1	0	3	0	5	0	1	6	0	0	1	0	1	1	14	2	0	17	27
08:30 AM	1	0	0	0	1	1	12	1	0	14	1	0	2	0	3	0	9	3	0	12	30
08:45 AM	0	1	3	0	4	0	16	2	0	18	1	0	1	0	2	0	8	1	0	9	33
Total	3	2	4	0	9	2	53	8	1	64	3	0	5	0	8	2	44	6	0	52	133
Grand Total	4	2	6	0	12	8	101	19	2	130	10	4	9	0	23	7	100	8	0	115	280
Apprch %	33.3	16.7	50	0		6.2	77.7	14.6	1.5		43.5	17.4	39.1	0		6.1	87	7	0		
Total %	1.4	0.7	2.1	0	4.3	2.9	36.1	6.8	0.7	46.4	3.6	1.4	3.2	0	8.2	2.5	35.7	2.9	0	41.1	

	Dorset Rd. Southbound				US 60 Westbound				Dorset Rd. Northbound				US 60 Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	1	0	0	1	2	11	2	15	2	1	1	4	0	6	0	6	26
07:30 AM	0	0	2	2	0	8	1	9	3	1	0	4	2	28	1	31	46
07:45 AM	0	0	0	0	4	19	4	27	1	2	1	4	2	16	1	19	50
08:00 AM	1	0	0	1	1	20	5	26	1	0	1	2	1	13	0	14	43
Total Volume	2	0	2	4	7	58	12	77	7	4	3	14	5	63	2	70	165
% App. Total	50	0	50		9.1	75.3	15.6		50	28.6	21.4		7.1	90	2.9		
PHF	.500	.000	.250	.500	.438	.725	.600	.713	.583	.500	.750	.875	.625	.563	.500	.565	.825

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	Dorset Rd. Southbound					US 60 Westbound					Dorset Rd. Northbound					US 60 Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch % Total %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		

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Groups Printed- Combined

	Dorset Rd. Southbound					US 60 Westbound					Dorset Rd. Northbound					US 60 Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
07:00 AM	4	0	35	0	39	13	90	9	6	118	10	9	22	0	41	23	377	30	0	430	628
07:15 AM	2	6	35	0	43	7	110	2	2	121	16	17	42	0	75	13	389	18	0	420	659
07:30 AM	4	0	40	0	44	14	131	5	4	154	15	9	25	0	49	25	462	29	1	517	764
07:45 AM	9	5	24	0	38	24	155	10	1	190	19	12	32	0	63	20	314	20	0	354	645
Total	19	11	134	0	164	58	486	26	13	583	60	47	121	0	228	81	1542	97	1	1721	2696
08:00 AM	6	3	18	0	27	10	145	7	0	162	5	5	12	0	22	16	236	14	0	266	477
08:15 AM	2	6	26	0	34	13	101	6	6	126	7	2	18	0	27	17	239	27	0	283	470
08:30 AM	2	4	32	0	38	19	112	6	2	139	3	10	23	0	36	10	280	26	0	316	529
08:45 AM	5	4	29	0	38	15	139	5	2	161	10	9	29	0	48	8	232	16	0	256	503
Total	15	17	105	0	137	57	497	24	10	588	25	26	82	0	133	51	987	83	0	1121	1979
Grand Total	34	28	239	0	301	115	983	50	23	1171	85	73	203	0	361	132	2529	180	1	2842	4675
Apprch %	11.3	9.3	79.4	0		9.8	83.9	4.3	2		23.5	20.2	56.2	0		4.6	89	6.3	0		
Total %	0.7	0.6	5.1	0	6.4	2.5	21	1.1	0.5	25	1.8	1.6	4.3	0	7.7	2.8	54.1	3.9	0	60.8	

	Dorset Rd. Southbound				US 60 Westbound				Dorset Rd. Northbound				US 60 Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	4	0	35	39	13	90	9	112	10	9	22	41	23	377	30	430	622
07:15 AM	2	6	35	43	7	110	2	119	16	17	42	75	13	389	18	420	657
07:30 AM	4	0	40	44	14	131	5	150	15	9	25	49	25	462	29	516	759
07:45 AM	9	5	24	38	24	155	10	189	19	12	32	63	20	314	20	354	644
Total Volume	19	11	134	164	58	486	26	570	60	47	121	228	81	1542	97	1720	2682
% App. Total	11.6	6.7	81.7		10.2	85.3	4.6		26.3	20.6	53.1		4.7	89.7	5.6		
PHF	.528	.458	.838	.932	.604	.784	.650	.754	.789	.691	.720	.760	.810	.834	.808	.833	.883

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Groups Printed- Car

	Dorset Rd. Southbound					US 60 Westbound					Dorset Rd. Northbound					US 60 Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
04:00 PM	6	8	15	0	29	28	305	13	0	346	7	1	22	0	30	20	197	8	0	225	630
04:15 PM	9	15	12	0	36	33	261	10	1	305	6	2	28	0	36	25	188	13	0	226	603
04:30 PM	13	15	13	0	41	28	303	10	3	344	7	8	27	0	42	22	183	13	1	219	646
04:45 PM	8	16	17	0	41	34	317	13	1	365	9	6	32	0	47	26	167	16	0	209	662
Total	36	54	57	0	147	123	1186	46	5	1360	29	17	109	0	155	93	735	50	1	879	2541
05:00 PM	8	13	24	0	45	47	334	17	0	398	8	8	42	0	58	33	206	13	0	252	753
05:15 PM	16	22	26	0	64	38	345	15	0	398	3	13	25	0	41	27	195	19	2	243	746
05:30 PM	18	21	18	0	57	48	358	10	2	418	4	10	44	0	58	29	152	24	0	205	738
05:45 PM	19	13	28	0	60	47	341	9	0	397	10	7	24	0	41	21	166	16	0	203	701
Total	61	69	96	0	226	180	1378	51	2	1611	25	38	135	0	198	110	719	72	2	903	2938
Grand Total	97	123	153	0	373	303	2564	97	7	2971	54	55	244	0	353	203	1454	122	3	1782	5479
Apprch %	26	33	41	0		10.2	86.3	3.3	0.2		15.3	15.6	69.1	0		11.4	81.6	6.8	0.2		
Total %	1.8	2.2	2.8	0	6.8	5.5	46.8	1.8	0.1	54.2	1	1	4.5	0	6.4	3.7	26.5	2.2	0.1	32.5	

	Dorset Rd. Southbound				US 60 Westbound				Dorset Rd. Northbound				US 60 Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	8	13	24	45	47	334	17	398	8	8	42	58	33	206	13	252	753
05:15 PM	16	22	26	64	38	345	15	398	3	13	25	41	27	195	19	241	744
05:30 PM	18	21	18	57	48	358	10	416	4	10	44	58	29	152	24	205	736
05:45 PM	19	13	28	60	47	341	9	397	10	7	24	41	21	166	16	203	701
Total Volume	61	69	96	226	180	1378	51	1609	25	38	135	198	110	719	72	901	2934
% App. Total	27	30.5	42.5		11.2	85.6	3.2		12.6	19.2	68.2		12.2	79.8	8		
PHF	.803	.784	.857	.883	.938	.962	.750	.967	.625	.731	.767	.853	.833	.873	.750	.894	.974

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Groups Printed- Truck

	Dorset Rd. Southbound					US 60 Westbound					Dorset Rd. Northbound					US 60 Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	18	0	0	18	2	0	2	0	4	0	10	0	0	10	32
04:15 PM	2	1	0	0	3	1	10	0	0	11	2	0	0	0	2	0	11	1	0	12	28
04:30 PM	0	0	0	0	0	1	10	0	0	11	0	0	3	0	3	1	12	0	0	13	27
04:45 PM	1	0	1	0	2	1	12	0	0	13	1	0	2	0	3	0	1	0	0	1	19
Total	3	1	1	0	5	3	50	0	0	53	5	0	7	0	12	1	34	1	0	36	106
05:00 PM	0	1	0	0	1	0	11	0	0	11	1	0	1	0	2	1	6	0	0	7	21
05:15 PM	0	0	0	0	0	1	10	0	0	11	0	0	0	0	0	1	8	0	0	9	20
05:30 PM	0	0	0	0	0	0	9	0	0	9	1	0	1	0	2	0	4	0	0	4	15
05:45 PM	0	0	0	0	0	0	8	1	0	9	2	0	0	0	2	1	6	0	0	7	18
Total	0	1	0	0	1	1	38	1	0	40	4	0	2	0	6	3	24	0	0	27	74
Grand Total	3	2	1	0	6	4	88	1	0	93	9	0	9	0	18	4	58	1	0	63	180
Apprch %	50	33.3	16.7	0		4.3	94.6	1.1	0		50	0	50	0		6.3	92.1	1.6	0		
Total %	1.7	1.1	0.6	0	3.3	2.2	48.9	0.6	0	51.7	5	0	5	0	10	2.2	32.2	0.6	0	35	

	Dorset Rd. Southbound				US 60 Westbound				Dorset Rd. Northbound				US 60 Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	18	0	18	2	0	2	4	0	10	0	10	32
04:15 PM	2	1	0	3	1	10	0	11	2	0	0	2	0	11	1	12	28
04:30 PM	0	0	0	0	1	10	0	11	0	0	3	3	1	12	0	13	27
04:45 PM	1	0	1	2	1	12	0	13	1	0	2	3	0	1	0	1	19
Total Volume	3	1	1	5	3	50	0	53	5	0	7	12	1	34	1	36	106
% App. Total	60	20	20		5.7	94.3	0		41.7	0	58.3		2.8	94.4	2.8		
PHF	.375	.250	.250	.417	.750	.694	.000	.736	.625	.000	.583	.750	.250	.708	.250	.692	.828

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Groups Printed- Bicycles on Crosswalk																					
	Dorset Rd. Southbound					US 60 Westbound					Dorset Rd. Northbound					US 60 Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
Total %																					

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	Dorset Rd. Southbound					US 60 Westbound					Dorset Rd. Northbound					US 60 Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch % Total %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		

[illegible]

Peggy Malone & Associates, Inc.

(888) 247-8602

File Name : 7-Dorset Rd and US 60 PM
 Site Code :
 Start Date : 3/3/2016
 Page No : 1

Groups Printed- Combined

	Dorset Rd. Southbound					US 60 Westbound					Dorset Rd. Northbound					US 60 Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
04:00 PM	6	8	15	0	29	28	323	13	0	364	9	1	24	0	34	20	207	8	0	235	662
04:15 PM	11	16	12	0	39	34	271	10	1	316	8	2	28	0	38	25	199	14	0	238	631
04:30 PM	13	15	13	0	41	29	313	10	3	355	7	8	30	0	45	23	195	13	1	232	673
04:45 PM	9	16	18	0	43	35	329	13	1	378	10	6	34	0	50	26	168	16	0	210	681
Total	39	55	58	0	152	126	1236	46	5	1413	34	17	116	0	167	94	769	51	1	915	2647
05:00 PM	8	14	24	0	46	47	345	17	0	409	9	8	43	0	60	34	212	13	0	259	774
05:15 PM	16	22	26	0	64	39	355	15	0	409	3	13	25	0	41	28	203	19	2	252	766
05:30 PM	18	21	18	0	57	48	367	10	2	427	5	10	45	0	60	29	156	24	0	209	753
05:45 PM	19	13	28	0	60	47	349	10	0	406	12	7	24	0	43	22	172	16	0	210	719
Total	61	70	96	0	227	181	1416	52	2	1651	29	38	137	0	204	113	743	72	2	930	3012
Grand Total	100	125	154	0	379	307	2652	98	7	3064	63	55	253	0	371	207	1512	123	3	1845	5659
Apprch %	26.4	33	40.6	0		10	86.6	3.2	0.2		17	14.8	68.2	0		11.2	82	6.7	0.2		
Total %	1.8	2.2	2.7	0	6.7	5.4	46.9	1.7	0.1	54.1	1.1	1	4.5	0	6.6	3.7	26.7	2.2	0.1	32.6	

	Dorset Rd. Southbound				US 60 Westbound				Dorset Rd. Northbound				US 60 Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	8	14	24	46	47	345	17	409	9	8	43	60	34	212	13	259	774
05:15 PM	16	22	26	64	39	355	15	409	3	13	25	41	28	203	19	250	764
05:30 PM	18	21	18	57	48	367	10	425	5	10	45	60	29	156	24	209	751
05:45 PM	19	13	28	60	47	349	10	406	12	7	24	43	22	172	16	210	719
Total Volume	61	70	96	227	181	1416	52	1649	29	38	137	204	113	743	72	928	3008
% App. Total	26.9	30.8	42.3		11	85.9	3.2		14.2	18.6	67.2		12.2	80.1	7.8		
PHF	.803	.795	.857	.887	.943	.965	.765	.970	.604	.731	.761	.850	.831	.876	.750	.896	.972

Peggy Malone & Associates, Inc.

(888) 247-8602

File Name : 8-Jude's Ferry and Batterson Rd. AM
 Site Code :
 Start Date : 3/3/2016
 Page No : 1

Groups Printed- Car

	Jude's Ferry Rd. Southbound					Batterson Rd. Westbound					Jude's Ferry Rd. Northbound					Batterson Rd. Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
07:00 AM	1	51	4	0	56	1	1	0	0	2	10	21	0	0	31	1	2	5	0	8	97
07:15 AM	6	83	8	0	97	2	0	1	0	3	57	48	0	0	105	0	1	1	0	2	207
07:30 AM	3	81	10	0	94	2	2	3	0	7	119	50	0	0	169	0	2	1	0	3	273
07:45 AM	9	100	13	0	122	8	2	6	0	16	111	57	0	0	168	0	0	0	0	0	306
Total	19	315	35	0	369	13	5	10	0	28	297	176	0	0	473	1	5	7	0	13	883
08:00 AM	4	43	7	1	55	2	1	0	0	3	1	17	0	0	18	1	1	2	0	4	80
08:15 AM	3	35	5	0	43	1	0	2	0	3	7	19	0	0	26	0	0	1	0	1	73
08:30 AM	3	38	12	0	53	1	0	2	0	3	23	23	0	0	46	0	0	0	0	0	102
08:45 AM	2	32	19	0	53	9	5	19	0	33	26	29	2	0	57	0	2	0	0	2	145
Total	12	148	43	1	204	13	6	23	0	42	57	88	2	0	147	1	3	3	0	7	400
Grand Total	31	463	78	1	573	26	11	33	0	70	354	264	2	0	620	2	8	10	0	20	1283
Apprch %	5.4	80.8	13.6	0.2		37.1	15.7	47.1	0		57.1	42.6	0.3	0		10	40	50	0		
Total %	2.4	36.1	6.1	0.1	44.7	2	0.9	2.6	0	5.5	27.6	20.6	0.2	0	48.3	0.2	0.6	0.8	0	1.6	

	Jude's Ferry Rd. Southbound				Batterson Rd. Westbound				Jude's Ferry Rd. Northbound				Batterson Rd. Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	1	51	4	56	1	1	0	2	10	21	0	31	1	2	5	8	97
07:15 AM	6	83	8	97	2	0	1	3	57	48	0	105	0	1	1	2	207
07:30 AM	3	81	10	94	2	2	3	7	119	50	0	169	0	2	1	3	273
07:45 AM	9	100	13	122	8	2	6	16	111	57	0	168	0	0	0	0	306
Total Volume	19	315	35	369	13	5	10	28	297	176	0	473	1	5	7	13	883
% App. Total	5.1	85.4	9.5		46.4	17.9	35.7		62.8	37.2	0		7.7	38.5	53.8		
PHF	.528	.788	.673	.756	.406	.625	.417	.438	.624	.772	.000	.700	.250	.625	.350	.406	.721

Peggy Malone & Associates, Inc.
(888) 247-8602

File Name : 8-Jude's Ferry and Batterson Rd. AM
Site Code :
Start Date : 3/3/2016
Page No : 1

Groups Printed- Truck

	Jude's Ferry Rd. Southbound					Batterson Rd. Westbound					Jude's Ferry Rd. Northbound					Batterson Rd. Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
07:00 AM	0	5	1	0	6	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	7
07:15 AM	0	2	1	0	3	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	5
07:30 AM	0	1	0	0	1	0	0	0	0	0	0	19	0	0	19	0	0	0	0	0	20
07:45 AM	0	16	1	0	17	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	22
Total	0	24	3	0	27	0	0	2	0	2	0	25	0	0	25	0	0	0	0	0	54
08:00 AM	0	3	0	0	3	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	5
08:15 AM	0	2	0	0	2	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	6
08:30 AM	0	1	3	0	4	0	0	1	0	1	1	1	0	0	2	0	0	0	0	0	7
08:45 AM	0	1	4	0	5	6	0	5	0	11	3	1	0	0	4	0	1	0	0	1	21
Total	0	7	7	0	14	6	0	6	0	12	5	7	0	0	12	0	1	0	0	1	39
Grand Total	0	31	10	0	41	6	0	8	0	14	5	32	0	0	37	0	1	0	0	1	93
Apprch %	0	75.6	24.4	0		42.9	0	57.1	0		13.5	86.5	0	0		0	100	0	0		
Total %	0	33.3	10.8	0	44.1	6.5	0	8.6	0	15.1	5.4	34.4	0	0	39.8	0	1.1	0	0	1.1	

	Jude's Ferry Rd. Southbound				Batterson Rd. Westbound				Jude's Ferry Rd. Northbound				Batterson Rd. Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	5	1	6	0	0	1	1	0	0	0	0	0	0	0	0	7
07:15 AM	0	2	1	3	0	0	1	1	0	1	0	1	0	0	0	0	5
07:30 AM	0	1	0	1	0	0	0	0	0	19	0	19	0	0	0	0	20
07:45 AM	0	16	1	17	0	0	0	0	0	5	0	5	0	0	0	0	22
Total Volume	0	24	3	27	0	0	2	2	0	25	0	25	0	0	0	0	54
% App. Total	0	88.9	11.1		0	0	100		0	100	0		0	0	0		
PHF	.000	.375	.750	.397	.000	.000	.500	.500	.000	.329	.000	.329	.000	.000	.000	.000	.614

File Name : 8-Jude's Ferry and Batterson Rd. AM
Site Code :
Start Date : 3/3/2016
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File Name : 8-Jude's Ferry and Batterson Rd. AM
Site Code :
Start Date : 3/3/2016
Page No : 1

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Peggy Malone & Associates, Inc.

(888) 247-8602

File Name : 8-Jude's Ferry and Batterson Rd. AM
 Site Code :
 Start Date : 3/3/2016
 Page No : 1

Groups Printed- Combined

	Jude's Ferry Rd. Southbound					Batterson Rd. Westbound					Jude's Ferry Rd. Northbound					Batterson Rd. Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
07:00 AM	1	56	5	0	62	1	1	1	0	3	10	21	0	0	31	1	2	5	0	8	104
07:15 AM	6	85	9	0	100	2	0	2	0	4	57	49	0	0	106	0	1	1	0	2	212
07:30 AM	3	82	10	0	95	2	2	3	0	7	119	69	0	0	188	0	2	1	0	3	293
07:45 AM	9	116	14	0	139	8	2	6	0	16	111	62	0	0	173	0	0	0	0	0	328
Total	19	339	38	0	396	13	5	12	0	30	297	201	0	0	498	1	5	7	0	13	937
08:00 AM	4	46	7	1	58	2	1	0	0	3	2	18	0	0	20	1	1	2	0	4	85
08:15 AM	3	37	5	0	45	1	0	2	0	3	7	23	0	0	30	0	0	1	0	1	79
08:30 AM	3	39	15	0	57	1	0	3	0	4	24	24	0	0	48	0	0	0	0	0	109
08:45 AM	2	33	23	0	58	15	5	24	0	44	29	30	2	0	61	0	3	0	0	3	166
Total	12	155	50	1	218	19	6	29	0	54	62	95	2	0	159	1	4	3	0	8	439
Grand Total	31	494	88	1	614	32	11	41	0	84	359	296	2	0	657	2	9	10	0	21	1376
Apprch %	5	80.5	14.3	0.2		38.1	13.1	48.8	0		54.6	45.1	0.3	0		9.5	42.9	47.6	0		
Total %	2.3	35.9	6.4	0.1	44.6	2.3	0.8	3	0	6.1	26.1	21.5	0.1	0	47.7	0.1	0.7	0.7	0	1.5	

	Jude's Ferry Rd. Southbound				Batterson Rd. Westbound				Jude's Ferry Rd. Northbound				Batterson Rd. Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	1	56	5	62	1	1	1	3	10	21	0	31	1	2	5	8	104
07:15 AM	6	85	9	100	2	0	2	4	57	49	0	106	0	1	1	2	212
07:30 AM	3	82	10	95	2	2	3	7	119	69	0	188	0	2	1	3	293
07:45 AM	9	116	14	139	8	2	6	16	111	62	0	173	0	0	0	0	328
Total Volume	19	339	38	396	13	5	12	30	297	201	0	498	1	5	7	13	937
% App. Total	4.8	85.6	9.6		43.3	16.7	40		59.6	40.4	0		7.7	38.5	53.8		
PHF	.528	.731	.679	.712	.406	.625	.500	.469	.624	.728	.000	.662	.250	.625	.350	.406	.714

Peggy Malone & Associates, Inc.

(888) 247-8602

File Name : 8-Jude's Ferry and Batterson Rd. PM
 Site Code :
 Start Date : 3/3/2016
 Page No : 1

Groups Printed- Car

	Jude's Ferry Rd. Southbound					Batterson Rd. Westbound					Jude's Ferry Rd. Northbound					Batterson Rd. Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
04:00 PM	0	30	2	0	32	17	9	29	0	55	5	43	0	0	48	2	0	1	0	3	138
04:15 PM	1	29	0	0	30	8	1	24	0	33	9	37	0	0	46	0	0	1	0	1	110
04:30 PM	3	36	3	0	42	12	1	22	0	35	9	60	1	0	70	1	1	2	0	4	151
04:45 PM	5	46	4	0	55	8	4	9	0	21	10	48	0	0	58	2	2	2	0	6	140
Total	9	141	9	0	159	45	15	84	0	144	33	188	1	0	222	5	3	6	0	14	539
05:00 PM	3	48	4	0	55	15	5	22	0	42	8	55	0	0	63	0	0	5	0	5	165
05:15 PM	5	50	2	0	57	17	2	34	0	53	8	50	1	0	59	0	0	2	0	2	171
05:30 PM	1	47	0	0	48	8	7	41	0	56	12	71	0	0	83	0	0	5	0	5	192
05:45 PM	1	37	1	0	39	14	5	16	0	35	5	54	0	0	59	1	0	3	0	4	137
Total	10	182	7	0	199	54	19	113	0	186	33	230	1	0	264	1	0	15	0	16	665
Grand Total	19	323	16	0	358	99	34	197	0	330	66	418	2	0	486	6	3	21	0	30	1204
Apprch %	5.3	90.2	4.5	0		30	10.3	59.7	0		13.6	86	0.4	0		20	10	70	0		
Total %	1.6	26.8	1.3	0	29.7	8.2	2.8	16.4	0	27.4	5.5	34.7	0.2	0	40.4	0.5	0.2	1.7	0	2.5	

	Jude's Ferry Rd. Southbound				Batterson Rd. Westbound				Jude's Ferry Rd. Northbound				Batterson Rd. Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	5	46	4	55	8	4	9	21	10	48	0	58	2	2	2	6	140
05:00 PM	3	48	4	55	15	5	22	42	8	55	0	63	0	0	5	5	165
05:15 PM	5	50	2	57	17	2	34	53	8	50	1	59	0	0	2	2	171
05:30 PM	1	47	0	48	8	7	41	56	12	71	0	83	0	0	5	5	192
Total Volume	14	191	10	215	48	18	106	172	38	224	1	263	2	2	14	18	668
% App. Total	6.5	88.8	4.7		27.9	10.5	61.6		14.4	85.2	0.4		11.1	11.1	77.8		
PHF	.700	.955	.625	.943	.706	.643	.646	.768	.792	.789	.250	.792	.250	.250	.700	.750	.870

Peggy Malone & Associates, Inc.
(888) 247-8602

File Name : 8-Jude's Ferry and Batterson Rd. PM
Site Code :
Start Date : 3/3/2016
Page No : 1

Groups Printed- Truck

	Jude's Ferry Rd. Southbound					Batterson Rd. Westbound					Jude's Ferry Rd. Northbound					Batterson Rd. Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
04:00 PM	0	1	0	0	1	3	1	11	0	15	0	6	0	0	6	0	0	0	0	0	22
04:15 PM	0	1	0	0	1	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	3
04:30 PM	0	2	0	0	2	0	0	0	0	0	2	3	0	0	5	0	0	0	0	0	7
04:45 PM	0	5	1	0	6	0	0	1	0	1	0	2	0	0	2	0	0	0	0	0	9
Total	0	9	1	0	10	4	1	12	0	17	2	12	0	0	14	0	0	0	0	0	41
05:00 PM	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	4
05:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
05:45 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	2	0	0	2	0	0	0	0	0	1	4	0	0	5	0	0	0	0	0	7
Grand Total	0	11	1	0	12	4	1	12	0	17	3	16	0	0	19	0	0	0	0	0	48
Apprch %	0	91.7	8.3	0		23.5	5.9	70.6	0		15.8	84.2	0	0		0	0	0	0		
Total %	0	22.9	2.1	0	25	8.3	2.1	25	0	35.4	6.2	33.3	0	0	39.6	0	0	0	0	0	

	Jude's Ferry Rd. Southbound				Batterson Rd. Westbound				Jude's Ferry Rd. Northbound				Batterson Rd. Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	1	0	1	3	1	11	15	0	6	0	6	0	0	0	0	22
04:15 PM	0	1	0	1	1	0	0	1	0	1	0	1	0	0	0	0	3
04:30 PM	0	2	0	2	0	0	0	0	2	3	0	5	0	0	0	0	7
04:45 PM	0	5	1	6	0	0	1	1	0	2	0	2	0	0	0	0	9
Total Volume	0	9	1	10	4	1	12	17	2	12	0	14	0	0	0	0	41
% App. Total	0	90	10		23.5	5.9	70.6		14.3	85.7	0		0	0	0		
PHF	.000	.450	.250	.417	.333	.250	.273	.283	.250	.500	.000	.583	.000	.000	.000	.000	.466

File Name : 8-Jude's Ferry and Batterson Rd. PM
Site Code :
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	Jude's Ferry Rd. Southbound					Batterson Rd. Westbound				Jude's Ferry Rd. Northbound					Batterson Rd. Eastbound						
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch % Total %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		

[illegible]

File Name : 8-Jude's Ferry and Batterson Rd. PM
Site Code :
Start Date : 3/3/2016
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Peggy Malone & Associates, Inc.

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File Name : 8-Jude's Ferry and Batterson Rd. PM
 Site Code :
 Start Date : 3/3/2016
 Page No : 1

Groups Printed- Combined

	Jude's Ferry Rd. Southbound					Batterson Rd. Westbound					Jude's Ferry Rd. Northbound					Batterson Rd. Eastbound					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
04:00 PM	0	31	2	0	33	20	10	40	0	70	5	49	0	0	54	2	0	1	0	3	160
04:15 PM	1	30	0	0	31	9	1	24	0	34	9	38	0	0	47	0	0	1	0	1	113
04:30 PM	3	38	3	0	44	12	1	22	0	35	11	63	1	0	75	1	1	2	0	4	158
04:45 PM	5	51	5	0	61	8	4	10	0	22	10	50	0	0	60	2	2	2	0	6	149
Total	9	150	10	0	169	49	16	96	0	161	35	200	1	0	236	5	3	6	0	14	580
05:00 PM	3	49	4	0	56	15	5	22	0	42	8	58	0	0	66	0	0	5	0	5	169
05:15 PM	5	50	2	0	57	17	2	34	0	53	9	50	1	0	60	0	0	2	0	2	172
05:30 PM	1	47	0	0	48	8	7	41	0	56	12	72	0	0	84	0	0	5	0	5	193
05:45 PM	1	38	1	0	40	14	5	16	0	35	5	54	0	0	59	1	0	3	0	4	138
Total	10	184	7	0	201	54	19	113	0	186	34	234	1	0	269	1	0	15	0	16	672
Grand Total	19	334	17	0	370	103	35	209	0	347	69	434	2	0	505	6	3	21	0	30	1252
Apprch %	5.1	90.3	4.6	0		29.7	10.1	60.2	0		13.7	85.9	0.4	0		20	10	70	0		
Total %	1.5	26.7	1.4	0	29.6	8.2	2.8	16.7	0	27.7	5.5	34.7	0.2	0	40.3	0.5	0.2	1.7	0	2.4	

	Jude's Ferry Rd. Southbound				Batterson Rd. Westbound				Jude's Ferry Rd. Northbound				Batterson Rd. Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	5	51	5	61	8	4	10	22	10	50	0	60	2	2	2	6	149
05:00 PM	3	49	4	56	15	5	22	42	8	58	0	66	0	0	5	5	169
05:15 PM	5	50	2	57	17	2	34	53	9	50	1	60	0	0	2	2	172
05:30 PM	1	47	0	48	8	7	41	56	12	72	0	84	0	0	5	5	193
Total Volume	14	197	11	222	48	18	107	173	39	230	1	270	2	2	14	18	683
% App. Total	6.3	88.7	5		27.7	10.4	61.8		14.4	85.2	0.4		11.1	11.1	77.8		
PHF	.700	.966	.550	.910	.706	.643	.652	.772	.813	.799	.250	.804	.250	.250	.700	.750	.885

Appendix C

2016 Existing Conditions Analysis

Queues

1: Stavemill Road/Luck Stone Road & US Route 60

06/20/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	53	1773	13	88	650	47	77	410	40	40	13
v/c Ratio	0.25	0.95	0.01	0.56	0.22	0.05	0.41	1.09	0.33	0.32	0.05
Control Delay	63.1	41.7	0.0	66.0	14.5	0.1	57.7	93.5	59.0	58.8	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.1	41.7	0.0	66.0	14.5	0.1	57.7	93.5	59.0	58.8	0.3
Queue Length 50th (ft)	22	~720	0	66	95	0	57	~181	31	31	0
Queue Length 95th (ft)	m41	#975	m0	121	131	0	107	#382	68	68	0
Internal Link Dist (ft)		1256			1551		719			735	
Turn Bay Length (ft)	863		363	738		375					400
Base Capacity (vph)	357	1866	908	176	2914	973	186	377	179	181	310
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	0.15	0.95	0.01	0.50	0.22	0.05	0.41	1.09	0.22	0.22	0.04

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

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

HCM Signalized Intersection Capacity Analysis

1: Stavemill Road/Luck Stone Road & US Route 60

06/20/2017

																		
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR						
Lane Configurations	 	 			  						 							
Traffic Volume (vph)	49	1631	12	81	598	43	54	17	377	66	7	12						
Future Volume (vph)	49	1631	12	81	598	43	54	17	377	66	7	12						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900						
Total Lost time (s)	6.5	7.2	7.2	6.5	7.5	7.5		6.5	6.5	7.2	7.2	7.2						
Lane Util. Factor	0.97	0.95	1.00	1.00	0.91	1.00		1.00	1.00	0.95	0.95	1.00						
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85						
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.96	1.00	0.95	0.96	1.00						
Satd. Flow (prot)	3433	3539	1583	1770	5085	1583		1794	1583	1681	1702	1583						
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.96	1.00	0.95	0.96	1.00						
Satd. Flow (perm)	3433	3539	1583	1770	5085	1583		1794	1583	1681	1702	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)	53	1773	13	88	650	47	59	18	410	72	8	13						
RTOR Reduction (vph)	0	0	6	0	0	21	0	0	212	0	0	12						
Lane Group Flow (vph)	53	1773	7	88	650	26	0	77	198	40	40	1						
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm						
Protected Phases	5	2		1	6		3	3		4	4							
Permitted Phases			2			6			3			4						
Actuated Green, G (s)	6.2	61.9	61.9	10.6	66.0	66.0		12.5	12.5	7.6	7.6	7.6						
Effective Green, g (s)	6.2	61.9	61.9	10.6	66.0	66.0		12.5	12.5	7.6	7.6	7.6						
Actuated g/C Ratio	0.05	0.52	0.52	0.09	0.55	0.55		0.10	0.10	0.06	0.06	0.06						
Clearance Time (s)	6.5	7.2	7.2	6.5	7.5	7.5		6.5	6.5	7.2	7.2	7.2						
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0	6.0		3.0	3.0	3.5	3.5	3.5						
Lane Grp Cap (vph)	177	1825	816	156	2796	870		186	164	106	107	100						
v/s Ratio Prot	0.02	c0.50		c0.05	c0.13			0.04		c0.02	0.02							
v/s Ratio Perm			0.00			0.02			c0.12			0.00						
v/c Ratio	0.30	0.97	0.01	0.56	0.23	0.03		0.41	1.21	0.38	0.37	0.01						
Uniform Delay, d1	54.8	28.2	14.1	52.5	13.9	12.4		50.3	53.8	53.9	53.9	52.7						
Progression Factor	1.13	1.08	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00						
Incremental Delay, d2	0.8	14.1	0.0	4.6	0.2	0.1		1.5	136.2	2.7	2.6	0.0						
Delay (s)	63.0	44.7	14.1	57.1	14.1	12.4		51.8	189.9	56.6	56.5	52.7						
Level of Service	E	D	B	E	B	B		D	F	E	E	D						
Approach Delay (s)		45.0			18.8			168.1			56.0							
Approach LOS		D			B			F			E							
Intersection Summary																		
HCM 2000 Control Delay	57.6			HCM 2000 Level of Service			E											
HCM 2000 Volume to Capacity ratio	0.91																	
Actuated Cycle Length (s)	120.0			Sum of lost time (s)			27.7											
Intersection Capacity Utilization	90.8%			ICU Level of Service			E											
Analysis Period (min)	15																	
c Critical Lane Group																		

Queues

2: Private Driveway/South Creek One & US Route 60

06/20/2017



Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	36	1635	1	624	79	3	33	32	34
v/c Ratio	0.19	0.55	0.01	0.16	0.06	0.03	0.38	0.38	0.17
Control Delay	57.3	5.0	87.0	0.2	0.1	46.0	65.8	66.3	1.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.3	5.0	87.0	0.2	0.1	46.0	65.8	66.3	1.9
Queue Length 50th (ft)	15	55	1	1	0	1	26	25	0
Queue Length 95th (ft)	m24	470	m3	1	0	12	62	61	0
Internal Link Dist (ft)		916		2019		345		986	
Turn Bay Length (ft)	363		338		313		440		
Base Capacity (vph)	328	2963	140	3993	1262	124	105	102	216
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.55	0.01	0.16	0.06	0.02	0.31	0.31	0.16

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

2: Private Driveway/South Creek One & US Route 60

06/20/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	1585	1	1	605	77	1	1	1	62	1	33
Future Volume (vph)	35	1585	1	1	605	77	1	1	1	62	1	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		6.5	7.4	7.4		6.5		6.5	6.5	6.5
Lane Util. Factor	0.97	0.95		1.00	0.91	1.00		1.00		0.95	0.95	1.00
Frt	1.00	1.00		1.00	1.00	0.85		0.95		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.98		0.95	0.95	1.00
Satd. Flow (prot)	3433	3539		1770	5085	1583		1750		1681	1688	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.88		0.76	0.73	1.00
Satd. Flow (perm)	3433	3539		1770	5085	1583		1558		1338	1294	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	36	1634	1	1	624	79	1	1	1	64	1	34
RTOR Reduction (vph)	0	0	0	0	0	20	0	1	0	0	0	32
Lane Group Flow (vph)	36	1635	0	1	624	59	0	2	0	33	32	2
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	1	6		5	2			3			3	
Permitted Phases						2	3			3		3
Actuated Green, G (s)	4.1	92.7		1.2	88.9	88.9		6.6		6.6	6.6	6.6
Effective Green, g (s)	4.1	92.7		1.2	88.9	88.9		6.6		6.6	6.6	6.6
Actuated g/C Ratio	0.03	0.77		0.01	0.74	0.74		0.05		0.05	0.05	0.05
Clearance Time (s)	6.5	6.5		6.5	7.4	7.4		6.5		6.5	6.5	6.5
Vehicle Extension (s)	2.5	6.0		2.5	6.0	6.0		2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	117	2733		17	3767	1172		85		73	71	87
v/s Ratio Prot	c0.01	c0.46		0.00	0.12							
v/s Ratio Perm						0.04		0.00		0.02	c0.02	0.00
v/c Ratio	0.31	0.60		0.06	0.17	0.05		0.02		0.45	0.45	0.02
Uniform Delay, d1	56.6	5.8		58.8	4.6	4.2		53.7		54.9	54.9	53.6
Progression Factor	1.02	0.95		1.61	0.02	0.00		1.00		1.00	1.00	1.00
Incremental Delay, d2	0.9	0.8		1.0	0.1	0.1		0.1		3.2	3.3	0.1
Delay (s)	58.8	6.3		95.5	0.2	0.1		53.7		58.2	58.2	53.7
Level of Service	E	A		F	A	A		D		E	E	D
Approach Delay (s)		7.4			0.3			53.7			56.7	
Approach LOS		A			A			D			E	

Intersection Summary

HCM 2000 Control Delay	7.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.4
Intersection Capacity Utilization	59.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis

3: Urbine Road/Batterson Road & US Route 60

06/20/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	1628	7	7	528	92	6	9	2	37	1	12
Future Volume (Veh/h)	21	1628	7	7	528	92	6	9	2	37	1	12
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	22	1696	7	7	550	96	6	9	2	39	1	13
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		Raised			Raised							
Median storage (veh)		2			2							
Upstream signal (ft)					996							
pX, platoon unblocked	0.97						0.97	0.97		0.97	0.97	0.97
vC, conflicting volume	646			1703			2042	2400	848	1462	2311	275
vC1, stage 1 conf vol							1740	1740		564	564	
vC2, stage 2 conf vol							302	660		898	1747	
vCu, unblocked vol	568			1703			2011	2380	848	1412	2288	185
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			98			93	93	99	84	99	98
cM capacity (veh/h)	968			370			86	128	305	239	123	799
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1		
Volume Total	22	848	848	7	7	275	275	96	17	53		
Volume Left	22	0	0	0	7	0	0	0	6	39		
Volume Right	0	0	0	7	0	0	0	96	2	13		
cSH	968	1700	1700	1700	370	1700	1700	1700	116	283		
Volume to Capacity	0.02	0.50	0.50	0.00	0.02	0.16	0.16	0.06	0.15	0.19		
Queue Length 95th (ft)	2	0	0	0	1	0	0	0	12	17		
Control Delay (s)	8.8	0.0	0.0	0.0	14.9	0.0	0.0	0.0	41.3	20.6		
Lane LOS	A				B				E	C		
Approach Delay (s)	0.1				0.2				41.3	20.6		
Approach LOS									E	C		
Intersection Summary												
Average Delay			0.9									
Intersection Capacity Utilization			57.1%		ICU Level of Service				B			
Analysis Period (min)			15									

Queues

4: US Route 60 & Jude's Ferry Road

06/20/2017



Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	497	1540	1	528	38	195	178
v/c Ratio	0.81	0.58	0.01	0.41	0.06	0.88	0.50
Control Delay	44.7	14.0	53.0	21.4	2.6	88.6	12.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.7	14.0	53.0	21.4	2.6	88.6	12.2
Queue Length 50th (ft)	379	354	0	67	0	150	0
Queue Length 95th (ft)	m396	m424	m4	249	5	#282	65
Internal Link Dist (ft)		640		3098		846	
Turn Bay Length (ft)	475		325		238	300	
Base Capacity (vph)	936	2639	110	1299	605	228	359
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.58	0.01	0.41	0.06	0.86	0.50

Intersection Summary

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

Queue shown is maximum after two cycles.

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

HCM Signalized Intersection Capacity Analysis

4: US Route 60 & Jude's Ferry Road

06/20/2017



Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	467	1448	1	496	36	183	167
Future Volume (vph)	467	1448	1	496	36	183	167
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5	6.2	6.2	6.5	6.5
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	1770	3539	1583	1770	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	3539	1770	3539	1583	1770	1583
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	497	1540	1	528	38	195	178
RTOR Reduction (vph)	0	0	0	0	24	0	156
Lane Group Flow (vph)	497	1540	1	528	14	195	22
Turn Type	Prot	NA	Prot	NA	Perm	Prot	Perm
Protected Phases	1	6	5	2		3	
Permitted Phases					2		3
Actuated Green, G (s)	41.7	84.3	1.2	44.1	44.1	15.0	15.0
Effective Green, g (s)	41.7	84.3	1.2	44.1	44.1	15.0	15.0
Actuated g/C Ratio	0.35	0.70	0.01	0.37	0.37	0.12	0.12
Clearance Time (s)	6.5	6.5	6.5	6.2	6.2	6.5	6.5
Vehicle Extension (s)	2.5	6.0	2.5	6.0	6.0	2.5	2.5
Lane Grp Cap (vph)	615	2486	17	1300	581	221	197
v/s Ratio Prot	c0.28	c0.44	0.00	0.15		c0.11	
v/s Ratio Perm					0.01		0.01
v/c Ratio	0.81	0.62	0.06	0.41	0.02	0.88	0.11
Uniform Delay, d1	35.5	9.4	58.8	28.2	24.2	51.6	46.6
Progression Factor	1.12	1.75	0.97	0.67	0.24	1.00	1.00
Incremental Delay, d2	4.0	0.6	1.1	0.9	0.1	31.0	0.2
Delay (s)	43.9	17.1	57.9	19.8	6.0	82.6	46.8
Level of Service	D	B	E	B	A	F	D
Approach Delay (s)		23.6		19.0		65.5	
Approach LOS		C		B		E	

Intersection Summary

HCM 2000 Control Delay	28.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	71.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis

5: New Dorset Road/Private Driveway & US Route 60

06/20/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	1693	39	74	591	1	9	2	222	1	1	1
Future Volume (Veh/h)	3	1693	39	74	591	1	9	2	222	1	1	1
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	3	1801	41	79	629	1	10	2	236	1	1	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	Raised			Raised								
Median storage (veh)	2			2								
Upstream signal (ft)				720								
pX, platoon unblocked	0.90							0.90	0.90			
vC, conflicting volume	630				1842				2281	2595	900	1930
vC1, stage 1 conf vol							1807	1807				787
vC2, stage 2 conf vol							474	788				1144
vCu, unblocked vol	366				1842				2201	2550	900	1812
tC, single (s)	4.1				4.1				7.5	6.5	6.9	7.5
tC, 2 stage (s)							6.5	5.5				6.5
tF (s)	2.2				2.2				3.5	4.0	3.3	3.5
p0 queue free %	100				76				87	98	16	82
cM capacity (veh/h)	1070				326				79	117	281	6
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1		
Volume Total	3	900	900	41	79	314	314	1	248	3		
Volume Left	3	0	0	0	79	0	0	0	10	1		
Volume Right	0	0	0	41	0	0	0	1	236	1		
cSH	1070	1700	1700	1700	326	1700	1700	1700	252	15		
Volume to Capacity	0.00	0.53	0.53	0.02	0.24	0.18	0.18	0.00	0.98	0.20		
Queue Length 95th (ft)	0	0	0	0	23	0	0	0	234	14		
Control Delay (s)	8.4	0.0	0.0	0.0	19.5	0.0	0.0	0.0	95.0	297.0		
Lane LOS	A				C				F	F		
Approach Delay (s)	0.0				2.2				95.0	297.0		
Approach LOS										F	F	
Intersection Summary												
Average Delay				9.3								
Intersection Capacity Utilization				75.5%	ICU Level of Service						D	
Analysis Period (min)				15								

HCM Unsignalized Intersection Capacity Analysis

6: US Route 60 & Batterson Road

06/20/2017

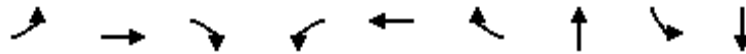


Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR	
Lane Configurations								
Traffic Volume (veh/h)	14	1670	1	575	1	1	24	
Future Volume (Veh/h)	14	1670	1	575	1	1	24	
Sign Control	Free		Free		Stop			
Grade	0%		0%		0%			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	
Hourly flow rate (vph)	15	1796	0	618	1	1	26	
Pedestrians								
Lane Width (ft)								
Walking Speed (ft/s)								
Percent Blockage								
Right turn flare (veh)								
Median type	Raised		Raised					
Median storage veh)	2		2					
Upstream signal (ft)	899							
pX, platoon unblocked			0.00		0.52			
vC, conflicting volume	619			0	1546 309			
vC1, stage 1 conf vol						618		
vC2, stage 2 conf vol						928		
vCu, unblocked vol	619			0	224 309			
tC, single (s)	4.1			0.0	6.8 6.9			
tC, 2 stage (s)						5.8		
tF (s)	2.2			0.0	3.5 3.3			
p0 queue free %	98			0	100 96			
cM capacity (veh/h)	957			0	458 687			
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	WB 4	SB 1
Volume Total	15	898	898	309	309	1	0	27
Volume Left	15	0	0	0	0	0	0	1
Volume Right	0	0	0	0	0	1	0	26
cSH	957	1700	1700	1700	1700	1700	1700	674
Volume to Capacity	0.02	0.53	0.53	0.18	0.18	0.00	0.00	0.04
Queue Length 95th (ft)	1	0	0	0	0	0	0	3
Control Delay (s)	8.8	0.0	0.0	0.0	0.0	0.0	0.0	10.6
Lane LOS	A							B
Approach Delay (s)	0.1				0.0		10.6	
Approach LOS								B
Intersection Summary								
Average Delay			0.2					
Intersection Capacity Utilization			56.2%		ICU Level of Service		B	
Analysis Period (min)			15					

Queues

7: Dorset Road & US Route 60

06/20/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	111	1752	92	44	552	66	259	152	35
v/c Ratio	0.59	0.99	0.11	0.35	0.35	0.08	1.17	0.78	0.17
Control Delay	63.3	50.4	0.6	88.4	12.7	1.1	156.9	77.8	27.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.3	50.4	0.6	88.4	12.7	1.1	156.9	77.8	27.4
Queue Length 50th (ft)	83	~780	0	34	184	8	~231	115	9
Queue Length 95th (ft)	135	#923	3	m74	102	0	#390	#200	39
Internal Link Dist (ft)		1395			819		1109		463
Turn Bay Length (ft)	300		550	350		563			
Base Capacity (vph)	258	1769	866	169	1567	784	222	213	223
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.99	0.11	0.26	0.35	0.08	1.17	0.71	0.16

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

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

HCM Signalized Intersection Capacity Analysis

7: Dorset Road & US Route 60

06/20/2017

																		
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR						
Lane Configurations																		
Traffic Volume (vph)	98	1542	81	39	486	58	121	47	60	134	11	19						
Future Volume (vph)	98	1542	81	39	486	58	121	47	60	134	11	19						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900						
Total Lost time (s)	6.5	6.7	6.7	6.5	6.8	6.8		6.5		6.5	6.5							
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00		1.00	1.00							
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.96		1.00	0.91							
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.97		0.95	1.00							
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583		1750		1770	1687							
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.97		0.95	1.00							
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583		1750		1770	1687							
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88						
Adj. Flow (vph)	111	1752	92	44	552	66	138	53	68	152	12	22						
RTOR Reduction (vph)	0	0	47	0	0	37	0	11	0	0	20	0						
Lane Group Flow (vph)	111	1752	45	44	552	29	0	248	0	152	15	0						
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA		Split	NA							
Protected Phases	1	6		5	2		3	3		4	4							
Permitted Phases			6			2												
Actuated Green, G (s)	12.8	58.7	58.7	7.3	53.1	53.1		14.5		13.3	13.3							
Effective Green, g (s)	12.8	58.7	58.7	7.3	53.1	53.1		14.5		13.3	13.3							
Actuated g/C Ratio	0.11	0.49	0.49	0.06	0.44	0.44		0.12		0.11	0.11							
Clearance Time (s)	6.5	6.7	6.7	6.5	6.8	6.8		6.5		6.5	6.5							
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0	5.0		4.0		2.5	2.5							
Lane Grp Cap (vph)	188	1731	774	107	1566	700		211		196	186							
v/s Ratio Prot	c0.06	c0.50		0.02	0.16			c0.14		c0.09	0.01							
v/s Ratio Perm			0.03			0.02												
v/c Ratio	0.59	1.01	0.06	0.41	0.35	0.04		1.18		0.78	0.08							
Uniform Delay, d1	51.1	30.6	16.1	54.3	22.1	19.0		52.8		51.9	47.9							
Progression Factor	1.00	1.00	1.00	1.54	0.52	1.00		1.00		1.00	1.00							
Incremental Delay, d2	4.9	24.7	0.1	2.4	0.6	0.1		118.1		16.7	0.1							
Delay (s)	56.0	55.3	16.3	86.2	12.2	19.1		170.9		68.6	48.0							
Level of Service	E	E	B	F	B	B		F		E	D							
Approach Delay (s)		53.5			17.8			170.9			64.7							
Approach LOS		D			B			F			E							
Intersection Summary																		
HCM 2000 Control Delay	56.4			HCM 2000 Level of Service			E											
HCM 2000 Volume to Capacity ratio	1.00																	
Actuated Cycle Length (s)	120.0			Sum of lost time (s)			26.3											
Intersection Capacity Utilization	82.7%			ICU Level of Service			E											
Analysis Period (min)	15																	
c Critical Lane Group																		

HCM Unsignalized Intersection Capacity Analysis 8: Jude's Ferry Road & Batterson Road

06/20/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	5	1	12	5	13	1	201	297	38	339	19
Future Volume (Veh/h)	7	5	1	12	5	13	1	201	297	38	339	19
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Hourly flow rate (vph)	10	7	1	17	7	18	1	283	418	54	477	27
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								926				
pX, platoon unblocked												
vC, conflicting volume	1100	1288	477	1084	1106	492	504			701		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1100	1288	477	1084	1106	492	504			701		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	94	95	100	90	96	97	100			94		
cM capacity (veh/h)	170	154	588	179	198	577	1061			896		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2							
Volume Total	18	42	702	531	27							
Volume Left	10	17	1	54	0							
Volume Right	1	18	418	0	27							
cSH	170	260	1061	896	1700							
Volume to Capacity	0.11	0.16	0.00	0.06	0.02							
Queue Length 95th (ft)	9	14	0	5	0							
Control Delay (s)	28.7	21.5	0.0	1.6	0.0							
Lane LOS	D	C	A	A								
Approach Delay (s)	28.7	21.5	0.0	1.6								
Approach LOS	D	C										
Intersection Summary												
Average Delay			1.7									
Intersection Capacity Utilization			57.9%			ICU Level of Service			B			
Analysis Period (min)			15									

Intersection: 1: Stavemill Road/Luck Stone Road & US Route 60

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	L	T	T	R	L	T	T	T	R	LT	R
Maximum Queue (ft)	42	71	445	464	95	131	171	167	104	47	373	640
Average Queue (ft)	9	31	292	298	5	63	89	75	11	13	137	384
95th Queue (ft)	30	63	422	443	44	117	151	140	55	36	389	708
Link Distance (ft)			1264	1264			1578	1578	1578			725
Upstream Blk Time (%)												7
Queuing Penalty (veh)												0
Storage Bay Dist (ft)	863	863			363	738				375	400	
Storage Blk Time (%)				3	0						0	23
Queuing Penalty (veh)				0	0						1	17

Intersection: 1: Stavemill Road/Luck Stone Road & US Route 60

Movement	SB	SB	SB
Directions Served	L	LT	R
Maximum Queue (ft)	101	51	19
Average Queue (ft)	46	10	6
95th Queue (ft)	89	35	19
Link Distance (ft)	723	723	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			400
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: Private Driveway/South Creek One & US Route 60

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	SB	SB
Directions Served	L	L	T	TR	L	T	T	T	R	LTR	L	LT
Maximum Queue (ft)	23	46	149	148	7	54	59	33	25	22	43	102
Average Queue (ft)	2	12	55	45	0	8	10	3	3	2	9	44
95th Queue (ft)	12	34	124	105	4	31	39	19	15	10	32	86
Link Distance (ft)			909	909		2020	2020	2020		348		977
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	363	363			338				313		440	
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 2: Private Driveway/South Creek One & US Route 60

Movement	SB
Directions Served	R
Maximum Queue (ft)	54
Average Queue (ft)	17
95th Queue (ft)	39
Link Distance (ft)	977
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 3: Urbine Road/Batterson Road & US Route 60

Movement	EB	EB	EB	WB	NB	SB
Directions Served	L	T	R	L	LTR	LTR
Maximum Queue (ft)	26	3	0	40	68	105
Average Queue (ft)	5	0	0	6	20	37
95th Queue (ft)	18	2	0	26	53	80
Link Distance (ft)		3120			419	431
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	188		100	188		
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 4: US Route 60 & Jude's Ferry Road

Movement	EB	EB	EB	WB	WB	WB	SB	SB
Directions Served	L	T	T	T	T	R	L	R
Maximum Queue (ft)	430	369	266	159	171	66	264	166
Average Queue (ft)	257	125	117	83	84	14	157	50
95th Queue (ft)	389	255	217	141	145	43	256	124
Link Distance (ft)		652	652	3120	3120			811
Upstream Blk Time (%)		0						
Queuing Penalty (veh)		0						
Storage Bay Dist (ft)	475					238	300	
Storage Blk Time (%)	0	0					1	0
Queuing Penalty (veh)	2	1					1	0

Intersection: 5: New Dorset Road/Private Driveway & US Route 60

Movement	EB	EB	EB	EB	WB	WB	NB	SB
Directions Served	L	T	T	R	L	T	LTR	LTR
Maximum Queue (ft)	17	3	3	5	186	5	946	30
Average Queue (ft)	1	0	0	0	75	0	603	3
95th Queue (ft)	8	3	3	3	148	5	1200	18
Link Distance (ft)		3652	3652			652	1060	515
Upstream Blk Time (%)							23	
Queuing Penalty (veh)							0	
Storage Bay Dist (ft)	288			800	288			
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 6: US Route 60 & Batterson Road

Movement	EB	WB	SB
Directions Served	L	U	LR
Maximum Queue (ft)	30	14	33
Average Queue (ft)	5	1	12
95th Queue (ft)	22	8	29
Link Distance (ft)			575
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	163	163	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 7: Dorset Road & US Route 60

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	SB	SB
Directions Served	L	T	T	R	L	T	T	R	LTR	L	TR
Maximum Queue (ft)	295	608	583	134	58	75	78	6	627	202	100
Average Queue (ft)	95	309	283	10	13	12	18	0	385	109	35
95th Queue (ft)	232	526	498	86	41	46	54	4	738	189	96
Link Distance (ft)		1437	1437			799	799		1090	462	
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	300			550	350			563			100
Storage Blk Time (%)	0	10	1	0						14	0
Queuing Penalty (veh)	0	10	1	0						4	0

Intersection: 8: Jude's Ferry Road & Batterson Road

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	LTR	LT	R
Maximum Queue (ft)	38	49	20	281	78
Average Queue (ft)	10	19	1	48	3
95th Queue (ft)	32	44	9	173	41
Link Distance (ft)	965	944	811	587	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					200
Storage Blk Time (%)				1	0
Queuing Penalty (veh)				0	0

Network Summary

Network wide Queuing Penalty: 38

Queues

1: Stavemill Road/Luck Stone Road & US Route 60

06/20/2017

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	110	886	47	390	1762	193	93	107	53	56	47
v/c Ratio	0.41	0.67	0.06	0.92	0.65	0.21	0.58	0.30	0.40	0.40	0.14
Control Delay	73.2	24.1	0.2	72.7	22.1	3.0	64.4	2.2	58.2	58.1	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	73.2	24.1	0.2	72.7	22.1	3.0	64.4	2.2	58.2	58.1	0.9
Queue Length 50th (ft)	42	318	0	~321	352	0	66	0	38	42	0
Queue Length 95th (ft)	76	390	1	#534	440	39	121	0	82	86	0
Internal Link Dist (ft)	1256			1551			719			735	
Turn Bay Length (ft)	863			363	738			375			400
Base Capacity (vph)	346	1328	736	424	2712	934	182	371	159	165	358
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	0.32	0.67	0.06	0.92	0.65	0.21	0.51	0.29	0.33	0.34	0.13

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

1: Stavemill Road/Luck Stone Road & US Route 60

06/20/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	103	833	44	367	1656	181	46	41	101	60	42	44
Future Volume (vph)	103	833	44	367	1656	181	46	41	101	60	42	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	7.2	7.2	6.5	7.5	7.5		6.5	6.5	7.2	7.2	7.2
Lane Util. Factor	0.97	0.95	1.00	1.00	0.91	1.00		1.00	1.00	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.97	1.00	0.95	0.99	1.00
Satd. Flow (prot)	3433	3539	1583	1770	5085	1583		1815	1583	1681	1752	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.97	1.00	0.95	0.99	1.00
Satd. Flow (perm)	3433	3539	1583	1770	5085	1583		1815	1583	1681	1752	1583
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	110	886	47	390	1762	193	49	44	107	64	45	47
RTOR Reduction (vph)	0	0	30	0	0	92	0	0	98	0	0	44
Lane Group Flow (vph)	110	886	17	390	1762	101	0	93	9	53	56	3
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases			2			6			3			4
Actuated Green, G (s)	9.0	41.4	41.4	27.3	59.4	59.4		10.1	10.1	7.8	7.8	7.8
Effective Green, g (s)	9.0	41.4	41.4	27.3	59.4	59.4		10.1	10.1	7.8	7.8	7.8
Actuated g/C Ratio	0.08	0.36	0.36	0.24	0.52	0.52		0.09	0.09	0.07	0.07	0.07
Clearance Time (s)	6.5	7.2	7.2	6.5	7.5	7.5		6.5	6.5	7.2	7.2	7.2
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0	6.0		3.0	3.0	3.5	3.5	3.5
Lane Grp Cap (vph)	271	1285	574	423	2649	824		160	140	115	119	108
v/s Ratio Prot	0.03	0.25		c0.22	c0.35			c0.05		0.03	c0.03	
v/s Ratio Perm			0.01			0.06			0.01			0.00
v/c Ratio	0.41	0.69	0.03	0.92	0.67	0.12		0.58	0.07	0.46	0.47	0.03
Uniform Delay, d1	50.0	30.8	23.4	42.3	20.0	14.0		49.9	47.6	51.1	51.1	49.6
Progression Factor	1.39	0.72	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	2.9	0.1	25.4	1.3	0.3		5.3	0.2	3.4	3.4	0.1
Delay (s)	70.5	25.1	23.5	67.7	21.3	14.3		55.2	47.8	54.5	54.6	49.7
Level of Service	E	C	C	E	C	B		E	D	D	D	D
Approach Delay (s)		29.8			28.5			51.3			53.1	
Approach LOS		C			C			D			D	
Intersection Summary												
HCM 2000 Control Delay			31.1				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.74									
Actuated Cycle Length (s)			114.0				Sum of lost time (s)			27.7		
Intersection Capacity Utilization			71.6%				ICU Level of Service			C		
Analysis Period (min)			15									
c Critical Lane Group												

Queues

2: Private Driveway/South Creek One & US Route 60

06/20/2017



Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	145	925	9	1780	276	3	54	56	281
v/c Ratio	0.51	0.35	0.09	0.56	0.25	0.02	0.37	0.40	0.92
Control Delay	71.4	5.5	68.0	3.1	0.5	39.7	54.2	55.6	58.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.4	5.5	68.0	3.1	0.5	39.7	54.2	55.6	58.1
Queue Length 50th (ft)	57	94	7	32	0	1	38	40	97
Queue Length 95th (ft)	88	183	m13	38	0	11	83	85	#252
Internal Link Dist (ft)		916		2019		345		986	
Turn Bay Length (ft)	363		338		313		440		
Base Capacity (vph)	346	2666	147	3198	1098	194	158	152	319
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.35	0.06	0.56	0.25	0.02	0.34	0.37	0.88

Intersection Summary

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

Queue shown is maximum after two cycles.

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

HCM Signalized Intersection Capacity Analysis

2: Private Driveway/South Creek One & US Route 60

06/20/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	138	878	1	9	1691	262	1	1	1	104	1	267
Future Volume (vph)	138	878	1	9	1691	262	1	1	1	104	1	267
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		6.5	7.4	7.4		6.5		6.5	6.5	6.5
Lane Util. Factor	0.97	0.95		1.00	0.91	1.00		1.00		0.95	0.95	1.00
Frt	1.00	1.00		1.00	1.00	0.85		0.95		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.98		0.95	0.95	1.00
Satd. Flow (prot)	3433	3539		1770	5085	1583		1750		1681	1687	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.92		0.76	0.73	1.00
Satd. Flow (perm)	3433	3539		1770	5085	1583		1632		1338	1289	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	145	924	1	9	1780	276	1	1	1	109	1	281
RTOR Reduction (vph)	0	0	0	0	0	102	0	1	0	0	0	134
Lane Group Flow (vph)	145	925	0	9	1780	174	0	2	0	54	56	147
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	1	6		5	2			3			3	
Permitted Phases						2	3			3		3
Actuated Green, G (s)	9.5	80.7		1.4	71.7	71.7		12.4		12.4	12.4	12.4
Effective Green, g (s)	9.5	80.7		1.4	71.7	71.7		12.4		12.4	12.4	12.4
Actuated g/C Ratio	0.08	0.71		0.01	0.63	0.63		0.11		0.11	0.11	0.11
Clearance Time (s)	6.5	6.5		6.5	7.4	7.4		6.5		6.5	6.5	6.5
Vehicle Extension (s)	2.5	6.0		2.5	6.0	6.0		2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	286	2505		21	3198	995		177		145	140	172
v/s Ratio Prot	c0.04	0.26		0.01	c0.35							
v/s Ratio Perm						0.11		0.00		0.04	0.04	c0.09
v/c Ratio	0.51	0.37		0.43	0.56	0.17		0.01		0.37	0.40	0.86
Uniform Delay, d1	50.0	6.6		55.9	12.1	8.8		45.3		47.2	47.3	49.9
Progression Factor	1.31	0.95		1.29	0.20	0.07		1.00		1.00	1.00	1.00
Incremental Delay, d2	1.0	0.4		8.3	0.6	0.3		0.0		1.2	1.4	31.5
Delay (s)	66.6	6.7		80.5	3.0	0.9		45.4		48.4	48.7	81.4
Level of Service	E	A		F	A	A		D		D	D	F
Approach Delay (s)		14.8			3.0			45.4			72.2	
Approach LOS		B			A			D			E	
Intersection Summary												
HCM 2000 Control Delay	14.3			HCM 2000 Level of Service			B					
HCM 2000 Volume to Capacity ratio	0.59											
Actuated Cycle Length (s)	114.0			Sum of lost time (s)			20.4					
Intersection Capacity Utilization	71.2%			ICU Level of Service			C					
Analysis Period (min)	15											
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

3: Urbine Road/Batterson Road & US Route 60

06/20/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	964	11	13	1833	78	3	2	3	35	3	16
Future Volume (Veh/h)	8	964	11	13	1833	78	3	2	3	35	3	16
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	9	1026	12	14	1950	83	3	2	3	37	3	17
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		Raised			Raised							
Median storage (veh)		2			2							
Upstream signal (ft)					996							
pX, platoon unblocked	0.74						0.74	0.74		0.74	0.74	0.74
vC, conflicting volume	2033			1038			2066	3105	513	2513	3034	975
vC1, stage 1 conf vol							1044	1044		1978	1978	
vC2, stage 2 conf vol							1022	2061		535	1056	
vCu, unblocked vol	1700			1038			1744	3141	513	2345	3046	278
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			98			99	98	99	50	97	97
cM capacity (veh/h)	276			665			203	85	506	75	102	535
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1		
Volume Total	9	513	513	12	14	975	975	83	8	57		
Volume Left	9	0	0	0	14	0	0	0	3	37		
Volume Right	0	0	0	12	0	0	0	83	3	17		
cSH	276	1700	1700	1700	665	1700	1700	1700	181	102		
Volume to Capacity	0.03	0.30	0.30	0.01	0.02	0.57	0.57	0.05	0.04	0.56		
Queue Length 95th (ft)	3	0	0	0	2	0	0	0	3	65		
Control Delay (s)	18.5	0.0	0.0	0.0	10.5	0.0	0.0	0.0	25.8	77.5		
Lane LOS	C				B				D	F		
Approach Delay (s)	0.2				0.1				25.8	77.5		
Approach LOS									D	F		
Intersection Summary												
Average Delay			1.6									
Intersection Capacity Utilization			62.6%		ICU Level of Service				B			
Analysis Period (min)			15									

Queues

4: US Route 60 & Jude's Ferry Road

06/20/2017



Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	155	924	1	1816	149	120	206
v/c Ratio	0.73	0.34	0.01	0.85	0.15	0.64	0.69
Control Delay	87.6	3.0	80.0	20.2	0.8	63.9	27.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	87.6	3.0	80.0	20.2	0.8	63.9	27.9
Queue Length 50th (ft)	120	48	1	726	0	85	41
Queue Length 95th (ft)	m#189	m72	m2	#830	m2	144	118
Internal Link Dist (ft)		640		3098		846	
Turn Bay Length (ft)	475		325		238	300	
Base Capacity (vph)	243	2682	116	2142	1004	240	342
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.34	0.01	0.85	0.15	0.50	0.60

Intersection Summary

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

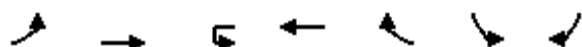
Queue shown is maximum after two cycles.

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

HCM Signalized Intersection Capacity Analysis

4: US Route 60 & Jude's Ferry Road

06/20/2017



Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	146	869	1	1707	140	113	194
Future Volume (vph)	146	869	1	1707	140	113	194
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5	6.2	6.2	6.5	6.5
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	1770	3539	1583	1770	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	3539	1770	3539	1583	1770	1583
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	155	924	1	1816	149	120	206
RTOR Reduction (vph)	0	0	0	0	47	0	131
Lane Group Flow (vph)	155	924	1	1816	102	120	75
Turn Type	Prot	NA	Prot	NA	Perm	Prot	Perm
Protected Phases	1	6	5	2		3	
Permitted Phases					2		3
Actuated Green, G (s)	13.7	81.2	1.2	69.0	69.0	12.1	12.1
Effective Green, g (s)	13.7	81.2	1.2	69.0	69.0	12.1	12.1
Actuated g/C Ratio	0.12	0.71	0.01	0.61	0.61	0.11	0.11
Clearance Time (s)	6.5	6.5	6.5	6.2	6.2	6.5	6.5
Vehicle Extension (s)	2.5	6.0	2.5	6.0	6.0	2.5	2.5
Lane Grp Cap (vph)	212	2520	18	2142	958	187	168
v/s Ratio Prot	c0.09	0.26	0.00	c0.51		c0.07	
v/s Ratio Perm					0.06		0.05
v/c Ratio	0.73	0.37	0.06	0.85	0.11	0.64	0.44
Uniform Delay, d1	48.4	6.4	55.8	18.2	9.5	48.9	47.8
Progression Factor	1.43	0.50	1.56	0.82	0.17	1.00	1.00
Incremental Delay, d2	11.0	0.4	0.8	3.6	0.2	6.5	1.4
Delay (s)	80.1	3.6	87.9	18.6	1.8	55.4	49.2
Level of Service	F	A	F	B	A	E	D
Approach Delay (s)		14.6		17.4		51.4	
Approach LOS		B		B		D	

Intersection Summary

HCM 2000 Control Delay	19.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	114.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	77.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis

5: New Dorset Road/Private Driveway & US Route 60

06/20/2017

															
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR			
Lane Configurations															
Traffic Volume (veh/h)	3	825	18	274	1638	1	52	1	182	1	1	1			
Future Volume (Veh/h)	3	825	18	274	1638	1	52	1	182	1	1	1			
Sign Control	Free			Free			Stop			Stop					
Grade	0%			0%			0%			0%					
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94			
Hourly flow rate (vph)	3	878	19	291	1743	1	55	1	194	1	1	1			
Pedestrians															
Lane Width (ft)															
Walking Speed (ft/s)															
Percent Blockage															
Right turn flare (veh)															
Median type	Raised			Raised											
Median storage veh)	2			2											
Upstream signal (ft)				720											
pX, platoon unblocked	0.58							0.58	0.58						
vC, conflicting volume	1744				897				2339	3210	439	2964			
vC1, stage 1 conf vol							884	884				2325			
vC2, stage 2 conf vol							1455	2326				640			
vCu, unblocked vol	838				897				1862	3361	439	2939			
tC, single (s)	4.1				4.1				7.5	6.5	6.9	7.5			
tC, 2 stage (s)							6.5	5.5				6.5			
tF (s)	2.2				2.2				3.5	4.0	3.3	3.5			
p0 queue free %	99				61				68	97	66	42			
cM capacity (veh/h)	460				753				171	40	566	2			
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1					
Volume Total	3	439	439	19	291	872	872	1	250	3					
Volume Left	3	0	0	0	291	0	0	0	55	1					
Volume Right	0	0	0	19	0	0	0	1	194	1					
cSH	460	1700	1700	1700	753	1700	1700	1700	363	5					
Volume to Capacity	0.01	0.26	0.26	0.01	0.39	0.51	0.51	0.00	0.69	0.61					
Queue Length 95th (ft)	0	0	0	0	46	0	0	0	123	24					
Control Delay (s)	12.9	0.0	0.0	0.0	12.8	0.0	0.0	0.0	34.3	1108.2					
Lane LOS	B				B				D	F					
Approach Delay (s)	0.0				1.8				34.3	1108.2					
Approach LOS										D	F				
Intersection Summary															
Average Delay				4.9											
Intersection Capacity Utilization				75.2%	ICU Level of Service					D					
Analysis Period (min)				15											

HCM Unsignalized Intersection Capacity Analysis

6: US Route 60 & Batterson Road

06/20/2017

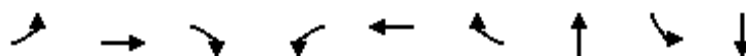


Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR	
Lane Configurations								
Traffic Volume (veh/h)	30	838	7	1673	6	2	50	
Future Volume (Veh/h)	30	838	7	1673	6	2	50	
Sign Control		Free		Free		Stop		
Grade		0%		0%		0%		
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	
Hourly flow rate (vph)	31	864	0	1725	6	2	52	
Pedestrians								
Lane Width (ft)								
Walking Speed (ft/s)								
Percent Blockage								
Right turn flare (veh)								
Median type		Raised		Raised				
Median storage veh		2		2				
Upstream signal (ft)		899						
pX, platoon unblocked			0.00			0.86		
vC, conflicting volume	1731		0			2219	862	
vC1, stage 1 conf vol						1725		
vC2, stage 2 conf vol						494		
vCu, unblocked vol	1731		0			2087	862	
tC, single (s)	4.1		0.0			6.8	6.9	
tC, 2 stage (s)						5.8		
tF (s)	2.2		0.0			3.5	3.3	
p0 queue free %	91		0			98	83	
cM capacity (veh/h)	360		0			124	298	
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	WB 4	SB 1
Volume Total	31	432	432	862	862	6	0	54
Volume Left	31	0	0	0	0	0	0	2
Volume Right	0	0	0	0	0	6	0	52
cSH	360	1700	1700	1700	1700	1700	1700	283
Volume to Capacity	0.09	0.25	0.25	0.51	0.51	0.00	0.00	0.19
Queue Length 95th (ft)	7	0	0	0	0	0	0	17
Control Delay (s)	15.9	0.0	0.0	0.0	0.0	0.0	0.0	20.7
Lane LOS	C							C
Approach Delay (s)	0.6			0.0				20.7
Approach LOS								C
Intersection Summary								
Average Delay			0.6					
Intersection Capacity Utilization			56.2%		ICU Level of Service			B
Analysis Period (min)			15					

Queues

7: Dorset Road & US Route 60

06/20/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	77	770	122	60	1454	176	220	90	272
v/c Ratio	0.49	0.45	0.14	0.42	0.87	0.21	0.96	0.49	0.89
Control Delay	59.4	22.5	0.3	51.2	34.6	9.3	99.3	56.7	53.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.4	22.5	0.3	51.2	34.6	9.3	99.3	56.7	53.8
Queue Length 50th (ft)	55	206	0	46	334	24	159	62	90
Queue Length 95th (ft)	101	278	0	m56	#718	m45	#314	115	#234
Internal Link Dist (ft)		1395			819		1109		463
Turn Bay Length (ft)	300		550	350		563			
Base Capacity (vph)	209	1693	872	364	1666	838	229	209	324
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.45	0.14	0.16	0.87	0.21	0.96	0.43	0.84

Intersection Summary

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

Queue shown is maximum after two cycles.

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

HCM Signalized Intersection Capacity Analysis

7: Dorset Road & US Route 60

06/20/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 				
Traffic Volume (vph)	74	739	117	58	1396	169	147	37	27	86	51	210
Future Volume (vph)	74	739	117	58	1396	169	147	37	27	86	51	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.7	6.7	6.5	6.8	6.8		6.5		6.5	6.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.98		1.00	0.88	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.97		0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583		1769		1770	1638	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.97		0.95	1.00	
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583		1769		1770	1638	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	77	770	122	60	1454	176	153	39	28	90	53	219
RTOR Reduction (vph)	0	0	65	0	0	95	0	4	0	0	133	0
Lane Group Flow (vph)	77	770	57	60	1454	81	0	216	0	90	139	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA		Split	NA	
Protected Phases	1	6		5	2		3	3		4	4	
Permitted Phases			6			2						
Actuated Green, G (s)	8.9	53.3	53.3	8.1	52.4	52.4		14.5		11.9	11.9	
Effective Green, g (s)	8.9	53.3	53.3	8.1	52.4	52.4		14.5		11.9	11.9	
Actuated g/C Ratio	0.08	0.47	0.47	0.07	0.46	0.46		0.13		0.10	0.10	
Clearance Time (s)	6.5	6.7	6.7	6.5	6.8	6.8		6.5		6.5	6.5	
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0	5.0		4.0		2.5	2.5	
Lane Grp Cap (vph)	138	1654	740	125	1626	727		225		184	170	
v/s Ratio Prot	c0.04	0.22		0.03	c0.41			c0.12		0.05	c0.09	
v/s Ratio Perm			0.04			0.05						
v/c Ratio	0.56	0.47	0.08	0.48	0.89	0.11		0.96		0.49	0.82	
Uniform Delay, d1	50.7	20.7	16.8	50.9	28.3	17.5		49.5		48.2	50.0	
Progression Factor	1.00	1.00	1.00	0.93	1.03	2.76		1.00		1.00	1.00	
Incremental Delay, d2	4.8	0.9	0.2	1.8	5.2	0.2		48.0		1.5	25.6	
Delay (s)	55.5	21.6	17.0	49.3	34.3	48.6		97.5		49.7	75.6	
Level of Service	E	C	B	D	C	D		F		D	E	
Approach Delay (s)		23.7			36.4			97.5			69.1	
Approach LOS		C			D			F			E	
Intersection Summary												
HCM 2000 Control Delay			40.4				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.86									
Actuated Cycle Length (s)			114.0				Sum of lost time (s)			26.3		
Intersection Capacity Utilization			92.0%				ICU Level of Service			F		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis 8: Jude's Ferry Road & Batterson Road

06/20/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	2	2	107	18	48	1	230	39	11	197	14
Future Volume (Veh/h)	14	2	2	107	18	48	1	230	39	11	197	14
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	16	2	2	122	20	55	1	261	44	13	224	16
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								926				
pX, platoon unblocked												
vC, conflicting volume	600	557	224	538	551	283	240			305		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	600	557	224	538	551	283	240			305		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	96	100	100	73	95	93	100			99		
cM capacity (veh/h)	366	434	815	447	437	756	1327			1256		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2							
Volume Total	20	197	306	237	16							
Volume Left	16	122	1	13	0							
Volume Right	2	55	44	0	16							
cSH	394	504	1327	1256	1700							
Volume to Capacity	0.05	0.39	0.00	0.01	0.01							
Queue Length 95th (ft)	4	46	0	1	0							
Control Delay (s)	14.6	16.7	0.0	0.5	0.0							
Lane LOS	B	C	A	A								
Approach Delay (s)	14.6	16.7	0.0	0.5								
Approach LOS	B	C										
Intersection Summary												
Average Delay			4.8									
Intersection Capacity Utilization			37.7%			ICU Level of Service			A			
Analysis Period (min)			15									

Intersection: 1: Stavemill Road/Luck Stone Road & US Route 60

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	L	T	T	R	L	T	T	T	R	LT	R
Maximum Queue (ft)	72	92	230	230	37	621	615	537	386	76	140	84
Average Queue (ft)	22	38	119	127	6	398	309	281	185	34	68	34
95th Queue (ft)	55	75	197	206	23	694	675	583	337	63	124	68
Link Distance (ft)			1264	1264			1578	1578	1578			724
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	863	863			363	738				375	400	
Storage Blk Time (%)						3	2		0			
Queuing Penalty (veh)						18	9		0			

Intersection: 1: Stavemill Road/Luck Stone Road & US Route 60

Movement	SB	SB	SB
Directions Served	L	LT	R
Maximum Queue (ft)	96	89	49
Average Queue (ft)	37	30	17
95th Queue (ft)	78	68	38
Link Distance (ft)	723	723	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			400
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: Private Driveway/South Creek One & US Route 60

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	B100	B100	NB
Directions Served	L	L	T	TR	L	T	T	T	R	T	T	LTR
Maximum Queue (ft)	85	92	68	63	36	258	277	241	113	127	127	23
Average Queue (ft)	31	45	16	10	6	130	142	73	41	5	5	2
95th Queue (ft)	73	86	49	39	22	233	253	187	84	129	129	13
Link Distance (ft)			909	909		2020	2020	2020		1264	1264	348
Upstream Blk Time (%)										0	0	
Queuing Penalty (veh)										0	0	
Storage Bay Dist (ft)	363	363			338				313			
Storage Blk Time (%)						0		0				
Queuing Penalty (veh)						0		0				

Intersection: 2: Private Driveway/South Creek One & US Route 60

Movement	SB	SB	SB
Directions Served	L	LT	R
Maximum Queue (ft)	90	135	171
Average Queue (ft)	20	63	69
95th Queue (ft)	58	115	128
Link Distance (ft)		977	977
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	440		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Urbine Road/Batterson Road & US Route 60

Movement	EB	EB	WB	WB	WB	NB	SB
Directions Served	L	T	L	T	T	LTR	LTR
Maximum Queue (ft)	18	2	33	167	170	45	203
Average Queue (ft)	3	0	7	6	6	10	92
95th Queue (ft)	12	1	26	123	125	37	194
Link Distance (ft)		3120		909	909	419	431
Upstream Blk Time (%)				0			
Queuing Penalty (veh)				0			
Storage Bay Dist (ft)	188		188				
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 4: US Route 60 & Jude's Ferry Road

Movement	EB	EB	EB	WB	WB	WB	WB	SB	SB
Directions Served	L	T	T	U	T	T	R	L	R
Maximum Queue (ft)	196	75	69	21	364	391	237	163	218
Average Queue (ft)	102	17	24	1	180	184	48	76	98
95th Queue (ft)	174	53	59	11	330	347	160	141	173
Link Distance (ft)		652	652		3120	3120			811
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	475			325			238	300	
Storage Blk Time (%)					1	4	0		
Queuing Penalty (veh)					0	5	1		

Intersection: 5: New Dorset Road/Private Driveway & US Route 60

Movement	EB	EB	WB	WB	NB	SB
Directions Served	L	R	L	T	LTR	LTR
Maximum Queue (ft)	20	4	194	2	1096	24
Average Queue (ft)	2	0	79	0	956	2
95th Queue (ft)	13	3	145	2	1358	14
Link Distance (ft)				652	1060	515
Upstream Blk Time (%)					76	
Queuing Penalty (veh)					0	
Storage Bay Dist (ft)	288	800	288			
Storage Blk Time (%)			0			
Queuing Penalty (veh)			0			

Intersection: 6: US Route 60 & Batterson Road

Movement	EB	WB	WB	SB
Directions Served	L	U	R	LR
Maximum Queue (ft)	86	33	2	91
Average Queue (ft)	27	4	0	32
95th Queue (ft)	67	20	2	70
Link Distance (ft)				575
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	163	163	100	
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: Dorset Road & US Route 60

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	SB	SB
Directions Served	L	T	T	R	L	T	T	R	LTR	L	TR
Maximum Queue (ft)	115	233	216	40	349	502	504	151	325	245	432
Average Queue (ft)	51	132	101	9	51	326	331	13	182	106	248
95th Queue (ft)	99	206	187	26	207	470	476	109	317	307	475
Link Distance (ft)		1437	1437			799	799		1090	462	462
Upstream Blk Time (%)										4	10
Queuing Penalty (veh)										0	0
Storage Bay Dist (ft)	300			550	350			563			
Storage Blk Time (%)		0			0	7	0	0			
Queuing Penalty (veh)		0			0	4	1	0			

Intersection: 8: Jude's Ferry Road & Batterson Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LT
Maximum Queue (ft)	32	107	7	22
Average Queue (ft)	11	46	0	1
95th Queue (ft)	32	80	5	10
Link Distance (ft)	965	944	811	587
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 38

Appendix D

2036 Background Conditions Analysis

Queues

CRO 237 - Route 60 Corridor - Powhatan

1: Stavemill Road/Luck Stone Road & US Route 60

06/22/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	66	2198	16	109	806	58	96	508	49	49	16
v/c Ratio	0.40	1.11	0.02	1.04	0.27	0.06	0.39	1.24	0.61	0.60	0.06
Control Delay	72.4	77.0	0.0	155.4	14.2	0.1	54.5	153.8	89.7	88.6	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	72.4	77.0	0.0	155.4	14.2	0.1	54.5	153.8	89.7	88.6	0.4
Queue Length 50th (ft)	28	~1110	0	~96	124	0	72	~351	42	42	0
Queue Length 95th (ft)	m40	#1243	m0	#218	152	0	129	#570	#107	#106	0
Internal Link Dist (ft)		1256			1551		719			735	
Turn Bay Length (ft)	863		363	738		375					400
Base Capacity (vph)	163	1972	952	105	2983	990	249	409	80	81	279
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	0.40	1.11	0.02	1.04	0.27	0.06	0.39	1.24	0.61	0.60	0.06

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

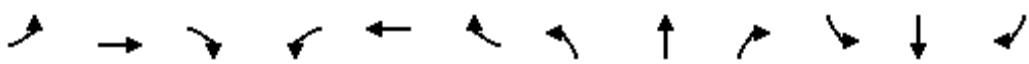
m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis

1: Stavemill Road/Luck Stone Road & US Route 60

CRO 237 - Route 60 Corridor - Powhatan

06/22/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	←←	→→	→	←	→→→	→		→	→	←	→	→
Traffic Volume (vph)	49	1631	12	81	598	43	54	17	377	66	7	12
Future Volume (vph)	49	1631	12	81	598	43	54	17	377	66	7	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	7.2	7.2	6.5	7.5	7.5		6.5	6.5	7.2	7.2	7.2
Lane Util. Factor	0.97	0.95	1.00	1.00	0.91	1.00		1.00	1.00	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.96	1.00	0.95	0.96	1.00
Satd. Flow (prot)	3433	3539	1583	1770	5085	1583		1795	1583	1681	1700	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.96	1.00	0.95	0.96	1.00
Satd. Flow (perm)	3433	3539	1583	1770	5085	1583		1795	1583	1681	1700	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
Growth Factor (vph)	124%	124%	124%	124%	124%	124%	124%	124%	124%	124%	124%	124%
Adj. Flow (vph)	66	2198	16	109	806	58	73	23	508	89	9	16
RTOR Reduction (vph)	0	0	7	0	0	25	0	0	189	0	0	15
Lane Group Flow (vph)	66	2198	9	109	806	33	0	96	319	49	49	1
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases			2			6			3			4
Actuated Green, G (s)	4.8	67.5	67.5	8.8	71.2	71.2		17.5	17.5	4.8	4.8	4.8
Effective Green, g (s)	4.8	67.5	67.5	8.8	71.2	71.2		17.5	17.5	4.8	4.8	4.8
Actuated g/C Ratio	0.04	0.54	0.54	0.07	0.57	0.57		0.14	0.14	0.04	0.04	0.04
Clearance Time (s)	6.5	7.2	7.2	6.5	7.5	7.5		6.5	6.5	7.2	7.2	7.2
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0	6.0		3.0	3.0	3.5	3.5	3.5
Lane Grp Cap (vph)	130	1895	848	123	2873	894		249	219	64	64	60
v/s Ratio Prot	0.02	c0.62		c0.06	0.16			0.05		c0.03	0.03	
v/s Ratio Perm			0.01			0.02			c0.20			0.00
v/c Ratio	0.51	1.16	0.01	0.89	0.28	0.04		0.39	1.45	0.77	0.77	0.01
Uniform Delay, d1	59.4	29.2	13.7	58.1	14.2	12.2		49.4	54.2	60.0	60.0	58.3
Progression Factor	1.14	0.57	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.4	77.0	0.0	47.7	0.2	0.1		1.0	228.1	42.2	42.2	0.1
Delay (s)	69.9	93.7	13.7	105.8	14.4	12.2		50.4	282.4	102.3	102.3	58.4
Level of Service	E	F	B	F	B	B		D	F	F	F	E
Approach Delay (s)		92.5			24.5			245.5			96.1	
Approach LOS		F			C			F			F	

Intersection Summary

HCM 2000 Control Delay	99.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	126.0	Sum of lost time (s)	27.7
Intersection Capacity Utilization	107.3%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	45	2027	1	773	98	3	40	40	42
v/c Ratio	0.27	0.68	0.01	0.20	0.08	0.03	0.47	0.48	0.17
Control Delay	67.5	2.6	52.0	1.9	0.3	48.7	73.7	75.3	1.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.5	2.6	52.0	1.9	0.3	48.7	73.7	75.3	1.5
Queue Length 50th (ft)	18	127	1	21	0	2	33	33	0
Queue Length 95th (ft)	m26	117	m3	25	2	12	74	74	0
Internal Link Dist (ft)		916		2019		345		986	
Turn Bay Length (ft)	363		338		313		440		
Base Capacity (vph)	169	2980	84	3944	1250	117	100	97	258
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.68	0.01	0.20	0.08	0.03	0.40	0.41	0.16

Intersection Summary

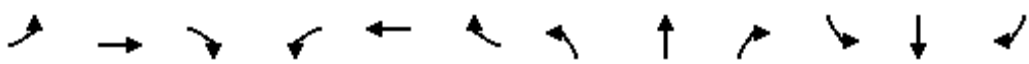
m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis

2: Private Driveway/South Creek One & US Route 60

CRO 237 - Route 60 Corridor - Powhatan

06/22/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↕↕		↔	↕↕↕	↔		↕↕		↔	↕↕	↔
Traffic Volume (vph)	35	1585	1	1	605	77	1	1	1	62	1	33
Future Volume (vph)	35	1585	1	1	605	77	1	1	1	62	1	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		6.5	7.4	7.4		6.5		6.5	6.5	6.5
Lane Util. Factor	0.97	0.95		1.00	0.91	1.00		1.00		0.95	0.95	1.00
Frt	1.00	1.00		1.00	1.00	0.85		0.95		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.98		0.95	0.95	1.00
Satd. Flow (prot)	3433	3539		1770	5085	1583		1750		1681	1687	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.87		0.76	0.73	1.00
Satd. Flow (perm)	3433	3539		1770	5085	1583		1552		1338	1292	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor (vph)	124%	124%	124%	124%	124%	124%	124%	124%	124%	124%	124%	124%
Adj. Flow (vph)	45	2026	1	1	773	98	1	1	1	79	1	42
RTOR Reduction (vph)	0	0	0	0	0	25	0	1	0	0	0	40
Lane Group Flow (vph)	45	2027	0	1	773	73	0	2	0	40	40	2
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	1	6		5	2			3			3	
Permitted Phases						2	3			3		3
Actuated Green, G (s)	5.0	98.3		1.2	93.6	93.6		7.0		7.0	7.0	7.0
Effective Green, g (s)	5.0	98.3		1.2	93.6	93.6		7.0		7.0	7.0	7.0
Actuated g/C Ratio	0.04	0.78		0.01	0.74	0.74		0.06		0.06	0.06	0.06
Clearance Time (s)	6.5	6.5		6.5	7.4	7.4		6.5		6.5	6.5	6.5
Vehicle Extension (s)	2.5	6.0		2.5	6.0	6.0		2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	136	2760		16	3777	1175		86		74	71	87
v/s Ratio Prot	0.01	c0.57		0.00	c0.15							
v/s Ratio Perm						0.05		0.00		0.03	c0.03	0.00
v/c Ratio	0.33	0.73		0.06	0.20	0.06		0.02		0.54	0.56	0.03
Uniform Delay, d1	58.9	7.1		61.8	4.9	4.4		56.3		57.9	58.0	56.3
Progression Factor	1.12	0.30		0.91	0.36	0.17		1.00		1.00	1.00	1.00
Incremental Delay, d2	0.7	1.2		1.2	0.1	0.1		0.1		6.2	8.0	0.1
Delay (s)	66.5	3.3		57.5	1.9	0.8		56.4		64.2	66.1	56.4
Level of Service	E	A		E	A	A		E		E	E	E
Approach Delay (s)		4.7			1.8			56.4			62.1	
Approach LOS		A			A			E			E	
Intersection Summary												
HCM 2000 Control Delay			6.2				HCM 2000 Level of Service			A		
HCM 2000 Volume to Capacity ratio			0.73									
Actuated Cycle Length (s)			126.0				Sum of lost time (s)			20.4		
Intersection Capacity Utilization			70.5%				ICU Level of Service			C		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

3: Urbine Road/Batterson Road & US Route 60

CRO 237 - Route 60 Corridor - Powhatan

06/22/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	1628	7	7	528	92	6	9	2	37	1	12
Future Volume (Veh/h)	21	1628	7	7	528	92	6	9	2	37	1	12
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	27	2103	9	9	682	119	8	12	3	48	1	16
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	Raised			Raised								
Median storage veh	2			2								
Upstream signal (ft)				996								
pX, platoon unblocked	0.95							0.95	0.95			
vC, conflicting volume	801				2112				2532	2976	1052	1814
vC1, stage 1 conf vol							2157	2157				700
vC2, stage 2 conf vol							376	819				1114
vCu, unblocked vol	690				2112				2509	2975	1052	1755
tC, single (s)	4.1				4.1				7.5	6.5	6.9	7.5
tC, 2 stage (s)							6.5	5.5				6.5
tF (s)	2.2				2.2				3.5	4.0	3.3	3.5
p0 queue free %	97				96				83	85	99	70
cM capacity (veh/h)	857				256				46	79	223	158
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1		
Volume Total	27	1052	1052	9	9	341	341	119	23	65		
Volume Left	27	0	0	0	9	0	0	0	8	48		
Volume Right	0	0	0	9	0	0	0	119	3	16		
cSH	857	1700	1700	1700	256	1700	1700	1700	68	192		
Volume to Capacity	0.03	0.62	0.62	0.01	0.04	0.20	0.20	0.07	0.34	0.34		
Queue Length 95th (ft)	2	0	0	0	3	0	0	0	31	35		
Control Delay (s)	9.3	0.0	0.0	0.0	19.6	0.0	0.0	0.0	83.3	33.1		
Lane LOS	A				C				F	D		
Approach Delay (s)	0.1				0.2				83.3	33.1		
Approach LOS										F	D	
Intersection Summary												
Average Delay				1.5								
Intersection Capacity Utilization				69.3%	ICU Level of Service						C	
Analysis Period (min)				15								

Queues
4: US Route 60 & Jude's Ferry Road

CRO 237 - Route 60 Corridor - Powhatan
06/22/2017



Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	616	1910	1	654	47	241	220
v/c Ratio	0.84	0.75	0.01	0.69	0.10	0.85	0.50
Control Delay	18.9	2.9	99.0	33.8	5.2	76.5	10.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.9	2.9	99.0	33.8	5.2	76.5	10.0
Queue Length 50th (ft)	314	90	1	146	0	189	0
Queue Length 95th (ft)	m263	m121	m4	177	13	#309	69
Internal Link Dist (ft)		640		3098		846	
Turn Bay Length (ft)	475		325		238	300	
Base Capacity (vph)	737	2532	84	954	461	316	463
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.84	0.75	0.01	0.69	0.10	0.76	0.48

Intersection Summary

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

Queue shown is maximum after two cycles.

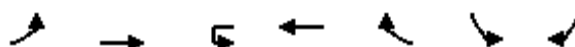
m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis

4: US Route 60 & Jude's Ferry Road

CRO 237 - Route 60 Corridor - Powhatan

06/22/2017



Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	467	1448	1	496	36	183	167
Future Volume (vph)	467	1448	1	496	36	183	167
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5	6.2	6.2	6.5	6.5
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	1770	3539	1583	1770	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	3539	1770	3539	1583	1770	1583
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor (vph)	124%	124%	124%	124%	124%	124%	124%
Adj. Flow (vph)	616	1910	1	654	47	241	220
RTOR Reduction (vph)	0	0	0	0	36	0	185
Lane Group Flow (vph)	616	1910	1	654	11	241	35
Turn Type	Prot	NA	Prot	NA	Perm	Prot	Perm
Protected Phases	1	6	5	2		3	
Permitted Phases					2		3
Actuated Green, G (s)	57.7	85.0	1.2	28.8	28.8	20.3	20.3
Effective Green, g (s)	57.7	85.0	1.2	28.8	28.8	20.3	20.3
Actuated g/C Ratio	0.46	0.67	0.01	0.23	0.23	0.16	0.16
Clearance Time (s)	6.5	6.5	6.5	6.2	6.2	6.5	6.5
Vehicle Extension (s)	2.5	6.0	2.5	6.0	6.0	2.5	2.5
Lane Grp Cap (vph)	810	2387	16	808	361	285	255
v/s Ratio Prot	0.35	c0.54	0.00	c0.18		c0.14	
v/s Ratio Perm					0.01		0.02
v/c Ratio	0.76	0.80	0.06	0.81	0.03	0.85	0.14
Uniform Delay, d1	28.4	14.5	61.8	46.0	37.7	51.3	45.4
Progression Factor	0.45	0.17	1.73	0.71	0.47	1.00	1.00
Incremental Delay, d2	1.1	0.8	1.2	8.5	0.2	19.7	0.2
Delay (s)	14.0	3.3	108.0	41.1	17.7	71.1	45.5
Level of Service	B	A	F	D	B	E	D
Approach Delay (s)		5.9		39.6		58.9	
Approach LOS		A		D		E	

Intersection Summary

HCM 2000 Control Delay	18.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	126.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	83.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis CRO 237 - Route 60 Corridor - Powhatan

5: New Dorset Road/Private Driveway & US Route 60

06/22/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	1693	39	74	591	1	9	2	222	1	1	1
Future Volume (Veh/h)	3	1693	39	74	591	1	9	2	222	1	1	1
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	4	2233	51	98	780	1	12	3	293	1	1	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	Raised			Raised								
Median storage veh	2			2								
Upstream signal (ft)				720								
pX, platoon unblocked	0.83							0.83	0.83			
vC, conflicting volume	781				2284				2828	3218	1116	2395
vC1, stage 1 conf vol							2241	2241				976
vC2, stage 2 conf vol							588	977				1419
vCu, unblocked vol	341				2284				2794	3261	1116	2275
tC, single (s)	4.1				4.1				7.5	6.5	6.9	7.5
tC, 2 stage (s)							6.5	5.5				6.5
tF (s)	2.2				2.2				3.5	4.0	3.3	3.5
p0 queue free %	100				55				71	96	0	0
cM capacity (veh/h)	1014				219				42	70	202	0
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1		
Volume Total	4	1116	1116	51	98	390	390	1	308	3		
Volume Left	4	0	0	0	98	0	0	0	12	1		
Volume Right	0	0	0	51	0	0	0	1	293	1		
cSH	1014	1700	1700	1700	219	1700	1700	1700	173	0		
Volume to Capacity	0.00	0.66	0.66	0.03	0.45	0.23	0.23	0.00	1.78	Err		
Queue Length 95th (ft)	0	0	0	0	53	0	0	0	553	Err		
Control Delay (s)	8.6	0.0	0.0	0.0	34.2	0.0	0.0	0.0	420.8	Err		
Lane LOS	A				D				F	F		
Approach Delay (s)	0.0				3.8				420.8	Err		
Approach LOS										F	F	
Intersection Summary												
Average Delay				Err								
Intersection Capacity Utilization				91.2%	ICU Level of Service						F	
Analysis Period (min)				15								

HCM Unsignalized Intersection Capacity Analysis

6: US Route 60 & Batterson Road

CRO 237 - Route 60 Corridor - Powhatan

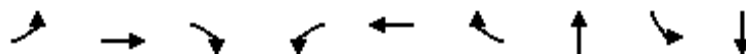
06/22/2017



Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR	
Lane Configurations								
Traffic Volume (veh/h)	14	1670	1	575	1	1	24	
Future Volume (Veh/h)	14	1670	1	575	1	1	24	
Sign Control		Free		Free		Stop		
Grade		0%		0%		0%		
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	
Hourly flow rate (vph)	19	2227	0	767	1	1	32	
Pedestrians								
Lane Width (ft)								
Walking Speed (ft/s)								
Percent Blockage								
Right turn flare (veh)								
Median type		Raised		Raised				
Median storage veh)		2		2				
Upstream signal (ft)		899						
pX, platoon unblocked			0.00			0.48		
vC, conflicting volume	768		0			1918	384	
vC1, stage 1 conf vol						767		
vC2, stage 2 conf vol						1152		
vCu, unblocked vol	768		0			732	384	
tC, single (s)	4.1		0.0			6.8	6.9	
tC, 2 stage (s)						5.8		
tF (s)	2.2		0.0			3.5	3.3	
p0 queue free %	98		0			100	95	
cM capacity (veh/h)	842		0			343	615	
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	WB 4	SB 1
Volume Total	19	1114	1114	384	384	1	0	33
Volume Left	19	0	0	0	0	0	0	1
Volume Right	0	0	0	0	0	1	0	32
cSH	842	1700	1700	1700	1700	1700	1700	600
Volume to Capacity	0.02	0.66	0.66	0.23	0.23	0.00	0.00	0.05
Queue Length 95th (ft)	2	0	0	0	0	0	0	4
Control Delay (s)	9.4	0.0	0.0	0.0	0.0	0.0	0.0	11.3
Lane LOS	A							B
Approach Delay (s)	0.1			0.0				11.3
Approach LOS								B
Intersection Summary								
Average Delay			0.2					
Intersection Capacity Utilization			67.2%		ICU Level of Service			C
Analysis Period (min)			15					

Queues
7: Dorset Road & US Route 60

CRO 237 - Route 60 Corridor - Powhatan
06/22/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	138	2173	114	55	685	82	322	189	43
v/c Ratio	0.55	1.14	0.12	0.79	0.46	0.11	1.27	1.17	0.24
Control Delay	59.2	97.2	1.4	112.7	15.0	0.8	191.9	174.4	30.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.2	97.2	1.4	112.7	15.0	0.8	191.9	174.4	30.6
Queue Length 50th (ft)	106	~1114	0	38	184	2	~324	~183	12
Queue Length 95th (ft)	171	#1203	15	m#86	297	m2	#496	#326	49
Internal Link Dist (ft)		1395			819		1109		463
Turn Bay Length (ft)	300		550	350		563			
Base Capacity (vph)	252	1913	921	70	1480	746	253	161	178
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.55	1.14	0.12	0.79	0.46	0.11	1.27	1.17	0.24

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis

7: Dorset Road & US Route 60

CRO 237 - Route 60 Corridor - Powhatan

06/22/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	98	1542	81	39	486	58	121	47	60	134	11	19
Future Volume (vph)	98	1542	81	39	486	58	121	47	60	134	11	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.7	6.7	6.5	6.8	6.8		6.5		6.5	6.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.96		1.00	0.91	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.97		0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583		1750		1770	1687	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.97		0.95	1.00	
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583		1750		1770	1687	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor (vph)	124%	124%	124%	124%	124%	124%	124%	124%	124%	124%	124%	124%
Adj. Flow (vph)	138	2173	114	55	685	82	170	66	85	189	16	27
RTOR Reduction (vph)	0	0	54	0	0	49	0	10	0	0	25	0
Lane Group Flow (vph)	138	2173	60	55	685	33	0	312	0	189	18	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA		Split	NA	
Protected Phases	1	6		5	2		3	3		4	4	
Permitted Phases			6			2						
Actuated Green, G (s)	19.3	66.8	66.8	4.0	51.4	51.4		17.5		11.5	11.5	
Effective Green, g (s)	19.3	66.8	66.8	4.0	51.4	51.4		17.5		11.5	11.5	
Actuated g/C Ratio	0.15	0.53	0.53	0.03	0.41	0.41		0.14		0.09	0.09	
Clearance Time (s)	6.5	6.7	6.7	6.5	6.8	6.8		6.5		6.5	6.5	
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0	5.0		4.0		2.5	2.5	
Lane Grp Cap (vph)	271	1876	839	56	1443	645		243		161	153	
v/s Ratio Prot	0.08	c0.61		c0.03	0.19			c0.18		c0.11	0.01	
v/s Ratio Perm			0.04			0.02						
v/c Ratio	0.51	1.16	0.07	0.98	0.47	0.05		1.28		1.17	0.12	
Uniform Delay, d1	49.0	29.6	14.5	61.0	27.4	22.6		54.2		57.2	52.6	
Progression Factor	1.00	1.00	1.00	1.04	0.53	1.00		1.00		1.00	1.00	
Incremental Delay, d2	1.5	77.7	0.2	102.4	0.9	0.1		154.8		125.4	0.3	
Delay (s)	50.5	107.3	14.6	165.5	15.4	22.7		209.0		182.6	52.9	
Level of Service	D	F	B	F	B	C		F		F	D	
Approach Delay (s)		99.7			26.2			209.0			158.6	
Approach LOS		F			C			F			F	
Intersection Summary												
HCM 2000 Control Delay			96.7				HCM 2000 Level of Service			F		
HCM 2000 Volume to Capacity ratio			1.18									
Actuated Cycle Length (s)			126.0				Sum of lost time (s)			26.3		
Intersection Capacity Utilization			96.0%				ICU Level of Service			F		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis 8: Jude's Ferry Road & Batterson Road

CRO 237 - Route 60 Corridor - Powhatan

06/22/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	5	1	12	5	13	1	201	297	38	339	19
Future Volume (Veh/h)	7	5	1	12	5	13	1	201	297	38	339	19
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	10	7	1	17	7	18	1	283	419	54	478	27
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)								926				
pX, platoon unblocked												
vC, conflicting volume	1102	1290	478	1085	1108	492	505			702		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1102	1290	478	1085	1108	492	505			702		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	94	95	100	90	96	97	100			94		
cM capacity (veh/h)	170	153	587	178	197	576	1060			895		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2							
Volume Total	18	42	703	532	27							
Volume Left	10	17	1	54	0							
Volume Right	1	18	419	0	27							
cSH	170	259	1060	895	1700							
Volume to Capacity	0.11	0.16	0.00	0.06	0.02							
Queue Length 95th (ft)	9	14	0	5	0							
Control Delay (s)	28.7	21.6	0.0	1.6	0.0							
Lane LOS	D	C	A	A								
Approach Delay (s)	28.7	21.6	0.0	1.6								
Approach LOS	D	C										
Intersection Summary												
Average Delay			1.8									
Intersection Capacity Utilization			69.4%			ICU Level of Service				C		
Analysis Period (min)			15									

Intersection: 1: Stavemill Road/Luck Stone Road & US Route 60

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	L	T	T	R	L	T	T	T	R	LT	R
Maximum Queue (ft)	46	137	585	594	234	274	194	188	138	47	400	781
Average Queue (ft)	12	32	323	333	13	146	114	100	23	13	308	698
95th Queue (ft)	34	147	583	590	119	273	178	167	87	36	562	898
Link Distance (ft)			1264	1264			1578	1578	1578			724
Upstream Blk Time (%)												76
Queuing Penalty (veh)												0
Storage Bay Dist (ft)	863	863			363	738				375	400	
Storage Blk Time (%)		0	0	9	0						1	77
Queuing Penalty (veh)		0	0	1	0						3	68

Intersection: 1: Stavemill Road/Luck Stone Road & US Route 60

Movement	SB	SB	SB
Directions Served	L	LT	R
Maximum Queue (ft)	136	118	20
Average Queue (ft)	64	23	6
95th Queue (ft)	117	72	20
Link Distance (ft)	723	723	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		400	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: Private Driveway/South Creek One & US Route 60

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	SB	SB
Directions Served	L	L	T	TR	L	T	T	T	R	LTR	L	LT
Maximum Queue (ft)	31	52	98	71	10	65	73	44	36	21	70	111
Average Queue (ft)	4	14	26	16	0	18	19	8	7	2	13	47
95th Queue (ft)	18	40	69	48	4	46	55	31	26	11	44	92
Link Distance (ft)			909	909		2020	2020	2020		348		977
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	363	363			338				313		440	
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 2: Private Driveway/South Creek One & US Route 60

Movement	SB
Directions Served	R
Maximum Queue (ft)	48
Average Queue (ft)	17
95th Queue (ft)	39
Link Distance (ft)	977
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 3: Urbine Road/Batterson Road & US Route 60

Movement	EB	WB	WB	WB	NB	SB
Directions Served	L	L	T	R	LTR	LTR
Maximum Queue (ft)	36	35	2	18	114	181
Average Queue (ft)	6	8	0	1	40	78
95th Queue (ft)	22	28	2	10	106	164
Link Distance (ft)			909	909	419	431
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	188	188				
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 4: US Route 60 & Jude's Ferry Road

Movement	EB	EB	EB	WB	WB	WB	WB	SB	SB
Directions Served	L	T	T	U	T	T	R	L	R
Maximum Queue (ft)	388	278	251	13	307	312	211	296	300
Average Queue (ft)	215	160	158	1	181	185	44	184	73
95th Queue (ft)	340	243	238	8	265	272	138	281	193
Link Distance (ft)		652	652		3120	3120			811
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	475			325			238	300	
Storage Blk Time (%)	0	0			0	4	0	1	0
Queuing Penalty (veh)	0	0			0	2	0	2	1

Intersection: 5: New Dorset Road/Private Driveway & US Route 60

Movement	EB	EB	WB	WB	WB	NB	SB
Directions Served	L	R	L	T	T	LTR	LTR
Maximum Queue (ft)	28	7	285	427	386	1087	45
Average Queue (ft)	2	0	181	100	71	1054	14
95th Queue (ft)	14	6	320	407	352	1139	55
Link Distance (ft)				652	652	1060	515
Upstream Blk Time (%)				0	0	92	
Queuing Penalty (veh)				1	0	0	
Storage Bay Dist (ft)	288	800	288				
Storage Blk Time (%)			19	10			
Queuing Penalty (veh)			69	9			

Intersection: 6: US Route 60 & Batterson Road

Movement	EB	EB	WB	SB
Directions Served	L	T	U	LR
Maximum Queue (ft)	34	61	9	55
Average Queue (ft)	5	2	0	16
95th Queue (ft)	22	65	5	40
Link Distance (ft)		799		575
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	163		163	
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: Dorset Road & US Route 60

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	SB	SB
Directions Served	L	T	T	R	L	T	T	R	LTR	L	TR
Maximum Queue (ft)	300	1483	1485	550	76	84	83	5	903	334	71
Average Queue (ft)	165	1209	1197	253	21	18	26	0	650	183	24
95th Queue (ft)	365	1846	1848	696	60	58	65	3	1150	315	56
Link Distance (ft)		1437	1437			799	799		1090	462	462
Upstream Blk Time (%)		38	32						15		
Queuing Penalty (veh)		0	0						0		
Storage Bay Dist (ft)	300			550	350			563			
Storage Blk Time (%)	0	42	37	1							
Queuing Penalty (veh)	2	51	37	6							

Intersection: 8: Jude's Ferry Road & Batterson Road

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	LTR	LT	R
Maximum Queue (ft)	42	60	26	284	74
Average Queue (ft)	11	22	2	56	3
95th Queue (ft)	34	51	16	181	40
Link Distance (ft)	965	944	811	587	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					200
Storage Blk Time (%)				1	0
Queuing Penalty (veh)				0	0

Network Summary

Network wide Queuing Penalty: 253

Queues

CRO 237 - Route 60 Corridor - Powhatan

1: Stavemill Road/Luck Stone Road & US Route 60

06/22/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	136	1099	58	484	2185	239	115	133	66	68	58
v/c Ratio	0.53	0.90	0.08	0.93	0.76	0.24	0.82	0.40	0.70	0.69	0.20
Control Delay	63.1	37.1	0.2	66.8	22.6	2.2	95.1	3.6	92.6	90.4	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	63.1	37.1	0.2	66.8	22.6	2.2	95.1	3.6	92.6	90.4	1.5
Queue Length 50th (ft)	0	454	0	368	463	0	91	0	54	56	0
Queue Length 95th (ft)	93	#427	1	#571	525	35	#196	0	#134	#136	0
Internal Link Dist (ft)		1256			1551		719			735	
Turn Bay Length (ft)	863		363	738		375					400
Base Capacity (vph)	267	1223	691	529	2871	997	141	332	94	98	297
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	0.51	0.90	0.08	0.91	0.76	0.24	0.82	0.40	0.70	0.69	0.20

Intersection Summary

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

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

1: Stavemill Road/Luck Stone Road & US Route 60

CRO 237 - Route 60 Corridor - Powhatan

06/22/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	103	833	44	367	1656	181	46	41	101	60	42	44
Future Volume (vph)	103	833	44	367	1656	181	46	41	101	60	42	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	7.2	7.2	6.5	7.5	7.5		6.5	6.5	7.2	7.2	7.2
Lane Util. Factor	0.97	0.95	1.00	1.00	0.91	1.00		1.00	1.00	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.97	1.00	0.95	0.99	1.00
Satd. Flow (prot)	3433	3539	1583	1770	5085	1583		1815	1583	1681	1753	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.97	1.00	0.95	0.99	1.00
Satd. Flow (perm)	3433	3539	1583	1770	5085	1583		1815	1583	1681	1753	1583
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor (vph)	124%	124%	124%	124%	124%	124%	124%	124%	124%	124%	124%	124%
Adj. Flow (vph)	136	1099	58	484	2185	239	61	54	133	79	55	58
RTOR Reduction (vph)	0	0	38	0	0	104	0	0	123	0	0	55
Lane Group Flow (vph)	136	1099	20	484	2185	135	0	115	10	66	68	3
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases			2			6			3			4
Actuated Green, G (s)	9.1	42.1	42.1	36.1	68.8	68.8		9.5	9.5	6.9	6.9	6.9
Effective Green, g (s)	9.1	42.1	42.1	36.1	68.8	68.8		9.5	9.5	6.9	6.9	6.9
Actuated g/C Ratio	0.07	0.35	0.35	0.30	0.56	0.56		0.08	0.08	0.06	0.06	0.06
Clearance Time (s)	6.5	7.2	7.2	6.5	7.5	7.5		6.5	6.5	7.2	7.2	7.2
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0	6.0		3.0	3.0	3.5	3.5	3.5
Lane Grp Cap (vph)	256	1221	546	523	2867	892		141	123	95	99	89
v/s Ratio Prot	0.04	c0.31		c0.27	0.43			c0.06		c0.04	0.04	
v/s Ratio Perm			0.01			0.09			0.01			0.00
v/c Ratio	0.53	0.90	0.04	0.93	0.76	0.15		0.82	0.08	0.69	0.69	0.04
Uniform Delay, d1	54.4	38.0	26.5	41.6	20.3	12.7		55.4	52.2	56.5	56.5	54.4
Progression Factor	1.03	0.70	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.9	9.9	0.1	22.4	2.0	0.4		29.1	0.3	20.4	18.6	0.2
Delay (s)	57.7	36.5	26.6	64.0	22.3	13.0		84.5	52.5	76.9	75.1	54.6
Level of Service	E	D	C	E	C	B		F	D	E	E	D
Approach Delay (s)		38.3			28.5			67.3			69.5	
Approach LOS		D			C			E			E	
Intersection Summary												
HCM 2000 Control Delay			35.0			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.89									
Actuated Cycle Length (s)			122.0			Sum of lost time (s)			27.7			
Intersection Capacity Utilization			83.1%			ICU Level of Service			E			
Analysis Period (min)			15									
c Critical Lane Group												



Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	180	1147	12	2207	342	3	68	69	349
v/c Ratio	0.61	0.47	0.14	0.74	0.32	0.01	0.31	0.33	0.87
Control Delay	61.5	9.0	83.8	7.4	0.7	33.3	46.5	47.1	46.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.5	9.0	83.8	7.4	0.7	33.3	46.5	47.1	46.5
Queue Length 50th (ft)	73	74	9	104	0	1	49	50	141
Queue Length 95th (ft)	m101	m410	m15	124	m4	9	91	92	244
Internal Link Dist (ft)		916		2019		345		986	
Turn Bay Length (ft)	363		338		313		440		
Base Capacity (vph)	295	2442	88	2975	1068	377	301	290	490
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.47	0.14	0.74	0.32	0.01	0.23	0.24	0.71

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

2: Private Driveway/South Creek One & US Route 60

CRO 237 - Route 60 Corridor - Powhatan

06/22/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	138	878	1	9	1691	262	1	1	1	104	1	267
Future Volume (vph)	138	878	1	9	1691	262	1	1	1	104	1	267
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		6.5	7.4	7.4		6.5		6.5	6.5	6.5
Lane Util. Factor	0.97	0.95		1.00	0.91	1.00		1.00		0.95	0.95	1.00
Frt	1.00	1.00		1.00	1.00	0.85		0.95		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.98		0.95	0.95	1.00
Satd. Flow (prot)	3433	3539		1770	5085	1583		1750		1681	1687	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.94		0.76	0.73	1.00
Satd. Flow (perm)	3433	3539		1770	5085	1583		1673		1338	1288	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor (vph)	124%	124%	124%	124%	124%	124%	124%	124%	124%	124%	124%	124%
Adj. Flow (vph)	180	1146	1	12	2207	342	1	1	1	136	1	349
RTOR Reduction (vph)	0	0	0	0	0	153	0	1	0	0	0	144
Lane Group Flow (vph)	180	1147	0	12	2207	189	0	2	0	68	69	205
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	1	6		5	2			3			3	
Permitted Phases						2	3			3		3
Actuated Green, G (s)	14.4	80.3		2.5	67.5	67.5		19.7		19.7	19.7	19.7
Effective Green, g (s)	14.4	80.3		2.5	67.5	67.5		19.7		19.7	19.7	19.7
Actuated g/C Ratio	0.12	0.66		0.02	0.55	0.55		0.16		0.16	0.16	0.16
Clearance Time (s)	6.5	6.5		6.5	7.4	7.4		6.5		6.5	6.5	6.5
Vehicle Extension (s)	2.5	6.0		2.5	6.0	6.0		2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	405	2329		36	2813	875		270		216	207	255
v/s Ratio Prot	0.05	c0.32		0.01	c0.43							
v/s Ratio Perm						0.12		0.00		0.05	0.05	c0.13
v/c Ratio	0.44	0.49		0.33	0.78	0.22		0.01		0.31	0.33	0.80
Uniform Delay, d1	50.1	10.5		58.9	21.5	13.8		42.9		45.2	45.3	49.3
Progression Factor	0.98	0.78		1.46	0.31	0.05		1.00		1.00	1.00	1.00
Incremental Delay, d2	0.5	0.7		2.9	1.7	0.4		0.0		0.6	0.7	16.1
Delay (s)	49.8	8.9		88.8	8.2	1.1		43.0		45.8	46.0	65.4
Level of Service	D	A		F	A	A		D		D	D	E
Approach Delay (s)		14.4			7.7			43.0			59.9	
Approach LOS		B			A			D			E	
Intersection Summary												
HCM 2000 Control Delay			15.5			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.76									
Actuated Cycle Length (s)			122.0			Sum of lost time (s)				20.4		
Intersection Capacity Utilization			83.0%			ICU Level of Service				E		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

3: Urbine Road/Batterson Road & US Route 60

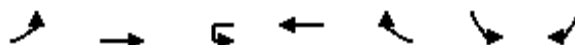
CRO 237 - Route 60 Corridor - Powhatan

06/22/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 			 	
Traffic Volume (veh/h)	8	964	11	13	1833	78	3	2	3	35	3	16
Future Volume (Veh/h)	8	964	11	13	1833	78	3	2	3	35	3	16
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	11	1272	15	17	2418	103	4	3	4	46	4	21
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		Raised			Raised							
Median storage (veh)		2			2							
Upstream signal (ft)					996							
pX, platoon unblocked	0.46						0.46	0.46		0.46	0.46	0.46
vC, conflicting volume	2521			1287			2560	3849	636	3116	3761	1209
vC1, stage 1 conf vol							1294	1294		2452	2452	
vC2, stage 2 conf vol							1266	2555		664	1309	
vCu, unblocked vol	1962			1287			2047	4839	636	3250	4649	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	92			97			97	91	99	0	92	96
cM capacity (veh/h)	135			535			141	32	421	35	52	500
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1		
Volume Total	11	636	636	15	17	1209	1209	103	11	71		
Volume Left	11	0	0	0	17	0	0	0	4	46		
Volume Right	0	0	0	15	0	0	0	103	4	21		
cSH	135	1700	1700	1700	535	1700	1700	1700	83	50		
Volume to Capacity	0.08	0.37	0.37	0.01	0.03	0.71	0.71	0.06	0.13	1.43		
Queue Length 95th (ft)	7	0	0	0	2	0	0	0	11	167		
Control Delay (s)	34.0	0.0	0.0	0.0	12.0	0.0	0.0	0.0	54.8	410.6		
Lane LOS	D				B				F	F		
Approach Delay (s)	0.3				0.1				54.8	410.6		
Approach LOS									F	F		
Intersection Summary												
Average Delay			7.7									
Intersection Capacity Utilization			76.0%		ICU Level of Service					D		
Analysis Period (min)			15									

Queues
4: US Route 60 & Jude's Ferry Road

CRO 237 - Route 60 Corridor - Powhatan
06/22/2017



Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	193	1146	1	2252	185	149	256
v/c Ratio	0.98	0.41	0.01	0.99	0.17	0.96	0.84
Control Delay	117.0	2.7	41.0	21.8	0.2	116.7	41.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	117.0	2.7	41.0	21.8	0.2	116.7	41.2
Queue Length 50th (ft)	160	33	1	137	0	119	58
Queue Length 95th (ft)	m#305	m96	m1	#1114	m0	#252	#200
Internal Link Dist (ft)		640		3098		846	
Turn Bay Length (ft)	475		325		238	300	
Base Capacity (vph)	197	2776	87	2274	1065	156	305
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.98	0.41	0.01	0.99	0.17	0.96	0.84

Intersection Summary

- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis

4: US Route 60 & Jude's Ferry Road

CRO 237 - Route 60 Corridor - Powhatan

06/22/2017



Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	146	869	1	1707	140	113	194
Future Volume (vph)	146	869	1	1707	140	113	194
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5	6.2	6.2	6.5	6.5
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	1770	3539	1583	1770	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1770	3539	1770	3539	1583	1770	1583
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor (vph)	124%	124%	124%	124%	124%	124%	124%
Adj. Flow (vph)	193	1146	1	2252	185	149	256
RTOR Reduction (vph)	0	0	0	0	49	0	165
Lane Group Flow (vph)	193	1146	1	2252	136	149	91
Turn Type	Prot	NA	Prot	NA	Perm	Prot	Perm
Protected Phases	1	6	5	2		3	
Permitted Phases					2		3
Actuated Green, G (s)	13.6	90.5	1.2	78.4	78.4	10.8	10.8
Effective Green, g (s)	13.6	90.5	1.2	78.4	78.4	10.8	10.8
Actuated g/C Ratio	0.11	0.74	0.01	0.64	0.64	0.09	0.09
Clearance Time (s)	6.5	6.5	6.5	6.2	6.2	6.5	6.5
Vehicle Extension (s)	2.5	6.0	2.5	6.0	6.0	2.5	2.5
Lane Grp Cap (vph)	197	2625	17	2274	1017	156	140
v/s Ratio Prot	c0.11	0.32	0.00	c0.64		c0.08	
v/s Ratio Perm					0.09		0.06
v/c Ratio	0.98	0.44	0.06	0.99	0.13	0.96	0.65
Uniform Delay, d1	54.1	6.0	59.8	21.4	8.5	55.4	53.8
Progression Factor	1.14	0.48	0.73	0.32	0.00	1.00	1.00
Incremental Delay, d2	54.6	0.5	0.7	13.3	0.2	58.2	9.3
Delay (s)	116.3	3.4	44.7	20.1	0.2	113.6	63.0
Level of Service	F	A	D	C	A	F	E
Approach Delay (s)		19.7		18.6		81.6	
Approach LOS		B		B		F	

Intersection Summary

HCM 2000 Control Delay	25.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	122.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	92.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis CRO 237 - Route 60 Corridor - Powhatan 5: New Dorset Road/Private Driveway & US Route 60

06/22/2017

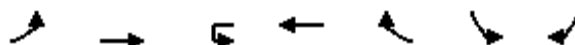
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	825	18	274	1638	1	52	1	182	1	1	1
Future Volume (Veh/h)	3	825	18	274	1638	1	52	1	182	1	1	1
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	4	1088	24	361	2161	1	69	1	240	1	1	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	Raised			Raised								
Median storage (veh)	2			2								
Upstream signal (ft)				720								
pX, platoon unblocked	0.38							0.38	0.38			
vC, conflicting volume	2162				1112				2900	3980	544	3676
vC1, stage 1 conf vol							1096	1096				2883
vC2, stage 2 conf vol							1804	2884				792
vCu, unblocked vol	779				1112				2735	5597	544	4790
tC, single (s)	4.1				4.1				7.5	6.5	6.9	7.5
tC, 2 stage (s)							6.5	5.5				6.5
tF (s)	2.2				2.2				3.5	4.0	3.3	3.5
p0 queue free %	99				42				36	67	50	0
cM capacity (veh/h)	315				624				108	3	483	0
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1		
Volume Total	4	544	544	24	361	1080	1080	1	310	3		
Volume Left	4	0	0	0	361	0	0	0	69	1		
Volume Right	0	0	0	24	0	0	0	1	240	1		
cSH	315	1700	1700	1700	624	1700	1700	1700	212	0		
Volume to Capacity	0.01	0.32	0.32	0.01	0.58	0.64	0.64	0.00	1.46	92.52		
Queue Length 95th (ft)	1	0	0	0	93	0	0	0	463	Err		
Control Delay (s)	16.6	0.0	0.0	0.0	18.4	0.0	0.0	0.0	274.4	Err		
Lane LOS	C				C				F	F		
Approach Delay (s)	0.1				2.6				274.4	Err		
Approach LOS										F	F	
Intersection Summary												
Average Delay				30.8								
Intersection Capacity Utilization				90.0%	ICU Level of Service						E	
Analysis Period (min)				15								

HCM Unsignalized Intersection Capacity Analysis

6: US Route 60 & Batterson Road

CRO 237 - Route 60 Corridor - Powhatan

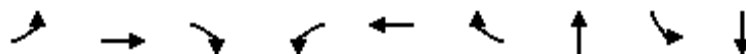
06/22/2017



Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR	
Lane Configurations								
Traffic Volume (veh/h)	30	838	7	1673	6	2	50	
Future Volume (Veh/h)	30	838	7	1673	6	2	50	
Sign Control		Free		Free		Stop		
Grade		0%		0%		0%		
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	
Hourly flow rate (vph)	38	1071	0	2139	8	3	64	
Pedestrians								
Lane Width (ft)								
Walking Speed (ft/s)								
Percent Blockage								
Right turn flare (veh)								
Median type		Raised		Raised				
Median storage veh		2		2				
Upstream signal (ft)		899						
pX, platoon unblocked			0.00			0.81		
vC, conflicting volume	2147		0			2750	1070	
vC1, stage 1 conf vol						2139		
vC2, stage 2 conf vol						612		
vCu, unblocked vol	2147		0			2690	1070	
tC, single (s)	4.1		0.0			6.8	6.9	
tC, 2 stage (s)						5.8		
tF (s)	2.2		0.0			3.5	3.3	
p0 queue free %	85		0			96	71	
cM capacity (veh/h)	248		0			74	217	
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	WB 4	SB 1
Volume Total	38	536	536	1070	1070	8	0	67
Volume Left	38	0	0	0	0	0	0	3
Volume Right	0	0	0	0	0	8	0	64
cSH	248	1700	1700	1700	1700	1700	1700	200
Volume to Capacity	0.15	0.32	0.32	0.63	0.63	0.00	0.00	0.34
Queue Length 95th (ft)	13	0	0	0	0	0	0	35
Control Delay (s)	22.2	0.0	0.0	0.0	0.0	0.0	0.0	31.9
Lane LOS	C							D
Approach Delay (s)	0.8			0.0				31.9
Approach LOS								D
Intersection Summary								
Average Delay			0.9					
Intersection Capacity Utilization			68.0%		ICU Level of Service			C
Analysis Period (min)			15					

Queues
7: Dorset Road & US Route 60

CRO 237 - Route 60 Corridor - Powhatan
06/22/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	96	955	151	75	1803	218	273	111	337
v/c Ratio	1.02	0.56	0.18	0.49	1.03	0.24	1.19	0.57	1.15
Control Delay	155.5	25.1	3.6	49.5	39.0	1.0	166.1	63.7	128.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	155.5	25.1	3.6	49.5	39.0	1.0	166.1	63.7	128.3
Queue Length 50th (ft)	~80	291	0	61	~792	9	~257	84	~217
Queue Length 95th (ft)	#195	358	38	m67	m#827	m6	#434	147	#407
Internal Link Dist (ft)		1395			819		1109		463
Turn Bay Length (ft)	300		550	350		563			
Base Capacity (vph)	94	1704	840	169	1746	891	229	195	294
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.02	0.56	0.18	0.44	1.03	0.24	1.19	0.57	1.15

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis

7: Dorset Road & US Route 60

CRO 237 - Route 60 Corridor - Powhatan

06/22/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	74	739	117	58	1396	169	147	37	27	86	51	210
Future Volume (vph)	74	739	117	58	1396	169	147	37	27	86	51	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.7	6.7	6.5	6.8	6.8		6.5		6.5	6.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.98		1.00	0.88	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.97		0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583		1769		1770	1638	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.97		0.95	1.00	
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583		1769		1770	1638	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor (vph)	124%	124%	124%	124%	124%	124%	124%	124%	124%	124%	124%	124%
Adj. Flow (vph)	96	955	151	75	1803	218	190	48	35	111	66	271
RTOR Reduction (vph)	0	0	80	0	0	113	0	4	0	0	113	0
Lane Group Flow (vph)	96	955	71	75	1803	105	0	269	0	111	224	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA		Split	NA	
Protected Phases	1	6		5	2		3	3		4	4	
Permitted Phases			6			2						
Actuated Green, G (s)	7.8	57.4	57.4	9.4	58.9	58.9		15.5		13.5	13.5	
Effective Green, g (s)	7.8	57.4	57.4	9.4	58.9	58.9		15.5		13.5	13.5	
Actuated g/C Ratio	0.06	0.47	0.47	0.08	0.48	0.48		0.13		0.11	0.11	
Clearance Time (s)	6.5	6.7	6.7	6.5	6.8	6.8		6.5		6.5	6.5	
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0	5.0		4.0		2.5	2.5	
Lane Grp Cap (vph)	113	1665	744	136	1708	764		224		195	181	
v/s Ratio Prot	c0.05	0.27		0.04	c0.51			c0.15		0.06	c0.14	
v/s Ratio Perm			0.04			0.07						
v/c Ratio	0.85	0.57	0.10	0.55	1.06	0.14		1.20		0.57	1.24	
Uniform Delay, d1	56.5	23.4	17.9	54.3	31.6	17.5		53.2		51.5	54.2	
Progression Factor	1.00	1.00	1.00	0.85	0.45	0.34		1.00		1.00	1.00	
Incremental Delay, d2	41.5	1.4	0.3	1.9	31.3	0.1		124.5		3.1	145.2	
Delay (s)	98.0	24.9	18.2	48.2	45.6	6.1		177.8		54.6	199.4	
Level of Service	F	C	B	D	D	A		F		D	F	
Approach Delay (s)		29.9			41.6			177.8			163.5	
Approach LOS		C			D			F			F	
Intersection Summary												
HCM 2000 Control Delay			60.9				HCM 2000 Level of Service			E		
HCM 2000 Volume to Capacity ratio			1.09									
Actuated Cycle Length (s)			122.0				Sum of lost time (s)			26.3		
Intersection Capacity Utilization			108.8%				ICU Level of Service			G		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis 8: Jude's Ferry Road & Batterson Road

CRO 237 - Route 60 Corridor - Powhatan

06/22/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	2	2	107	18	48	1	230	39	11	197	14
Future Volume (Veh/h)	14	2	2	107	18	48	1	230	39	11	197	14
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	20	3	3	151	25	68	1	324	55	16	278	20
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (ft)								926				
pX, platoon unblocked												
vC, conflicting volume	744	691	278	668	684	352	298			379		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	744	691	278	668	684	352	298			379		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	93	99	100	59	93	90	100			99		
cM capacity (veh/h)	279	362	761	364	366	692	1263			1179		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2							
Volume Total	26	244	380	294	20							
Volume Left	20	151	1	16	0							
Volume Right	3	68	55	0	20							
cSH	310	420	1263	1179	1700							
Volume to Capacity	0.08	0.58	0.00	0.01	0.01							
Queue Length 95th (ft)	7	90	0	1	0							
Control Delay (s)	17.7	24.8	0.0	0.6	0.0							
Lane LOS	C	C	A	A								
Approach Delay (s)	17.7	24.8	0.0	0.5								
Approach LOS	C	C										
Intersection Summary												
Average Delay			6.9									
Intersection Capacity Utilization			43.5%			ICU Level of Service			A			
Analysis Period (min)			15									

Intersection: 1: Stavemill Road/Luck Stone Road & US Route 60

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	L	T	T	R	L	T	T	T	R	LT	R
Maximum Queue (ft)	89	104	297	310	82	635	717	807	502	189	178	114
Average Queue (ft)	32	46	181	195	13	444	395	384	284	44	90	45
95th Queue (ft)	73	86	274	288	55	738	859	817	564	121	162	88
Link Distance (ft)			1264	1264			1578	1578	1578			724
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	863	863			363	738				375	400	
Storage Blk Time (%)				0	0	6	4		0	0		
Queuing Penalty (veh)				0	0	43	16		0	0		

Intersection: 1: Stavemill Road/Luck Stone Road & US Route 60

Movement	SB	SB	SB
Directions Served	L	LT	R
Maximum Queue (ft)	117	119	60
Average Queue (ft)	51	44	19
95th Queue (ft)	98	94	43
Link Distance (ft)	723	723	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			400
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: Private Driveway/South Creek One & US Route 60

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	B100	B100	NB
Directions Served	L	L	T	TR	L	T	T	T	R	T	T	LTR
Maximum Queue (ft)	111	124	149	139	148	522	544	484	261	960	1085	23
Average Queue (ft)	42	52	41	38	16	336	357	285	72	63	87	2
95th Queue (ft)	91	100	113	107	99	494	520	467	176	490	573	13
Link Distance (ft)			909	909		2020	2020	2020		1264	1264	348
Upstream Blk Time (%)										0	0	
Queuing Penalty (veh)										0	0	
Storage Bay Dist (ft)	363	363			338				313			
Storage Blk Time (%)					0	8		1	0			
Queuing Penalty (veh)					0	1		4	0			

Intersection: 2: Private Driveway/South Creek One & US Route 60

Movement	SB	SB	SB
Directions Served	L	LT	R
Maximum Queue (ft)	118	149	257
Average Queue (ft)	26	69	118
95th Queue (ft)	76	124	217
Link Distance (ft)		977	977
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	440		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Urbine Road/Batterson Road & US Route 60

Movement	EB	EB	WB	WB	WB	WB	NB	SB
Directions Served	L	T	L	T	T	R	LTR	LTR
Maximum Queue (ft)	35	2	41	817	955	164	60	454
Average Queue (ft)	5	0	11	98	178	6	17	373
95th Queue (ft)	22	0	35	549	769	126	52	547
Link Distance (ft)		3120		909	909	909	419	431
Upstream Blk Time (%)				0	1	0		61
Queuing Penalty (veh)				1	4	0		0
Storage Bay Dist (ft)	188		188					
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 4: US Route 60 & Jude's Ferry Road

Movement	EB	EB	EB	WB	WB	WB	WB	SB	SB
Directions Served	L	T	T	U	T	T	R	L	R
Maximum Queue (ft)	309	186	152	8	772	782	238	296	411
Average Queue (ft)	169	48	54	0	488	500	131	148	193
95th Queue (ft)	315	122	115	6	821	840	302	272	376
Link Distance (ft)		652	652		3120	3120			811
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	475			325			238	300	
Storage Blk Time (%)					20	24	1	2	4
Queuing Penalty (veh)					0	42	7	4	5

Intersection: 5: New Dorset Road/Private Driveway & US Route 60

Movement	EB	EB	WB	WB	WB	NB	SB
Directions Served	L	R	L	T	T	LTR	LTR
Maximum Queue (ft)	30	15	286	427	359	1101	42
Average Queue (ft)	4	1	185	47	26	1048	7
95th Queue (ft)	19	8	299	255	200	1214	36
Link Distance (ft)				652	652	1060	515
Upstream Blk Time (%)				0	0	90	
Queuing Penalty (veh)				0	0	0	
Storage Bay Dist (ft)	288	800	288				
Storage Blk Time (%)			2	1			
Queuing Penalty (veh)			15	2			

Intersection: 6: US Route 60 & Batterson Road

Movement	EB	EB	EB	WB	WB	WB	WB	SB
Directions Served	L	T	T	U	T	T	R	LR
Maximum Queue (ft)	135	234	232	41	5	7	6	336
Average Queue (ft)	65	58	58	8	0	1	0	127
95th Queue (ft)	142	331	334	30	7	11	4	359
Link Distance (ft)		799	799		3652	3652		575
Upstream Blk Time (%)		2	2					3
Queuing Penalty (veh)		9	9					0
Storage Bay Dist (ft)	163			163			100	
Storage Blk Time (%)	12	7						
Queuing Penalty (veh)	62	3						

Intersection: 7: Dorset Road & US Route 60

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	SB	SB
Directions Served	L	T	T	R	L	T	T	R	LTR	L	TR
Maximum Queue (ft)	217	406	380	95	349	580	586	287	894	489	503
Average Queue (ft)	92	208	180	15	76	355	360	34	588	343	450
95th Queue (ft)	194	497	474	71	266	549	557	218	991	651	563
Link Distance (ft)		1437	1437			799	799		1090	462	462
Upstream Blk Time (%)		1	1			0	0		4	36	72
Queuing Penalty (veh)		0	0			0	0		0	0	0
Storage Bay Dist (ft)	300			550	350			563			
Storage Blk Time (%)	0	2	2	0	0	11	1	0			
Queuing Penalty (veh)	0	2	3	0	1	8	2	0			

Intersection: 8: Jude's Ferry Road & Batterson Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LT
Maximum Queue (ft)	39	136	4	42
Average Queue (ft)	12	61	0	3
95th Queue (ft)	35	108	4	17
Link Distance (ft)	965	944	811	587
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 245

Appendix E

2036 Alternative/Improved Conditions Analysis

Queues

1: Stavemill Road/Luck Stone Road & US Route 60

06/20/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	66	2198	16	109	806	58	96	508	49	49	16
v/c Ratio	0.40	1.13	0.02	0.23	0.24	0.05	0.86	1.23	0.61	0.60	0.06
Control Delay	66.7	83.2	0.0	49.1	9.4	0.1	112.7	150.9	89.2	88.1	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	66.7	83.2	0.0	49.1	9.4	0.1	112.7	150.9	89.2	88.1	0.4
Queue Length 50th (ft)	28	~1096	0	40	98	0	~83	~394	42	42	0
Queue Length 95th (ft)	m44	#1227	m0	69	119	0	#197	#613	#105	#105	0
Internal Link Dist (ft)		1256			1551		719			735	
Turn Bay Length (ft)	863		363	738		375					400
Base Capacity (vph)	164	1952	970	480	3362	1097	111	414	80	81	281
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	0.40	1.13	0.02	0.23	0.24	0.05	0.86	1.23	0.61	0.60	0.06

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

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

HCM Signalized Intersection Capacity Analysis

1: Stavemill Road/Luck Stone Road & US Route 60

06/20/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	1631	12	81	598	43	54	17	377	66	7	12
Future Volume (vph)	49	1631	12	81	598	43	54	17	377	66	7	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	7.2	7.2	6.5	7.5	7.5		6.5	6.5	7.2	7.2	7.2
Lane Util. Factor	0.97	0.95	1.00	0.97	0.91	1.00		1.00	1.00	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.96	1.00	0.95	0.96	1.00
Satd. Flow (prot)	3433	3539	1583	3433	5085	1583		1795	1583	1681	1700	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.96	1.00	0.95	0.96	1.00
Satd. Flow (perm)	3433	3539	1583	3433	5085	1583		1795	1583	1681	1700	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
Growth Factor (vph)	124%	124%	124%	124%	124%	124%	124%	124%	124%	124%	124%	124%
Adj. Flow (vph)	66	2198	16	109	806	58	73	23	508	89	9	16
RTOR Reduction (vph)	0	0	8	0	0	21	0	0	78	0	0	15
Lane Group Flow (vph)	66	2198	8	109	806	37	0	96	430	49	49	1
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	Perm
Protected Phases	5	2		1	6		3	3	1	4	4	
Permitted Phases			2			6			3			4
Actuated Green, G (s)	4.8	66.2	66.2	18.8	79.9	79.9		7.8	26.6	4.8	4.8	4.8
Effective Green, g (s)	4.8	66.2	66.2	18.8	79.9	79.9		7.8	26.6	4.8	4.8	4.8
Actuated g/C Ratio	0.04	0.53	0.53	0.15	0.64	0.64		0.06	0.21	0.04	0.04	0.04
Clearance Time (s)	6.5	7.2	7.2	6.5	7.5	7.5		6.5	6.5	7.2	7.2	7.2
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0	6.0		3.0	3.0	3.5	3.5	3.5
Lane Grp Cap (vph)	131	1874	838	516	3250	1011		112	336	64	65	60
v/s Ratio Prot	0.02	c0.62		0.03	0.16			0.05	c0.19	c0.03	0.03	
v/s Ratio Perm			0.01			0.02			0.08			0.00
v/c Ratio	0.50	1.17	0.01	0.21	0.25	0.04		0.86	1.28	0.77	0.75	0.01
Uniform Delay, d1	58.9	29.4	13.9	46.6	9.7	8.3		58.0	49.2	59.5	59.5	57.8
Progression Factor	1.05	0.64	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.4	82.6	0.0	0.2	0.2	0.1		43.6	147.0	42.2	39.4	0.1
Delay (s)	64.2	101.5	13.9	46.8	9.9	8.4		101.7	196.2	101.8	98.9	57.9
Level of Service	E	F	B	D	A	A		F	F	F	F	E
Approach Delay (s)		99.8			13.9			181.2			94.4	
Approach LOS		F			B			F			F	
Intersection Summary												
HCM 2000 Control Delay			91.0				HCM 2000 Level of Service		F			
HCM 2000 Volume to Capacity ratio			1.18									
Actuated Cycle Length (s)			125.0				Sum of lost time (s)		27.7			
Intersection Capacity Utilization			107.3%				ICU Level of Service		G			
Analysis Period (min)			15									
c Critical Lane Group												

Queues

2: Private Driveway/South Creek One & US Route 60

06/20/2017



Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	45	2027	1	773	98	3	40	40	42
v/c Ratio	0.27	0.68	0.01	0.20	0.08	0.03	0.47	0.48	0.22
Control Delay	57.8	2.9	63.0	1.2	0.1	48.3	73.8	75.5	2.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.8	2.9	63.0	1.2	0.1	48.3	73.8	75.5	2.7
Queue Length 50th (ft)	18	140	1	9	0	2	33	33	0
Queue Length 95th (ft)	m25	111	m3	m11	m0	12	73	73	0
Internal Link Dist (ft)		916		2019		345		986	
Turn Bay Length (ft)	363		338		313		440		
Base Capacity (vph)	167	2980	84	3946	1250	115	98	95	204
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.68	0.01	0.20	0.08	0.03	0.41	0.42	0.21

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

2: Private Driveway/South Creek One & US Route 60

06/20/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	1585	1	1	605	77	1	1	1	62	1	33
Future Volume (vph)	35	1585	1	1	605	77	1	1	1	62	1	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		6.5	7.4	7.4		6.5		6.5	6.5	6.5
Lane Util. Factor	0.97	0.95		1.00	0.91	1.00		1.00		0.95	0.95	1.00
Frt	1.00	1.00		1.00	1.00	0.85		0.95		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.98		0.95	0.95	1.00
Satd. Flow (prot)	3433	3539		1770	5085	1583		1750		1681	1687	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.87		0.76	0.73	1.00
Satd. Flow (perm)	3433	3539		1770	5085	1583		1552		1338	1292	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor (vph)	124%	124%	124%	124%	124%	124%	124%	124%	124%	124%	124%	124%
Adj. Flow (vph)	45	2026	1	1	773	98	1	1	1	79	1	42
RTOR Reduction (vph)	0	0	0	0	0	28	0	1	0	0	0	40
Lane Group Flow (vph)	45	2027	0	1	773	70	0	2	0	40	40	2
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	1	6		5	2			3			3	
Permitted Phases						2	3			3		3
Actuated Green, G (s)	8.8	97.5		1.2	89.0	89.0		6.8		6.8	6.8	6.8
Effective Green, g (s)	8.8	97.5		1.2	89.0	89.0		6.8		6.8	6.8	6.8
Actuated g/C Ratio	0.07	0.78		0.01	0.71	0.71		0.05		0.05	0.05	0.05
Clearance Time (s)	6.5	6.5		6.5	7.4	7.4		6.5		6.5	6.5	6.5
Vehicle Extension (s)	2.5	6.0		2.5	6.0	6.0		2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	241	2760		16	3620	1127		84		72	70	86
v/s Ratio Prot	c0.01	c0.57		0.00	0.15							
v/s Ratio Perm						0.04		0.00		0.03	c0.03	0.00
v/c Ratio	0.19	0.73		0.06	0.21	0.06		0.02		0.56	0.57	0.03
Uniform Delay, d1	54.7	7.1		61.3	6.1	5.4		56.0		57.6	57.7	56.0
Progression Factor	0.96	0.34		1.10	0.22	0.02		1.00		1.00	1.00	1.00
Incremental Delay, d2	0.2	1.2		1.2	0.1	0.1		0.1		7.2	8.9	0.1
Delay (s)	52.6	3.6		68.7	1.5	0.2		56.0		64.9	66.6	56.1
Level of Service	D	A		E	A	A		E		E	E	E
Approach Delay (s)		4.7			1.4			56.0			62.4	
Approach LOS		A			A			E			E	
Intersection Summary												
HCM 2000 Control Delay			6.1				HCM 2000 Level of Service			A		
HCM 2000 Volume to Capacity ratio			0.73									
Actuated Cycle Length (s)			125.0				Sum of lost time (s)			20.4		
Intersection Capacity Utilization			70.5%				ICU Level of Service			C		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

3: Urbine Road/Batterson Road & US Route 60

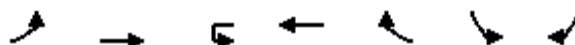
06/20/2017

																
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR				
Lane Configurations																
Traffic Volume (veh/h)	21	1628	7	7	528	92	6	9	2	37	1	12				
Future Volume (Veh/h)	21	1628	7	7	528	92	6	9	2	37	1	12				
Sign Control	Free				Free				Stop		Stop					
Grade	0%				0%				0%		0%					
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96				
Hourly flow rate (vph)	27	2103	9	9	682	119	8	12	3	48	1	16				
Pedestrians																
Lane Width (ft)																
Walking Speed (ft/s)																
Percent Blockage																
Right turn flare (veh)												12				
Median type	Raised						Raised									
Median storage (veh)	2						2									
Upstream signal (ft)				996												
pX, platoon unblocked	0.94						0.94	0.94			0.94	0.94	0.94			
vC, conflicting volume	801	2112					2516	2976	1052	1814	2866	341				
vC1, stage 1 conf vol							2157	2157			700	700				
vC2, stage 2 conf vol							360	819			1114	2166				
vCu, unblocked vol	673	2112					2488	2975	1052	1745	2858	186				
tC, single (s)	4.1	4.1					7.5	6.5	6.9	7.5	6.5	6.9				
tC, 2 stage (s)							6.5	5.5			6.5	5.5				
tF (s)	2.2	2.2					3.5	4.0	3.3	3.5	4.0	3.3				
p0 queue free %	97	96					83	85	99	70	99	98				
cM capacity (veh/h)	864	256					46	79	223	159	71	779				
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1						
Volume Total	27	1052	1052	9	9	341	341	119	23	65						
Volume Left	27	0	0	0	9	0	0	0	8	48						
Volume Right	0	0	0	9	0	0	0	119	3	16						
cSH	864	1700	1700	1700	256	1700	1700	1700	68	208						
Volume to Capacity	0.03	0.62	0.62	0.01	0.04	0.20	0.20	0.07	0.34	0.31						
Queue Length 95th (ft)	2	0	0	0	3	0	0	0	31	32						
Control Delay (s)	9.3	0.0	0.0	0.0	19.6	0.0	0.0	0.0	83.2	31.1						
Lane LOS	A				C						F	D				
Approach Delay (s)	0.1					0.2				83.2	31.1					
Approach LOS									F	D						
Intersection Summary																
Average Delay				1.4												
Intersection Capacity Utilization				69.9%	ICU Level of Service					C						
Analysis Period (min)				15												

Queues

4: US Route 60 & Jude's Ferry Road

06/20/2017



Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	616	1910	1	654	47	241	220
v/c Ratio	0.72	0.76	0.01	0.42	0.07	0.84	0.50
Control Delay	30.9	4.5	76.0	17.0	1.6	75.6	9.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.9	4.5	76.0	17.0	1.6	75.6	9.9
Queue Length 50th (ft)	212	116	1	204	0	188	0
Queue Length 95th (ft)	m215	m129	m3	259	5	#304	69
Internal Link Dist (ft)		640		3098		388	
Turn Bay Length (ft)	475		325		238	300	
Base Capacity (vph)	854	2527	84	1541	716	318	465
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.76	0.01	0.42	0.07	0.76	0.47

Intersection Summary

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

Queue shown is maximum after two cycles.

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

HCM Signalized Intersection Capacity Analysis

4: US Route 60 & Jude's Ferry Road

06/20/2017



Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations	←←	↑↑	←	↑↑	→	←	→
Traffic Volume (vph)	467	1448	1	496	36	183	167
Future Volume (vph)	467	1448	1	496	36	183	167
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5	6.2	6.2	6.5	6.5
Lane Util. Factor	0.97	0.95	1.00	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	3539	1770	3539	1583	1770	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	3539	1770	3539	1583	1770	1583
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor (vph)	124%	124%	124%	124%	124%	124%	124%
Adj. Flow (vph)	616	1910	1	654	47	241	220
RTOR Reduction (vph)	0	0	0	0	28	0	184
Lane Group Flow (vph)	616	1910	1	654	19	241	36
Turn Type	Prot	NA	Prot	NA	Perm	Prot	Perm
Protected Phases	1	6	5	2		3	
Permitted Phases					2		3
Actuated Green, G (s)	36.3	84.1	1.2	49.3	49.3	20.2	20.2
Effective Green, g (s)	36.3	84.1	1.2	49.3	49.3	20.2	20.2
Actuated g/C Ratio	0.29	0.67	0.01	0.39	0.39	0.16	0.16
Clearance Time (s)	6.5	6.5	6.5	6.2	6.2	6.5	6.5
Vehicle Extension (s)	2.5	6.0	2.5	6.0	6.0	2.5	2.5
Lane Grp Cap (vph)	996	2381	16	1395	624	286	255
v/s Ratio Prot	0.18	c0.54	0.00	c0.18		c0.14	
v/s Ratio Perm					0.01		0.02
v/c Ratio	0.62	0.80	0.06	0.47	0.03	0.84	0.14
Uniform Delay, d1	38.4	14.5	61.3	28.1	23.2	50.9	44.9
Progression Factor	0.66	0.27	1.33	0.64	0.24	1.00	1.00
Incremental Delay, d2	0.4	1.3	1.2	1.1	0.1	19.4	0.2
Delay (s)	25.7	5.2	82.9	19.2	5.7	70.2	45.1
Level of Service	C	A	F	B	A	E	D
Approach Delay (s)		10.2		18.4		58.3	
Approach LOS		B		B		E	
Intersection Summary							
HCM 2000 Control Delay			17.8		HCM 2000 Level of Service		B
HCM 2000 Volume to Capacity ratio			0.82				
Actuated Cycle Length (s)			125.0		Sum of lost time (s)		19.5
Intersection Capacity Utilization			83.5%		ICU Level of Service		E
Analysis Period (min)			15				
c Critical Lane Group							

HCM Unsignalized Intersection Capacity Analysis

5: New Dorset Road/Private Driveway & US Route 60

06/20/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	1693	39	74	591	1	9	2	222	1	1	1
Future Volume (Veh/h)	3	1693	39	74	591	1	9	2	222	1	1	1
Sign Control	Free				Free				Stop		Stop	
Grade	0%				0%				0%		0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	4	2233	51	98	780	1	12	3	293	1	1	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)	12											
Median type	Raised						Raised					
Median storage veh	2						2					
Upstream signal (ft)				720								
pX, platoon unblocked	0.87							0.87	0.87			
vC, conflicting volume	781				2284				2828	3218	1116	2102
vC1, stage 1 conf vol							2241	2241				976
vC2, stage 2 conf vol							588	977				1126
vCu, unblocked vol	456				2284				2803	3250	1116	1970
tC, single (s)	4.1				4.1				7.5	6.5	6.9	7.5
tC, 2 stage (s)							6.5	5.5				6.5
tF (s)	2.2				2.2				3.5	4.0	3.3	3.5
p0 queue free %	100				55				71	96	0	0
cM capacity (veh/h)	961				219				41	69	202	0
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1		
Volume Total	4	1116	1116	51	98	390	390	1	308	3		
Volume Left	4	0	0	0	98	0	0	0	12	1		
Volume Right	0	0	0	51	0	0	0	1	293	1		
cSH	961	1700	1700	1700	219	1700	1700	1700	212	0		
Volume to Capacity	0.00	0.66	0.66	0.03	0.45	0.23	0.23	0.00	1.45	Err		
Queue Length 95th (ft)	0	0	0	0	53	0	0	0	457	Err		
Control Delay (s)	8.8	0.0	0.0	0.0	34.2	0.0	0.0	0.0	265.0	Err		
Lane LOS	A				D				F	F		
Approach Delay (s)	0.0				3.8				265.0	Err		
Approach LOS										F	F	
Intersection Summary												
Average Delay				Err								
Intersection Capacity Utilization				88.4%	ICU Level of Service						E	
Analysis Period (min)				15								

HCM Unsignalized Intersection Capacity Analysis

6: US Route 60 & Batterson Road

06/20/2017

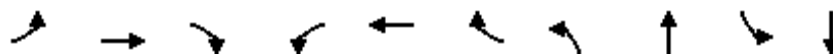


Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR	
Lane Configurations								
Traffic Volume (veh/h)	14	1670	1	575	1	1	24	
Future Volume (Veh/h)	14	1670	1	575	1	1	24	
Sign Control		Free		Free		Stop		
Grade		0%		0%		0%		
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	
Hourly flow rate (vph)	19	2227	0	767	1	1	32	
Pedestrians								
Lane Width (ft)								
Walking Speed (ft/s)								
Percent Blockage								
Right turn flare (veh)								
Median type		Raised		Raised				
Median storage veh)		2		2				
Upstream signal (ft)		899						
pX, platoon unblocked			0.00			0.43		
vC, conflicting volume	768		0			1918	384	
vC1, stage 1 conf vol						767		
vC2, stage 2 conf vol						1152		
vCu, unblocked vol	768		0			494	384	
tC, single (s)	4.1		0.0			6.8	6.9	
tC, 2 stage (s)						5.8		
tF (s)	2.2		0.0			3.5	3.3	
p0 queue free %	98		0			100	95	
cM capacity (veh/h)	842		0			346	615	
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	WB 4	SB 1
Volume Total	19	1114	1114	384	384	1	0	33
Volume Left	19	0	0	0	0	0	0	1
Volume Right	0	0	0	0	0	1	0	32
cSH	842	1700	1700	1700	1700	1700	1700	601
Volume to Capacity	0.02	0.66	0.66	0.23	0.23	0.00	0.00	0.05
Queue Length 95th (ft)	2	0	0	0	0	0	0	4
Control Delay (s)	9.4	0.0	0.0	0.0	0.0	0.0	0.0	11.3
Lane LOS	A							B
Approach Delay (s)	0.1			0.0				11.3
Approach LOS								B
Intersection Summary								
Average Delay			0.2					
Intersection Capacity Utilization			67.2%		ICU Level of Service			C
Analysis Period (min)			15					

Queues

7: Dorset Road & US Route 60

06/20/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	138	2173	114	55	685	82	171	151	189	43
v/c Ratio	0.55	1.03	0.11	0.79	0.41	0.10	0.66	1.01	1.02	0.44
Control Delay	58.7	52.6	0.2	133.2	7.9	0.2	64.9	119.7	126.8	44.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.7	52.6	0.2	133.2	7.9	0.2	64.9	119.7	126.8	44.1
Queue Length 50th (ft)	105	~1014	0	43	50	0	136	~94	~162	13
Queue Length 95th (ft)	170	#1104	0	#114	73	0	#234	#228	#303	51
Internal Link Dist (ft)		1395			819			1109		463
Turn Bay Length (ft)	300		550	350		563	300			
Base Capacity (vph)	253	2117	1027	70	1684	859	259	149	185	98
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.55	1.03	0.11	0.79	0.41	0.10	0.66	1.01	1.02	0.44

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

7: Dorset Road & US Route 60

06/20/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 			 	
Traffic Volume (vph)	98	1542	81	39	486	58	121	47	60	134	11	19
Future Volume (vph)	98	1542	81	39	486	58	121	47	60	134	11	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.7	6.7	6.5	6.8	6.8	6.5	6.5		6.5	6.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.92		1.00	0.91	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1705		1770	1687	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1705		1770	1687	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Growth Factor (vph)	124%	124%	124%	124%	124%	124%	124%	124%	124%	124%	124%	124%
Adj. Flow (vph)	138	2173	114	55	685	82	170	66	85	189	16	27
RTOR Reduction (vph)	0	0	48	0	0	45	0	37	0	0	26	0
Lane Group Flow (vph)	138	2173	66	55	685	37	171	114	0	189	17	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases			6			2						
Actuated Green, G (s)	19.2	72.2	72.2	4.0	56.9	56.9	18.3	8.2		14.4	4.3	
Effective Green, g (s)	19.2	72.2	72.2	4.0	56.9	56.9	18.3	8.2		14.4	4.3	
Actuated g/C Ratio	0.15	0.58	0.58	0.03	0.46	0.46	0.15	0.07		0.12	0.03	
Clearance Time (s)	6.5	6.7	6.7	6.5	6.8	6.8	6.5	6.5		6.5	6.5	
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0	5.0	4.0	4.0		2.5	2.5	
Lane Grp Cap (vph)	271	2044	914	56	1610	720	259	111		203	58	
v/s Ratio Prot	0.08	c0.61		c0.03	0.19		0.10	c0.07		c0.11	0.01	
v/s Ratio Perm			0.04			0.02						
v/c Ratio	0.51	1.06	0.07	0.98	0.43	0.05	0.66	1.02		0.93	0.29	
Uniform Delay, d1	48.6	26.4	11.6	60.5	23.0	19.0	50.4	58.4		54.8	58.9	
Progression Factor	1.00	1.00	1.00	1.35	0.34	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.5	39.2	0.2	109.4	0.8	0.1	6.8	91.9		44.0	2.0	
Delay (s)	50.1	65.6	11.8	191.1	8.5	19.1	57.2	150.3		98.8	60.9	
Level of Service	D	E	B	F	A	B	E	F		F	E	
Approach Delay (s)		62.2			21.8			100.9			91.8	
Approach LOS		E			C			F			F	
Intersection Summary												
HCM 2000 Control Delay			58.5									
HCM 2000 Volume to Capacity ratio			1.04									
Actuated Cycle Length (s)			125.0							26.3		
Intersection Capacity Utilization			95.7%									
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis8: Jude's Ferry Road & Batterson Road

06/20/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	5	1	12	5	13	1	201	297	38	339	19
Future Volume (Veh/h)	7	5	1	12	5	13	1	201	297	38	339	19
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	10	7	1	17	7	18	1	283	419	54	478	27
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								926				
pX, platoon unblocked												
vC, conflicting volume	1102	1290	478	1085	1108	492	505			702		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1102	1290	478	1085	1108	492	505			702		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	94	95	100	90	96	97	100			94		
cM capacity (veh/h)	170	153	587	178	197	576	1060			895		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2							
Volume Total	18	42	703	532	27							
Volume Left	10	17	1	54	0							
Volume Right	1	18	419	0	27							
cSH	170	259	1060	895	1700							
Volume to Capacity	0.11	0.16	0.00	0.06	0.02							
Queue Length 95th (ft)	9	14	0	5	0							
Control Delay (s)	28.7	21.6	0.0	1.6	0.0							
Lane LOS	D	C	A	A								
Approach Delay (s)	28.7	21.6	0.0	1.6								
Approach LOS	D	C										
Intersection Summary												
Average Delay			1.8									
Intersection Capacity Utilization			69.4%			ICU Level of Service				C		
Analysis Period (min)			15									

Intersection: 1: Stavemill Road/Luck Stone Road & US Route 60

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	NB
Directions Served	L	L	T	T	R	L	L	T	T	T	R	LT
Maximum Queue (ft)	54	78	550	566	226	82	132	161	162	109	37	400
Average Queue (ft)	12	32	281	281	11	13	59	83	72	10	12	274
95th Queue (ft)	39	67	518	538	97	47	108	144	138	57	33	545
Link Distance (ft)			1264	1264				1578	1578	1578		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	863	863			363	738	738				375	400
Storage Blk Time (%)				5	0							0
Queuing Penalty (veh)				1	0							2

Intersection: 1: Stavemill Road/Luck Stone Road & US Route 60

Movement	NB	SB	SB	SB
Directions Served	R	L	LT	R
Maximum Queue (ft)	755	134	99	22
Average Queue (ft)	618	62	20	7
95th Queue (ft)	945	116	61	21
Link Distance (ft)	725	723	723	
Upstream Blk Time (%)	54			
Queuing Penalty (veh)	0			
Storage Bay Dist (ft)			400	
Storage Blk Time (%)	61			
Queuing Penalty (veh)	54			

Intersection: 2: Private Driveway/South Creek One & US Route 60

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	SB	SB
Directions Served	L	L	T	TR	L	T	T	T	R	LTR	L	LT
Maximum Queue (ft)	26	49	90	77	3	74	70	48	39	25	92	136
Average Queue (ft)	4	14	22	12	0	17	19	8	7	2	14	55
95th Queue (ft)	16	39	68	47	2	49	54	31	27	14	51	105
Link Distance (ft)			909	909		2020	2020	2020		348		977
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	363	363			338				313		440	
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 2: Private Driveway/South Creek One & US Route 60

Movement	SB
Directions Served	R
Maximum Queue (ft)	64
Average Queue (ft)	20
95th Queue (ft)	44
Link Distance (ft)	977
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 3: Urbine Road/Batterson Road & US Route 60

Movement	EB	EB	WB	WB	NB	SB	SB
Directions Served	L	T	L	R	LTR	LT	R
Maximum Queue (ft)	20	4	36	20	95	131	37
Average Queue (ft)	3	0	6	1	30	50	10
95th Queue (ft)	12	4	25	11	79	111	33
Link Distance (ft)		3095		909	419	431	
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	188		188				300
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 4: US Route 60 & Jude's Ferry Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	SB	SB	B25
Directions Served	L	L	T	T	U	T	T	R	L	R	T
Maximum Queue (ft)	471	475	662	699	9	1259	1253	237	300	448	393
Average Queue (ft)	452	461	591	351	0	455	434	31	176	261	172
95th Queue (ft)	510	533	838	742	6	1323	1306	140	351	547	491
Link Distance (ft)			641	641		3095	3095			362	396
Upstream Blk Time (%)			40	3						40	28
Queuing Penalty (veh)			480	37						173	121
Storage Bay Dist (ft)	475	475			325			238	300		
Storage Blk Time (%)	11	47	42			37	25	0	3	40	
Queuing Penalty (veh)	102	418	244			0	11	0	6	90	

Intersection: 5: New Dorset Road/Private Driveway & US Route 60

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	T	R	L	T	T	LT	R	LTR
Maximum Queue (ft)	264	2512	2513	485	288	658	680	1086	300	60
Average Queue (ft)	19	941	918	83	266	520	222	1038	289	22
95th Queue (ft)	131	2564	2571	484	340	892	702	1199	305	68
Link Distance (ft)		3652	3652			641	641	1062		515
Upstream Blk Time (%)		0	0			52	4	87		
Queuing Penalty (veh)		2	2			213	16	0		
Storage Bay Dist (ft)	288			800	288				300	
Storage Blk Time (%)	0	45	10	0	58	53		82	76	
Queuing Penalty (veh)	0	2	5	1	210	49		226	10	

Intersection: 6: US Route 60 & Batterson Road

Movement	EB	EB	EB	WB	SB
Directions Served	L	T	T	U	LR
Maximum Queue (ft)	46	86	95	7	42
Average Queue (ft)	6	10	10	0	14
95th Queue (ft)	31	131	128	4	34
Link Distance (ft)		799	799		575
Upstream Blk Time (%)		0	0		
Queuing Penalty (veh)		0	0		
Storage Bay Dist (ft)	163			163	
Storage Blk Time (%)		1			
Queuing Penalty (veh)		0			

Queuing and Blocking Report

2036 AM Improved

06/21/2017

Intersection: 7: Dorset Road & US Route 60

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	T	R	L	TR	L	TR
Maximum Queue (ft)	300	1276	1257	550	99	120	119	22	253	339	253	83
Average Queue (ft)	141	648	620	106	23	28	36	1	111	134	137	27
95th Queue (ft)	320	1333	1305	451	72	87	94	10	213	277	227	63
Link Distance (ft)		1437	1437			799	799			1090	462	462
Upstream Blk Time (%)		5	3									
Queuing Penalty (veh)		0	0									
Storage Bay Dist (ft)	300			550	350			563	300			
Storage Blk Time (%)	0	22	14	0					0	2		
Queuing Penalty (veh)	1	28	14	2					0	3		

Intersection: 8: Jude's Ferry Road & Batterson Road

Movement	EB	WB	NB	B25	SB	SB
Directions Served	LTR	LTR	LTR	T	LT	R
Maximum Queue (ft)	55	198	6	119	561	139
Average Queue (ft)	15	61	0	4	237	11
95th Queue (ft)	42	220	4	72	655	87
Link Distance (ft)	972	950	396	362	587	
Upstream Blk Time (%)				0	26	
Queuing Penalty (veh)				0	0	
Storage Bay Dist (ft)						200
Storage Blk Time (%)					31	0
Queuing Penalty (veh)					7	0

Network Summary

Network wide Queuing Penalty: 2533

Queues

2036 PM Improved

1: Stavemill Road/Luck Stone Road & US Route 60

06/20/2017

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	136	1099	58	484	2185	239	115	133	66	68	58
v/c Ratio	0.64	0.72	0.07	0.83	0.80	0.25	0.68	0.21	0.55	0.54	0.17
Control Delay	48.7	18.0	0.2	55.5	24.0	2.6	65.9	1.6	64.9	63.5	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.7	18.0	0.2	55.5	24.0	2.6	65.9	1.6	64.9	63.5	1.0
Queue Length 50th (ft)	45	223	0	162	453	0	75	0	46	47	0
Queue Length 95th (ft)	#81	140	1	#234	526	38	#148	11	#100	#96	0
Internal Link Dist (ft)		1256			1551		719			735	
Turn Bay Length (ft)	863		363	738		375					400
Base Capacity (vph)	212	1521	782	604	2717	957	181	656	124	130	355
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	0.64	0.72	0.07	0.80	0.80	0.25	0.64	0.20	0.53	0.52	0.16

Intersection Summary

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

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

1: Stavemill Road/Luck Stone Road & US Route 60

2036 PM Improved

06/20/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	103	833	44	367	1656	181	46	41	101	60	42	44
Future Volume (vph)	103	833	44	367	1656	181	46	41	101	60	42	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	7.2	7.2	6.5	7.5	7.5		6.5	6.5	7.2	7.2	7.2
Lane Util. Factor	0.97	0.95	1.00	0.97	0.91	1.00		1.00	1.00	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.97	1.00	0.95	0.99	1.00
Satd. Flow (prot)	3433	3539	1583	3433	5085	1583		1815	1583	1681	1753	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.97	1.00	0.95	0.99	1.00
Satd. Flow (perm)	3433	3539	1583	3433	5085	1583		1815	1583	1681	1753	1583
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor (vph)	124%	124%	124%	124%	124%	124%	124%	124%	124%	124%	124%	124%
Adj. Flow (vph)	136	1099	58	484	2185	239	61	54	133	79	55	58
RTOR Reduction (vph)	0	0	34	0	0	114	0	0	98	0	0	55
Lane Group Flow (vph)	136	1099	24	484	2185	125	0	115	35	66	68	3
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	Perm
Protected Phases	5	2		1	6		3	3	1	4	4	
Permitted Phases			2			6			3			4
Actuated Green, G (s)	6.5	43.7	43.7	17.8	54.7	54.7		9.9	27.7	6.2	6.2	6.2
Effective Green, g (s)	6.5	43.7	43.7	17.8	54.7	54.7		9.9	27.7	6.2	6.2	6.2
Actuated g/C Ratio	0.06	0.42	0.42	0.17	0.52	0.52		0.09	0.26	0.06	0.06	0.06
Clearance Time (s)	6.5	7.2	7.2	6.5	7.5	7.5		6.5	6.5	7.2	7.2	7.2
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0	6.0		3.0	3.0	3.5	3.5	3.5
Lane Grp Cap (vph)	212	1472	658	581	2649	824		171	515	99	103	93
v/s Ratio Prot	0.04	c0.31		0.14	c0.43			c0.06	0.01	c0.04	0.04	
v/s Ratio Perm			0.02			0.08			0.01			0.00
v/c Ratio	0.64	0.75	0.04	0.83	0.82	0.15		0.67	0.07	0.67	0.66	0.04
Uniform Delay, d1	48.1	26.0	18.2	42.2	21.1	13.1		46.0	29.0	48.4	48.4	46.6
Progression Factor	0.73	0.57	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.9	3.2	0.1	9.9	3.1	0.4		10.0	0.1	16.3	15.3	0.2
Delay (s)	41.1	18.0	18.3	52.1	24.2	13.5		55.9	29.0	64.7	63.7	46.8
Level of Service	D	B	B	D	C	B		E	C	E	E	D
Approach Delay (s)		20.5			28.0			41.5			58.9	
Approach LOS		C			C			D			E	
Intersection Summary												
HCM 2000 Control Delay			27.9			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.80									
Actuated Cycle Length (s)			105.0			Sum of lost time (s)			27.7			
Intersection Capacity Utilization			74.3%			ICU Level of Service			D			
Analysis Period (min)			15									
c Critical Lane Group												

Queues
2: Private Driveway/South Creek One & US Route 60

2036 PM Improved
06/20/2017



Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	180	1147	12	2207	342	3	68	69	349
v/c Ratio	0.65	0.47	0.12	0.76	0.33	0.01	0.32	0.34	0.87
Control Delay	52.5	5.4	70.4	3.6	0.6	30.0	41.4	42.0	42.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.5	5.4	70.4	3.6	0.6	30.0	41.4	42.0	42.0
Queue Length 50th (ft)	64	87	8	45	0	1	42	43	111
Queue Length 95th (ft)	m99	160	m12	51	m0	9	83	84	#225
Internal Link Dist (ft)		916		2019		345		986	
Turn Bay Length (ft)	363		338		313		440		
Base Capacity (vph)	277	2460	101	2886	1046	340	273	263	468
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.47	0.12	0.76	0.33	0.01	0.25	0.26	0.75

Intersection Summary

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

Queue shown is maximum after two cycles.

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

HCM Signalized Intersection Capacity Analysis

2: Private Driveway/South Creek One & US Route 60

2036 PM Improved

06/20/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	138	878	1	9	1691	262	1	1	1	104	1	267
Future Volume (vph)	138	878	1	9	1691	262	1	1	1	104	1	267
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		6.5	7.4	7.4		6.5		6.5	6.5	6.5
Lane Util. Factor	0.97	0.95		1.00	0.91	1.00		1.00		0.95	0.95	1.00
Frt	1.00	1.00		1.00	1.00	0.85		0.95		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.98		0.95	0.95	1.00
Satd. Flow (prot)	3433	3539		1770	5085	1583		1750		1681	1687	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.93		0.76	0.73	1.00
Satd. Flow (perm)	3433	3539		1770	5085	1583		1659		1338	1288	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor (vph)	124%	124%	124%	124%	124%	124%	124%	124%	124%	124%	124%	124%
Adj. Flow (vph)	180	1146	1	12	2207	342	1	1	1	136	1	349
RTOR Reduction (vph)	0	0	0	0	0	165	0	1	0	0	0	153
Lane Group Flow (vph)	180	1147	0	12	2207	177	0	2	0	68	69	196
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	1	6		5	2			3			3	
Permitted Phases						2	3			3		3
Actuated Green, G (s)	13.7	67.8		1.2	54.4	54.4		16.5		16.5	16.5	16.5
Effective Green, g (s)	13.7	67.8		1.2	54.4	54.4		16.5		16.5	16.5	16.5
Actuated g/C Ratio	0.13	0.65		0.01	0.52	0.52		0.16		0.16	0.16	0.16
Clearance Time (s)	6.5	6.5		6.5	7.4	7.4		6.5		6.5	6.5	6.5
Vehicle Extension (s)	2.5	6.0		2.5	6.0	6.0		2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	447	2285		20	2634	820		260		210	202	248
v/s Ratio Prot	0.05	c0.32		0.01	c0.43							
v/s Ratio Perm						0.11		0.00		0.05	0.05	c0.12
v/c Ratio	0.40	0.50		0.60	0.84	0.22		0.01		0.32	0.34	0.79
Uniform Delay, d1	41.9	9.7		51.7	21.5	13.7		37.3		39.3	39.4	42.6
Progression Factor	0.89	0.54		1.45	0.12	0.00		1.00		1.00	1.00	1.00
Incremental Delay, d2	0.4	0.7		25.1	2.4	0.4		0.0		0.7	0.7	15.3
Delay (s)	37.8	6.0		99.9	4.9	0.4		37.4		40.0	40.1	57.9
Level of Service	D	A		F	A	A		D		D	D	E
Approach Delay (s)		10.3			4.8			37.4			52.9	
Approach LOS		B			A			D			D	
Intersection Summary												
HCM 2000 Control Delay			11.8				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.79									
Actuated Cycle Length (s)			105.0				Sum of lost time (s)			20.4		
Intersection Capacity Utilization			83.0%				ICU Level of Service			E		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

3: Urbine Road/Batterson Road & US Route 60

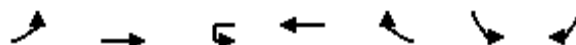
2036 PM Improved

06/20/2017

																		
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR						
Lane Configurations																		
Traffic Volume (veh/h)	8	964	11	13	1833	78	3	2	3	35	3	16						
Future Volume (Veh/h)	8	964	11	13	1833	78	3	2	3	35	3	16						
Sign Control	Free			Free			Stop			Stop								
Grade	0%			0%			0%			0%								
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94						
Hourly flow rate (vph)	11	1272	15	17	2418	103	4	3	4	46	4	21						
Pedestrians																		
Lane Width (ft)																		
Walking Speed (ft/s)																		
Percent Blockage																		
Right turn flare (veh)												12						
Median type	Raised			Raised														
Median storage veh	2			2														
Upstream signal (ft)				996														
pX, platoon unblocked	0.50						0.50	0.50			0.50	0.50						
vC, conflicting volume	2521				1287			2539	3849	636	3116	3761						
vC1, stage 1 conf vol							1294	1294			2452	2452						
vC2, stage 2 conf vol							1245	2555			664	1309						
vCu, unblocked vol	2039				1287			2075	4703	636	3232	4526						
tC, single (s)	4.1				4.1			7.5	6.5	6.9	7.5	6.5						
tC, 2 stage (s)							6.5	5.5			6.5	5.5						
tF (s)	2.2				2.2			3.5	4.0	3.3	3.5	4.0						
p0 queue free %	92				97			97	90	99	0	92						
cM capacity (veh/h)	136				535			142	31	421	33	51						
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1								
Volume Total	11	636	636	15	17	1209	1209	103	11	71								
Volume Left	11	0	0	0	17	0	0	0	4	46								
Volume Right	0	0	0	15	0	0	0	103	4	21								
cSH	136	1700	1700	1700	535	1700	1700	1700	83	49								
Volume to Capacity	0.08	0.37	0.37	0.01	0.03	0.71	0.71	0.06	0.13	1.44								
Queue Length 95th (ft)	6	0	0	0	2	0	0	0	11	167								
Control Delay (s)	33.8	0.0	0.0	0.0	12.0	0.0	0.0	0.0	55.1	344.4								
Lane LOS	D				B				F	F								
Approach Delay (s)	0.3				0.1				55.1	344.4								
Approach LOS									F	F								
Intersection Summary																		
Average Delay				6.5														
Intersection Capacity Utilization				79.5%	ICU Level of Service					D								
Analysis Period (min)				15														

Queues
4: US Route 60 & Jude's Ferry Road

2036 PM Improved
06/20/2017



Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	193	1146	1	2252	185	149	256
v/c Ratio	0.88	0.43	0.01	0.98	0.17	0.81	0.96
Control Delay	74.5	1.9	70.0	19.4	0.2	78.7	72.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.5	1.9	70.0	19.4	0.2	78.7	72.6
Queue Length 50th (ft)	70	18	1	665	0	100	97
Queue Length 95th (ft)	#136	48	m1	#987	m0	#208	#258
Internal Link Dist (ft)		640		3098		397	
Turn Bay Length (ft)	475		325		238	300	
Base Capacity (vph)	219	2649	101	2298	1084	183	267
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.88	0.43	0.01	0.98	0.17	0.81	0.96

Intersection Summary

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

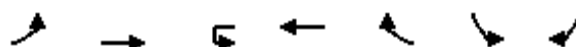
Queue shown is maximum after two cycles.

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

HCM Signalized Intersection Capacity Analysis

4: US Route 60 & Jude's Ferry Road

2036 PM Improved
06/20/2017



Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	146	869	1	1707	140	113	194
Future Volume (vph)	146	869	1	1707	140	113	194
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5	6.5	6.2	6.2	6.5	6.5
Lane Util. Factor	0.97	0.95	1.00	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	3539	1770	3539	1583	1770	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	3539	1770	3539	1583	1770	1583
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor (vph)	124%	124%	124%	124%	124%	124%	124%
Adj. Flow (vph)	193	1146	1	2252	185	149	256
RTOR Reduction (vph)	0	0	0	0	64	0	103
Lane Group Flow (vph)	193	1146	1	2252	121	149	153
Turn Type	Prot	NA	Prot	NA	Perm	Prot	Perm
Protected Phases	1	6	5	2		3	
Permitted Phases					2		3
Actuated Green, G (s)	11.9	73.4	1.2	63.0	63.0	10.9	10.9
Effective Green, g (s)	11.9	73.4	1.2	63.0	63.0	10.9	10.9
Actuated g/C Ratio	0.11	0.70	0.01	0.60	0.60	0.10	0.10
Clearance Time (s)	6.5	6.5	6.5	6.2	6.2	6.5	6.5
Vehicle Extension (s)	2.5	6.0	2.5	6.0	6.0	2.5	2.5
Lane Grp Cap (vph)	389	2473	20	2123	949	183	164
v/s Ratio Prot	0.06	c0.32	0.00	c0.64		0.08	
v/s Ratio Perm					0.08		c0.10
v/c Ratio	0.50	0.46	0.05	1.06	0.13	0.81	0.93
Uniform Delay, d1	43.7	7.0	51.3	21.0	9.1	46.1	46.7
Progression Factor	0.78	0.25	1.49	0.38	0.00	1.00	1.00
Incremental Delay, d2	0.7	0.6	0.5	34.7	0.2	22.9	50.6
Delay (s)	34.9	2.4	76.7	42.8	0.2	69.0	97.2
Level of Service	C	A	E	D	A	E	F
Approach Delay (s)		7.0		39.6		86.8	
Approach LOS		A		D		F	

Intersection Summary

HCM 2000 Control Delay	33.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	87.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis 5: New Dorset Road/Private Driveway & US Route 60

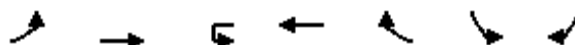
2036 PM Improved
06/20/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	825	18	274	1638	1	52	1	182	1	1	1
Future Volume (Veh/h)	3	825	18	274	1638	1	52	1	182	1	1	1
Sign Control	Free		Free		Stop		Stop					
Grade	0%		0%		0%		0%					
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	4	1088	24	361	2161	1	69	1	240	1	1	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)	12											
Median type	Raised		Raised									
Median storage veh)	2		2									
Upstream signal (ft)			720									
pX, platoon unblocked	0.41					0.41	0.41			0.41	0.41	0.41
vC, conflicting volume	2162			1112			2900	3980	544	3436	4003	1080
vC1, stage 1 conf vol							1096	1096			2883	2883
vC2, stage 2 conf vol							1804	2884			552	1120
vCu, unblocked vol	972			1112			2758	5372	544	4054	5427	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5			6.5	5.5
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			42			34	71	50	0	0	100
cM capacity (veh/h)	291			624			105	3	483	0	0	448
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	WB 4	NB 1	SB 1		
Volume Total	4	544	544	24	361	1080	1080	1	310	3		
Volume Left	4	0	0	0	361	0	0	0	69	1		
Volume Right	0	0	0	24	0	0	0	1	240	1		
cSH	291	1700	1700	1700	624	1700	1700	1700	457	0		
Volume to Capacity	0.01	0.32	0.32	0.01	0.58	0.64	0.64	0.00	0.68	33.71		
Queue Length 95th (ft)	1	0	0	0	93	0	0	0	124	Err		
Control Delay (s)	17.5	0.0	0.0	0.0	18.4	0.0	0.0	0.0	36.3	Err		
Lane LOS	C			C				E		F		
Approach Delay (s)	0.1			2.6				36.3		Err		
Approach LOS									E	F		
Intersection Summary												
Average Delay			12.1									
Intersection Capacity Utilization			78.4%		ICU Level of Service				D			
Analysis Period (min)			15									

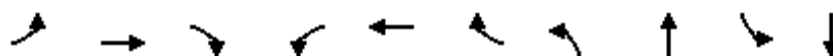
HCM Unsignalized Intersection Capacity Analysis

6: US Route 60 & Batterson Road

2036 PM Improved
06/20/2017



Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR	
Lane Configurations		 		 		 		
Traffic Volume (veh/h)	30	838	7	1673	6	2	50	
Future Volume (Veh/h)	30	838	7	1673	6	2	50	
Sign Control		Free		Free		Stop		
Grade		0%		0%		0%		
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	
Hourly flow rate (vph)	38	1071	0	2139	8	3	64	
Pedestrians								
Lane Width (ft)								
Walking Speed (ft/s)								
Percent Blockage								
Right turn flare (veh)								
Median type		Raised		Raised				
Median storage veh		2		2				
Upstream signal (ft)		899						
pX, platoon unblocked			0.00			0.80		
vC, conflicting volume	2147		0			2750	1070	
vC1, stage 1 conf vol						2139		
vC2, stage 2 conf vol						612		
vCu, unblocked vol	2147		0			2688	1070	
tC, single (s)	4.1		0.0			6.8	6.9	
tC, 2 stage (s)						5.8		
tF (s)	2.2		0.0			3.5	3.3	
p0 queue free %	85		0			96	71	
cM capacity (veh/h)	248		0			74	217	
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	WB 4	SB 1
Volume Total	38	536	536	1070	1070	8	0	67
Volume Left	38	0	0	0	0	0	0	3
Volume Right	0	0	0	0	0	8	0	64
cSH	248	1700	1700	1700	1700	1700	1700	200
Volume to Capacity	0.15	0.32	0.32	0.63	0.63	0.00	0.00	0.34
Queue Length 95th (ft)	13	0	0	0	0	0	0	35
Control Delay (s)	22.2	0.0	0.0	0.0	0.0	0.0	0.0	31.9
Lane LOS	C							D
Approach Delay (s)	0.8			0.0				31.9
Approach LOS								D
Intersection Summary								
Average Delay			0.9					
Intersection Capacity Utilization			68.0%		ICU Level of Service			C
Analysis Period (min)			15					



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	96	955	151	75	1803	218	190	83	111	337
v/c Ratio	1.04	0.57	0.18	0.48	1.05	0.25	1.07	0.46	0.44	1.18
Control Delay	156.0	22.3	2.3	36.5	43.0	0.9	134.5	38.8	50.1	139.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	156.0	22.3	2.3	36.5	43.0	0.9	134.5	38.8	50.1	139.9
Queue Length 50th (ft)	~70	250	0	45	~684	3	~142	35	71	~197
Queue Length 95th (ft)	#175	315	25	m49	m#723	m3	#284	82	#149	#377
Internal Link Dist (ft)		1395			819			1109		463
Turn Bay Length (ft)	300		550	350		563	300			
Base Capacity (vph)	92	1688	846	168	1725	883	177	222	255	285
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.04	0.57	0.18	0.45	1.05	0.25	1.07	0.37	0.44	1.18

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis

7: Dorset Road & US Route 60

2036 PM Improved
06/20/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	74	739	117	58	1396	169	147	37	27	86	51	210
Future Volume (vph)	74	739	117	58	1396	169	147	37	27	86	51	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.7	6.7	6.5	6.8	6.8	6.5	6.5		6.5	6.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.94		1.00	0.88	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1745		1770	1638	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1745		1770	1638	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor (vph)	124%	124%	124%	124%	124%	124%	124%	124%	124%	124%	124%	124%
Adj. Flow (vph)	96	955	151	75	1803	218	190	48	35	111	66	271
RTOR Reduction (vph)	0	0	83	0	0	114	0	26	0	0	104	0
Lane Group Flow (vph)	96	955	68	75	1803	104	190	57	0	111	233	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases			6			2						
Actuated Green, G (s)	5.5	47.5	47.5	8.0	49.9	49.9	10.5	8.2		15.1	12.8	
Effective Green, g (s)	5.5	47.5	47.5	8.0	49.9	49.9	10.5	8.2		15.1	12.8	
Actuated g/C Ratio	0.05	0.45	0.45	0.08	0.48	0.48	0.10	0.08		0.14	0.12	
Clearance Time (s)	6.5	6.7	6.7	6.5	6.8	6.8	6.5	6.5		6.5	6.5	
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0	5.0	4.0	4.0		2.5	2.5	
Lane Grp Cap (vph)	92	1600	716	134	1681	752	177	136		254	199	
v/s Ratio Prot	c0.05	0.27		0.04	c0.51		c0.11	0.03		0.06	c0.14	
v/s Ratio Perm			0.04			0.07						
v/c Ratio	1.04	0.60	0.10	0.56	1.07	0.14	1.07	0.42		0.44	1.17	
Uniform Delay, d1	49.8	21.6	16.5	46.8	27.6	15.5	47.2	46.1		41.1	46.1	
Progression Factor	1.00	1.00	1.00	0.71	0.49	0.29	1.00	1.00		1.00	1.00	
Incremental Delay, d2	106.1	1.7	0.3	2.0	38.0	0.1	88.5	2.8		0.9	116.6	
Delay (s)	155.9	23.2	16.7	35.1	51.4	4.7	135.8	49.0		41.9	162.7	
Level of Service	F	C	B	D	D	A	F	D		D	F	
Approach Delay (s)		33.0			46.0			109.4			132.8	
Approach LOS		C			D			F			F	
Intersection Summary												
HCM 2000 Control Delay			56.1				HCM 2000 Level of Service			E		
HCM 2000 Volume to Capacity ratio			1.08									
Actuated Cycle Length (s)			105.0				Sum of lost time (s)			26.3		
Intersection Capacity Utilization			104.3%				ICU Level of Service			G		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis 8: Jude's Ferry Road & Batterson Road

2036 PM Improved
06/20/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	2	2	107	18	48	1	230	39	11	197	14
Future Volume (Veh/h)	14	2	2	107	18	48	1	230	39	11	197	14
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	20	3	3	151	25	68	1	324	55	16	278	20
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (ft)								926				
pX, platoon unblocked												
vC, conflicting volume	744	691	278	668	684	352	298			379		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	744	691	278	668	684	352	298			379		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	93	99	100	59	93	90	100			99		
cM capacity (veh/h)	279	362	761	364	366	692	1263			1179		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2							
Volume Total	26	244	380	294	20							
Volume Left	20	151	1	16	0							
Volume Right	3	68	55	0	20							
cSH	310	420	1263	1179	1700							
Volume to Capacity	0.08	0.58	0.00	0.01	0.01							
Queue Length 95th (ft)	7	90	0	1	0							
Control Delay (s)	17.7	24.8	0.0	0.6	0.0							
Lane LOS	C	C	A	A								
Approach Delay (s)	17.7	24.8	0.0	0.5								
Approach LOS	C	C										
Intersection Summary												
Average Delay			6.9									
Intersection Capacity Utilization			43.5%			ICU Level of Service			A			
Analysis Period (min)			15									

Intersection: 1: Stavemill Road/Luck Stone Road & US Route 60

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	NB
Directions Served	L	L	T	T	R	L	L	T	T	T	R	LT
Maximum Queue (ft)	100	110	270	289	50	270	365	573	584	544	228	172
Average Queue (ft)	36	49	154	166	15	145	191	322	333	291	58	80
95th Queue (ft)	79	93	249	262	40	233	355	541	552	507	182	144
Link Distance (ft)			1264	1264				1578	1578	1578		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	863	863			363	738	738				375	400
Storage Blk Time (%)				0			0	1		2	0	
Queuing Penalty (veh)				0			0	2		4	1	

Intersection: 1: Stavemill Road/Luck Stone Road & US Route 60

Movement	NB	SB	SB	SB
Directions Served	R	L	LT	R
Maximum Queue (ft)	98	114	109	78
Average Queue (ft)	40	46	37	20
95th Queue (ft)	78	94	82	49
Link Distance (ft)	725	723	723	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			400	
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Private Driveway/South Creek One & US Route 60

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	B100	B100	NB
Directions Served	L	L	T	TR	L	T	T	T	R	T	T	LTR
Maximum Queue (ft)	90	99	114	126	194	629	662	619	275	536	1066	25
Average Queue (ft)	35	44	37	33	14	363	378	308	91	43	92	2
95th Queue (ft)	76	87	88	89	95	613	631	584	235	387	592	13
Link Distance (ft)			909	909		2020	2020	2020		1264	1264	348
Upstream Blk Time (%)										0	0	
Queuing Penalty (veh)										0	1	
Storage Bay Dist (ft)	363	363			338				313			
Storage Blk Time (%)					0	12		3	0			
Queuing Penalty (veh)					0	1		10	1			

Intersection: 2: Private Driveway/South Creek One & US Route 60

Movement	SB	SB	SB
Directions Served	L	LT	R
Maximum Queue (ft)	97	128	270
Average Queue (ft)	21	65	121
95th Queue (ft)	61	114	229
Link Distance (ft)		977	977
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	440		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: Urbine Road/Batterson Road & US Route 60

Movement	EB	EB	WB	WB	WB	WB	NB	SB	SB
Directions Served	L	R	L	T	T	R	LTR	LT	R
Maximum Queue (ft)	32	3	41	915	952	654	63	434	300
Average Queue (ft)	3	0	9	106	198	39	16	304	49
95th Queue (ft)	19	3	32	580	821	343	49	528	207
Link Distance (ft)				909	909	909	419	431	
Upstream Blk Time (%)				0	1	0		39	
Queuing Penalty (veh)				1	6	1		0	
Storage Bay Dist (ft)	188	100	188						300
Storage Blk Time (%)								50	0
Queuing Penalty (veh)								10	0

Intersection: 4: US Route 60 & Jude's Ferry Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	SB	SB	B25
Directions Served	L	L	T	T	U	T	T	R	L	R	T
Maximum Queue (ft)	359	362	343	276	9	1014	1019	238	244	314	16
Average Queue (ft)	243	198	94	70	0	483	494	144	115	169	1
95th Queue (ft)	444	458	353	258	5	928	953	313	215	289	14
Link Distance (ft)			641	641		3095	3095			370	387
Upstream Blk Time (%)			1	0						1	
Queuing Penalty (veh)			3	0						3	
Storage Bay Dist (ft)	475	475			325			238	300		
Storage Blk Time (%)	0	2	2			18	23	1	0	1	
Queuing Penalty (veh)	1	9	3			0	39	7	0	2	

Intersection: 5: New Dorset Road/Private Driveway & US Route 60

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	T	R	L	T	T	LT	R	LTR
Maximum Queue (ft)	36	28	21	14	287	478	462	1096	300	30
Average Queue (ft)	4	2	1	1	175	62	47	880	103	6
95th Queue (ft)	21	41	26	7	303	327	299	1434	319	26
Link Distance (ft)		3652	3652			641	641	1062		515
Upstream Blk Time (%)						0	0	68		
Queuing Penalty (veh)						2	4	0		
Storage Bay Dist (ft)	288			800	288				300	
Storage Blk Time (%)		0			3	2		79	2	
Queuing Penalty (veh)		0			32	8		179	1	

Intersection: 6: US Route 60 & Batterson Road

Movement	EB	EB	EB	WB	WB	WB	WB	SB
Directions Served	L	T	T	U	T	T	R	LR
Maximum Queue (ft)	153	426	418	30	10	12	2	380
Average Queue (ft)	87	146	143	5	0	0	0	173
95th Queue (ft)	178	593	588	23	10	10	2	471
Link Distance (ft)		792	792		3652	3652		575
Upstream Blk Time (%)		6	6					8
Queuing Penalty (veh)		31	31					0
Storage Bay Dist (ft)	163			163			100	
Storage Blk Time (%)	24	12				0		
Queuing Penalty (veh)	124	5				0		

Intersection: 7: Dorset Road & US Route 60

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	T	R	L	T	T	R	L	TR	L	TR
Maximum Queue (ft)	234	596	579	201	349	550	561	301	296	516	492	507
Average Queue (ft)	103	232	207	32	66	331	336	34	196	188	360	447
95th Queue (ft)	227	709	692	206	248	528	537	235	333	606	663	581
Link Distance (ft)		1437	1437			792	792			1086	462	462
Upstream Blk Time (%)		4	3			0	0			0	34	72
Queuing Penalty (veh)		0	0			0	0			0	0	0
Storage Bay Dist (ft)	300			550	350			563	300			
Storage Blk Time (%)	0	7	6	0	0	10	1	0	16	12		
Queuing Penalty (veh)	2	7	9	0	1	7	2	1	13	22		

Intersection: 8: Jude's Ferry Road & Batterson Road

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LT
Maximum Queue (ft)	39	149	2	38
Average Queue (ft)	13	63	0	3
95th Queue (ft)	36	113	2	19
Link Distance (ft)	972	950	387	587
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 585

Appendix F

Citizen Comments/Exhibits



CITIZEN INFORMATION MEETING
Route 60 Corridor East Special Area Plan
Powhatan County, Virginia
December 7, 2016, 5-7 PM
Huguenot Public Safety Building
1959 Urbine Road Powhatan, Virginia 23139

Comment Sheet

State Project No.: 0060-072-600
UPC #106217

All comments submitted will become a part of the citizen information meeting transcript and will be made available to the public.

(Optional Information)

NAME: S. Davenport
ADDRESS: 2082 Lone Draw Dr
CITY: Powhatan STATE: VA ZIP CODE: 23139

1. Do you support this project?

Yes

2. Do you believe this meeting helped you understand the project better? What other information would you like to see, if any?

Yes - information regarding impact on residences & families that live next to impacted areas

3. Please provide any additional information or comments regarding this project.

Please - Do not widen Rt 60 or destroy trees & shrubs along the route. Maintaining the rural atmosphere to Powhatan is a priority & Rt. 60 is important. Thanks

Please leave this comment sheet at the designated location or mail your comments **WITHIN 14 DAYS** (December 21, 2016) to the addressee on the reverse side.



CITIZEN INFORMATION MEETING
Route 60 Corridor East Special Area Plan
Powhatan County, Virginia
December 7, 2016, 5-7 PM
Huguenot Public Safety Building
1959 Urbine Road Powhatan, Virginia 23139

Comment Sheet

State Project No.: 0060-072-600
UPC #106217

All comments submitted will become a part of the citizen information meeting transcript and will be made available to the public.

(Optional Information)

NAME: Theresa & Richard Swales
ADDRESS: 1520 Swiftwood Dr
CITY: Powhatan VA STATE: VA ZIP CODE: 23139

1. Do you support this project? yes

2. Do you believe this meeting helped you understand the project better? What other information would you like to see, if any? yes. helped - anything to help with current Traffic backups.

3. Please provide any additional information or comments regarding this project.

Worried about Round about at Jukes Ferry - Accidents - Kids

Please leave this comment sheet at the designated location or mail your comments
WITHIN 14 DAYS (December 21, 2016) to the addressee on the reverse side.



CITIZEN INFORMATION MEETING
Route 60 Corridor East Special Area Plan
Powhatan County, Virginia
December 7, 2016, 5-7 PM
Huguenot Public Safety Building
1959 Urbine Road Powhatan, Virginia 23139

Comment Sheet

State Project No.: 0060-072-600
UPC #106217

All comments submitted will become a part of the citizen information meeting transcript and will be made available to the public.

(Optional Information)

NAME: Cynthia & Neil Spier
ADDRESS: 1813, Manahatowon Ferry Rd.
CITY: Midlothian STATE: VA ZIP CODE: 23113

1. Do you support this project?

Overall. Except see below comments.

2. Do you believe this meeting helped you understand the project better? What other information would you like to see, if any?

yes.

3. Please provide any additional information or comments regarding this project.

Strongly oppose the connector roads proposed connecting Route 60 to page Rd labeled as (14) & (43). These roads would serve no purpose & disrupt the rural residential atmosphere of this Eastern part of the county.

Please leave this comment sheet at the designated location or mail your comments **WITHIN 14 DAYS** (December 21, 2016) to the addressee on the reverse side.



CITIZEN INFORMATION MEETING
Route 60 Corridor East Special Area Plan
Powhatan County, Virginia
December 7, 2016, 5-7 PM
Huguenot Public Safety Building
1959 Urbine Road Powhatan, Virginia 23139

Comment Sheet

State Project No.: 0060-072-600
UPC #106217

All comments submitted will become a part of the citizen information meeting transcript and will be made available to the public.

(Optional Information)

NAME: Joanne S. Fico
ADDRESS: 2762 Meadows Rd.
CITY: Powhatan STATE: Va ZIP CODE: 23139

1. Do you support this project?

From what I saw & was explained, the ~~the~~ plans seem appropriate.

2. Do you believe this meeting helped you understand the project better? What other information would you like to see, if any?

yes - provided clarification

3. Please provide any additional information or comments regarding this project.

Please leave this comment sheet at the designated location or mail your comments
WITHIN 14 DAYS (December 21, 2016) to the addressee on the reverse side.

Steve Schmidt

From: Bret Schardein <bschardein@powhatanva.gov>
Sent: Friday, December 16, 2016 10:10 AM
To: Reichert, Kevin (VDOT)
Cc: Scott Dunn; Steve Schmidt
Subject: FW: Route 60

FYI on feedback on the plan.

Bret Schardein, AICP, CZA
Director of Community Development
Powhatan County
(804) 598-5621 ext. 2005



From: Michelle Pfeiffer [mailto:michelle.pfeiffer@verizon.net]
Sent: Thursday, December 15, 2016 8:09 PM
To: Bret Schardein <bschardein@powhatanva.gov>
Subject: Route 60

Mr. Schardein - you know what would quickly transform the mess that is Route 60 in Powhatan? Putting up (and enforcing) signs telling people that the left lane is a passing lane and to move to the right lane if you're not in the process of passing another car. Whoever did the study a few years ago and came to the conclusion that this was not a problem in Powhatan has not driven 60 on a regular basis. It's ridiculous and dangerous at times!
Michelle Pfeiffer
Powhatan, VA

He is your friend, your partner, your defender, your dog. You are his life, his love, his leader. He will be yours, faithful and true, to the last beat of his heart. You owe it to him to be worthy of such devotion.



Virginia Department
of Transportation

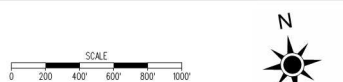
ROUTE 60 CORRIDOR EAST SPECIAL AREA PLAN

SHEET 1 OF 2

Project Location



North Arrow & Scale



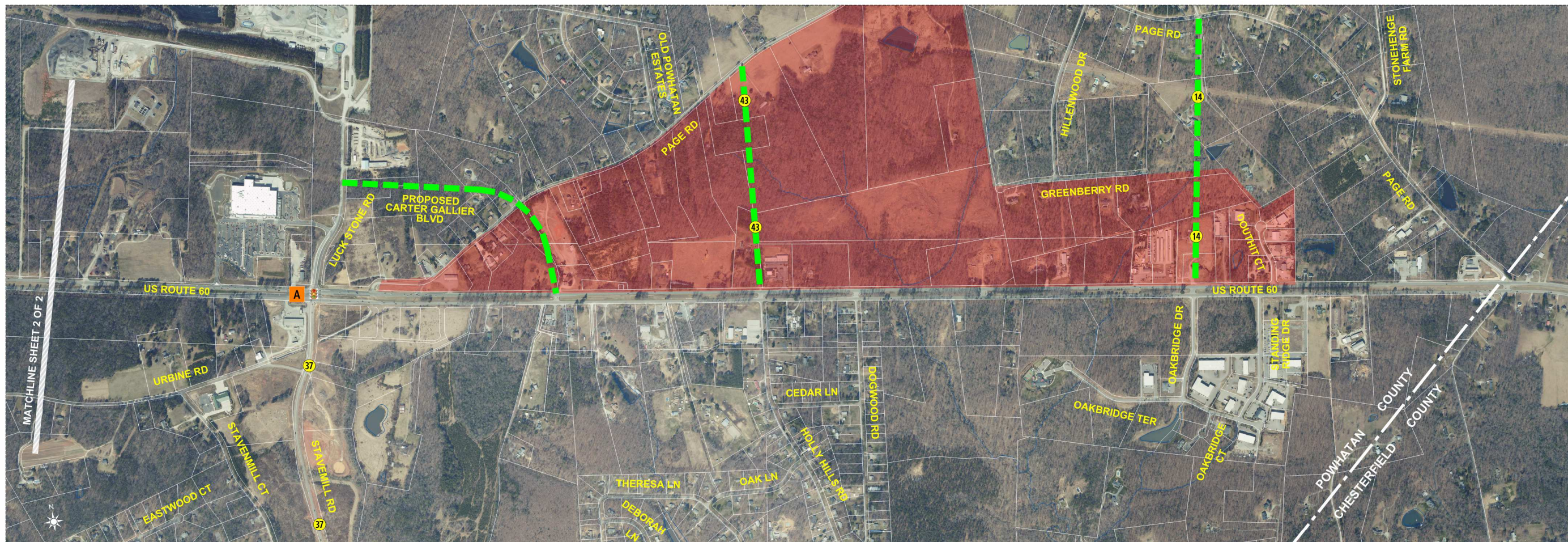
Legend

- Property Lines
- Streams/Ponds
- Signal
- Village Center Development Area
- Thoroughfare Plan - Major Arterial, Proposed
- Thoroughfare Plan - Minor Arterial, Proposed
- Thoroughfare Plan - Rural Collector, Proposed
- Major Thoroughfare Plan Projects
- Corridor Study Intersections



ROUTE 60 CORRIDOR EAST SPECIAL AREA PLAN
Powhatan County, Virginia
December 2016

Imagery Courtesy VGIN copyright 2013.





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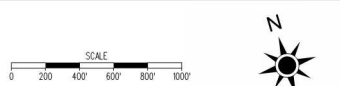
ROUTE 60 CORRIDOR EAST SPECIAL AREA PLAN

SHEET 2 OF 2

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