STAFFORD Virginia

27

BOARD OF SUPERVISORS
Agenda Item

Meeting Date:	June 19, 2012
Title:	Consider Reclassification of 73.3 acres from A-1, Agricultural and PD-1, Planned Development-1 Zoning Districts to B-2, Urban Commercial and R-2, Urban Residential–Medium Density Zoning Districts on Assessor's Parcels 29-66A and 29-66B
Department:	Planning and Zoning
Staff Contact:	Jeffrey A. Harvey
Board Committee/ Other BACC:	N/A
Staff Recommendation:	Approval
Budget Impact:	N/A
Time Sensitivity:	March 7, 2013

ATTACHMENTS:

1.	Background Report	7.	Generalized Development Plan, dtd 3/26/12
2.	Land Use Action Request	8.	TIA Addendum, dtd 1/30/12
3.	Location and Zoning Map	9.	Fiscal Impact Report, dtd 2/1/12
4.	PC Minutes dtd 4/3/12 & 4/18/12	10.	Proposed Proffers, dtd 5/29/12
5.	Application and Related Materials	11.	Proposed Ordinance O12-12
6.	Impact Statement, dtd 3/5/12	12.	Proposed Resolution R12-105

	Consent Agenda		**Other Business**		**Unfinished Business**
	Discussion		**Presentation**		**Work Session**
	New Business	X	**Public Hearing**		**Add-On**

REVIEW:

X	County Administrator	
X	County Attorney	
X	Parks, Recreation and Community Facilities	

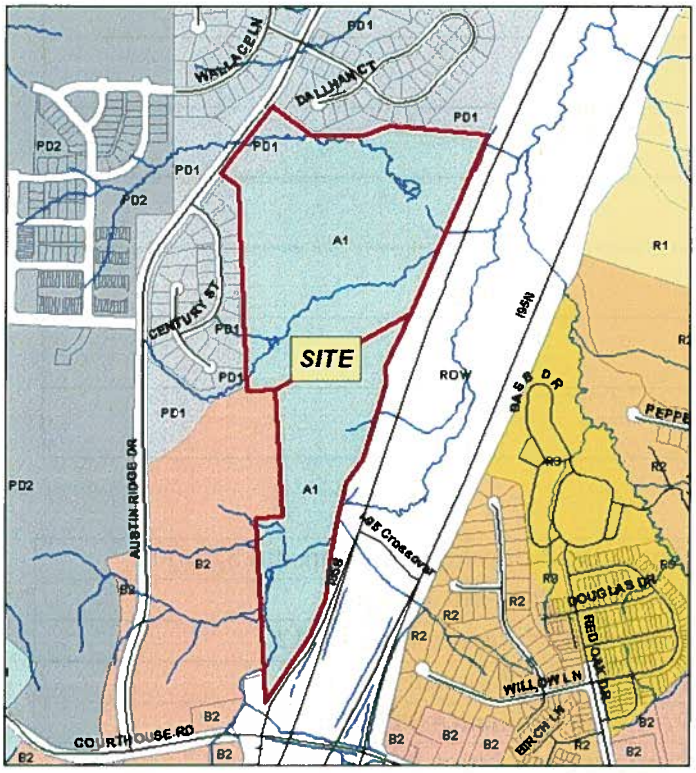
DISTRICT:	Garrisonville

Attachment 1
O12-12
R12-105

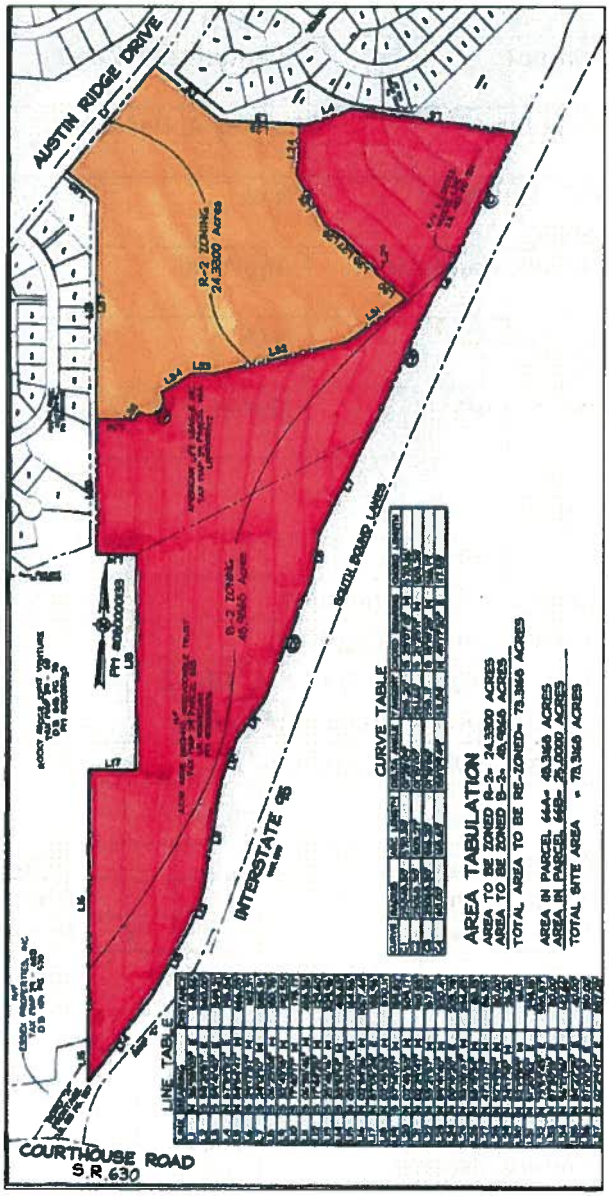
BACKGROUND REPORT

COMMENTS:

This application is a request to reclassify 48.99 acres from A-1, Agricultural and PD-1, Planned Development-1 Zoning Districts to B-2, Urban Commercial, for 24.66 acres of development of a commercial retail and office complex with hotels, on the southern portion of the site; and 24.33 acres for R-2, Urban Residential – Medium Density Zoning District, for development of 51 single family residential dwelling units on the northern portion of the site.



Current Zoning Map



Proposed Zoning Plat
Red: B-2, Urban Commercial;
Orange: R-2, Urban Residential – Medium Density

Existing Conditions

The site consists of forested land covered with mature deciduous trees. The topography includes rolling terrain across the site, with steeper slopes generally associated with stream valleys that are along the northern property boundary that bisect the site. The stream valleys include unnamed tributaries to Austin Run, which flow to the north. These streams have been designated as Critical Resource Protection Areas (CRPA). The streams include associated wetlands, as depicted on the Environmental Exhibit of the Generalized Development Plan (GDP). Within the 73.3 acres subject to rezoning, 15.3 acres are classified as wetlands and CRPA. The Impact Statement notes that there are no known archeological or architecturally significant sites on the property.

Aerial Photograph

Zoning History

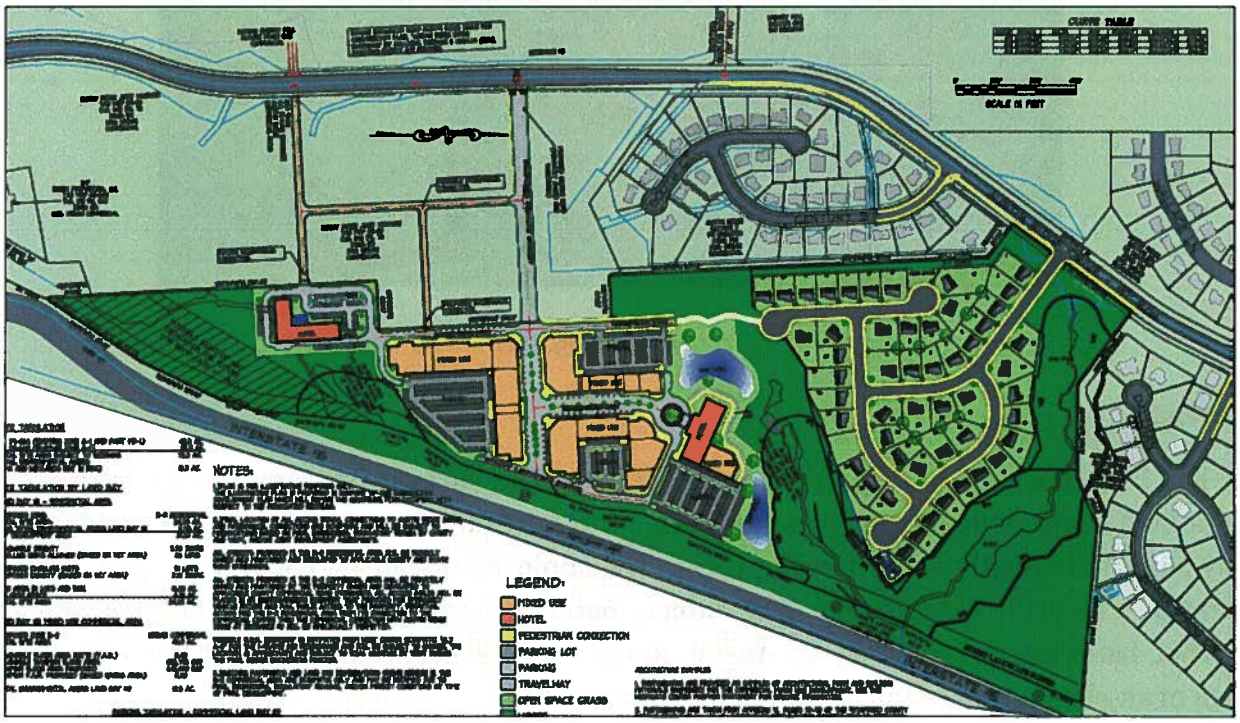
The site has been the subject of past land use actions. The current property has its current form as a result of a land swap with Austin Ridge in 2003. The portion of the subject property zoned PD-1 was originally part of the Austin Ridge Development. The applicant acquired that land to have direct frontage and access off of Austin Ridge Drive. The subject parcel originally included 65 additional acres to the north. That land was transferred to Austin Ridge for the eventual development of Section 8 and relocation of an elementary school site to more suitable land.

Generalized Development Plan

The Generalized Development Plan (GDP) depicts how the commercial and residential development may occur. The commercial portion of the project would access through the adjacent commercially zoned land that is part of Austin Ridge. The commercial buildings are oriented to front on private streets. Several mixed use (retail and office) buildings and two hotels are shown. Staff notes that the specific commercial uses on the GDP are not proffered. The GDP illustrates a range of 227,000 to 645,000 square feet of commercial development. The lesser amount of building area could be accommodated with surface parking. Increasing the amount of square footage would require vertical parking decks, which could be constructed in the location of the surface parking. Parallel on-street parking is also shown. The GDP includes illustrations of the preferred architectural form and building materials in the commercial areas. These images include features identified in the County's Courthouse Redevelopment Plan.

The residential portion of the development at the northern end of the site would access off of Austin Ridge Drive. The 51 single-family detached lots are proposed to be located immediately to the east of existing homes in Section 7 of Austin Ridge. All the residential streets will be publicly maintained. No inter-parcel street connections are proposed to the existing residential areas.

The existing streams and CRPA provide a natural buffer from the existing homes to the north, I-95 to the east, and proposed commercial area in the southern portion of the site. A 25-foot landscape buffer strip is shown adjacent to the closest existing residential uses, and included in the proffers. The GDP illustrates a pedestrian connection to be provided between the commercial and residential areas.



Generalized Development Plan

Transportation Impacts

The Transportation Impact Analysis (TIA) Determination Form submitted with this application calculated that the site would generate, at its highest volume, approximately 20,922 vehicle trips per day (VPD) and 697 AM and 2,037 PM peak vehicle trips per hour (VPH). These figures justified the need for a traffic impact analysis (TIA) in accordance with state guidelines. The study was included with an application and sent to VDOT for their review and comment. The study has been modified in response to VDOT comments. The study evaluated the site's impact on the surrounding traffic network. The study assumed the amount of development envisioned on the GDP, including 51 residential units, 525,000 square feet of mixed use commercial development, and two 100-room hotels. Planned developments in the vicinity of the site were included in the assumptions.

The study evaluated the impact on the following intersections: Courthouse Road/Austin Ridge Drive; Courthouse Road/I-95 NB Ramps; Courthouse Road/I-95 SB Ramps; the two proposed entrances along Austin Ridge Drive; Mine Road/Austin Ridge Drive; and, Mine Road/Courthouse Road.

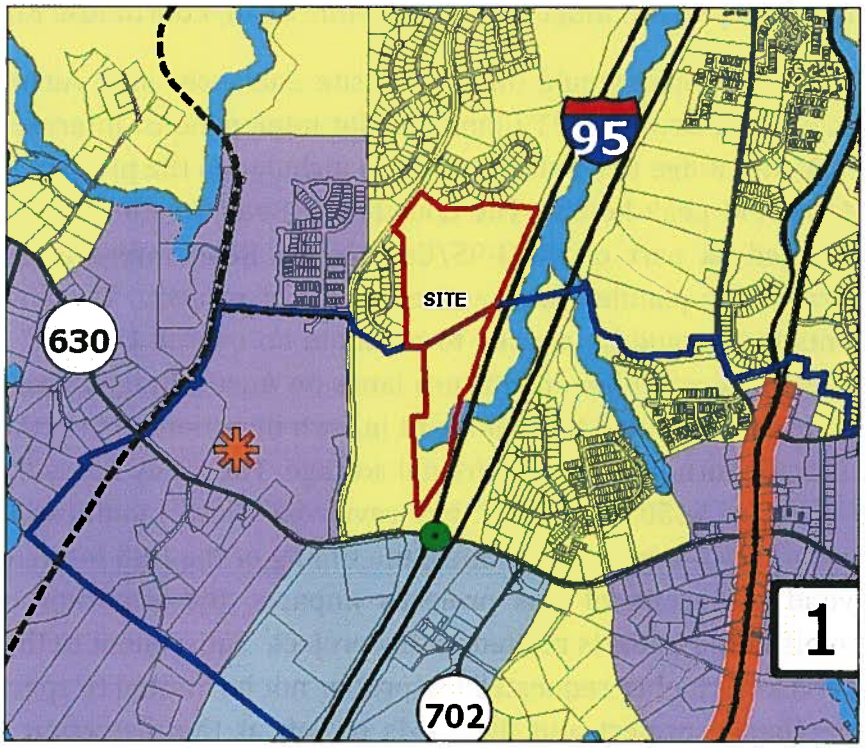
The study identifies that the project would impact the site entrances onto Austin Ridge Drive and the Courthouse Road/Austin Ridge Drive/VDOT Commuter lot intersections. Intersection improvements for the site entrances onto Austin Ridge Drive that have been included in the proffers to maintain overall LOS of A and B in the AM and PM peak hours. The Courthouse Road/Austin Ridge Drive intersection will ultimately be reconstructed as part of the I-95/Courthouse Road interchange reconstruction. The original study incorporated the planned improvements of that project. The amended study identifies additional improvements that would be needed to maintain an overall LOS of C. These improvements include: increasing the planned southbound left turn lanes on Austin Ridge Drive onto Courthouse Road from two to three; increase the planned through lanes in each direction on Courthouse Road from two to three; and expanded specific turn lanes for additional storage. The study notes these improvements are estimated to have a value of $450,000. VDOT has reviewed these modifications and recommended improvements and concurs with the findings. Since the timing of the I-95 interchange reconstruction is unknown and is beyond the scope of this project's impacts, the applicant originally proffered to contribute the funds to offset the impacts related to this project. Subsequent to the Planning Commission recommendation, Supervisor Schieber requested the proffer not be limited to specific improvements that are reliant on the Interchange project and the funds be left at the discretion of the County for any transportation improvement in the vicinity of the site. This could fund more immediate mitigation needs should the proposed project occur in advance of the interchange project.

As noted in the proffer summary, the applicant is offering other transportation improvements, including sidewalk improvements internal to the site to connect residential to commercial areas and link the development to the existing sidewalks along Austin Ridge Drive. Also, the proffers state the applicant's commitment to work with VDOT on right-of-way for the future improvement to the I-95 interchange reconstruction. A 4.7 acre portion of the southeast corner of the property is identified on the GDP as area

that may be needed for the interchange. This area is to be reserved for future right-of-way dedication if needed.

Comprehensive Plan

The Comprehensive Plan identifies this site as being within the Suburban and Resource Protection future land use designations. Suburban land use is recommended as primarily residential in nature but will be complimented by neighborhood and community oriented activity centers, places of worship, parks and play areas, and retail and business activities. Development densities should not exceed 3 dwelling units per acre and a floor area ratio (FAR) of 0.4 for non-residential development. Single-family detached dwelling unit types are recommended, unless approval already exists for other dwelling unit types. The Resource Protection designation reflects where sensitive environmental resources are located and recommended for protection.



Future Land Use Map

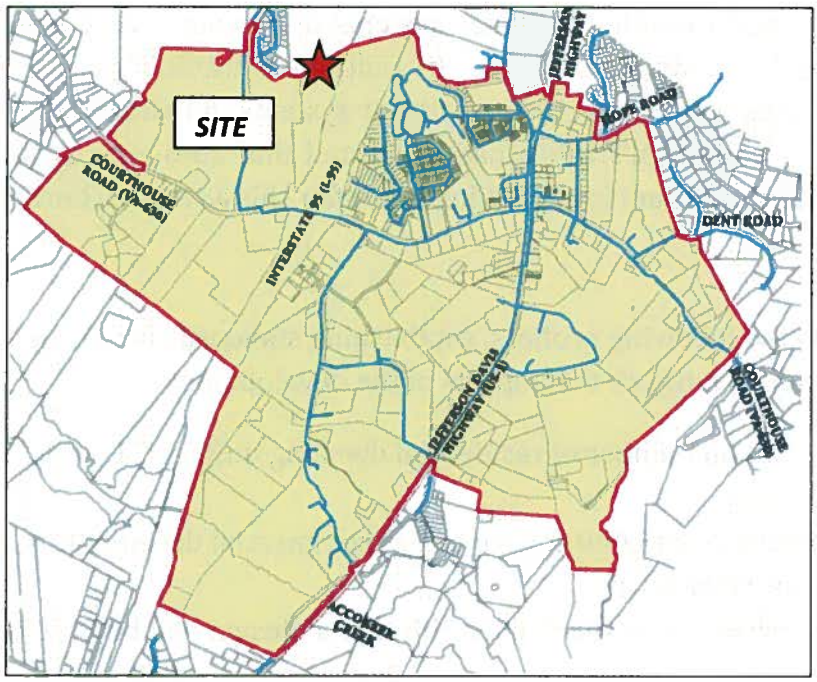
The proposed development is consistent with the recommended future land use. The location of the proposed residential use, in the northern portion of the site, is consistent with the established development and zoning patterns. The intensity and type of residential development is consistent with recommendations in the Comprehensive Plan. The commercial development is adjacent to existing zoned commercial property, serving as a logical extension of this commercially zoned area. The Plan encourages commercial development in Suburban areas to be conducted in a manner to minimize noise and social impacts,

transportation, and visual impacts on established residential neighborhoods. The proffers serve to minimize the impacts of the commercial development on the existing residences. Much of the area would be screened by a stream corridor and additional land that would be preserved. The proposal is also consistent with the Resource Protection land use, as the CRPA will remain in open space buffers.

Goal 6 of the Comprehensive Plan recommends creation of an intermodal system of transportation. Specifically, Policy 6.3.1 states that development proposals should establish sidewalks and greenways to connect local neighborhoods with activity centers such as shopping, employment, and schools and with one another. The provision for sidewalks connecting the existing and planned residential areas to the commercial area supports this policy.

Courthouse Redevelopment Area

The property lies within the Courthouse Redevelopment Area (RDA). The Courthouse RDA was approved as a part of the Master Redevelopment Plan (RDA Plan), adopted by the Board in May, 2011. The vision for the Courthouse RDA includes a grid street system to optimize pedestrian and vehicle circulation; mixed-use blocks with enclosed parking to foster residential and office uses over first-floor commercial; open space, and pedestrian-friendly environments, including streetscape improvements defining the grid street system; and implementation of squares and plazas throughout the area to foster passive recreation exchanges with others, places to have lunch, or just relax. The GDP follows the RDA Plan recommendations with a pedestrian-friendly site layout, mixed use concept, and enhanced architectural design.



Courthouse RDA Limits

Fiscal Impacts

The applicant has submitted a Fiscal Impact Analysis of the proposed project. The study finds that the project would be an economic and fiscal benefit to the County. In summary, the project would yield an annual $3.0 million in surplus revenues for the County above the costs of services and facilities to serve the development at full buildout of 645,000 square feet of commercial and 51 single family dwellings. A comparison was provided, assuming a more modest amount of 290,000 square feet of commercial development with surface parking. With this amount, the project would yield an annual $1.38 million in surplus revenues for the County above the costs of services and facilities. This analysis assumes full buildout of the commercial and residential development. The proposal does not guarantee the timing of the commercial development with the residential development.

Monetary Proffers

The applicant is proffering monetary contributions of $38,368.34 per each residential dwelling unit for a total contribution of $1,956,785.40 to offset capital facility impacts. This amount is less than the County's recommended monetary proffer guidelines of $43,101 for single family detached dwellings. The applicant is proposing a credit associated with the 5.6 by-right dwelling units that could be realized in the proposed 24.33 acres R-2 zoning district. This credit is proposed to be divided and reduced from the 51 lots and equates to a reduction of $4,736.66 per unit from the recommended proffer amount. Staff notes that the monetary proffer guidelines do not address the issue of credits. Whether or not to allow credit against by-right development will be a policy decision of the Board.

Fire and Rescue

The applicant is proffering to require sprinkler systems in all commercial development and standpipe systems in all buildings three stories or taller. In addition, if traffic signals are warranted, emergency vehicle preemption devices will be installed. Sprinkler systems in residential units will be offered as an option. The County's Fire Marshal's Office had suggested that automatic sprinklers be required in all residential structures. The applicant is not willing to proffer this as it is cost prohibitive.

Proffer Summary

The applicant has made the following proffers, establishing standards for the development of the site and improvements to be made to mitigate the impacts of the development:

- Establish the maximum number of residential dwelling units at 51, with the type limited to single-family detached
- Establish a maximum of 645,000 square feet of commercial development, with office development including first floor retail space
- Establish design criteria to ensure that architectural design will be in general accordance with the GDP
- Require construction of specific left and right turn lanes and installation of traffic signals if warranted at both intersections with Austin Ridge Drive

- Construct sidewalks to provide pedestrian connections internal to the project and to existing sidewalks along Austin Ridge Drive
- Construct a pedestrian access trail to connect the commercial area to the residential area, designed to allow for secondary emergency vehicle access. Signage and advance disclosure would be included to make residents aware of the future connection should the trail be installed subsequent to the residential development
- Provide transportation contribution of $449,000 for future transportation improvements in the vicinity of the project
- States commitment to work with VDOT on right-of-way requirements for the I-95/Courthouse Road interchange reconstruction project and reserve area for future dedication
- Establish limits on the height and intensity of lighting to minimize impacts on adjacent properties;
- Establish a series of Crime Prevention Through Environmental Design (CPTED) principles for the commercial area
- Restrict specific uses from being permitted on the subject property that do not meet the intent of the Courthouse RDA Plan
- Require a payment of $38,368.34 per each residential dwelling unit for a total contribution of $1,956,785.40, with a breakdown of the per unit allocation to specific types of public facilities
- Provide a 25-foot landscape buffer between the proposed residential land bay and existing Austin Ridge Section 7
- Require construction of amenities shown on the GDP
- Require sprinkler systems in all commercial development and standpipe systems in all buildings 3 stories or taller. Sprinkler systems in residential units will be offered as an option
- Enhance environmental protection, requiring any retaining walls to be setback 20 feet from RPAs

EVALUATION CRITERIA:

Section 28-206 of the Zoning Ordinance lists twelve (12) criteria to be considered at each public hearing for reclassification. A summary of each criteria are as follows:

1. Compliance of the request with the stated requirements of the district or districts involved - *The request is in compliance with the stated requirements of the B-2 and R-2 zoning districts. The buildings, streets, parking areas and open spaces meet ordinance requirements.*

2. The existing use and character of the property and the surrounding property - *The property is currently undeveloped land. The site is wooded. Land to the southwest is undeveloped. To the northwest and north are residential uses. To the east is I-95.*

3. The suitability of the property for various uses - *The conditions of the site make it suitable for a variety of uses. The size of the site allows for two land bays, with the existing CRPAs offering buffering of conflicting uses.*

4. The trend of growth and development in the surrounding area - *To the north and west of the northern land bay is the established Austin Ridge residential development consisting of single-family homes. To the south and west of the southern land bay is undeveloped land that is zoned for urban commercial development.*

5. The current and future requirements of the county for land – *The proffers state the applicant's commitment to work with VDOT on right-of-way for the Interstate 95/Courthouse Road interchange reconstruction and reserves land where right-of-way may be needed. No other County needs are identified on the site.*

6. The transportation requirements of the project and the county, and the impact of the proposed land use on the county transportation network - *The proposal includes several intersection improvements along Austin Ridge Drive and monetary contributions toward additional transportation improvements in the vicinity of the site to offset impacts on the transportation network.*

7. Requirements for schools, parks, recreational lands and facilities, and other public services, potentially generated by the proposed classification - *The proposal would increase the potential impact on parks, recreational lands and schools, and other public facilities. The proposal mitigates the impacts associated with all additional dwelling units above the number of by-right dwelling units under current zoning through monetary contributions.*

8. The conservation of property values in the surrounding area – *Staff believes that the project would not have a negative effect on any property values in the surrounding area. The uses in the project, residential, commercial retail, office, and hotel uses do not generate noise dust or smoke emissions. The commercial uses would be buffered from the existing residential uses. Residential uses of the same type and intensity are proposed adjacent to the current residences. A landscape buffer is being included between the existing and proposed residential areas.*

9. The preservation of natural resources and the impact of the proposed uses on the natural environment - *The site contains sensitive natural resources. The proposal would cluster development outside of sensitive environmental areas, including wetlands and CRPAs. Proffers require retaining walls be setback 20 feet from any CRPAs.*

10. The most appropriate use of land - *The Land Use Plan recommends suburban development in this location. The proposed location and scale of the proposed uses in the development conform to the recommended location and density standards established in the Plan and fit in with the established development patterns on adjacent properties.*

11. The timing of the development of utilities and public facilities and the overall public costs of the development – *Water and sewer utilities and roads are in place to support this development. Upon development of the project, the applicant will be required to make any required transportation and utility improvements required for their project. Improvements associated with Courthouse Road may occur at a later date as the interstate intersection is reconstructed.*

12. The consistency, or lack thereof, of the proposed rezoning with the Stafford County Comprehensive Plan as in effect at that time - *The proposal is consistent with the Comprehensive Plan, specifically the Suburban land use recommendations and the concepts envisioned in the Courthouse Redevelopment Plan.*

SUMMARY OF POSITIVE AND NEGATIVE FEATURES:

POSITIVE:

1. Monetary contributions would mitigate impacts to public facilities for all new dwelling units (above those currently allowed by-right).

2. Transportation improvements and monetary contributions would probably mitigate the impacts to the transportation network.

3. The commercial aspect of the project, once developed, would potentially offset the financial burden of residential development.

4. The proposal is in conformance with the Comprehensive Plan.

5. The proposal is consistent with the established and proposed development patterns on adjacent properties.

NEGATIVE:

1. Public facility impacts associated with the by-right development would not be mitigated.

2. Recommended measures to address fire and rescue concerns not fully addressed.

RECOMMENDATION:

Staff believes the project's benefits outweigh the negative aspects, and recommends approval of proposed Ordinance O12-12 with proffers dated May 29, 2012.

On April 18, 2012, the Planning Commission voted 5 to 1 (Mr. Gibbons voted no and Mr. Hirons was absent) to recommend approval of the reclassification with the proposed proffers.

Attachment 2
O12-12
R12-105

LAND USE ACTION REQUEST

BOARD OF SUPERVISORS

Date: June 19, 2012

[X] New [ ] Revised [ ] Unfinished

REQUEST: Reclassify 73.3 acres from A-1, Agricultural and PD-1, Planned Development-1 to B-2, Urban Commercial and R-2, Urban Residential – Medium Density on Assessor's Parcels 29-66A and 29-66B

Conforms with Comprehensive Plan? [X] Yes [ ] No [ ] N/A

CONDITIONS: See Proposed Ordinance O12-12

APPLICANT:

	Assessor's Parcel 29-66A	Assessor's Parcel 29-66B
Name:	Paul A. Brown American Life League, Inc.	Paul A. Brown, Trustee Judie Anne Brown Irrevocable Trust
Address:	P.O. Box 1350 Stafford, VA 22555	P.O. Box 1350 Stafford, VA 22555
Agent:	Charles W. Payne, Jr. Esq. Hirschler Fleischer	

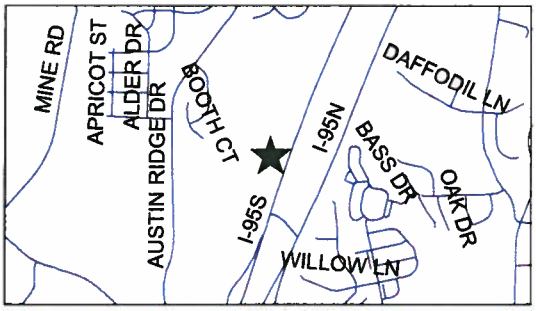
PLANNING COMMISSION RECOMMENDATION: Approve [X] Deny [ ]

At a meeting on April 18, 2012 the Planning Commission voted 5-1 (Mr. Gibbons voted no, Mr. Hirons was absent) to recommend approval of the request.

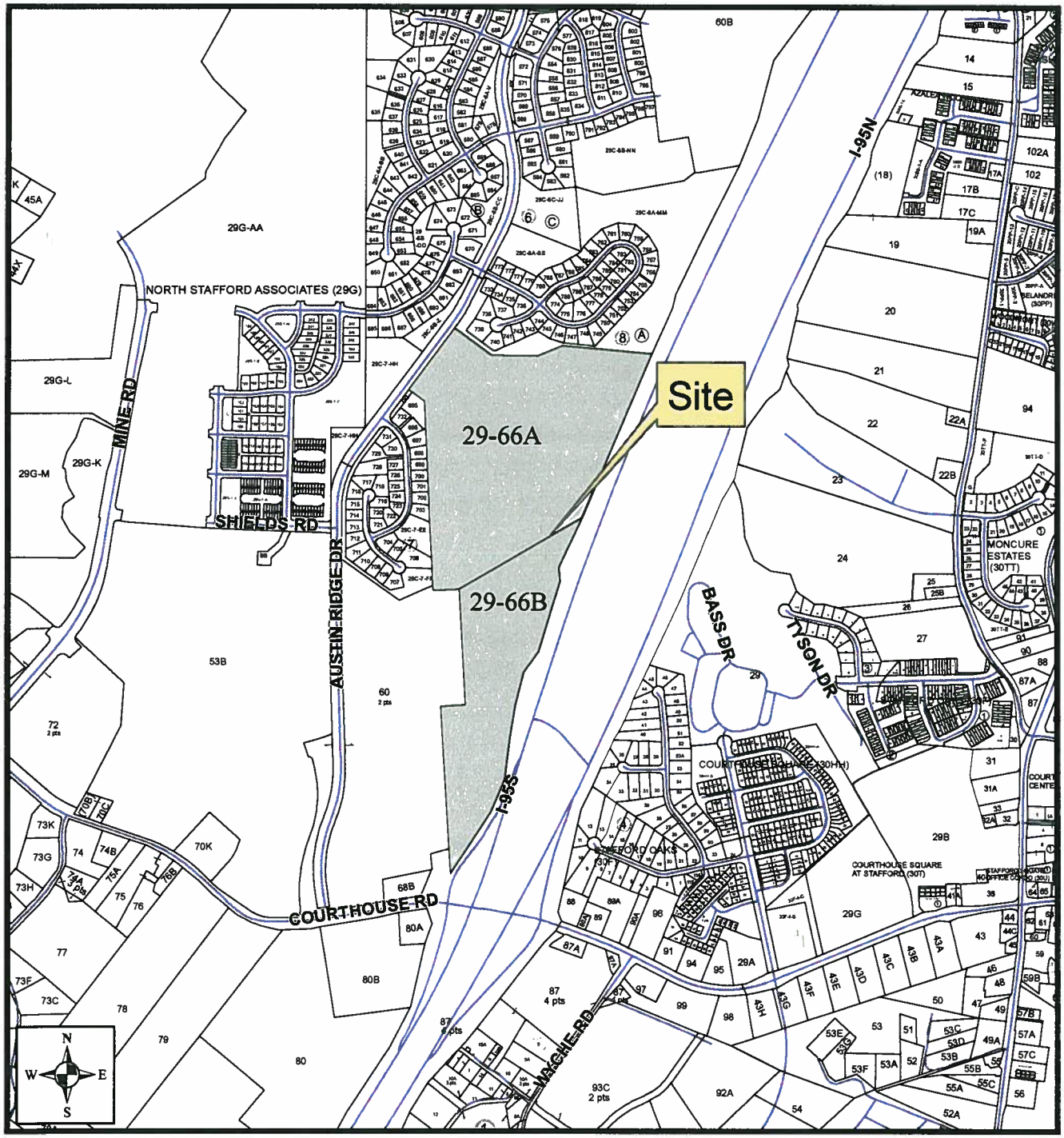
TIMING:

Application Date	March 8, 2012		
Advertisement Date/s	June 5, 2012 and June 12, 2012		
Plan. Comm. Action Date	April 18, 2012	(Required)	July 2, 2012
Proposed Board Action Date	June 19, 2012	(Required)	March 7, 2013

Property & Location



RC1100267
RECLASSIFICATION
WESTGATE CENTER
AT STAFFORD COURTHOUSE



03-27-12

Stafford County Department of
Planning & Zoning
P.O. Box 339, Stafford, VA 22555
(540) 658 - 8668

6. RC1100267; Reclassification – Westgate Center at Stafford Courthouse - A proposed reclassification from the A-1, Agricultural and PD-1, Planned Development-1 Zoning Districts to B-2, Urban Commercial (48.99 acres) and R-2, Urban Residential-Medium Density Zoning Districts (24.33 acres) to allow for the development of a commercial retail and office complex, and single-family residential dwellings on Assessor's Parcels 29-66A and 66B, consisting of 73.32 acres in total, located on the east side of Austin Ridge Drive, and north of Courthouse Road in the Garrisonville Election District. **(Time Limit: July 2, 2012)**

Mike Zuraf presented the staff report. He stated that the Planning Commission is to consider the request for a reclassification of Assessor's Parcels 29-66A and 66B from A-1, Agricultural and PD-1, Planned Development-1 zoning districts to B-2, Urban Commercial (48.99 acres) and R-2, Urban Residential – Medium Density (24.33 acres) zoning districts. He gave a brief description of the zoning map and the proposed zoning plat. Mr. Zuraf gave a brief overview of the proffers, traffic analysis, comprehensive plan, and monetary contributions listed in the staff report. Mr. Rhodes asked if the TIA Implications are based on the full maximum build out of the 645,000 square feet. Mr. Zuraf stated that is correct. He stated that staff does recommend approval of the Ordinance with the proposed proffers and staff believes the project's benefits out outweigh the negatives and would suggest the Planning Commission consider the request by the Fire and Rescue department. In particular, there were questions and concerns regarding the number of existing hotels in Stafford County, their annual tax revenues, and the number of hotels that are in the process of being developed. Mr. Apicella asked had they ever allowed an applicant to take the benefit of any proffer reductions that might occur in the future. Mr. Harvey stated that the current guidelines stipulate that there is a fixed dollar amount that is set every year, and that dollar amount can float after that based on the Marshal Swift Construction Cost Index, so over the last several years it has decreased, but now it increasing because of inflationary factors, but there is no process where the base number changes, in the current guidelines. There were other questions and concerns relating to the language proposed in the sprinkler request by Fire and Rescue. Mr. Zuraf stated that he would contact the Fire and Rescue department to see if they would recommend any modifications to the language.

Charlie Payne, the applicant's representative of Hirschler Fleischer, gave a brief overview of key elements from the staff report. In particular, there were questions and concerns of the sign height, and the applicant clarified that they would be following the County standards for signage. Mr. Payne stated that the applicant was willing to remove paragraph 14 from the proffers. Mr. Gibbons asked if they had the easement accessible. Mr. Payne stated that they have a recorded easement across the property, and a copy will be provided, but the easement is not beneficial to either party because of the way it angles across both sides, so they have a written agreement with the property owner that if they are approved they will have an easement in that location that is displayed on the GPD. Mr. Gibbons suggested the Fiscal Impact Analysis Consultant come back and present to the Commission how they would get $3,000,000 in revenue.

Mr. Rhodes opened the public comment portion for item number 6.

Sue Christiansen stated that her concern is with the location of the commercial development near the residential areas, since she is a resident of a nearby location. In particular, she had question about the buffers, the retail and hotels that will be developed in the area, and the occupancy in ADR, Average Daily Rate. She had questions and concerns about the developer's history with previous developments, and who would be the builder of the homes.

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Kevin Booker stated that his concern was the impact on the wildlife. He asked had there been a study on the wildlife. He stated that his concern is the trail that is going to be built between the commercial and the residential for the project.

Dan Stanton stated that his concern is the retail in the area and if there is going to be a market for the homes in the area. He asked had anyone talked to the Sheriff's department about what impact the development area will bring to the community. He stated that his concern is that they may not have the market for the hotels at that location.

Mike Shoup stated that his concern is the transient traffic. He stated that he would like the timing of the projects addressed.

Bill Tawton stated that is concern is the property values of the resident's homes. He stated that over the years the property value of their homes have decreased due to the economy, the crime rate, and the transient traffic that has come into the neighborhood. He stated that the residents' main concern is what is being brought into the neighborhood.

Dennis Parks stated that his concern is the property value of the resident's homes and the impact the new development is going to bring to the neighborhood.

Daphine Parks stated that her concern is with the new home developments, where would the children go to school and what impact it would have in the classroom. She stated that the classrooms are overloaded.

Paul Waldolski stated that almost every project that stands alone, without the ability to support transit and without convenience of nearby services. He stated that there are rolling slopes, stream corridors, and wildlife issues in the area. He asked what they were going to do with the developers of the 51 homes. He stated that the market is saturated in Stafford County and that is why short sales and foreclosures are at a high rate.

Judy Welch stated that her concern is Anthony Burns shutting down or moving. She had questions about the commuter lot, Austin Ridge drive being widened, paths connecting the neighborhoods, landscape boundaries, barriers, signage, the homes that are being developed, the hotels, and wildlife.

Mr. Rhodes closed the public comment portion of the public hearing, and asked the applicant to come forward to address some of the comments for clarification.

Mr. Payne stated that the closest residential home to the commercial site is about 650 feet property line to property line. He stated that it will be significantly buffered and the walking path between the residential and the commercial is there to benefit the residential component. Mr. Hirons asked if there would be trails between the existing residential and the new residential. Mr. Payne stated there would not be any trails there. He stated that they proposed the uses into the future and they are consistent with the suburban area land use plan and the redevelopment plan, so they encompass the proposed uses with that in mind. Mr. Rhodes asked if Mr. Payne has an identified hotel or other occupant retail establishment, it is just a concept. Mr. Payne stated that yes is it just concept plan. Mr. Rhodes stated the items that would be prohibited as the proffers are currently configured and proposed. Mr. Payne stated that they analyzed 34 additional students, which have been proffered for. Mr. Rhodes asked where Mr. Payne sees the connection from the new interchange to the development of the commercial portion of the plan. Mr.

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Payne stated that very likely the commercial component is not going to happen until the interchange happens. He stated that given the traffic impact and requirements, the investment stream is not going to happen until the interchange happens. Mr. Rhodes asked does he have a partnership with any particular builders for homes for the residential portion. Mr. Payne stated that they do not. He stated that the lots are 8,000 to 10,000 square feet, and they are looking at building high-end homes on the lots because those lots are larger than the lots that are in Austin Ridge. Mr. Apicella asked what would be the potential outcome if some of the properties were built by right. Mr. Payne stated 17 units by right. Mr. Payne stated that they would not be developing in the RPAs or the steep slope areas. Mr. Rhodes asked if there were landscaping buffers between the Mr. Payne's properties and the properties of Austin Ridge Homes. Mr. Payne showed a highlight of the buffer on a map. Mr. Apicella asked what would cause them not to build up to the parking decks. Mr. Payne stated that it would be the buffer requirement between commercial and residential development. Mr. Rhodes asked Mr. Zuraf was the Sheriff's department involved in preliminary designs. Mr. Zuraf stated that the Sheriff's department's staff was involved in the review of this case, and they provided the suggestions for the septet design. Mr. Harvey stated in reference to Mr. Hirons questions about the height of signs, that pursing to the Zoning Ordinance, if they have a shopping center sign, the shopping center sign can be 30 feet in height, and if they have a general advertising sign, it could be 20 feet in height. He stated that there are other sign standards for other free standing signs if there is a pad site along a major roadway.

Mr. Rhodes made a motion to defer to the April 18th meeting.

Mrs. Hazard seconded the motion.

The motion passed 7-0.

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1. RC1100267; Reclassification – Westgate Center at Stafford Courthouse - A proposed reclassification from the A-1, Agricultural and PD-1, Planned Development-1 Zoning Districts to B-2, Urban Commercial (48.99 acres) and R-2, Urban Residential-Medium Density Zoning Districts (24.33 acres) to allow for the development of a commercial retail and office complex, and single-family residential dwellings on Assessor's Parcels 29-66A and 66B, consisting of 73.32 acres in total, located on the east side of Austin Ridge Drive, and north of Courthouse Road in the Garrisonville Election District. **(Time Limit: July 2, 2012) (Deferred at April 3, 2012 to April 18, 2012)**

Mike Zuraf presented the staff report. He gave a brief description of the new proffer statement. He stated that VDOT is considering design adjustments to the Courthouse Road Interchange project that may or may not impact the Westgate property site, slightly more or less than it currently is. Mrs. Hazard asked if the methodology that was used in the past incorrect. Mr. Harvey stated that they have to change the Ordinance to comply with State Code. He stated that the program for impact fees started in 2003, and the State Code changed in 2007, under the provision that the program was started under, they can collect transportation impact fees at the time of an occupancy permit regardless of whether the subdivision plat had been recorded after the Ordinance went into effect or not. He stated that under the current regulations that the State Code has, and that they have to adopt, is that they can only collect impact fees for projects that have either been through a site plan approval or of record plat after they adopt the new Ordinance. He stated that the State Code is currently harmonized, as far as when you can collect proffers, and also when impact fees are collected prior to the occupancy permit. Mr. Rhodes asked if there is any County contribution towards the interchange project. Mr. Harvey stated generally speaking with primary interstate funds, there typically are not matching funds.

Scott Mayausky, Commissioner of the Revenue, gave a review of the appraisal that the applicant provided. He stated the most important part of an appraisal, in this situation, is called the highest invest use. He stated that in undeveloped properties and transition areas, it is the driver in the value of that property. He stated that was valued at its current zoning, which is A-1, and it was appraised at 12,000 per acre. He stated that the applicant's appraiser valued the property as if it was rezoned as B-2. Mr. Apicella asked what the total cost would be for the improvements of the project. Mr. Zuraf stated that for the cost that has been specified for the Austin Ridge Courthouse Road Intersection is $450,000, and there are additional costs at the site intersections along Austin Ridge drive that has not been quantified. Mr. Mayauski stated that it would be helpful to everyone if there was a standard process.

Mr. Rhodes halted the discussion and proceeded to the public presentation portion of the meeting.

Mr. Payne stated that their evaluations are $60,000 an acre on the 25 acres, and the remainder is part of the commercial project. He stated that the sprinklers are not requirements of the State Code or County Code, and they would offer it as an option to their buyers. Mr. Payne gave a brief description of the additional prohibited uses. Mr. Rhodes asked if there is a willingness by the applicant to take that to the high range of the A-1 evaluation of $20,000 per acre. Mr. Apicella recommends they consider providing the County the $450,000 for the road improvements necessary to mitigate the impacts of the rezoning, and additionally agree to the appropriate process and price is to dedicate or condemn the land necessary for the interchange. Mr. Payne stated that they would be willing to remove the credit. Mr. Rhodes recommended striking the offset provision of $282,450 and leave it as the $450,000 proffered contributions for lane improvements. Mr. Payne stated that was acceptable.

DRAFT

Mr. Rhodes handed over the gavel to Mrs. Hazard and made a motion to recommend approval of RC1100267, Reclassification of Westgate Center at Stafford Courthouse, with the modified proffers as were presented tonight and with the specific change as was stated on subparagraph 3-H, which reads "For purposes of Landbay #2, the applicant is aware of VDOT planning for a proposed future I-95/Courthouse Interchange and are committed to working with VDOT on right of way requirements. He stated by ending that, it takes out the offset amount of $282,000, which allows the County to get the full proffered amount of $450,000 for the road lane improvements.

Mr. Apicella seconded the motion.

Mr. Gibbons stated he would be opposing the motion.

Ms. McClendon informed the Commission because they were considering information that was presented in written form for the first time, there would have to be a 2/3 vote to consider it for voting.

Mr. Rhodes made a motion to accept the new information that was received tonight in order to consider moving the larger item number 1 forward.

Mr. Apicella seconded the motion.

Mrs. Hazard explained that under the by-laws the Commission did not have to consider the revision to the proffers that were made. She stated Mr. Rhodes made it very clear what was being amended and as part of the motion the Commission would be voting to accept the new information and move the application forward. After a brief discussion between the Commission and Ms. McClendon it was decided the votes would be separate.

Mrs. Hazard stated the Commission would be voting on the motion made by Mr. Rhodes concerning the proffer revision 3H, which was submitted tonight, as dictated by Mr. Rhodes and seconded by Mr. Apicella. The motion passed 5-1 (Mr. Gibbons opposed, Mr. Hirons was absent).

Mrs. Hazard stated the Commission would now vote on the motion made by Mr. Rhodes to recommend approval of RC1100267, Reclassification of Westgate Center at Stafford Courthouse which also includes the revision to proffer 3H. The motion passed 5-1 (Mr. Gibbons opposed, Mr. Hirons was absent).

DRAFT

STAFFORD COUNTY
Department of Planning and Zoning
PLANNING APPLICATION
RECLASSIFICATION

RECEIVED BUT NOT OFFICIALLY SUBMITTED
DATE: 7/29/11 INITIALS MB

OFFICIALLY SUBMITTED
DATE:_____ INITIALS_____

PROJECT INFORMATION

PROJECT #: 1100267

Westgate Center at Stafford Courthouse
PROJECT NAME

SECTION

ADDRESS (IF AVAILABLE)

73.3168
TOTAL SITE ACREAGE

29-66A and 29-66B
TAX MAP /PARCEL(S)

Garrisonville
ZONING DISTRICT

North of Courthouse Road, abutting I-95 south and Austin Ridge
LOCATION OF PROJECT

ZONING DISTRICT

Please select **ONE (1)** of the following as the **PRIMARY CONTACT PERSON** for this application

APPLICANT/AGENT (Provide attachment if differs): Primary Contact Person ☒

Charles W. Payne, Jr.,Esq. , (Agent) — NAME
Hirschler Fleischer — COMPANY
725 Jackson Street, Suite 200 — ADDRESS
Fredericksburg — CITY
Va. — STATE
22401 — ZIP
(540) 604-2108 — PHONE NUMBER
(540) 604-2101 — FAX NUMBER
cpayne@hf-law.com — EMAIL ADDRESS

OWNER (Provide attachments if multiple owners): Primary Contact Person ☐

SEE ATTACHED — NAME
SEE ATTACHED — COMPANY
ADDRESS
CITY
STATE
ZIP
PHONE NUMBER
FAX NUMBER
EMAIL ADDRESS

ENGINEER/SURVEYOR: Primary Contact Person ☐

Stephen V. Arthur — NAME
Allison Baird & Sehl, P.C. — COMPANY
14961 Kings Highway, P.O. Box 838 — ADDRESS
Montross, — CITY
Va. — STATE
22520 — ZIP
804-493-9066 — PHONE NUMBER
804-493-9926 — FAX NUMBER
Stephen_Arthur@hotmail.com — EMAIL ADDRESS

METES AND BOUNDS DESCRIPTION
48.3168 ACRES OF LAND
AMERICAN LIFE LEAGUE

GARRISONVILLE DISTRICT, STAFFORD CO., VA.

(TM# 29-66A)

COMMENCING AT A POINT ON THE WESTERLY RIGHT-OF-WAY LINE OF INTERSTATE 95 AND THE EASTERLY RIGHT-OF-WAY LINE OF FRONTAGE ROAD "A", THENCE WITH THE RIGHT-OF-WAY LINE OF FRONTAGE ROAD "A" NORTH 03°03'01" WEST, A DISTANCE OF 164.86 FEET TO A POINT; THENCE LEAVING SAID RIGHT-OF-WAY AND WITH THE LANDS OF ROCKY RIDGE JOINT VENTURE AND THE LANDS OF JUDIE ANNE BROWNE IRREVOCABLE TRUST THE FOLLOWING COURSES AND DISTANCES:

NORTH 02°54'36" WEST, A DISTANCE OF 1067.44 FEET TO A POINT;

NORTH 87°05'24" EAST, A DISTANCE OF 183.96 FEET TO A POINT;

NORTH 02°02'53" WEST, A DISTANCE OF 870.11 FEET TO THE POINT OF BEGINNING, SAID POINT BEING THE COMMON CORNER OF ROCKY RIDGE JOINT VENTURE AND JUDIE ANNE BROWNE IRREVOCABLE TRUST THENCE WITH THE LANDS OF ROCKY RIDGE JOINT VENTURE THE FOLLOWING COURSES AND DISTANCES:

SOUTH 87°14'07" WEST, A DISTANCE OF 159.82 FEET TO A POINT;

NORTH 02°45'53" WEST, A DISTANCE OF 509.17 FEET TO A POINT;

NORTH 02°29'47" WEST, A DISTANCE OF 910.53 FEET TO A POINT;

NORTH 53°21'57" EAST, A DISTANCE OF 157.52 FEET TO EASTERLY RIGHT-OF-WAY LINE OF AUSTIN RIDGE DRIVE, 90 FEET RIGHT-OF-WAY, THENCE WITH THE EASTERLY RIGHT-OF-WAY LINE OF AUSTIN RIDGE DRIVE, NORTH 36°38'03" WEST, A DISTANCE OF 548.56 FEET TO THE EASTERLY RIGHT-OF-WAY OF AUSTIN RIDGE DRIVE AND THE CORNER OF PARCEL MM, AUSTIN RIDGE SUBDIVISION, SECTION 8A, THENCE WITH PARCEL MM, AUSTIN RIDGE SUBDIVISION, SECTION 8A THE FOLLOWING COURSES AND DISTANCES:

SOUTH 53°21'57" EAST, A DISTANCE OF 340.00 FEET TO A POINT;

SOUTH 89°41'40" EAST, A DISTANCE OF 349.21 FEET TO A POINT;

NORTH 67°59'52" EAST, A DISTANCE OF 195.84 FEET TO A POINT;

SOUTH 84°54'47" EAST, A DISTANCE OF 666.03 FEET TO THE WESTERLY RIGHT-OF-WAY LINE OF INTERSTATE 95; THENCE WITH THE WESTERLY RIGHT-OF WAY LINE OF INTERSTATE 95 THE FOLLOWING COURSES AND DISTANCES:

ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 23,048.30 FEET, AN ARC LENGTH OF 570.38 FEET, AND CHORD BEARING SOUTH 23°07'13" WEST, A DISTANCE OF 570.36 FEET TO A POINT;

SOUTH 29°17'37" WEST, A CHORD DISTANCE OF 162.21 FEET TO A POINT;

ALONG THE ARC OF A CURVE TO THE LEFT HAVING A RADIUS OF 23,068.30 FEET, AN ARC LENGTH OF 503.27 FEET, AND CHORD BEARING SOUTH 21°23'11" WEST, A DISTANCE OF 503.26 FEET TO A POINT;

SOUTH 24°12'10" WEST, A CHORD DISTANCE OF 101.62 FEET TO A POINT; THENCE LEAVING THE WESTERLY RIGHT-OF-WAY AND WITH THE LANDS OF JUDIE ANNE BROWNE IRREVOCABLE TRUST, SOUTH 60°04'35" WEST, A DISTANCE OF 1056.42 FEET TO THE POINT OF BEGINNING AND CONTAINING 48.3168 ACRES, MORE OR LESS.

(TM # 29-66B)

METES AND BOUNDS DESCRIPTION
25.000 ACRES OF LAND
JUDIE ANNE BROWN TRUST

GARRISONVILLE DISTRICT
STAFFORD COUNTY, VIRGINIA

Beginning at a point in the northwest quadrant of the interchange of I-95 and route 630 and in the west right-of-way of I-95, ramp "C" and frontage road "A";

Thence north 03 degrees 03' 01" west, a distance of 164.86 feet to a point;

Thence north 02 degrees 54' 36" west, a distance of 1067.44 feet to a point;

Thence north 87 degrees 05' 24" east, a distance of 183.96 feet to a point;

Thence north 02 degrees 45' 53" west, a distance of 870.11 feet to a point;

Thence north 60 degrees 04' 34" east, a distance of 1056.42 feet to a point;

Thence south 24 degrees 12' 10" west, a distance of 453.89 feet to a point;

Thence south 06 degrees 23' 04" west, a distance of 180.78 feet to a point on a curve;

Thence along a curve to the left, having a radius of 23068.30 feet and an arc distance of 516.20 feet, the chord of said curve being south 18 degrees 18' 28""west, 516.19 feet; Thence south 32 degrees 43' 18" west, a distance of 192.50 feet to a point;

Thence south 17 degrees 40' 17" west, a distance of 175.17 feet to a point;

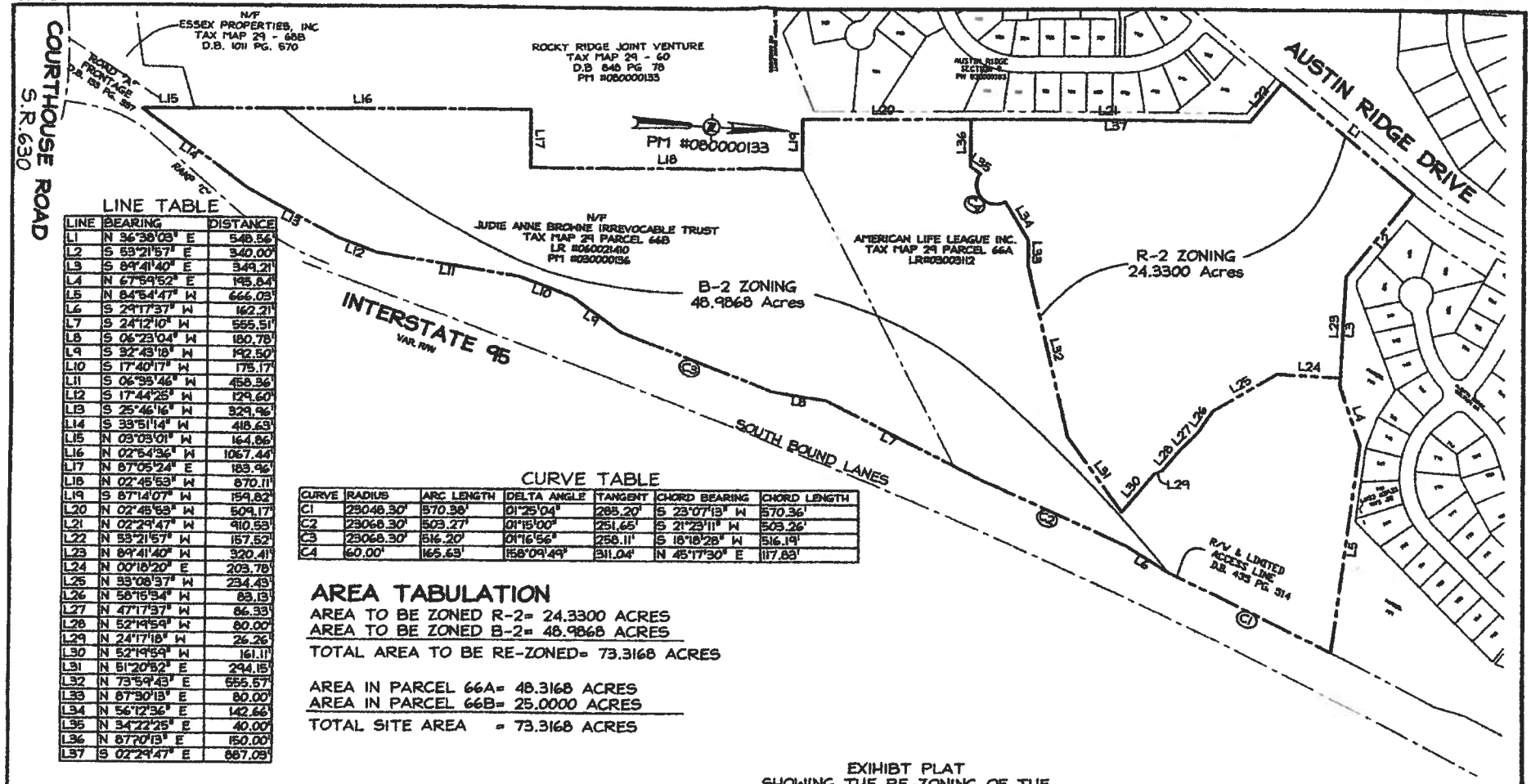
Thence south 06 degrees 35' 46" west, a distance of 458.36 feet to a point;

Thence south 17 degrees 44' 25" west, a distance of 129.60 feet to a point;

Thence south 25 degrees 46'16" west, a distance of 329.96 feet to a point;

Thence south 33 degrees 51' 14" west, a distance of 418.63 feet to a point and the point of beginning; and containing 25.000 acres of land, more or less.

08-012



LINE TABLE

LINE	BEARING	DISTANCE
L1	N 36°38'03" E	548.56'
L2	S 53°21'57" E	340.00'
L3	S 89°41'40" E	349.21'
L4	N 67°59'52" E	195.84'
L5	N 84°54'47" W	666.03'
L6	S 29°17'37" W	162.21'
L7	S 24°12'10" W	555.51'
L8	S 06°23'04" W	180.78'
L9	S 32°43'18" W	192.50'
L10	S 17°40'17" W	175.17'
L11	S 06°35'46" W	458.36'
L12	S 17°44'25" W	129.60'
L13	S 25°46'16" W	329.96'
L14	S 33°51'14" W	418.63'
L15	N 03°03'01" W	164.86'
L16	N 02°54'36" W	1067.44'
L17	N 87°05'24" E	183.96'
L18	N 02°45'53" W	870.11'
L19	S 87°14'07" W	159.82'
L20	N 02°45'53" W	509.17'
L21	N 02°29'47" W	910.53'
L22	N 53°21'57" W	157.52'
L23	N 89°41'40" W	320.41'
L24	N 00°18'20" E	203.78'
L25	N 33°08'37" W	234.43'
L26	N 58°15'34" W	83.13'
L27	N 47°17'37" W	86.33'
L28	N 52°19'59" W	80.00'
L29	N 24°17'18" W	26.26'
L30	N 52°19'59" W	161.11'
L31	N 51°20'52" E	294.15'
L32	N 73°59'43" E	555.57'
L33	N 87°30'13" E	80.00'
L34	N 56°12'36" E	142.66'
L35	N 34°22'25" E	40.00'
L36	N 87°70'13" E	150.00'
L37	S 02°29'47" E	887.03'

CURVE TABLE

CURVE	RADIUS	ARC LENGTH	DELTA ANGLE	TANGENT	CHORD BEARING	CHORD LENGTH
C1	23048.30'	570.38'	01°25'04"	285.20'	S 23°07'13" W	570.36'
C2	23068.30'	503.27'	01°15'00"	251.65'	S 21°23'11" W	503.26'
C3	23068.30'	516.20'	01°16'56"	258.11'	S 18°18'28" W	516.19'
C4	60.00'	165.63'	158°09'49"	311.04'	N 45°17'30" E	117.83'

AREA TABULATION

AREA TO BE ZONED R-2= 24.3300 ACRES
AREA TO BE ZONED B-2= 48.9868 ACRES

TOTAL AREA TO BE RE-ZONED= 73.3168 ACRES

AREA IN PARCEL 66A= 48.3168 ACRES
AREA IN PARCEL 66B= 25.0000 ACRES

TOTAL SITE AREA = 73.3168 ACRES

GRAPHIC SCALE

0' 300' 600' 900'

SCALE 1"=300'

EXIHIBT PLAT
SHOWING THE RE-ZONING OF THE
PROPERTIES OF

AMERICAN LIFE LEAGUE INC.
TAX MAP 29 PARCEL 66A
AND
THE JUDIE ANNE BROWN IRREVOCABLE TRUST
TAX MAP 29 PARCEL 66B

GARRISONVILLE MAGISTERIAL DISTRICT
STAFFORD COUNTY, VIRGINIA

DRAWN BY: DAA	CHECKED BY: SVA
SCALE: 1"=300'	DATE: JANUARY 26, 2012

The KNISELEY GROUP, Inc.
LAND DEVELOPMENT CONSULTANTS

LAND PLANNING
LAND SURVEYING
SURVEY ENGINEERING

705 CAROLINE STREET
FREDERICKSBURG, VA 22401
PHONE: 540.656.2092
FAX: 540.656.2094

12-B-01

APPLICATION AFFIDAVIT

This form to be filed with:

STAFFORD COUNTY
BOARD OF SUPERVISORS

1300 COURTHOUSE ROAD
STAFFORD, VIRGINIA 22555

Internal Use Only
Project Name: WESTGATE CENTER & STAFFORD COURTHOUSE
A/P #: 1100267
Date: 7/29/11

All applicants for a special exception, a special use permit, conditional use permit, amendment to the zoning ordinance or variance shall make complete disclosure of the equitable ownership of the real estate involved in the application, including in the case of corporate ownership, limited liability company ownership or similar business ownership, the name of stockholders, officers, managing partners, general partners, owners and members, and in any case the names and addresses of all of the real parties in interest. The requirement of listing names of stockholders, officers and directors shall not apply to a corporation whose stock is traded on a national or local stock exchange and having more than 500 shareholders. In the event the ownership of the involved real estate changes in any respect during the time the application is pending, the applicant shall make complete disclosure of the new equitable ownership of the real estate involved in the application as required herein. If the applicant is a contract purchaser, the ownership information required herein shall be provided for the contract purchaser in addition to the owner of the real estate involved in the application. This section applies to applications before the board of supervisors, planning commission and board of zoning appeals.

See Section 15.2-2289 for State Enabling Authority

1. Applicant information

Name of Applicant Paul A. Brown, V-P , and Paul A. Brown, Trustee
Name of Company American Life League, Inc. and Judie Anne Brown Irrevocable Trust

Applicant Address P.O. Box 1350
Stafford, Va. 22555-1350

Applicant's Signature Paul A. Brown, V-P ~~Co-Trustee~~ X P.B. Paul A. Brown, Trustee
X by P.B. Brown, his attorney in fact X by P.B. Brown, his attorney in fact

Name of Agent Charles W. Payne, Jr., Esq.

Address of Agent Hirschler Fleischer, 725 Jackson Street, #200, Fredericksburg, Va. 2240

2. Type of Application

☐ **Conditional Use Permit** ☐ **Variance**

☒ **Rezoning** ☐ **Special Exception**

Project Name: American Life League Rezoning
A/P #: 1100267
Date:

Application Affidavit
Page 2
Applicant: Am.LifeLeague,Inc./JudieABrown

3. Property Information

Assessors Parcel(s) 29-66A and 29-66B

Address _____

4. Unless the equitable ownership is a corporation, limited liability company or similar business ownership, list all equitable owners of the property.

Name of owners	Address

5. If the equitable ownership of the property is a corporation, limited liability company or similar business ownership, list all officers, managing partners, general partners, share holders, owners and members. This provision shall not apply if the corporation is listed on a national or local stock exchange and has more than 500 share holders.

Name of Members	Address
SEE ATTACHED	SEE ATTACHED

6. Unless the applicant is a contract purchaser and is a corporation, limited liability company or similar business ownership, list all individuals involved with the purchase of the property.

Name of Members	Address

CORPORATE OFFICERS OF AMERICAN LIFE LEAGUE, INC.

(Attachment to Planning Application Reclassification//Zoning)

Owner of Parcel 29-66A: American Life League, Inc.

Name	Office/Title
Judith A. Brown	President
Joseph Pavlik	Treasurer
Scarlett Clark	Secretary

Stockholders: (If less than 500 share holders): N/A

Application Affidavit
Page 3
Applicant: Am.LifeLeague,Inc./JudieABrown

Project Name: AmericanLifeLeague
A/P #: Rezoning 1100267
Date:

7. If the applicant is a contract purchaser and is a corporation, limited liability company or similar business ownership, list all officers, managing partners, general partners, share holders, owners and members. This provision shall not apply if the corporation is listed on a national or local stock exchange and has more than 500 share holders

Name of Members

_____ _____
_____ _____
_____ _____
_____ _____
_____ _____

8. Have all individuals listed on this affidavit been notified of the purpose of the application?

☒ **Yes** ☐ **No**

9. If #8 is No, list all individuals who have not been notified about this application plus submit the cost required for the Department of Planning and Zoning or Code Administration to send certified letters notifying those listed below of this application prior to the public hearing.

Name	**Address, including zip code, no P.O. Box please**
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Number of owners to be notified: _____X
Cost for certified letters $_____ (cost as of the day of submittal)
Total due: $_____ (Make checks payable to County of Stafford)

Please submit a check in the amount due with this application to cover the cost of serving the individuals listed in this section.

Application Affidavit
Page 4
Applicant: Am LifeLeague,Inc./JudieABrown

Project Name:	American Life League Rezoning
A/P #:	1100267
Date:	

10. Affirmation & Witness

I hereby make oath or affirmation that the contents of this affidavit are true and correct to the best of my knowledge, information and belief. In the event the ownership of the involved real estate changes during the time the application is pending, I shall make complete disclosure of the new equitable ownership of the real estate involved in the application as required herein.

Printed name of Signer Paul A. Brown, Trustee , by Hugh Brown, his Attorney-in-fact

Corporate Office of Signer Paul A. Brown, V-P , by Hugh Brown, his Attorney-in-fact

Signature Paul a. Brown, Trustee X by Hugh C. Brown, his attorney in fact X Paul a. Brown, Vice President by Hugh C. Brown, his attorney in fact

Date July 29, 2011

COMMONWEALTH OF VIRGINIA
~~COUNTY OF STAFFORD, to wit:~~
CITY OF FREDERICKSBURG, to wit:

The forgoing affidavit was acknowledged before me this 29th day of July, 2011 by

Paul A. Brown, Trustee and * owner/applicant.

My commission expires: 6/30/2012

Notary Public

ELIZABETH DAMARIS PIERSON NOTARY PUBLIC REG # 154314 MY COMMISSION EXPIRES 06/30/2012 COMMONWEALTH OF VIRGINIA

* Paul A. Brown, Vice-President of American Life League, Inc., by Hugh Brown, his Attorney-in-Fact

OWNERS

(Attachment to Planning Application Reclassification//Zoning)

Owner of Parcel 29-66A
American Life League, Inc.
Contact: Paul A. Brown, Vice-President
Attn: Tom Mucha
PO Box 1350
Stafford, Virginia 22555-1350

Phone No.: 540-373-1111
Fax No. : 540-373-2855
E-Mail: tmucha@aka1.com

Owner of Parcel 29-66B
Paul A. Brown, Trustee
for the Judie Anne Brown Irrevocable Trust
Contact: Paul A. Brown (Attn: Tom Mucha)
PO Box 1350
Stafford, Virginia 22555-1350

Phone No.: 540-373-1111
Fax No. : 540-373-2855
E-Mail: tmucha@aka1.com

Project #:_____

STATEMENTS OF UNDERSTANDING:

I, as owner/co-owner of the property subject to this application, do hereby certify that I have read and understand the requirements for the submission of a reclassification as provided under the Stafford County Code, and further, that this submittal is in compliance with the requirements and applicable provisions of the Stafford County Zoning Ordinance, Chapter 28 of the Stafford County Code.

Signature of Owner/Co Owner	Printed Name	Date
Paul A. Brown, Vice President by Hugh R. Brown, his attorney in fact	Paul A. Brown, Vice-President by Hugh Brown, his attorney-in-fact	7-29-2011
Paul A. Brown, Trustee by Hugh R. Brown, his attorney in fact	Paul A. Brown, Trustee by Hugh Brown, his attorney-in-fact	7-29-2011

I, as applicant or agent for the owner(s) of the property subject to this application, do hereby certify that I have read and understand the requirements for the submission of a reclassification as provided under the Stafford County Code, and further, that this submittal is in compliance with the requirements and applicable provisions of the Stafford County Zoning Ordinance, Chapter 28 of the Stafford County Code.

Signature of Applicant/Agent	Printed Name	Date
	Charles W. Payne, Jr., Esq.	7-29-2011

* Additional sheets may be used, if necessary.

Project #:_____

GENERAL INFORMATION AND REVIEW FEE CALCULATIONS:

CLEARLY INDICATE ALL INFORMATION THAT APPLIES TO THIS PROJECT:

ENTER FOR FEE CALCULATIONS:

73.3168 **# of Acres**

☐ **Planned Development**

☐ **Proffer Amendment**

Check if submitted:

☐ **Owner's Consent**

☒ **Impact Statement**

☒ **TIA Determination Form**

☐ **County TIA**

☒ **VDOT TIA**

☒ **General Development Plan**

INFORMATIONAL

Approved Ordinance #_____

Previous Ordinance #_____

Resolution # _____

# of Lots (if rezoning to residential)_____

Original Zoning A-1 and PD-1

Proposed Zoning R2 & B2

Proposed Use(s) _____

SEE ATTACHED IMPACT STATEMENT AND GDP

STAFFORD COUNTY, VIRGINIA
APPLICATION FOR ZONING RECLASSIFICATION AMENDMENT APPLICATION
IMPACT STATEMENT

Applicant:	American Life League, Inc. (Owner of Tax Map 29-66A) & Paul A. Brown, Trustee for the Judie Anne Brown Irrevocable Trust Agreement dated June 28, 2006, as clarified and restated pursuant to that certain Clarification and Complete Restatement of the Judie Anne Brown Irrevocable Trust Agreement, dated August 23, 2007. (Owner of Tax Map 29-66B)
Rezoning Request:	Rezone Parcels Tax Map 29-66 A & 29-66B from A-1(portion thereof also being zoned PD-1) to B-2; total acreage approximately 73.3 acres
Date:	Revised March 5, 2012

Rezoning Application Request:

The applicants, American Life League, Inc., a District of Columbia corporation (Owner of Tax Map 29-66 A) & Paul A. Brown, Trustee for the Judie Anne Brown Irrevocable Trust Agreement dated June 28, 2006, as clarified and restated pursuant to that certain Clarification and Complete Restatement of the Judie Anne Brown Irrevocable Trust Agreement, dated August 23, 2007 (Owner of Tax Map 29-66B) (hereinafter collectively the "Applicant") hereby request a rezoning of the following properties from A-1 (portion thereof being zoned PD-1) to **R-2, Residential, Urban Residential—Medium Density, Landbay #1** , and **B-2, Urban Commercial, Landbay #2** (see §28-34 & §28-35):

> Zoning reclassification for parcels Tax Map 29-66 A, consisting of 48 +/- acres(of record by instrument No. LR 03003112) and 29-66 B, consisting of 25 +/- acres (LR 060021410), generally located in the northwest quadrant of the I-95 / Route 630 interchange area in the Garrisonville Magisterial District, Stafford County, Virginia, consisting in the aggregate of approximately 73.3 acres, which are adjoining parcels located along the east side of Austin Ridge Drive, and to the north of Courthouse Road (Route 630) and west of I-95, all as more particularly described on that attached generalized development plan dated June 30, 2011, as last revised January 20, 2012, prepared by The Kniseley Group, Inc., and entitled "Generalized Development Plan Westgate Center @ Stafford Courthouse", which plan is incorporated into this application by this reference ("GDP")[1].

---

[1]The GDP is a general overview of the proposed improvements to the Property whereby overall square footage of any improvement on the Property may be larger or smaller than depicted on the GDP, all subject to this application and applicable ordinance requirements. Applicant further reserves the right to make modifications or amendments to the GDP in order to address the County's final site engineering, architectural and design issues, internal road placements, and to ensure compliance with federal, state and city regulations, laws and ordinances.

We have also included with this application an illustrative exhibit that depicts our general proposal for development and uses. This exhibit was prepared by The Kniseley Group, Inc., dated January 23, 2012, and entitled "Illustrative Exhibit Westgate Center @ Stafford Courthouse" ("Illustrative Exhibit"). The exhibit provides a proposed maximum floor area of 645,000 square feet of commercial space, as compared to 853,776 square feet allowed under county ordinance in the proposed B-2 zone, and 51 Single Family Detached Residential lots in the proposed R-2 residential zone. The exhibit also depicts buffering areas, protection of environmentally sensitive areas, proposed amenities, vehicular and pedestrian access areas across the adjoining property owner to Austin Ridge Drive, surface parking and parking deck areas, and proposed uses designated by color guide on the Illustrative Exhibit.

In addition and as noted above, our proposal provides for general mixed-use development scheme with the following proposed development highlights:

(1) Total development acreage area of 73.3 acres of which approximately 58 acres will be deemed the net development area;

(2) Within Landbay # 1, approximately 18.23 of the 24.33 aggregate acres will be developed under R-2 Urban Residential zoning designation for 51 single family detached homes (nets 2.34 DU/AC versus 3.50 allowed DU/AC) of substantially similar quality as the adjoining neighborhood of Austin Ridge;

(3) Within Landbay # 2, approximately 36.2 of the remaining 49 acres (less approximately 4.7 acres of dedicated right of way for future I-95 interchange) will be developed under B-2 Urban Commercial zoning designation for purposes of developing 645,000 gross square feet of commercial development, including entertainment retail, Class-A office space, hotel space and commercial retail space, all as generally depicted on the Illustrative Exhibit.

(4) This proposal will also provide at least 25% open space, construction design and materials in general accordance with the Courthouse Redevelopment Overlay area, all as provided more particularly on the Illustrative Exhibit and in this application.

(5) Also note that our general mixed use development scheme, that does include maximum density and development restrictions, provides for a flexible mixed use development scheme within the confines of our application, which we believe is essential to current market conditions and investment interests.

Overview:

The Applicant makes this request to rezone the subject properties from A-1 (plus portion zoned PD-1) to R-2 Urban Residential and B-2, Urban Commercial, which are both defined under County code (see §28-34) as follows:

> "The purpose of the R-2 District is to provide areas of medium density residential uses designed and intended to be primarily characterized by multifamily dwellings, duplexes, and townhouses. Such districts are to be located near centers of urban concentrations, only where approved water and sewerage are available and where

transportation systems are adequate."

> "The purpose of the B-2 District is to designate appropriate areas for high-density commercial uses intended to serve retail sales and service, business and professional service needs at a regional or countywide scale. These areas should be located at strategic nodes along arterial and major collector roads where there are adequate utilities and facilities to serve the intense development."

Although the R-2 district promotes multifamily housing, it does not prohibit single family detached housing. In addition and as noted in more detail below, the subject site is located within the Suburban land use area of the County's Comprehensive Plan, amended as of March 15, 2011 ("Comp Plan"). Within the Suburban area, single family detached housing is encouraged at a density of three (3) units per acre. Our plan proposes on approximately 24.33 acres (e.g. Landbay # 1 as shown on the Illustrative Exhibit), with fifty-one (51) units at a net density of 2.34 units per acre. Further, our proposal is consistent with the residential units located to our North within the Austin Ridge housing development. This residential component of our plan also provides necessary rooftops within our general mixed use scheme and includes several amenities, including proposed walkways, walking trails and paths, tot lot, open space and possible passive recreational areas (e.g. like picnic areas), and further provides extensive wooded buffers between this project and adjoining development to our North.

The Applicant also proposes on the remaining 49 acres of the overall site (less approximately 4.7 acres dedicated for future right pertaining to I-95 interchange), future commercial mixed uses under the B-2 zoning criteria subject to any proffered-out uses provided in Applicant's attached revised proffer statement. Pursuant to the GDP, the Applicant has provided maximum buildable areas of only 645,000 square feet (as compared to 853,776 gross square footage allowance) for certain commercial uses and proposes a flexible menu of future commercial uses in general accordance with the GDP and Illustrative Exhibit.

It is assumed that the Applicant will for purposes of any rezoning approval be required to provide a lot line adjustment to include the two proposed separate Landbay areas as described on the GDP and Illustrative Exhibit. Further, the project is proposed for purposes of creating a mixed use concept in accordance with the surrounding uses and the County's Comp Plan. The project is also expected be developed in phases and the Applicant believes the first phase of the proposed project will include Land Bay 1 with Land Bay 2 as phase two, all as generally shown on the GDP and Illustrative Exhibit. Notwithstanding the foregoing and given typical fluctuations in the commercial real estate market, it is our desire that any of the aforesaid phases may occur in any order, subject to the requirements of the approved Proffer Statement. In any event, applicable infrastructure improvements will be triggered and required as a condition precedent for purposes of any development phase of the project, all as generally described on the GDP. Again, we are attempting to provide a flexible, innovative process that will ensure successful future development of the project, which is consistent with current and near term future market conditions, and the County's Comp Plan.

Further, Landbay # 2 is more adaptable to commercial uses due to its frontage on and visibility from I-95, and the fact Landbay # 1 adjoins several high density residential uses

namely the Austin Ridge subdivision generally located to the North and West of the proposed site. Thus, our proposed residential uses will provide an adequate transitional component to the Austin Ridge development accustomed to adjoining similar residential uses. We have also planned the project so that it will not only attract consumers from major road arteries, but also directly serve the adjoining and nearby residential communities (current and future), including connecting walking trails to the site and extending the sidewalk network system to adjoining neighborhoods. We have also provided significant buffering areas of at least 200 feet from surrounding residential uses, all as shown on the GDP and Illustrative Exhibit. We believe this will be an added attractive component for the project and adequately buffer any impacts on surrounding residential uses.

As noted above, this proposed project is also adjacent to or near significant road arteries like Rt. 630 and Austin Ridge Road. In addition, the subject sites will be adjacent to or near the future Rt. 630/I-95 interchange as described in our traffic impact analysis (as revised), which study is enclosed with this application, made a part hereof by this reference, and discussed in more detail below ('Traffic Study"). Further and as noted in more detail below, this proposal is consistent with the County's Comp Plan and will provide needed commercial property opportunities near the Courthouse area. We further believe this site, given its access to Courthouse Road and the interstate, will be attractive for certain employment center opportunities, including for government contractor and other professional business service ('PBS") end users.

The site is also within the urban service area and will have access to public water and sewer. Further, the proposed residential development will have minimal impact on schools while the commercial area will have none and provide a significant role in offsetting the costs of county core services, like schools. The main ingress/egress access points will be along Austin Ridge Road, as generally shown on the GDP and Illustrative Exhibit[2]. Travel and roadways within the site will be private and in accordance with County specifications and requirements, all as shown on the GDP.

It is our further reasonable anticipation and as provided in our attached Fiscal Impact Analysis prepared by S. Patz and Associates, Inc., entitled "Fiscal Impact Analysis Westgate Center Stafford County, Virginia", dated May 2011, as last revised February 2, 2012 ("Fiscal Impact Study"), which is discussed in more detail below, that projects tax revenues for this project to yield annually $3.0 million in surplus revenues for the County net the costs of services and facilities. In this regard, it is our projection that this project, once completely built out, would generate $3.8 million annually, in constant 2011 dollars, compared to costs to the County of approximately $800,000. Thus, this project will provide a net positive annual fiscal return for the County and generate a significant number of new jobs and opportunities for a live, work and play community near the County Courthouse area. It is also the Applicant's reasonable belief that an approved rezoning of the subject parcels under this Application will enhance the values of

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[2] We are also working with the adjoining property owner for purposes of two points of access across its property to Austin Ridge Road. Currently, the Applicant has an access and utility easement across the adjoining property owner of record by Instrument No. LR030031112. However, for purposes of the future development of both the Applicant's site and that of the adjoining property owner, this easement may be amended by the parties to ensure fluid and consistent development of both sites and proper interparcel connections.

surrounding properties, including providing new opportunities for surrounding commercial development in the near future, and provide necessary and convenient shopping, retail and job center locations.

An alternate plan to our proposal, which would include surface parking versus parking decks, would generate approximately $1.4 million in net revenues for the county in constant 2011 dollars. Please see enclosed Fiscal Impact Study.

Currently, the vacant and undeveloped parcels generate approximately $16,700 in real estate tax. Comparing the by-right uses for this district, which would include for purposes of Agricultural (A-1), approximately 16-17 residential single family detached homes, the parcels would generate a net fiscal benefit of $19,700. Please see enclosed Fiscal Impact Study.

The project will further have a minimal impact on recreational facilities and our traffic studies generally indicate that certain transportation improvements will be required to either maintain or enhance current levels of services. In this regard, the Applicant retained Bowman Consulting Group, Ltd, to prepare a traffic impact analysis ("TIA"). Generally, the TIA determined that the Project will generate approximately 20,922 vehicles per day, 697 vehicle trips in the AM peak hour, and 2,037 vehicle trips in the PM peak hour. These traffic volumes exceed thresholds outlined in §15.2-2222.1 of the Code of Virginia and the Virginia Traffic Impact Analysis Regulations (24 VAC 30-155), which are commonly referred to as "Chapter 527" requirements. The majority of the project's traffic will access the external public roadway network via a southern connection (Entrance # 2) to Austin Ridge Drive. A more detailed analysis is discussed below and as provided in the enclosed TIA.

We will further provide suitable stormwater management facilities to control water quantity and quality that also incorporate Low Impact Development (LID) devices and techniques where underlying soils permit such practices to reduce impervious areas on the sites, to prevent unnecessary water runoff, and to protect environmentally sensitive areas, all as generally noted on our GDP.

In addition and as noted aforesaid, we believe the proposed future use of the site will benefit surrounding property owners by providing a positive transitional development scheme, convenient retail and shopping opportunities in the immediate area without the need of distant transportation, and will further enhance their respective property values. In this regard, it is also important to note that: (1) adjacent residential properties to our North and West are zoned urban residential, notably Austin Ridge Sections 6B, 7 and 8A are all zoned PD 1 and currently urban residential uses; (2) to our South and West undeveloped properties owned respectively by Rocky Ridge Joint Venture (TM 29-60) and Essex Properties, Inc. (TM 29-68 B) are zoned B-2; (3) undeveloped properties located on the West side of Austin Ridge and commonly known as "Embrey Mill" are zoned for mixed use commercial; and (4) lastly as noted above and our GDP, to our east is I-95.

Comprehensive Plan Overview.

We believe this project is compatible with the County's Comp Plan and will provide many positive net benefits to the County and surrounding communities. For purposes of the Comp Plan, this site is located within the Suburban land use area of the County's Comp Plan, which encourages mixed uses of detached single family residential units and commercial retail and business uses. For purposes of single family detached units, the Comp Plan generally encourages three (3) units per acre maximum density on one-quarter to one-half acre lots, which can also serve as "infill development".

For purposes of the commercial uses, the Comp Plan generally encourages retail and office uses not to exceed 0.4 floor area ratio ("FAR") with all structures being generally "low rise" not exceeding three (3) stories in design and site layout and design compliments existing neighborhoods and communities. The Comp Plan for this area also encourages the protection of environmentally sensitive areas and off street parking. Further, the Comp Plan encourages sidewalks and pedestrian trails, and that the commercial components of any development are located along or near arterial transportation corridors or at nodes where arterial and collector roads connect.

The proposed project is also located within the County's Courthouse Redevelopment area and the County's Urban Service Area. As provided in the Comp Plan, we believe this project is a prime infill development area as it is undeveloped land immediately adjoining Austin Ridge subdivision to the South, has viable visibility from I-95 and Austin Ridge Road, and as a mixed used project will attract commercial retail, office and hotel uses, all of which will benefit the Courthouse area and provide new economic development opportunities. In addition, the Comp Plan provides that Redevelopment Areas may also be of Suburban scale, which is consistent with our proposed development plan.

In regards to our project and its compliance with the Comp Plan, the applicant is proposing 51 single family detached units to be located exclusively on Landbay # 1, which includes approximately 24.33 gross acres, all as generally provided on the GDP and Illustrative Exhibit. The net DU/AC is 2.34 units, and these units will be substantially similar to the residential units to our North and West located within the Austin Ridge residential development. This project also includes several amenities like pedestrian friendly sidewalks and walking paths, all as generally depicted on our GDP and Illustrative Exhibit. Landbay # 1 will be a reasonable, infill transitional development component from the Austin Ridge residential subdivision, significantly buffered by trees and wooded areas from said subdivision to minimize or eliminate any impacts to adjoining residential properties, all as provided on the GDP and Illustrative Exhibit. Further, the Landbay # 1 development area will have access to Austin Ridge Drive as generally shown on the GDP and Illustrative Exhibit. Please also note that properties and users within Landbay # 2 will not have access across Landbay # 1, all as shown on said exhibits. Our project also preserves environmentally sensitive areas and at least 25% open space, all as generally shown GDP and Illustrative Exhibit.

For purposes of the B-2 urban commercial component of this project (e.g. Landbay # 2), this project proposes a variety of commercial retail, restaurant, office and hotel uses, all as generally shown on the Illustrative Exhibit. This project will also be visible from I-95 to its East and buffered by extensive tree and wooded areas to its North. The properties to the West and

South, as noted above, are zoned B-2 and thus compatible with the future use proposed in this application. The project limits all commercial sites to at or below a 0.4 FAR (e.g. in fact we are at 0.30 FAR based on gross area) and no greater than three (3) stories in height, all as generally depicted on our Illustrative Exhibit. All parking is in accordance with applicable County zoning ordinance and located offsite, and includes parking decks, all as generally tabulated and shown on the Illustrative Exhibit.

As noted above, this project's site layout, design and construction materials will compliment adjoining residential neighborhoods and commercial uses. The site is also located along arterial transportation corridors such Austin Ridge Drive, and will collect onto Rt. 630. The project will also be developed in a manner so that it is visible from Interstate 95 for purposes of enhancing attraction to the site, and will be developed in a manner to reduce sound and other potential impacts to surrounding properties. Further, the applicant has proposed parking decks on the site to reduce impervious parking areas, and to ensure convenient access to shopping areas. In addition, the menu of proposed uses shown on the Illustrative Exhibit will compliment and serve the adjoining neighborhoods and future residential uses (see the balanced menu of office, retail, restaurant, commercial, and hotel uses that will be suitable for the area and surrounding communities), which is consistent with the priorities outlined in the Comp Plan.

We further believe our proposed plan efficiently integrates the proposed residential uses to the North of the commercial site and will be designed in a manner that is generally compatible with the Courthouse Redevelopment Area's proposed design features and those of the surrounding communities. In this regard, please see proposed photos # 1-4 located on the Illustrative Exhibit for general architectural design and construction materials. This project is also consistent with Section 3.6 of the Comp Plan regarding growth projections within the USA, and believe our mixed use plan, combining residential and medium density commercial uses is in accordance with County future planning for growth and investment, and projected future types of high quality housing.

Sidewalks are also being proposed along all street fronts linking commercial and residential uses. There are shared access points within Landbay # 2 for purposes of the commercial uses with direct access to Austin Ridge Drive in the area shown on the Illustrative Exhibit. We have also proposed interparcel connectors as between Landbay# 2 and adjoining properties as shown on the Illustrative Exhibit. Please note that in order to avoid commercial traffic flowing across residential uses of Landbay # 1, we have prohibited in our plan Landbay # 2 uses having access across Landbay # 1, all as generally shown on the Illustrative Exhibit.

As noted above, this project provides for adequate and aesthetically friendly street buffers and buffer areas between development schemes. The project will also include adequate street lighting for all uses and all residential use street lighting will be compatible with surrounding residential communities and directed away from abutting residential properties.

Further and as noted above, this project will access arterial roads such as Austin Ridge Road and collection points onto Rt. 630. This project will also be adjacent to or near the future Rt. 630 / I-95 interchange, all as discussed in the enclosed TIA. The site will also have adequate access to water and sewer as it is within the Urban Service Areas ("USAs") as provided under

Section 3.5 and Map 3.6 of the Comp Plan, and discussed in more detail below. The Comp Plan encourages "more compact development" within USAs and is the most appropriate area for Suburban scale developments such as our project as it will promote improvements to utilities, road networks, pedestrian accommodations, and community facilities.

Impact Analysis.

1. **Current Capacity of and anticipated demands on highways, utilities, storm drainage, schools and recreational facilities**.

A. Traffic Generation.

The proposed project includes turn lane improvements and traffic signalization (if warranted) at its proposed site entrances along Austin Ridge Drive. These improvements are documented in further detail in the TIA and Proffer Statement mentioned above. With these improvements, the proposed site entrances are anticipated to operate with acceptable levels of service (LOS) C or better under all build-out analysis scenarios in years 2020 and 2026. These LOS meet the County's current minimum standard as identified in the Comp Plan.

The existing roadway section along Austin Ridge Drive has sufficient capacity to handle the anticipated site traffic for the project. The majority of the site traffic will be directed to/from Courthouse Road, which is slated for major improvements as part of the I-95/Courthouse Road interchange improvement project. The interchange project will add capacity along Courthouse Road and at the new interchange on I-95 that is expected to sufficiently handle traffic from other background traffic and partially handle anticipated site traffic from the proposed project. As discussed in the TIA and Proffer Statement, additional improvements to the Courthouse Road/Relocated Austin Ridge Drive intersection are identified and provided for through proffers to provide sufficient capacity for the project's projected additional traffic. These improvements are expected to fully mitigate the impacts of the project's site trips under projected full build-out in horizon years 2020 and 2026. With mitigation, the resulting overall peak hour LOS at the Courthouse Road/Relocated Austin Ridge Drive intersection are equal to or better than existing conditions (LOS C or better) and satisfy to the County's desired minimum LOS as identified in the Comp Plan.

Lastly, the project's proposed layout and right-of-way dedication will facilitate (and in no way hinder) the proposed reconstruction of the VDOT I-95/Courthouse Road interchange as described by Alternative A2 in VDOT's Interchange Modification Report.

By Right Impact: By Right Impact: Under by-right development, the maximum traffic intensity would occur with build out of single family residential dwelling units. Under the existing A-1 zoning, the Stafford County code allows for a minimum of 3 acre lots. Excluding undevelopable (protected) areas of the site, a

maximum of 16 single family dwelling units could be built by-right. Based on data contained in the current edition of *Trip Generation* (by the Institute of Transportation Engineers (ITE, 8th Edition)), these 16 units could generate approximately 153 vehicle-trips per day and up to 12 vehicle-trips during the weekday AM peak hour and up to 16 vehicle-trips during the weekday PM peak hour.

B. Utilities. As noted above, the proposed rezoning is located within the County's urban service area and has access to public water and sewer. It is anticipated that the Project will have a minimal impact on utility demands. Existing water and sewer mains are available across the frontage of the project and appear to have available capacity, or the reasonable ability to be upgraded by the developer to provide adequate capacity.

(1) Public Water: This project is located in the 370 pressure zone. There is an existing 18" water main located on the west side of Austin Ridge Drive with sufficient pressure and capacity to serve the proposed development. Existing 12" diameter connections from the main to the east side of Austin Ridge Drive were constructed in anticipation of commercial development at the time that Austin Ridge Drive was constructed in this general area. Onsite water mains will be constructed generally along the proposed travel ways creating loops and networks throughout the site. Fire protection will be provided in addition to domestic demands. Building Fire suppression systems (sprinklers) will be provided in accordance with applicable regulations for commercial spaces.

2. Sewer: This project is located in the Austin Run Sewer Service area. An existing 8" diameter gravity sewer main runs along the east side of Austin Ridge Drive and drains toward Austin Run to the north. Landbay 1 will connect to this system. An existing sewage pump station identified as 'A-209' on the Stafford County sewer maps is located to the south of the property near Rte. 630 Courthouse Road. Landbay 2 is proposed for connection to this pump station. Capacity upgrades to the pump station and associated force main may be necessary at the time of development.

The anticipated Water and Sewer Average Daily Demands are as follows (flow estimates are in accordance with Table 3 of 9VAC25-790-460, known as the Sewage Collection and Treatment Regulations of the Virginia Department of Environmental Quality):

- Shopping Center: 525 (thousand GSF) @ 250 gpd/1000 GSF = 131,250 gpd.
- Hotel: 200 rooms (120 thousand GSF) @ 130gpd/room = 26,000 gpd
- 51 SFD Residences @ 390 gpd/unit = 19,890 gpd
- Total projected daily demand for project of: 177,140 gpd

Utilities By-Right Impact. Under by-right development, the maximum intensity impacts to utilities would occur with build out of single family residential dwelling units. Under the existing A-1 zoning, the Stafford County code allows for a minimum of 3 acre lots. Excluding undevelopable (protected) areas of the site, a maximum of 16 single family dwelling units could be built by-right. The property lies within the Urban Service area and the Courthouse Redevelopment Area.

(1) Private Water and Sewer: Rural size residential lots of 3 acres or greater are traditionally served by individual water wells and sewage handling drainfields where the geology and properties of the soil allow for proper installation and operation of these utilities by the property owner. These private systems are typically less expensive to install on a per lot basis during lot development than public water and sewer systems primarily because of the fewer number of lots and increased frontage lengths available to distribute the cost of public water and sewer systems. These utilities make no demand on county services, however they do result in larger areas cleared on each lot to develop the primary and reserve drainfields in accordance with Virginia Department of Health regulations. Drainfields have limited lifespans and become saturated over time so that they will require replacement in the future at a location reserved on the lot during the initial design.

(2) Public Water: By-right development of 16 rural-sized lots located in the Urban Service Area could be served by a public water main that would run parallel to the public street right-of-way serving the development. This would represent the worst-case impact on the public services for consideration with this Impact Analysis. The existing water main located along Austin Ridge Drive at the frontage to the property should provide more than adequate flow rates and pressures for both domestic service and fire flows for these 16 lots. Since no commercial development is proposed in this By-Right comparison, no commercial fire suppression systems would be needed.

(3) Public Sanitary Sewer: By-right development of 16 rural-sized lots located in the Urban Service Area could be served by a public sanitary sewer that would run parallel to the public street right-of-way serving the development. This would represent the worst-case impact on the public services for consideration with this Impact Analysis.

(4) For Comparison purposes, the anticipated Water and Sewer Average Daily Demands for the By-Right residential lots are as follows (flow estimates are in accordance with Table 3 of 9VAC25-790-460, known as the Sewage Collection and Treatment Regulations of the Virginia Department of Environmental Quality):

- 16 SFD Residences @ 390 gpd/unit = 6,240 gpd

C. Storm Drainage. The Property consists of undulating and sloped topography that is cut from southwest to northeast by three swales that carry storm water toward two drainage culverts that drain underneath Interstate 95 toward the east. The Property lies at the downstream end of the contributing watershed. Adjacent existing commercial and residential developments to the west and north rest "above" the Property in topographic elevation and lie generally upstream from the Property. The proposed rezoning will not create a storm drainage impact on the adjoining properties.

Each Landbay will collect storm runoff in a privately owned and maintained drainage system that will manage the water quality and quantity of runoff before it reaches the environmentally protected areas of adjacent streams and wetlands. Storm Water Management will consist of a combination of extended detention ponds supplemented by Low Impact Development (LID) methodologies to maximize groundwater recharge in open space areas. These LID techniques may consist of infiltration devices such as bio-retention trenches, grassed swales and level spreaders, extended detention dry ponds supplemented by wetland plantings, or the extension of vegetative filter strips between development and resource protection areas. Each LandBay will provide a system uniquely designed for its proposed development scheme that may consist of any suitable and effective combination of acceoted techniques.

By Right Impact: Neighborhoods of Rural-size residential lots of 3 acres or greater traditionally generate minor, if any, increases in storm water runoff as a result of the development. Low Impact Development (LID) methodologies take on a primary role in these sites to offset the minimal increases in runoff and maintain focus on water quality management of the runoff. This is typically a dispersed system of rain gardens that incorporate infiltration and bio-retention trenches located on the lots and the use of roadside ditches instead of concrete curb and gutter systems along the public streets. The development of centralized storm water management basins or ponds are typically not needed to control such minor increases in runoff, thereby limiting the amount of cleared land area needed for this element of development.

D. Schools. The proposed rezoning will have minimal impact on schools as the project with 51 detached single family homes is estimated to generate approximately 34 school age children, based on the County's guidelines. However, it is anticipated that the quality residential component of the project will more than pay for itself, as provided in more detail in our enclosed Fiscal Impact Analysis, and the applicant has provided cash proffers (of even date herewith) to offset school costs in accordance with the County's proffer guidelines.

By Right Impact:

A by right development would generate approximately 16 units, which would generate approximately 10.6 students, which is about 1/3 of the number generated by our proposed residential phase of the development.

E. Recreational Facilities. The proposed rezoning should have minimal impact on park and recreational facilities. Also, this project provides for pocket neighborhood park and picnic areas in the northeast corner of the proposed development, a pedestrian trail that can be connected to the surrounding residential neighborhoods, and the project will include a connecting sidewalk system.

Impact for By-Right Uses: By-right the applicant could develop and construct approximately 16 residential single family detached lots on both parcels, which would cost per unit $5,704 multiplied by 16 for a total cost of $91,264, based on current county proffer guideline cost analysis. However, with a by right development the county would receive zero dollars towards this cost versus the proposal provided hereunder which would contribute $258,461.88 in total cash proffers toward recreation.

2. **Fiscal Impact**. We have enclosed with this proposal a Fiscal Impact Analysis prepared by S. Patz and Associates, Inc., dated May 2011, and entitled "Fiscal Impact Analysis Westgate Center, Stafford County, Virginia." Generally, our Fiscal Impact Analysis concludes that for purposes of complete build-out, this project will produce (based on 2011 constant dollars) $3.9 million annually, which will more than offset the estimated services cost of approximately $800,000 for a positive net gain of $3.1 million annually. Our assumptions are based on several factors, including the County's current tax rate, budget and CPI projections, County estimates for the costs for public services, market business activity (including BRAC, courthouse and hospital industry expansion) and conditions, and County demographics, all as more particularly described in our analysis, which is incorporated into our application by this reference.

3. **Environmental Impact.** Delineation of wetland areas and associated evaluations of endangered species and cultural resources were evaluated most recently in September 2010. Designated field located wetland areas are provided on the GDP and are best characterized as being strictly associated with the three swales that carry storm water runoff through the site toward drainage culverts under Interstate 95 to the east. The jurisdictional wetlands lie fully within the county delineated Resource Protection Areas (RPA), which is also shown on the GDP. Proposed impacts to these areas are limited to one stream crossing needed to ensure the interconnection of Land Bays 1 and 2.

Building development will use the more compact footprints and vertical design techniques of mixed-use town centers that act to reduce total disturbed areas and

limit the impervious areas that generate increased runoff. This approach is also enhanced by limiting the proposed development allowed by County Code (0.30 FAR vs. 0.40 Allowable FAR). Pre-treatment of runoff by the Storm Water Management facilities for each land bay along with the use of vegetative strips and level spreaders will further reduce impacts from runoff.

Open space areas will be established by the Applicant for preservation and maintenance. The RPA will be preserved in its natural state except for the proposed road crossing, pedestrian trails, stream mitigation efforts if required, utilities necessary for the development of the Property or adjoining properties or other such activities approved in accordance with applicable State and Federal requirements. Retaining walls over three feet in height, if any, or building walls will be set back a minimum of 20 feet from the RPA boundary to ensure construction and maintenance access is located outside the RPA.

No endangered species subject to State or Federal jurisdiction were identified during the wetland identification effort. This site does not lie within a FEMA designated 100-year flood plain.

By-Right Impact: Development of 16 rural-sized 3 acre lots will require a public road access from Austin Ridge Drive north of proposed Landbay#1 to serve the lots. This road would cross the drainage swale between proposed Landbay #1 into proposed Landbay #2 at the same location as shown on the Illustrative plan for the proposed development. This would be the only area in both scenarios where impacts to an existing stream channel may impact existing wetlands located on the entire property, The by-right development will be less intense in overall tree clearing disturbances than particularly the proposed residential and commercial development, however the impacts to environmentally protected areas remain the same between the two scenarios being analyzed for this Impact Analysis.

4. **Impact on Adjacent Properties.** The Project is adjacent to the following properties: (a) to our north is the Austin Ridge Section 8A residential subdivision; (b) to our south is Route 630; (c) to our northwest is the Austin Ridge Section 7 residential subdivision and due west is the undeveloped Austin Ridge Commercial property owned by the Rocky Ridge Joint Venture; and (c) to our east is I-95. As noted above in this Impact Statement, we believe our project is compatible with surrounding property uses and will have no adverse impact on such properties, including our residential transitional component located on Landbay #1. In fact, it is our belief that our proposed rezoning will positively impact surrounding properties, including the likelihood of increasing surrounding property values. We have also enhanced voluntary setback and buffering areas in our plan with a minimum +/-200' of trees, natural vegetation and other plantings between LandBay #2 and Austin Ridge Section 7 to the West and between Land Bay #1 and Austin Ridge Section 8A to the North.

Impact to Adjacent Properties for By-Right Development. As noted above, the proposed site could generate by-right traffic of up to 153 vehicle-trips per day and up to 12 and 16 vehicle-trips during the weekday AM and PM peak hours, respectively. In addition, the proposed development does require additional clearing for the commercial component and additional storm water management area versus LID uses as noted above for by-right residential development of 16 lots. Any by-right residential development on our sites will also be compatible with Austin Ridge subdivision located just to our north and northwest. Please remember to the east of our site is I-95, and to our south is Courthouse Road. In addition, adjacent properties to our west and south are zoned commercial and these properties (adjacent properties) and zoned uses could have an impact on any by-right zoning use on our properties, especially as to traffic generation, buffering, and stormwater management.

5. **Historical Sites.** This Property has no known archeological or architecturally significant sites. Accordingly, there is no impact to historical sites under the proposed development.

GENERALIZED DEVELOPMENT PLAN

WESTGATE CENTER @ STAFFORD COURTHOUSE

GARRISONVILLE MAGISTERIAL
DISTRICT STAFFORD COUNTY,
VIRGINIA

OWNER/APPLICANT:

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FAX: (540)604-2101

TRANSPORTATION ENGINEER:

BOWMAN CONSULTING GROUP, LTD
3951 WESTERRE PKY. SUITE 150
RICHMOND, VIRGINIA 23233

CONTACT: JOHN D. RILEY, PE
PHONE: (804) 619-3240
FAX: (804) 270-2008
MOBILE: (804) 301-1488

WETLAND CONSULTANT:

ENVIRODATA, INC.
P.O. BOX 1808
GLOUCESTER, VIRGINIA 23061

CONTACT: WILLIAM B. ELLEN
PHONE: (804) 695-8280

V C NITY MA
SCALE 1"=1000

PLAN DATE: JUNE 30, 2011
REVISED: MARCH 26, 2012

COMMONWEALTH OF VIRGINIA
DONALD A. KIMBLEY
LIC. No. 1836
03/26/2012
LAND SURVEYOR

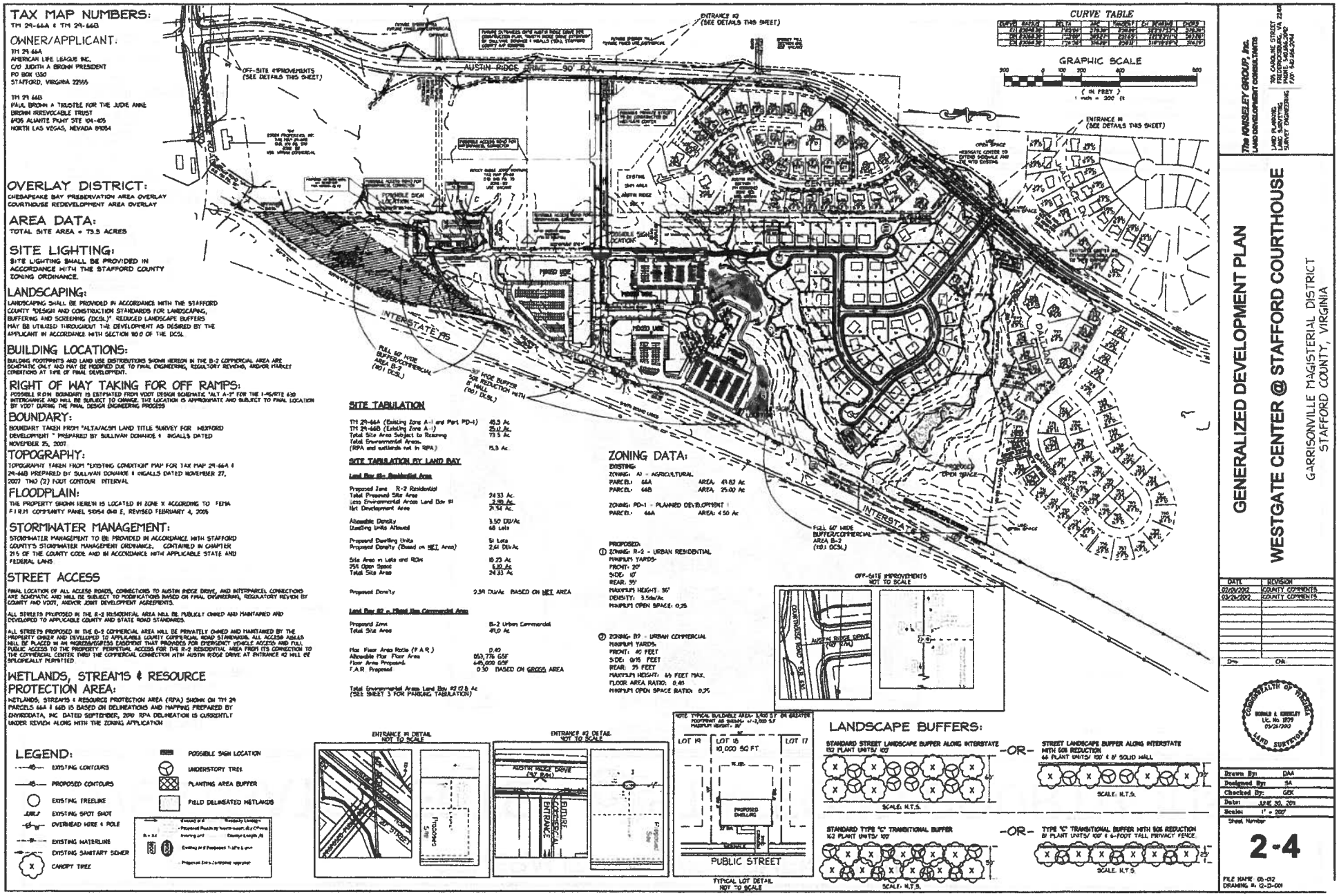
APPROVAL BLOCK

PLANNING COMMISSION CHAIRMAN — DATE

SHEET	DESCRIPTION	LATEST REVISION
1	COVER SHEET	03/26/2012
2	GENERALIZED DEVELOPMENT PLAN	03/26/2012
3	COMMERCIAL CENTER ENLARGEMENT	03/26/2012
4	ILLUSTRATIVE	03/26/2012

SHEET 1 OF 4

DWG# 12-D-001



The KINSELEY GROUP, Inc.
LAND DEVELOPMENT CONSULTANTS
LAND PLANNING
LAND SURVEYING
SURVEY ENGINEERING
701 CAROLINE STREET
FREDERICKSBURG, VA 22401
PHONE: 540.373.3336
FAX: 540.899.5944

GENERALIZED DEVELOPMENT PLAN

WESTGATE CENTER @ STAFFORD COURTHOUSE

GARRISONVILLE MAGISTERIAL DISTRICT
STAFFORD COUNTY, VIRGINIA

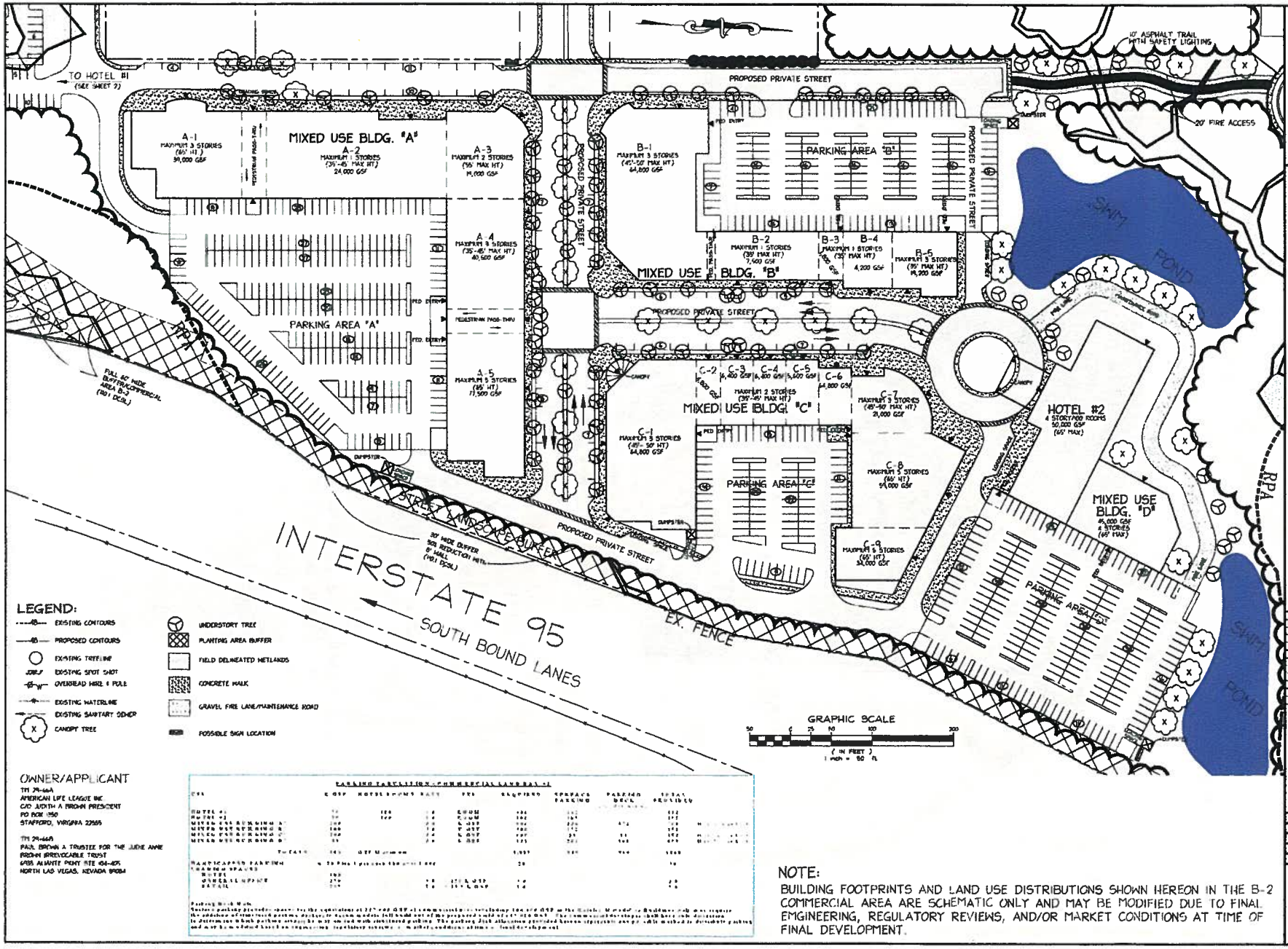
DATE	REVISION
02/20/2002	COUNTY COMMENTS
03/26/2002	COUNTY COMMENTS

COMMONWEALTH OF VIRGINIA
DONALD A. KINSELEY
LIC. NO. 1859
03/26/2002
LAND SURVEYOR

Drawn By:	DAA
Designed By:	SA
Checked By:	GSK
Date:	MAR. 20, 2m
Scales	1" = 200'

Sheet Number
2-4

FILE NAME: 05-132
DRAWING #: 12-D-001



LEGEND:

- EXISTING CONTOURS
- PROPOSED CONTOURS
- EXISTING TREELINE
- EXISTING SPOT SHOT
- OVERHEAD WIRE & POLE
- EXISTING WATERLINE
- EXISTING SANITARY SEWER
- CANOPY TREE
- UNDERSTORY TREE
- PLANTING AREA BUFFER
- FIELD DELINEATED WETLANDS
- CONCRETE WALK
- GRAVEL FIRE LANE/MAINTENANCE ROAD
- POSSIBLE SIGN LOCATION

OWNER/APPLICANT

TM 29-66A
AMERICAN LIFE LEAGUE INC.
C/O JUDITH A BROWN PRESIDENT
PO BOX 1150
STAFFORD, VIRGINIA 22555

TM 29-66B
PAUL BROWN A TRUSTEE FOR THE JUDIE ANNE BROWN IRREVOCABLE TRUST
6655 ALIANTE POINT RITE 104-105
NORTH LAS VEGAS, NEVADA 89084

PARKING TABULATION - COMMERCIAL LAND BAY #1

USE	S. OF	HOTEL ROOMS RATE	PER	REQUIRED	SURFACE PARKING	PARKING DECK	TOTAL PROVIDED
HOTEL #1	70	100	1 ROOM	100	100		100
HOTEL #2	70	100	1 ROOM	100	100		100
MIXED USE BUILDING A	100		1,000	100	100	0	100
MIXED USE BUILDING B	100		1,000	100	100	0	100
MIXED USE BUILDING C	100		1,000	100	100	0	100
MIXED USE BUILDING D	85		1,000	85	85	0	85
TOTALS	525	0 OF 50 MAXIMUM		585	585	0	585
HANDICAPPED PARKING	4% Of the 1st 1,000 and 2% of the remainder			24			24
TRAILER SPACES							
HOTEL	100						
OWNER'S UPKEEP	275		1/2	138			138
RETAIL	200		1/2	100			100

Parking Reduction:
Section 1 parking provided shown for the application of 70% and 85% of the required parking for hotel and mixed use buildings. Buildings with more than one use may request the application of commercial parking multiple use factors as prepared by the Urban Land Institute to determine what parking amount may be required with combined parking. The parking data calculation provided herein represents one of such methods for determining parking and may be modified based on requirements from future reviews or other conditions of the Board of Supervisors.

NOTE:

BUILDING FOOTPRINTS AND LAND USE DISTRIBUTIONS SHOWN HEREON IN THE B-2 COMMERCIAL AREA ARE SCHEMATIC ONLY AND MAY BE MODIFIED DUE TO FINAL ENGINEERING, REGULATORY REVIEWS, AND/OR MARKET CONDITIONS AT TIME OF FINAL DEVELOPMENT.

The KINSLEY GROUP, Inc.
LAND DEVELOPMENT CONSULTANTS
725 CARLINE STREET
FREDERICKSBURG, VA 22401
PHONE 540.373.2292
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LAND PLANNING
LAND SURVEYING
SURVEY ENGINEERING

GENERALIZED DEVELOPMENT PLAN
WESTGATE CENTER @ STAFFORD COURTHOUSE
COMMERCIAL CENTER ENLARGEMENT

GARRISONVILLE MAGISTERIAL DISTRICT
STAFFORD COUNTY, VIRGINIA

DATE	REVISION
05/09/2002	COUNTY COMMENTS
05/26/2002	COUNTY COMMENTS
Drn.	Chk.

COMMONWEALTH OF VIRGINIA
DONALD A. KINSLEY
Lic. No. 0000
05/26/2002
LAND SURVEYOR

Drawn By:	DAK
Designed By:	SA
Checked By:	GFK
Date:	JANUARY 29, 2002
Scale:	1" = 50'

Sheet Number
3-4

FILE NAME: 98-002
DRAWING #: 12-17-009

ILLUSTRATIVE EXHIBIT
WESTGATE CENTER
@ STAFFORD COURTHOUSE
GARRISONVILLE MAGISTERIAL DISTRICT
STAFFORD COUNTY, VIRGINIA
The KINSELEY GROUP, Inc.
LAND DEVELOPMENT CONSULTANTS
LAND PLANNING
LAND SURVEYING
SURVEY ENGINEERING
705 CAROLINE STREET
FREDERICKSBURG, VA 22401
PHONE: 540 654 3090
SCALE IN FEET
CURVE TABLE
LEGEND:
MIXED USE
HOTEL
PEDESTRIAN CONNECTION
PARKING LOT
PARKING
TRAVELWAY
OPEN SPACE GRASS
WOODS
POND
PHOTO #1
PHOTO #2
PHOTO #3
PHOTO #4
ARCHITECTURE EXAMPLES
1. PHOTOGRAPHS ARE PROVIDED AS SAMPLES OF ARCHITECTURAL STYLE AND BUILDING MATERIALS ONLY. ACTUAL BUILDINGS MAY DIFFER FROM THESE EXAMPLES. SEE THE WESTGATE CENTER PROFFER STATEMENT FOR SPECIFIC INFORMATION.
2. PHOTOGRAPHS ARE TAKEN FROM APPENDIX V, PAGES 70-72 OF THE "STAFFORD COUNTY REDEVELOPMENT PLAN, VOL. III: COURTHOUSE AREA," DATED OCTOBER 2001 AS PREPARED BY CROSS ARCHITECTS (NOW HKA ARCHITECTS) ON BEHALF OF THE STAFFORD COUNTY REDEVELOPMENT CORPORATION. THESE PHOTOGRAPHS WERE USED AS PART OF A VISUAL PREFERENCE SURVEY OF CITIZENS ATTENDING THE DESIGN CHARETTES AND PUBLIC WORKSHOPS HELD BY STAFFORD COUNTY IN 2005 AND 2006.
SITE TABULATION
NOTES:
LAND BAY #2 - COMMERCIAL LAND BAY #2
PARKING TABULATION - COMMERCIAL LAND BAY #2
LAND BAY #1 - RESIDENTIAL AREA
LAND BAY #2 - MIXED USE COMMERCIAL AREA
PROPOSED ZONE B-2
TOTAL SITE AREA
ALLOWABLE FLOOR AREA RATIO (F.A.R.)
ALLOWABLE FLOOR AREA
ALLOWABLE ZONE MAX. F.A.R.
MAXIMUM F.A.R. PROPOSED (BASED GROSS AREA)
TOTAL ENVIRONMENTAL AREAS LAND BAY #2
PROPOSED ACCESS ROAD (PRIVATELY OWNED AND MAINTAINED)
PROPOSED PRIVATE STREET
AUSTIN RIDGE DRIVE
DALLSTAIN
WALLACE LN
GESTURO ST
INTERSTATE 95
SHELTONS SHOPPING CENTER
MIXED USE
HOTEL
PARKING
PARKING LOT
TRAVELWAY
OPEN SPACE GRASS
WOODS
POND
PEDESTRIAN CONNECTION

Bowman
CONSULTING

January 30, 2012

Michael Zuraf, AICP
Principal Planner
Stafford County - Planning and Zoning Department
1300 Courthouse Road
Stafford, VA 22555

RE: Westgate Center @ Stafford Courthouse Traffic Impact Analysis
Stafford County, VA
BCG Project # 9350-01-001

Dear Mr. Zuraf:

Bowman Consulting Group (BCG) is in receipt of the Virginia Department of Transportation's (VDOT's) review comment letter (dated October 3, 2011) for the above referenced project. BCG has provided the comment responses below (bold) to each of VDOT's comments (italics). BCG has also revised the analysis and figures as noted in our comments below. For reference, the revised (and new) figures are included in **Attachment A**, which consists of 18 revised figures (EX-1, EX-2, 6, and 14-28) and 9 new figures (7A-F and 9A-C). The revised analysis tables are included in **Attachment B** and the supporting technical documentation (Synchro/SimTraffic printouts) is included in **Attachment C**. **Attachment D** includes a graphical illustration of recommended mitigation measures at the Courthouse Road/Relocated Austin Ridge Drive intersection, and **Attachment E** includes a cost estimate for the improvements in **Attachment D**.

It is specifically noted that the attached figures and analysis results include, where applicable, the following adjustments to the traffic impact analysis (TIA) assumptions as agreed upon with VDOT and County staff at a January 4, 2012 coordination meeting for this project at VDOT's Fredericksburg District Residency:

1. Where approved/unbuilt developments were assumed to be fully built-out by 2015 (very conservative) under the original TIA submission, they have now been pro-rated to 25% of complete build-out for year 2015, with the exception of Embrey Mill, which has been reduced from 700 single-family dwelling units (as originally reported in **Table 3** of the TIA) to 400 units, and with the exception of the Rappahannock Jail, which is assumed to be 100% built-out by 2015. Refer to **Table 3A (Attachment B)** for the updated 2015 approved/unbuilt trip generation tabulation.

2. Projected build-out+6 (2026) horizon year trips for the approved-unbuilt Embrey Mill development have been increased significantly (from 700 total single-family dwelling

Bowman Consulting Group, Ltd.
3951 Westerre Parkway · Suite 150 · Richmond, VA 23233
Phone: 804.616.3240 · Fax: 804.270.2008 · www.bowmanconsulting.com

HCM Signalized Intersection Capacity Analysis
1: Courthouse Road & NB Ramp

Westgate Center TIA
1/13/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	162	422	0	0	540	323	285	3	326	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0	6.0		6.0	6.0			
Lane Util. Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Frt	1.00	1.00			1.00	0.85		1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (prot)	1770	1863			1863	1583		1775	1583			
Flt Permitted	0.19	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (perm)	348	1863			1863	1583		1775	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)	176	459	0	0	587	351	310	3	354	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	64	0	0	274	0	0	0
Lane Group Flow (vph)	176	459	0	0	587	287	0	313	80	0	0	0
Turn Type	pm+pt					Perm	Perm		Perm			
Protected Phases	1	6			2			4				
Permitted Phases	6					2	4		4			
Actuated Green, G (s)	38.7	38.7			26.6	26.6		14.9	14.9			
Effective Green, g (s)	38.7	38.7			26.6	26.6		14.9	14.9			
Actuated g/C Ratio	0.59	0.59			0.41	0.41		0.23	0.23			
Clearance Time (s)	6.0	6.0			6.0	6.0		6.0	6.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0	3.0			
Lane Grp Cap (vph)	338	1099			755	642		403	360			
v/s Ratio Prot	0.05	c0.25			c0.32							
v/s Ratio Perm	0.26					0.18		0.18	0.05			
v/c Ratio	0.52	0.42			0.78	0.45		0.78	0.22			
Uniform Delay, d1	9.6	7.3			16.9	14.2		23.8	20.6			
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d2	1.4	0.3			5.1	0.5		9.1	0.3			
Delay (s)	11.0	7.6			22.0	14.7		32.9	21.0			
Level of Service	B	A			C	B		C	C			
Approach Delay (s)		8.5			19.2			26.5			0.0	
Approach LOS		A			B			C			A	

Intersection Summary			
HCM Average Control Delay	18.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	65.6	Sum of lost time (s)	18.0
Intersection Capacity Utilization	68.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
1: Courthouse Road & NB Ramp

Westage Center TIA
1/13/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	114	707	0	0	638	194	261	1	233	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0	6.0		6.0	6.0			
Lane Util. Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Frt	1.00	1.00			1.00	0.85		1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (prot)	1770	1863			1863	1583		1774	1583			
Flt Permitted	0.17	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (perm)	321	1863			1863	1583		1774	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)	124	768	0	0	693	211	284	1	253	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	21	0	0	160	0	0	0
Lane Group Flow (vph)	124	768	0	0	693	190	0	285	93	0	0	0
Turn Type	pm+pt					Perm	Perm		Perm			
Protected Phases	1	6			2			4				
Permitted Phases	6					2	4		4			
Actuated Green, G (s)	58.4	58.4			44.2	44.2		19.6	19.6			
Effective Green, g (s)	58.4	58.4			44.2	44.2		19.6	19.6			
Actuated g/C Ratio	0.65	0.65			0.49	0.49		0.22	0.22			
Clearance Time (s)	6.0	6.0			6.0	6.0		6.0	6.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0	3.0			
Lane Grp Cap (vph)	340	1209			915	777		386	345			
v/s Ratio Prot	0.03	c0.41			c0.37							
v/s Ratio Perm	0.20					0.12		0.16	0.06			
v/c Ratio	0.36	0.64			0.76	0.24		0.74	0.27			
Uniform Delay, d1	11.4	9.4			18.6	13.2		32.8	29.3			
Progression Factor	1.22	1.06			1.00	1.00		1.00	1.00			
Incremental Delay, d2	0.5	1.9			5.8	0.7		7.2	0.4			
Delay (s)	14.4	11.9			24.4	14.0		40.0	29.7			
Level of Service	B	B			C	B		D	C			
Approach Delay (s)		12.2			22.0			35.2			0.0	
Approach LOS		B			C			D			A	

Intersection Summary			
HCM Average Control Delay	21.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	72.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
1: Courthouse Road & NB Ramp

Westgate Center TIA
1/25/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	201	715	0	0	640	389	341	3	505	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0	6.0		6.0	6.0			
Lane Util. Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Frt	1.00	1.00			1.00	0.85		1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (prot)	1770	1863			1863	1583		1775	1583			
Flt Permitted	0.11	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (perm)	211	1863			1863	1583		1775	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)	212	753	0	0	674	409	359	3	532	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	61	0	0	156	0	0	0
Lane Group Flow (vph)	212	753	0	0	674	348	0	362	376	0	0	0
Turn Type	pm+pt					Perm	Perm		Perm			
Protected Phases	1	6			2			4				
Permitted Phases	6					2	4		4			
Actuated Green, G (s)	42.3	42.3			29.3	29.3		18.0	18.0			
Effective Green, g (s)	42.3	42.3			29.3	29.3		18.0	18.0			
Actuated g/C Ratio	0.59	0.59			0.41	0.41		0.25	0.25			
Clearance Time (s)	6.0	6.0			6.0	6.0		6.0	6.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0	3.0			
Lane Grp Cap (vph)	274	1090			755	642		442	394			
v/s Ratio Prot	0.07	c0.40			c0.36							
v/s Ratio Perm	0.38					0.22		0.20	c0.24			
v/c Ratio	0.77	0.69			0.89	0.54		0.82	0.95			
Uniform Delay, d1	13.4	10.4			20.0	16.4		25.6	26.7			
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d2	12.7	1.9			12.9	0.9		11.3	33.3			
Delay (s)	26.2	12.4			32.9	17.3		36.9	60.1			
Level of Service	C	B			C	B		D	E			
Approach Delay (s)		15.4			27.0			50.7			0.0	
Approach LOS		B			C			D			A	

Intersection Summary			
HCM Average Control Delay	30.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	72.3	Sum of lost time (s)	18.0
Intersection Capacity Utilization	78.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
1: Courthouse Road & NB Ramp

Westgate Center TIA
1/25/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	138	901	0	0	1014	401	407	1	318	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0	6.0		6.0	6.0			
Lane Util. Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Frt	1.00	1.00			1.00	0.85		1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (prot)	1770	1863			1863	1583		1774	1583			
Flt Permitted	0.08	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (perm)	141	1863			1863	1583		1774	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	948	0	0	1067	422	428	1	335	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	32	0	0	123	0	0	0
Lane Group Flow (vph)	145	948	0	0	1067	390	0	429	212	0	0	0
Turn Type	pm+pt					Perm	Perm		Perm			
Protected Phases	1	6			2			4				
Permitted Phases	6					2	4		4			
Actuated Green, G (s)	58.0	58.0			47.0	47.0		20.0	20.0			
Effective Green, g (s)	58.0	58.0			47.0	47.0		20.0	20.0			
Actuated g/C Ratio	0.64	0.64			0.52	0.52		0.22	0.22			
Clearance Time (s)	6.0	6.0			6.0	6.0		6.0	6.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0	3.0			
Lane Grp Cap (vph)	181	1201			973	827		394	352			
v/s Ratio Prot	0.04	c0.51			c0.57							
v/s Ratio Perm	0.47					0.25		0.24	0.13			
v/c Ratio	0.80	0.79			1.10	0.47		1.09	0.60			
Uniform Delay, d1	21.3	11.6			21.5	13.6		35.0	31.4			
Progression Factor	1.27	0.59			1.00	1.00		1.00	1.00			
Incremental Delay, d2	6.6	1.4			59.0	1.9		71.3	2.9			
Delay (s)	33.6	8.3			80.5	15.6		106.3	34.3			
Level of Service	C	A			F	B		F	C			
Approach Delay (s)		11.7			62.1			74.8			0.0	
Approach LOS		B			E			E			A	

Intersection Summary			
HCM Average Control Delay	48.5	HCM Level of Service	D
HCM Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	98.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
1: Courthouse Road & NB Ramp

Westgate Center TIA
1/25/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	211	718	0	0	641	389	343	3	505	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0	6.0		6.0	6.0			
Lane Util. Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Frt	1.00	1.00			1.00	0.85		1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (prot)	1770	1863			1863	1583		1775	1583			
Flt Permitted	0.11	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (perm)	211	1863			1863	1583		1775	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)	222	756	0	0	675	409	361	3	532	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	60	0	0	155	0	0	0
Lane Group Flow (vph)	222	756	0	0	675	349	0	364	377	0	0	0
Turn Type	pm+pt					Perm	Perm		Perm			
Protected Phases	1	6			2			4				
Permitted Phases	6					2	4		4			
Actuated Green, G (s)	42.3	42.3			29.3	29.3		18.0	18.0			
Effective Green, g (s)	42.3	42.3			29.3	29.3		18.0	18.0			
Actuated g/C Ratio	0.59	0.59			0.41	0.41		0.25	0.25			
Clearance Time (s)	6.0	6.0			6.0	6.0		6.0	6.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0	3.0			
Lane Grp Cap (vph)	274	1090			755	642		442	394			
v/s Ratio Prot	0.08	c0.41			c0.36							
v/s Ratio Perm	0.39					0.22		0.21	c0.24			
v/c Ratio	0.81	0.69			0.89	0.54		0.82	0.96			
Uniform Delay, d1	14.4	10.5			20.1	16.4		25.6	26.8			
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d2	16.4	1.9			13.0	0.9		11.8	33.7			
Delay (s)	30.7	12.4			33.1	17.3		37.4	60.5			
Level of Service	C	B			C	B		D	E			
Approach Delay (s)		16.6			27.1			51.1			0.0	
Approach LOS		B			C			D			A	

Intersection Summary			
HCM Average Control Delay	30.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	72.3	Sum of lost time (s)	18.0
Intersection Capacity Utilization	79.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
1: Courthouse Road & NB Ramp

Westgate Center TIA
1/25/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	144	903	0	0	1018	401	414	1	318	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0	6.0		6.0	6.0			
Lane Util. Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Frt	1.00	1.00			1.00	0.85		1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (prot)	1770	1863			1863	1583		1774	1583			
Flt Permitted	0.08	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (perm)	141	1863			1863	1583		1774	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)	152	951	0	0	1072	422	436	1	335	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	32	0	0	122	0	0	0
Lane Group Flow (vph)	152	951	0	0	1072	390	0	437	213	0	0	0
Turn Type	pm+pt					Perm	Perm		Perm			
Protected Phases	1	6			2			4				
Permitted Phases	6					2	4		4			
Actuated Green, G (s)	58.0	58.0			47.0	47.0		20.0	20.0			
Effective Green, g (s)	58.0	58.0			47.0	47.0		20.0	20.0			
Actuated g/C Ratio	0.64	0.64			0.52	0.52		0.22	0.22			
Clearance Time (s)	6.0	6.0			6.0	6.0		6.0	6.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0	3.0			
Lane Grp Cap (vph)	181	1201			973	827		394	352			
v/s Ratio Prot	0.05	c0.51			c0.58							
v/s Ratio Perm	0.49					0.25		0.25	0.13			
v/c Ratio	0.84	0.79			1.10	0.47		1.11	0.60			
Uniform Delay, d1	22.3	11.6			21.5	13.6		35.0	31.4			
Progression Factor	1.29	0.60			1.00	1.00		1.00	1.00			
Incremental Delay, d2	3.3	0.5			60.9	1.9		78.3	2.9			
Delay (s)	32.0	7.5			82.4	15.6		113.3	34.4			
Level of Service	C	A			F	B		F	C			
Approach Delay (s)		10.8			63.5			79.0			0.0	
Approach LOS		B			E			E			A	

Intersection Summary			
HCM Average Control Delay	49.8	HCM Level of Service	D
HCM Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	99.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
2: Courthouse Road & i-95 NB Ramp

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations				↑↑↑	↰↰	
Volume (vph)	0	0	0	767	468	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.0	6.0	
Lane Util. Factor				0.91	0.97	
Frt				1.00	1.00	
Flt Protected				1.00	0.95	
Satd. Flow (prot)				5085	3433	
Flt Permitted				1.00	0.95	
Satd. Flow (perm)				5085	3433	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	807	493	0
RTOR Reduction (vph)	0	0	0	0	139	0
Lane Group Flow (vph)	0	0	0	807	354	0
Turn Type						
Protected Phases				8	2	
Permitted Phases						
Actuated Green, G (s)				12.5	8.9	
Effective Green, g (s)				12.5	8.9	
Actuated g/C Ratio				0.37	0.27	
Clearance Time (s)				6.0	6.0	
Vehicle Extension (s)				3.0	3.0	
Lane Grp Cap (vph)				1903	915	
v/s Ratio Prot				c0.16	c0.10	
v/s Ratio Perm						
v/c Ratio				0.42	0.39	
Uniform Delay, d1				7.8	10.0	
Progression Factor				1.00	1.00	
Incremental Delay, d2				0.2	0.3	
Delay (s)				7.9	10.3	
Level of Service				A	B	
Approach Delay (s)	0.0			7.9	10.3	
Approach LOS	A			A	B	

Intersection Summary			
HCM Average Control Delay	8.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	33.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	38.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
2: Courthouse Road & i-95 NB Ramp

Westgate Center TIA
1/27/2012

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations				↑↑↑	↰↰	
Volume (vph)	0	0	0	1456	760	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.0	6.0	
Lane Util. Factor				0.91	0.97	
Frt				1.00	1.00	
Flt Protected				1.00	0.95	
Satd. Flow (prot)				5085	3433	
Flt Permitted				1.00	0.95	
Satd. Flow (perm)				5085	3433	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	1533	800	0
RTOR Reduction (vph)	0	0	0	0	15	0
Lane Group Flow (vph)	0	0	0	1533	785	0
Turn Type						
Protected Phases				8	2	
Permitted Phases						
Actuated Green, G (s)				30.6	21.3	
Effective Green, g (s)				30.6	21.3	
Actuated g/C Ratio				0.48	0.33	
Clearance Time (s)				6.0	6.0	
Vehicle Extension (s)				3.0	3.0	
Lane Grp Cap (vph)				2435	1144	
v/s Ratio Prot				c0.30	c0.23	
v/s Ratio Perm						
v/c Ratio				0.63	0.69	
Uniform Delay, d1				12.4	18.4	
Progression Factor				1.00	1.00	
Incremental Delay, d2				0.5	1.7	
Delay (s)				12.9	20.1	
Level of Service				B	C	
Approach Delay (s)	0.0			12.9	20.1	
Approach LOS	A			B	C	

Intersection Summary			
HCM Average Control Delay	15.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	63.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	59.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
2: Courthouse Road & i-95 NB Ramp

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations				↑↑↑	↰↰	
Volume (vph)	0	0	0	879	558	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.0	6.0	
Lane Util. Factor				0.91	0.97	
Frt				1.00	1.00	
Flt Protected				1.00	0.95	
Satd. Flow (prot)				5085	3433	
Flt Permitted				1.00	0.95	
Satd. Flow (perm)				5085	3433	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	925	587	0
RTOR Reduction (vph)	0	0	0	0	93	0
Lane Group Flow (vph)	0	0	0	925	494	0
Turn Type						
Protected Phases				8	2	
Permitted Phases						
Actuated Green, G (s)				14.9	11.3	
Effective Green, g (s)				14.9	11.3	
Actuated g/C Ratio				0.39	0.30	
Clearance Time (s)				6.0	6.0	
Vehicle Extension (s)				3.0	3.0	
Lane Grp Cap (vph)				1983	1016	
v/s Ratio Prot				c0.18	c0.14	
v/s Ratio Perm						
v/c Ratio				0.47	0.49	
Uniform Delay, d1				8.7	11.1	
Progression Factor				1.00	1.00	
Incremental Delay, d2				0.2	0.4	
Delay (s)				8.9	11.4	
Level of Service				A	B	
Approach Delay (s)	0.0			8.9	11.4	
Approach LOS	A			A	B	

Intersection Summary			
HCM Average Control Delay	9.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	38.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	42.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
2: Courthouse Road & i-95 NB Ramp

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations				↑↑↑	↰↰	
Volume (vph)	0	0	0	1690	951	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.0	6.0	
Lane Util. Factor				0.91	0.97	
Frt				1.00	1.00	
Flt Protected				1.00	0.95	
Satd. Flow (prot)				5085	3433	
Flt Permitted				1.00	0.95	
Satd. Flow (perm)				5085	3433	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	1779	1001	0
RTOR Reduction (vph)	0	0	0	0	7	0
Lane Group Flow (vph)	0	0	0	1779	994	0
Turn Type						
Protected Phases				8	2	
Permitted Phases						
Actuated Green, G (s)				37.9	28.8	
Effective Green, g (s)				37.9	28.8	
Actuated g/C Ratio				0.48	0.37	
Clearance Time (s)				6.0	6.0	
Vehicle Extension (s)				3.0	3.0	
Lane Grp Cap (vph)				2449	1256	
v/s Ratio Prot				c0.35	c0.29	
v/s Ratio Perm						
v/c Ratio				0.73	0.79	
Uniform Delay, d1				16.3	22.3	
Progression Factor				1.00	1.00	
Incremental Delay, d2				1.1	3.5	
Delay (s)				17.4	25.8	
Level of Service				B	C	
Approach Delay (s)	0.0			17.4	25.8	
Approach LOS	A			B	C	

Intersection Summary			
HCM Average Control Delay	20.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	78.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
2: Courthouse Road & i-95 NB Ramp

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations				↑↑↑	↰↰	
Volume (vph)	0	0	0	804	503	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.0	6.0	
Lane Util. Factor				0.91	0.97	
Frt				1.00	1.00	
Flt Protected				1.00	0.95	
Satd. Flow (prot)				5085	3433	
Flt Permitted				1.00	0.95	
Satd. Flow (perm)				5085	3433	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	846	529	0
RTOR Reduction (vph)	0	0	0	0	113	0
Lane Group Flow (vph)	0	0	0	846	416	0
Turn Type						
Protected Phases				8	2	
Permitted Phases						
Actuated Green, G (s)				13.3	10.0	
Effective Green, g (s)				13.3	10.0	
Actuated g/C Ratio				0.38	0.28	
Clearance Time (s)				6.0	6.0	
Vehicle Extension (s)				3.0	3.0	
Lane Grp Cap (vph)				1916	973	
v/s Ratio Prot				c0.17	c0.12	
v/s Ratio Perm						
v/c Ratio				0.44	0.43	
Uniform Delay, d1				8.2	10.3	
Progression Factor				1.00	1.00	
Incremental Delay, d2				0.2	0.3	
Delay (s)				8.4	10.6	
Level of Service				A	B	
Approach Delay (s)	0.0			8.4	10.6	
Approach LOS	A			A	B	

Intersection Summary			
HCM Average Control Delay	9.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	35.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	39.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
2: Courthouse Road & i-95 NB Ramp

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations				↑↑↑	↰↰	
Volume (vph)	0	0	0	1499	822	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.0	6.0	
Lane Util. Factor				0.91	0.97	
Frt				1.00	1.00	
Flt Protected				1.00	0.95	
Satd. Flow (prot)				5085	3433	
Flt Permitted				1.00	0.95	
Satd. Flow (perm)				5085	3433	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	1578	865	0
RTOR Reduction (vph)	0	0	0	0	12	0
Lane Group Flow (vph)	0	0	0	1578	853	0
Turn Type						
Protected Phases				8	2	
Permitted Phases						
Actuated Green, G (s)				32.4	23.6	
Effective Green, g (s)				32.4	23.6	
Actuated g/C Ratio				0.48	0.35	
Clearance Time (s)				6.0	6.0	
Vehicle Extension (s)				3.0	3.0	
Lane Grp Cap (vph)				2423	1191	
v/s Ratio Prot				c0.31	c0.25	
v/s Ratio Perm						
v/c Ratio				0.65	0.72	
Uniform Delay, d1				13.5	19.3	
Progression Factor				1.00	1.00	
Incremental Delay, d2				0.6	2.1	
Delay (s)				14.1	21.4	
Level of Service				B	C	
Approach Delay (s)	0.0			14.1	21.4	
Approach LOS	A			B	C	

Intersection Summary			
HCM Average Control Delay	16.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	68.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
2: Courthouse Road & i-95 NB Ramp

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations				↑↑↑	↰↰	
Volume (vph)	0	0	0	916	593	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.0	6.0	
Lane Util. Factor				0.91	0.97	
Frt				1.00	1.00	
Flt Protected				1.00	0.95	
Satd. Flow (prot)				5085	3433	
Flt Permitted				1.00	0.95	
Satd. Flow (perm)				5085	3433	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	964	624	0
RTOR Reduction (vph)	0	0	0	0	75	0
Lane Group Flow (vph)	0	0	0	964	549	0
Turn Type						
Protected Phases				8	2	
Permitted Phases						
Actuated Green, G (s)				15.6	12.4	
Effective Green, g (s)				15.6	12.4	
Actuated g/C Ratio				0.39	0.31	
Clearance Time (s)				6.0	6.0	
Vehicle Extension (s)				3.0	3.0	
Lane Grp Cap (vph)				1983	1064	
v/s Ratio Prot				c0.19	c0.16	
v/s Ratio Perm						
v/c Ratio				0.49	0.52	
Uniform Delay, d1				9.2	11.3	
Progression Factor				1.00	1.00	
Incremental Delay, d2				0.2	0.4	
Delay (s)				9.4	11.8	
Level of Service				A	B	
Approach Delay (s)	0.0			9.4	11.8	
Approach LOS	A			A	B	

Intersection Summary			
HCM Average Control Delay	10.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	40.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	44.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
2: Courthouse Road & i-95 NB Ramp

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations				↑↑↑	↰↰	
Volume (vph)	0	0	0	1733	1013	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.0	6.0	
Lane Util. Factor				0.91	0.97	
Frt				1.00	1.00	
Flt Protected				1.00	0.95	
Satd. Flow (prot)				5085	3433	
Flt Permitted				1.00	0.95	
Satd. Flow (perm)				5085	3433	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	1824	1066	0
RTOR Reduction (vph)	0	0	0	0	5	0
Lane Group Flow (vph)	0	0	0	1824	1061	0
Turn Type						
Protected Phases				8	2	
Permitted Phases						
Actuated Green, G (s)				38.1	30.6	
Effective Green, g (s)				38.1	30.6	
Actuated g/C Ratio				0.47	0.38	
Clearance Time (s)				6.0	6.0	
Vehicle Extension (s)				3.0	3.0	
Lane Grp Cap (vph)				2401	1302	
v/s Ratio Prot				c0.36	c0.31	
v/s Ratio Perm						
v/c Ratio				0.76	0.81	
Uniform Delay, d1				17.5	22.5	
Progression Factor				1.00	1.00	
Incremental Delay, d2				1.4	4.0	
Delay (s)				19.0	26.5	
Level of Service				B	C	
Approach Delay (s)	0.0			19.0	26.5	
Approach LOS	A			B	C	

Intersection Summary			
HCM Average Control Delay	21.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	80.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	72.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
7: Courthouse Road & SB Ramp

Westgate Center TIA
1/13/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↱	↰	↑						↑	↱
Volume (vph)	0	421	216	191	634	0	0	0	0	163	0	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	6.0	6.0						6.0	6.0
Lane Util. Factor		1.00	1.00	1.00	1.00						1.00	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (prot)		1863	1583	1770	1863						1770	1583
Flt Permitted		1.00	1.00	0.28	1.00						0.95	1.00
Satd. Flow (perm)		1863	1583	526	1863						1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	458	235	208	689	0	0	0	0	177	0	74
RTOR Reduction (vph)	0	0	82	0	0	0	0	0	0	0	0	62
Lane Group Flow (vph)	0	458	153	208	689	0	0	0	0	0	177	12
Turn Type			Perm	pm+pt						Perm		Perm
Protected Phases		2		1	6						4	
Permitted Phases			2	6						4		4
Actuated Green, G (s)		21.4	21.4	35.5	35.5						8.8	8.8
Effective Green, g (s)		21.4	21.4	35.5	35.5						8.8	8.8
Actuated g/C Ratio		0.38	0.38	0.63	0.63						0.16	0.16
Clearance Time (s)		6.0	6.0	6.0	6.0						6.0	6.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0						3.0	3.0
Lane Grp Cap (vph)		708	602	511	1175						277	247
v/s Ratio Prot		0.25		0.06	c0.37							
v/s Ratio Perm			0.10	0.20							0.10	0.01
v/c Ratio		0.65	0.25	0.41	0.59						0.64	0.05
Uniform Delay, d1		14.3	12.0	6.0	6.1						22.3	20.2
Progression Factor		1.00	1.00	1.00	1.00						1.00	1.00
Incremental Delay, d2		2.0	0.2	0.5	0.8						4.8	0.1
Delay (s)		16.4	12.2	6.5	6.8						27.0	20.3
Level of Service		B	B	A	A						C	C
Approach Delay (s)		15.0			6.8			0.0			25.0	
Approach LOS		B			A			A			C	

Intersection Summary			
HCM Average Control Delay	12.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	56.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	68.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
7: Courthouse Road & SB Ramp

Westage Center TIA
1/13/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	521	347	245	654	0	0	0	0	300	0	196
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	6.0	6.0						6.0	6.0
Lane Util. Factor		1.00	1.00	1.00	1.00						1.00	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (prot)		1863	1583	1770	1863						1770	1583
Flt Permitted		1.00	1.00	0.23	1.00						0.95	1.00
Satd. Flow (perm)		1863	1583	436	1863						1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	566	377	266	711	0	0	0	0	326	0	213
RTOR Reduction (vph)	0	0	73	0	0	0	0	0	0	0	0	164
Lane Group Flow (vph)	0	566	304	266	711	0	0	0	0	0	326	49
Turn Type			Perm	pm+pt						Perm		Perm
Protected Phases		2		1	6						4	
Permitted Phases			2	6						4		4
Actuated Green, G (s)		40.8	40.8	57.3	57.3						20.7	20.7
Effective Green, g (s)		40.8	40.8	57.3	57.3						20.7	20.7
Actuated g/C Ratio		0.45	0.45	0.64	0.64						0.23	0.23
Clearance Time (s)		6.0	6.0	6.0	6.0						6.0	6.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0						3.0	3.0
Lane Grp Cap (vph)		845	718	433	1186						407	364
v/s Ratio Prot		c0.30		0.07	c0.38							
v/s Ratio Perm			0.19	0.32							0.18	0.03
v/c Ratio		0.67	0.42	0.61	0.60						0.80	0.13
Uniform Delay, d1		19.3	16.6	11.1	9.6						32.7	27.5
Progression Factor		1.00	1.00	1.76	0.89						1.00	1.00
Incremental Delay, d2		4.2	1.8	1.8	1.5						10.8	0.2
Delay (s)		23.5	18.5	21.4	10.1						43.5	27.7
Level of Service		C	B	C	B						D	C
Approach Delay (s)		21.5			13.1			0.0			37.3	
Approach LOS		C			B			A			D	

Intersection Summary			
HCM Average Control Delay	21.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	72.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
7: Courthouse Road & SB Ramp

Westgate Center TIA
1/25/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↱	↰	↑						↰	↱
Volume (vph)	0	599	355	238	743	0	0	0	0	319	0	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	6.0	6.0						6.0	6.0
Lane Util. Factor		1.00	1.00	1.00	1.00						1.00	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (prot)		1863	1583	1770	1863						1770	1583
Flt Permitted		1.00	1.00	0.15	1.00						0.95	1.00
Satd. Flow (perm)		1863	1583	283	1863						1770	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)	0	631	374	251	782	0	0	0	0	336	0	87
RTOR Reduction (vph)	0	0	90	0	0	0	0	0	0	0	0	67
Lane Group Flow (vph)	0	631	284	251	782	0	0	0	0	0	336	20
Turn Type			Perm	pm+pt						Perm		Perm
Protected Phases		2		1	6						4	
Permitted Phases			2	6						4		4
Actuated Green, G (s)		28.5	28.5	41.6	41.6						16.0	16.0
Effective Green, g (s)		28.5	28.5	41.6	41.6						16.0	16.0
Actuated g/C Ratio		0.41	0.41	0.60	0.60						0.23	0.23
Clearance Time (s)		6.0	6.0	6.0	6.0						6.0	6.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0						3.0	3.0
Lane Grp Cap (vph)		763	648	321	1114						407	364
v/s Ratio Prot		0.34		0.08	c0.42							
v/s Ratio Perm			0.18	c0.39							0.19	0.01
v/c Ratio		0.83	0.44	0.78	0.70						0.83	0.05
Uniform Delay, d1		18.3	14.8	11.7	9.7						25.5	20.9
Progression Factor		1.00	1.00	1.00	1.00						1.00	1.00
Incremental Delay, d2		7.3	0.5	11.7	2.0						12.8	0.1
Delay (s)		25.7	15.3	23.5	11.7						38.3	21.0
Level of Service		C	B	C	B						D	C
Approach Delay (s)		21.8			14.6			0.0			34.7	
Approach LOS		C			B			A			C	

Intersection Summary			
HCM Average Control Delay	21.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	69.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
7: Courthouse Road & SB Ramp

Westgate Center TIA
1/25/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	629	440	455	967	0	0	0	0	410	0	238
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	6.0	6.0						6.0	6.0
Lane Util. Factor		1.00	1.00	1.00	1.00						1.00	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (prot)		1863	1583	1770	1863						1770	1583
Flt Permitted		1.00	1.00	0.13	1.00						0.95	1.00
Satd. Flow (perm)		1863	1583	251	1863						1770	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)	0	662	463	479	1018	0	0	0	0	432	0	251
RTOR Reduction (vph)	0	0	84	0	0	0	0	0	0	0	0	100
Lane Group Flow (vph)	0	662	379	479	1018	0	0	0	0	0	432	151
Turn Type			Perm	pm+pt						Perm		Perm
Protected Phases		2		1	6						4	
Permitted Phases			2	6						4		4
Actuated Green, G (s)		33.7	33.7	57.0	57.0						21.0	21.0
Effective Green, g (s)		33.7	33.7	57.0	57.0						21.0	21.0
Actuated g/C Ratio		0.37	0.37	0.63	0.63						0.23	0.23
Clearance Time (s)		6.0	6.0	6.0	6.0						6.0	6.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0						3.0	3.0
Lane Grp Cap (vph)		698	593	451	1180						413	369
v/s Ratio Prot		0.36		c0.20	0.55							
v/s Ratio Perm			0.24	c0.47							0.24	0.10
v/c Ratio		0.95	0.64	1.06	0.86						1.05	0.41
Uniform Delay, d1		27.3	23.1	29.1	13.3						34.5	29.2
Progression Factor		1.00	1.00	0.87	0.83						1.00	1.00
Incremental Delay, d2		23.5	5.2	33.1	0.9						56.8	0.7
Delay (s)		50.8	28.3	58.5	11.9						91.3	30.0
Level of Service		D	C	E	B						F	C
Approach Delay (s)		41.6			26.8			0.0			68.8	
Approach LOS		D			C			A			E	

Intersection Summary			
HCM Average Control Delay	40.5	HCM Level of Service	D
HCM Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	98.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
7: Courthouse Road & SB Ramp

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↱	↰	↑						↰	↱
Volume (vph)	0	612	362	238	746	0	0	0	0	319	0	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	6.0	6.0						6.0	6.0
Lane Util. Factor		1.00	1.00	1.00	1.00						1.00	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (prot)		1863	1583	1770	1863						1770	1583
Flt Permitted		1.00	1.00	0.15	1.00						0.95	1.00
Satd. Flow (perm)		1863	1583	280	1863						1770	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)	0	644	381	251	785	0	0	0	0	336	0	91
RTOR Reduction (vph)	0	0	91	0	0	0	0	0	0	0	0	71
Lane Group Flow (vph)	0	644	290	251	785	0	0	0	0	0	336	20
Turn Type			Perm	pm+pt						Perm		Perm
Protected Phases		2		1	6						4	
Permitted Phases			2	6						4		4
Actuated Green, G (s)		29.2	29.2	42.3	42.3						15.5	15.5
Effective Green, g (s)		29.2	29.2	42.3	42.3						15.5	15.5
Actuated g/C Ratio		0.42	0.42	0.61	0.61						0.22	0.22
Clearance Time (s)		6.0	6.0	6.0	6.0						6.0	6.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0						3.0	3.0
Lane Grp Cap (vph)		779	662	321	1129						393	352
v/s Ratio Prot		0.35		0.08	c0.42							
v/s Ratio Perm			0.18	c0.39							0.19	0.01
v/c Ratio		0.83	0.44	0.78	0.70						0.85	0.06
Uniform Delay, d1		18.1	14.5	11.7	9.4						26.1	21.4
Progression Factor		1.00	1.00	1.00	1.00						1.00	1.00
Incremental Delay, d2		7.2	0.5	11.7	1.9						16.4	0.1
Delay (s)		25.2	14.9	23.4	11.2						42.5	21.5
Level of Service		C	B	C	B						D	C
Approach Delay (s)		21.4			14.2			0.0			38.0	
Approach LOS		C			B			A			D	

Intersection Summary			
HCM Average Control Delay	21.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	69.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
7: Courthouse Road & SB Ramp

Westgate Center TIA
1/25/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	637	444	455	978	0	0	0	0	410	0	249
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	6.0	6.0						6.0	6.0
Lane Util. Factor		1.00	1.00	1.00	1.00						1.00	1.00
Frt		1.00	0.85	1.00	1.00						1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.95	1.00
Satd. Flow (prot)		1863	1583	1770	1863						1770	1583
Flt Permitted		1.00	1.00	0.12	1.00						0.95	1.00
Satd. Flow (perm)		1863	1583	218	1863						1770	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)	0	671	467	479	1029	0	0	0	0	432	0	262
RTOR Reduction (vph)	0	0	84	0	0	0	0	0	0	0	0	98
Lane Group Flow (vph)	0	671	383	479	1029	0	0	0	0	0	432	164
Turn Type			Perm	pm+pt						Perm		Perm
Protected Phases		2		1	6						4	
Permitted Phases			2	6						4		4
Actuated Green, G (s)		33.0	33.0	57.0	57.0						21.0	21.0
Effective Green, g (s)		33.0	33.0	57.0	57.0						21.0	21.0
Actuated g/C Ratio		0.37	0.37	0.63	0.63						0.23	0.23
Clearance Time (s)		6.0	6.0	6.0	6.0						6.0	6.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0						3.0	3.0
Lane Grp Cap (vph)		683	580	448	1180						413	369
v/s Ratio Prot		0.36		c0.21	0.55							
v/s Ratio Perm			0.24	c0.46							0.24	0.10
v/c Ratio		0.98	0.66	1.07	0.87						1.05	0.44
Uniform Delay, d1		28.2	23.8	29.7	13.5						34.5	29.5
Progression Factor		1.00	1.00	0.88	0.83						1.00	1.00
Incremental Delay, d2		30.4	5.8	36.0	0.9						56.8	0.9
Delay (s)		58.6	29.7	62.1	12.1						91.3	30.4
Level of Service		E	C	E	B						F	C
Approach Delay (s)		46.7			28.0			0.0			68.3	
Approach LOS		D			C			A			E	

Intersection Summary			
HCM Average Control Delay	42.8	HCM Level of Service	D
HCM Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	99.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
4: EB Courthouse & I-95 SB Ramp

Westgate Center TIA
1/27/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱							↰	↑	
Volume (vph)	0	899	714	0	0	0	0	0	0	8	6	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0							6.0	6.0	
Lane Util. Factor		0.95	1.00							1.00	1.00	
Frt		1.00	0.85							1.00	1.00	
Flt Protected		1.00	1.00							0.95	1.00	
Satd. Flow (prot)		3539	1583							1770	1863	
Flt Permitted		1.00	1.00							0.95	1.00	
Satd. Flow (perm)		3539	1583							1770	1863	
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)	0	946	752	0	0	0	0	0	0	8	6	0
RTOR Reduction (vph)	0	0	228	0	0	0	0	0	0	8	0	0
Lane Group Flow (vph)	0	946	524	0	0	0	0	0	0	0	6	0
Turn Type			Perm							Perm		
Protected Phases		4									6	
Permitted Phases			4							6		
Actuated Green, G (s)		29.2	29.2							0.7	0.7	
Effective Green, g (s)		29.2	29.2							0.7	0.7	
Actuated g/C Ratio		0.70	0.70							0.02	0.02	
Clearance Time (s)		6.0	6.0							6.0	6.0	
Vehicle Extension (s)		3.0	3.0							3.0	3.0	
Lane Grp Cap (vph)		2466	1103							30	31	
v/s Ratio Prot		0.27									c0.00	
v/s Ratio Perm			c0.33							0.00		
v/c Ratio		0.38	0.48							0.00	0.19	
Uniform Delay, d1		2.6	2.9							20.3	20.3	
Progression Factor		1.00	1.00							1.00	1.00	
Incremental Delay, d2		0.1	0.3							0.1	3.0	
Delay (s)		2.7	3.2							20.3	23.4	
Level of Service		A	A							C	C	
Approach Delay (s)		2.9			0.0			0.0			21.6	
Approach LOS		A			A			A			C	

Intersection Summary			
HCM Average Control Delay	3.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	41.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	57.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
4: EB Courthouse & I-95 SB Ramp

Westgate Center TIA
1/27/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱							↰	↑	
Volume (vph)	0	698	573	0	0	0	0	0	0	118	79	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0							6.0	6.0	
Lane Util. Factor		0.95	1.00							1.00	1.00	
Frt		1.00	0.85							1.00	1.00	
Flt Protected		1.00	1.00							0.95	1.00	
Satd. Flow (prot)		3539	1583							1770	1863	
Flt Permitted		1.00	1.00							0.95	1.00	
Satd. Flow (perm)		3539	1583							1770	1863	
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)	0	735	603	0	0	0	0	0	0	124	83	0
RTOR Reduction (vph)	0	0	268	0	0	0	0	0	0	106	0	0
Lane Group Flow (vph)	0	735	335	0	0	0	0	0	0	18	83	0
Turn Type			Perm							Perm		
Protected Phases		4									6	
Permitted Phases			4							6		
Actuated Green, G (s)		22.1	22.1							5.7	5.7	
Effective Green, g (s)		22.1	22.1							5.7	5.7	
Actuated g/C Ratio		0.56	0.56							0.14	0.14	
Clearance Time (s)		6.0	6.0							6.0	6.0	
Vehicle Extension (s)		3.0	3.0							3.0	3.0	
Lane Grp Cap (vph)		1965	879							253	267	
v/s Ratio Prot		0.21									c0.04	
v/s Ratio Perm			c0.21							0.01		
v/c Ratio		0.37	0.38							0.07	0.31	
Uniform Delay, d1		5.0	5.0							14.8	15.3	
Progression Factor		1.00	1.00							1.00	1.00	
Incremental Delay, d2		0.1	0.3							0.1	0.7	
Delay (s)		5.1	5.3							14.9	16.0	
Level of Service		A	A							B	B	
Approach Delay (s)		5.2			0.0			0.0			15.3	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM Average Control Delay	6.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	39.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
4: EB Courthouse & I-95 SB Ramp

Westgate Center TIA
1/27/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱							↰	↑	
Volume (vph)	0	1017	763	0	0	0	0	0	0	8	6	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0							6.0	6.0	
Lane Util. Factor		0.95	1.00							1.00	1.00	
Frt		1.00	0.85							1.00	1.00	
Flt Protected		1.00	1.00							0.95	1.00	
Satd. Flow (prot)		3539	1583							1770	1863	
Flt Permitted		1.00	1.00							0.95	1.00	
Satd. Flow (perm)		3539	1583							1770	1863	
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)	0	1071	803	0	0	0	0	0	0	8	6	0
RTOR Reduction (vph)	0	0	212	0	0	0	0	0	0	8	0	0
Lane Group Flow (vph)	0	1071	591	0	0	0	0	0	0	0	6	0
Turn Type			Perm							Perm		
Protected Phases		4									6	
Permitted Phases			4							6		
Actuated Green, G (s)		35.3	35.3							0.7	0.7	
Effective Green, g (s)		35.3	35.3							0.7	0.7	
Actuated g/C Ratio		0.74	0.74							0.01	0.01	
Clearance Time (s)		6.0	6.0							6.0	6.0	
Vehicle Extension (s)		3.0	3.0							3.0	3.0	
Lane Grp Cap (vph)		2603	1164							26	27	
v/s Ratio Prot		0.30									c0.00	
v/s Ratio Perm			c0.37							0.00		
v/c Ratio		0.41	0.51							0.00	0.22	
Uniform Delay, d1		2.4	2.7							23.3	23.4	
Progression Factor		1.00	1.00							1.00	1.00	
Incremental Delay, d2		0.1	0.3							0.1	4.1	
Delay (s)		2.5	3.0							23.4	27.5	
Level of Service		A	A							C	C	
Approach Delay (s)		2.7			0.0			0.0			25.2	
Approach LOS		A			A			A			C	

Intersection Summary			
HCM Average Control Delay	2.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	48.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	60.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
4: EB Courthouse & I-95 SB Ramp

Westgate Center TIA
1/27/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1237	790	0	0	0	0	0	0	118	79	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0							6.0	6.0	
Lane Util. Factor		0.95	1.00							1.00	1.00	
Frt		1.00	0.85							1.00	1.00	
Flt Protected		1.00	1.00							0.95	1.00	
Satd. Flow (prot)		3539	1583							1770	1863	
Flt Permitted		1.00	1.00							0.95	1.00	
Satd. Flow (perm)		3539	1583							1770	1863	
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)	0	1302	832	0	0	0	0	0	0	124	83	0
RTOR Reduction (vph)	0	0	150	0	0	0	0	0	0	86	0	0
Lane Group Flow (vph)	0	1302	682	0	0	0	0	0	0	38	83	0
Turn Type			Perm							Perm		
Protected Phases		4									6	
Permitted Phases			4							6		
Actuated Green, G (s)		50.4	50.4							6.9	6.9	
Effective Green, g (s)		50.4	50.4							6.9	6.9	
Actuated g/C Ratio		0.73	0.73							0.10	0.10	
Clearance Time (s)		6.0	6.0							6.0	6.0	
Vehicle Extension (s)		3.0	3.0							3.0	3.0	
Lane Grp Cap (vph)		2574	1151							176	185	
v/s Ratio Prot		0.37									c0.04	
v/s Ratio Perm			c0.43							0.02		
v/c Ratio		0.51	0.59							0.21	0.45	
Uniform Delay, d1		4.1	4.5							28.7	29.4	
Progression Factor		1.00	1.00							1.00	1.00	
Incremental Delay, d2		0.2	0.8							0.6	1.7	
Delay (s)		4.2	5.4							29.3	31.1	
Level of Service		A	A							C	C	
Approach Delay (s)		4.7			0.0			0.0			30.0	
Approach LOS		A			A			A			C	

Intersection Summary			
HCM Average Control Delay	6.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	69.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	63.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
4: EB Courthouse & I-95 SB Ramp

Westgate Center TIA
1/27/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱							↰	↑	
Volume (vph)	0	928	777	0	0	0	0	0	0	8	6	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0							6.0	6.0	
Lane Util. Factor		0.95	1.00							1.00	1.00	
Frt		1.00	0.85							1.00	1.00	
Flt Protected		1.00	1.00							0.95	1.00	
Satd. Flow (prot)		3539	1583							1770	1863	
Flt Permitted		1.00	1.00							0.95	1.00	
Satd. Flow (perm)		3539	1583							1770	1863	
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)	0	977	818	0	0	0	0	0	0	8	6	0
RTOR Reduction (vph)	0	0	227	0	0	0	0	0	0	8	0	0
Lane Group Flow (vph)	0	977	591	0	0	0	0	0	0	0	6	0
Turn Type			Perm							Perm		
Protected Phases		4									6	
Permitted Phases			4							6		
Actuated Green, G (s)		33.0	33.0							0.7	0.7	
Effective Green, g (s)		33.0	33.0							0.7	0.7	
Actuated g/C Ratio		0.72	0.72							0.02	0.02	
Clearance Time (s)		6.0	6.0							6.0	6.0	
Vehicle Extension (s)		3.0	3.0							3.0	3.0	
Lane Grp Cap (vph)		2556	1143							27	29	
v/s Ratio Prot		0.28									c0.00	
v/s Ratio Perm			c0.37							0.00		
v/c Ratio		0.38	0.52							0.00	0.21	
Uniform Delay, d1		2.4	2.8							22.2	22.2	
Progression Factor		1.00	1.00							1.00	1.00	
Incremental Delay, d2		0.1	0.4							0.1	3.5	
Delay (s)		2.5	3.2							22.2	25.8	
Level of Service		A	A							C	C	
Approach Delay (s)		2.8			0.0			0.0			23.7	
Approach LOS		A			A			A			C	

Intersection Summary			
HCM Average Control Delay	3.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	45.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	61.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
4: EB Courthouse & I-95 SB Ramp

Westgate Center TIA
1/27/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱							↰	↑	
Volume (vph)	0	733	622	0	0	0	0	0	0	118	79	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0							6.0	6.0	
Lane Util. Factor		0.95	1.00							1.00	1.00	
Frt		1.00	0.85							1.00	1.00	
Flt Protected		1.00	1.00							0.95	1.00	
Satd. Flow (prot)		3539	1583							1770	1863	
Flt Permitted		1.00	1.00							0.95	1.00	
Satd. Flow (perm)		3539	1583							1770	1863	
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)	0	772	655	0	0	0	0	0	0	124	83	0
RTOR Reduction (vph)	0	0	277	0	0	0	0	0	0	107	0	0
Lane Group Flow (vph)	0	772	378	0	0	0	0	0	0	17	83	0
Turn Type			Perm							Perm		
Protected Phases		4									6	
Permitted Phases			4							6		
Actuated Green, G (s)		24.3	24.3							5.8	5.8	
Effective Green, g (s)		24.3	24.3							5.8	5.8	
Actuated g/C Ratio		0.58	0.58							0.14	0.14	
Clearance Time (s)		6.0	6.0							6.0	6.0	
Vehicle Extension (s)		3.0	3.0							3.0	3.0	
Lane Grp Cap (vph)		2043	914							244	257	
v/s Ratio Prot		0.22									c0.04	
v/s Ratio Perm			c0.24							0.01		
v/c Ratio		0.38	0.41							0.07	0.32	
Uniform Delay, d1		4.8	4.9							15.8	16.4	
Progression Factor		1.00	1.00							1.00	1.00	
Incremental Delay, d2		0.1	0.3							0.1	0.7	
Delay (s)		4.9	5.2							15.9	17.1	
Level of Service		A	A							B	B	
Approach Delay (s)		5.1			0.0			0.0			16.4	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM Average Control Delay	6.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	42.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	52.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
4: EB Courthouse & I-95 SB Ramp

Westgate Center TIA
1/27/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱							↰	↑	
Volume (vph)	0	1046	826	0	0	0	0	0	0	8	6	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0							6.0	6.0	
Lane Util. Factor		0.95	1.00							1.00	1.00	
Frt		1.00	0.85							1.00	1.00	
Flt Protected		1.00	1.00							0.95	1.00	
Satd. Flow (prot)		3539	1583							1770	1863	
Flt Permitted		1.00	1.00							0.95	1.00	
Satd. Flow (perm)		3539	1583							1770	1863	
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)	0	1101	869	0	0	0	0	0	0	8	6	0
RTOR Reduction (vph)	0	0	219	0	0	0	0	0	0	8	0	0
Lane Group Flow (vph)	0	1101	650	0	0	0	0	0	0	0	6	0
Turn Type			Perm							Perm		
Protected Phases		4									6	
Permitted Phases			4							6		
Actuated Green, G (s)		38.0	38.0							0.8	0.8	
Effective Green, g (s)		38.0	38.0							0.8	0.8	
Actuated g/C Ratio		0.75	0.75							0.02	0.02	
Clearance Time (s)		6.0	6.0							6.0	6.0	
Vehicle Extension (s)		3.0	3.0							3.0	3.0	
Lane Grp Cap (vph)		2647	1184							28	29	
v/s Ratio Prot		0.31									c0.00	
v/s Ratio Perm			c0.41							0.00		
v/c Ratio		0.42	0.55							0.00	0.21	
Uniform Delay, d1		2.3	2.7							24.6	24.7	
Progression Factor		1.00	1.00							1.00	1.00	
Incremental Delay, d2		0.1	0.5							0.1	3.5	
Delay (s)		2.4	3.3							24.7	28.2	
Level of Service		A	A							C	C	
Approach Delay (s)		2.8			0.0			0.0			26.2	
Approach LOS		A			A			A			C	

Intersection Summary			
HCM Average Control Delay	3.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	50.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
4: EB Courthouse & I-95 SB Ramp

Westgate Center TIA
1/27/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱							↰	↑	
Volume (vph)	0	1272	839	0	0	0	0	0	0	118	79	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0							6.0	6.0	
Lane Util. Factor		0.95	1.00							1.00	1.00	
Frt		1.00	0.85							1.00	1.00	
Flt Protected		1.00	1.00							0.95	1.00	
Satd. Flow (prot)		3539	1583							1770	1863	
Flt Permitted		1.00	1.00							0.95	1.00	
Satd. Flow (perm)		3539	1583							1770	1863	
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)	0	1339	883	0	0	0	0	0	0	124	83	0
RTOR Reduction (vph)	0	0	196	0	0	0	0	0	0	55	0	0
Lane Group Flow (vph)	0	1339	687	0	0	0	0	0	0	69	83	0
Turn Type			Perm							Perm		
Protected Phases		4									6	
Permitted Phases			4							6		
Actuated Green, G (s)		49.3	49.3							6.9	6.9	
Effective Green, g (s)		49.3	49.3							6.9	6.9	
Actuated g/C Ratio		0.72	0.72							0.10	0.10	
Clearance Time (s)		6.0	6.0							6.0	6.0	
Vehicle Extension (s)		3.0	3.0							3.0	3.0	
Lane Grp Cap (vph)		2558	1144							179	188	
v/s Ratio Prot		0.38									c0.04	
v/s Ratio Perm			c0.43							0.04		
v/c Ratio		0.52	0.60							0.39	0.44	
Uniform Delay, d1		4.2	4.6							28.7	28.8	
Progression Factor		1.00	1.00							1.00	1.00	
Incremental Delay, d2		0.2	0.9							1.4	1.7	
Delay (s)		4.4	5.5							30.1	30.5	
Level of Service		A	A							C	C	
Approach Delay (s)		4.9			0.0			0.0			30.2	
Approach LOS		A			A			A			C	

Intersection Summary			
HCM Average Control Delay	7.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	68.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
9: Courthouse Road & Austin Ridge Drive

Westgate Center TIA
1/13/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	68	445	8	27	493	168	1	0	14	163	3	152
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	7.0	7.0	6.0	7.0	7.0		6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		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	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583		1770	1583	1770	1863	1583
Flt Permitted	0.25	1.00	1.00	0.39	1.00	1.00		0.95	1.00	0.95	1.00	1.00
Satd. Flow (perm)	471	1863	1583	733	1863	1583		1770	1583	1770	1863	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)	74	484	9	29	536	183	1	0	15	177	3	165
RTOR Reduction (vph)	0	0	1	0	0	60	0	0	14	0	0	134
Lane Group Flow (vph)	74	484	8	29	536	123	0	1	1	177	3	31
Turn Type	pm+pt		Perm	pm+pt		Perm	Split		pm+ov	Split		Perm
Protected Phases	5	2		1	6		3	3	1	4	4	
Permitted Phases	2		2	6		6			3			4
Actuated Green, G (s)	41.2	34.9	34.9	35.2	31.9	31.9		0.8	4.1	14.8	14.8	14.8
Effective Green, g (s)	41.2	34.9	34.9	35.2	31.9	31.9		0.8	4.1	14.8	14.8	14.8
Actuated g/C Ratio	0.52	0.44	0.44	0.45	0.40	0.40		0.01	0.05	0.19	0.19	0.19
Clearance Time (s)	6.0	7.0	7.0	6.0	7.0	7.0		6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	350	825	701	371	754	641		18	82	332	350	297
v/s Ratio Prot	c0.02	c0.26		0.00	c0.29			c0.00	0.00	c0.10	0.00	
v/s Ratio Perm	0.09		0.01	0.03		0.08			0.00			0.02
v/c Ratio	0.21	0.59	0.01	0.08	0.71	0.19		0.06	0.01	0.53	0.01	0.10
Uniform Delay, d1	11.1	16.5	12.3	12.5	19.6	15.1		38.6	35.4	28.9	26.0	26.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	1.1	0.0	0.1	3.2	0.1		1.3	0.0	1.6	0.0	0.2
Delay (s)	11.4	17.6	12.3	12.6	22.8	15.3		39.9	35.5	30.5	26.0	26.7
Level of Service	B	B	B	B	C	B		D	D	C	C	C
Approach Delay (s)		16.7			20.5			35.7			28.6	
Approach LOS		B			C			D			C	

Intersection Summary			
HCM Average Control Delay	21.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	78.8	Sum of lost time (s)	32.0
Intersection Capacity Utilization	61.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
9: Courthouse Road & Austin Ridge Drive

Westage Center TIA
1/13/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	32	366	5	76	505	258	58	33	197	289	3	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	7.0	7.0	6.0	7.0	7.0		6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		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	0.85	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	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583		1805	1583	1770	1863	1583
Flt Permitted	0.24	1.00	1.00	0.30	1.00	1.00		0.97	1.00	0.95	1.00	1.00
Satd. Flow (perm)	443	1863	1583	560	1863	1583		1805	1583	1770	1863	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)	35	398	5	83	549	280	63	36	214	314	3	63
RTOR Reduction (vph)	0	0	1	0	0	93	0	0	157	0	0	48
Lane Group Flow (vph)	35	398	4	83	549	187	0	99	57	314	3	15
Turn Type	pm+pt		Perm	pm+pt		Perm	Split		pm+ov	Split		Perm
Protected Phases	5	2		1	6		3	3	1	4	4	
Permitted Phases	2		2	6		6			3			4
Actuated Green, G (s)	40.3	36.3	36.3	49.3	40.8	40.8		11.7	20.2	25.4	25.4	25.4
Effective Green, g (s)	40.3	36.3	36.3	49.3	40.8	40.8		11.7	20.2	25.4	25.4	25.4
Actuated g/C Ratio	0.38	0.34	0.34	0.46	0.38	0.38		0.11	0.19	0.24	0.24	0.24
Clearance Time (s)	6.0	7.0	7.0	6.0	7.0	7.0		6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	217	633	538	354	711	604		198	299	421	443	376
v/s Ratio Prot	0.01	0.21		c0.02	c0.29			c0.05	0.02	c0.18	0.00	
v/s Ratio Perm	0.05		0.00	0.09		0.12			0.02			0.01
v/c Ratio	0.16	0.63	0.01	0.23	0.77	0.31		0.50	0.19	0.75	0.01	0.04
Uniform Delay, d1	22.7	29.6	23.4	17.9	29.0	23.2		44.8	36.5	37.8	31.1	31.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	2.0	0.0	0.3	5.2	0.3		2.0	0.3	7.0	0.0	0.0
Delay (s)	23.0	31.6	23.4	18.2	34.2	23.5		46.8	36.8	44.8	31.1	31.4
Level of Service	C	C	C	B	C	C		D	D	D	C	C
Approach Delay (s)		30.8			29.4			40.0			42.5	
Approach LOS		C			C			D			D	

Intersection Summary

HCM Average Control Delay	33.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	106.9	Sum of lost time (s)	25.0
Intersection Capacity Utilization	69.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
9: Courthouse Road & Austin Ridge Drive

Westgate Center TIA
1/25/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	53	838	8	27	650	133	1	0	14	85	3	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	7.0	7.0	6.0	7.0	7.0		6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		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	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583		1770	1583	1770	1863	1583
Flt Permitted	0.25	1.00	1.00	0.10	1.00	1.00		0.95	1.00	0.95	1.00	1.00
Satd. Flow (perm)	460	1863	1583	194	1863	1583		1770	1583	1770	1863	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)	56	882	8	28	684	140	1	0	15	89	3	83
RTOR Reduction (vph)	0	0	0	0	0	57	0	0	14	0	0	73
Lane Group Flow (vph)	56	882	8	28	684	83	0	1	1	89	3	10
Turn Type	pm+pt		Perm	pm+pt		Perm	Split		pm+ov	Split		Perm
Protected Phases	5	2		1	6		3	3	1	4	4	
Permitted Phases	2		2	6		6			3			4
Actuated Green, G (s)	49.3	45.2	45.2	46.3	43.7	43.7		0.6	3.2	10.5	10.5	10.5
Effective Green, g (s)	49.3	45.2	45.2	46.3	43.7	43.7		0.6	3.2	10.5	10.5	10.5
Actuated g/C Ratio	0.59	0.54	0.54	0.55	0.52	0.52		0.01	0.04	0.13	0.13	0.13
Clearance Time (s)	6.0	7.0	7.0	6.0	7.0	7.0		6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	334	1004	853	156	970	825		13	60	222	233	198
v/s Ratio Prot	c0.01	c0.47		0.01	0.37			c0.00	0.00	c0.05	0.00	
v/s Ratio Perm	0.09		0.00	0.09		0.05			0.00			0.01
v/c Ratio	0.17	0.88	0.01	0.18	0.71	0.10		0.08	0.01	0.40	0.01	0.05
Uniform Delay, d1	17.6	16.9	9.0	28.7	15.2	10.2		41.4	38.8	33.8	32.2	32.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	8.8	0.0	0.6	2.4	0.1		2.5	0.1	1.2	0.0	0.1
Delay (s)	17.8	25.8	9.0	29.2	17.6	10.2		43.9	38.9	35.0	32.2	32.4
Level of Service	B	C	A	C	B	B		D	D	C	C	C
Approach Delay (s)		25.2			16.7			39.2			33.7	
Approach LOS		C			B			D			C	

Intersection Summary			
HCM Average Control Delay	22.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	83.9	Sum of lost time (s)	19.0
Intersection Capacity Utilization	68.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
9: Courthouse Road & Austin Ridge Drive

Westgate Center TIA
1/25/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	691	5	76	909	203	58	33	197	154	3	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	7.0	7.0	6.0	7.0	7.0		6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		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	0.85	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	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583		1805	1583	1770	1863	1583
Flt Permitted	0.07	1.00	1.00	0.18	1.00	1.00		0.97	1.00	0.95	1.00	1.00
Satd. Flow (perm)	140	1863	1583	326	1863	1583		1805	1583	1770	1863	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)	26	727	5	80	957	214	61	35	207	162	3	33
RTOR Reduction (vph)	0	0	0	0	0	50	0	0	164	0	0	29
Lane Group Flow (vph)	26	727	5	80	957	164	0	96	43	162	3	4
Turn Type	pm+pt		Perm	pm+pt		Perm	Split		pm+ov	Split		Perm
Protected Phases	5	2		1	6		3	3	1	4	4	
Permitted Phases	2		2	6		6			3			4
Actuated Green, G (s)	65.0	62.4	62.4	75.2	67.5	67.5		10.0	17.7	14.9	14.9	14.9
Effective Green, g (s)	65.0	62.4	62.4	75.2	67.5	67.5		10.0	17.7	14.9	14.9	14.9
Actuated g/C Ratio	0.54	0.52	0.52	0.63	0.56	0.56		0.08	0.15	0.12	0.12	0.12
Clearance Time (s)	6.0	7.0	7.0	6.0	7.0	7.0		6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	111	969	823	297	1048	890		150	233	220	231	197
v/s Ratio Prot	0.01	0.39		c0.02	c0.51			c0.05	0.01	c0.09	0.00	
v/s Ratio Perm	0.12		0.00	0.15		0.10			0.02			0.00
v/c Ratio	0.23	0.75	0.01	0.27	0.91	0.18		0.64	0.19	0.74	0.01	0.02
Uniform Delay, d1	22.6	22.7	13.9	15.2	23.6	12.8		53.3	44.8	50.7	46.1	46.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1	3.3	0.0	0.5	11.9	0.1		9.0	0.4	12.1	0.0	0.0
Delay (s)	23.7	26.0	13.9	15.7	35.5	12.9		62.2	45.2	62.7	46.1	46.2
Level of Service	C	C	B	B	D	B		E	D	E	D	D
Approach Delay (s)		25.8			30.4			50.6			59.7	
Approach LOS		C			C			D			E	

Intersection Summary			
HCM Average Control Delay	33.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	25.0
Intersection Capacity Utilization	83.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
9: Courthouse Road & Austin Ridge Drive

Westgate Center TIA
1/25/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	54	838	8	27	650	140	1	0	14	105	3	82
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	7.0	7.0	6.0	7.0	7.0		6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		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	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583		1770	1583	1770	1863	1583
Flt Permitted	0.25	1.00	1.00	0.10	1.00	1.00		0.95	1.00	0.95	1.00	1.00
Satd. Flow (perm)	457	1863	1583	191	1863	1583		1770	1583	1770	1863	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)	57	882	8	28	684	147	1	0	15	111	3	86
RTOR Reduction (vph)	0	0	0	0	0	59	0	0	14	0	0	75
Lane Group Flow (vph)	57	882	8	28	684	88	0	1	1	111	3	11
Turn Type	pm+pt		Perm	pm+pt		Perm	Split		pm+ov	Split		Perm
Protected Phases	5	2		1	6		3	3	1	4	4	
Permitted Phases	2		2	6		6			3			4
Actuated Green, G (s)	50.6	46.4	46.4	47.4	44.8	44.8		0.6	3.2	11.5	11.5	11.5
Effective Green, g (s)	50.6	46.4	46.4	47.4	44.8	44.8		0.6	3.2	11.5	11.5	11.5
Actuated g/C Ratio	0.59	0.54	0.54	0.55	0.52	0.52		0.01	0.04	0.13	0.13	0.13
Clearance Time (s)	6.0	7.0	7.0	6.0	7.0	7.0		6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	333	1004	853	153	969	824		12	59	236	249	211
v/s Ratio Prot	c0.01	c0.47		0.01	0.37			c0.00	0.00	c0.06	0.00	
v/s Ratio Perm	0.09		0.00	0.10		0.06			0.00			0.01
v/c Ratio	0.17	0.88	0.01	0.18	0.71	0.11		0.08	0.01	0.47	0.01	0.05
Uniform Delay, d1	18.2	17.4	9.2	29.7	15.7	10.5		42.5	39.9	34.5	32.4	32.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	8.8	0.0	0.6	2.4	0.1		3.0	0.1	1.5	0.0	0.1
Delay (s)	18.4	26.2	9.2	30.2	18.0	10.5		45.5	40.0	36.0	32.4	32.7
Level of Service	B	C	A	C	B	B		D	D	D	C	C
Approach Delay (s)		25.6			17.1			40.3			34.5	
Approach LOS		C			B			D			C	

Intersection Summary			
HCM Average Control Delay	23.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	86.1	Sum of lost time (s)	19.0
Intersection Capacity Utilization	69.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
9: Courthouse Road & Austin Ridge Drive

Westgate Center TIA
1/25/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	29	691	5	76	909	225	58	33	197	167	3	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	7.0	7.0	6.0	7.0	7.0		6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		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	0.85	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	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583		1805	1583	1770	1863	1583
Flt Permitted	0.07	1.00	1.00	0.17	1.00	1.00		0.97	1.00	0.95	1.00	1.00
Satd. Flow (perm)	132	1863	1583	322	1863	1583		1805	1583	1770	1863	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)	31	727	5	80	957	237	61	35	207	176	3	35
RTOR Reduction (vph)	0	0	0	0	0	58	0	0	166	0	0	30
Lane Group Flow (vph)	31	727	5	80	957	179	0	96	41	176	3	5
Turn Type	pm+pt		Perm	pm+pt		Perm	Split		pm+ov	Split		Perm
Protected Phases	5	2		1	6		3	3	1	4	4	
Permitted Phases	2		2	6		6			3			4
Actuated Green, G (s)	64.1	61.5	61.5	74.1	66.5	66.5		9.3	16.9	15.6	15.6	15.6
Effective Green, g (s)	64.1	61.5	61.5	74.1	66.5	66.5		9.3	16.9	15.6	15.6	15.6
Actuated g/C Ratio	0.54	0.52	0.52	0.62	0.56	0.56		0.08	0.14	0.13	0.13	0.13
Clearance Time (s)	6.0	7.0	7.0	6.0	7.0	7.0		6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	107	963	818	293	1041	885		141	225	232	244	208
v/s Ratio Prot	0.01	0.39		c0.02	c0.51			c0.05	0.01	c0.10	0.00	
v/s Ratio Perm	0.15		0.00	0.15		0.11			0.01			0.00
v/c Ratio	0.29	0.75	0.01	0.27	0.92	0.20		0.68	0.18	0.76	0.01	0.02
Uniform Delay, d1	22.9	22.8	13.9	15.3	23.8	13.1		53.4	45.0	49.9	45.0	45.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.5	3.4	0.0	0.5	12.5	0.1		12.7	0.4	13.3	0.0	0.0
Delay (s)	24.4	26.2	13.9	15.8	36.4	13.2		66.1	45.4	63.1	45.0	45.1
Level of Service	C	C	B	B	D	B		E	D	E	D	D
Approach Delay (s)		26.0			30.7			51.9			59.9	
Approach LOS		C			C			D			E	

Intersection Summary

HCM Average Control Delay	34.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	119.0	Sum of lost time (s)	25.0
Intersection Capacity Utilization	83.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
1: Courthouse Road & Austin Ridge Drive

Westgate Center TIA
1/27/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	NWL	NWR
Lane Configurations										
Volume (vph)	56	0	1503	0	880	139	92	83	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4 0		6 0		6 0	6.0	6.0	6 0		
Lane Util. Factor	0.97		0.88		0 95	1.00	0 97	1 00		
Frt	1.00		0 85		1 00	0 85	1 00	0 85		
Flt Protected	0.95		1.00		1.00	1.00	0.95	1.00		
Satd. Flow (prot)	3433		2787		3539	1583	3433	1583		
Flt Permitted	0.95		1.00		1.00	1.00	0.95	1.00		
Satd. Flow (perm)	3433		2787		3539	1583	3433	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
Adj. Flow (vph)	59	0	1582	0	926	146	97	87	0	0
RTOR Reduction (vph)	0	0	269	0	0	69	0	65	0	0
Lane Group Flow (vph)	59	0	1313	0	926	77	97	22	0	0
Turn Type	Prot		custom			Perm		Perm		
Protected Phases	7				8		6			
Permitted Phases			4			8		6		
Actuated Green, G (s)	3 2		54 9		47.7	47.7	23 1	23 1		
Effective Green, g (s)	3.2		54.9		47.7	47.7	23 1	23 1		
Actuated g/C Ratio	0 04		0 61		0 53	0 53	0 26	0 26		
Clearance Time (s)	4 0		6 0		6.0	6 0	6.0	6.0		
Vehicle Extension (s)	3.0		3.0		3.0	3.0	3.0	3.0		
Lane Grp Cap (vph)	122		1700		1876	839	881	406		
v/s Ratio Prot	0 02				0.26		c0.03			
v/s Ratio Perm			c0.47			0.05		0.01		
v/c Ratio	0 48		0 77		0 49	0 09	0 11	0 05		
Uniform Delay, d1	42.6		12.9		13.5	10.5	25.6	25.2		
Progression Factor	1 00		1 00		1 00	1 00	1 00	1 00		
Incremental Delay, d2	3.0		2.2		0.2	0 0	0 3	0.3		
Delay (s)	45 6		15.2		13 7	10 5	25 8	25 5		
Level of Service	D		B		B	B	C	C		
Approach Delay (s)		16 3			13 2		25 7		0 0	
Approach LOS		B			B		C		A	

Intersection Summary			
HCM Average Control Delay	15.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0 58		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	57 6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
1: Courthouse Road & Austin Ridge Drive

Westgate Center TIA
1/27/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	NWL	NWR
Lane Configurations										
Volume (vph)	26	0	1065	0	1836	247	165	32	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		6.0		6.0	6.0	6.0	6.0		
Lane Util. Factor	0.97		0.88		0.95	1.00	0.97	1.00		
Frt	1.00		0.85		1.00	0.85	1.00	0.85		
Flt Protected	0.95		1.00		1.00	1.00	0.95	1.00		
Satd. Flow (prot)	3433		2787		3539	1583	3433	1583		
Flt Permitted	0.95		1.00		1.00	1.00	0.95	1.00		
Satd. Flow (perm)	3433		2787		3539	1583	3433	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
Adj. Flow (vph)	27	0	1121	0	1722	260	174	34	0	0
RTOR Reduction (vph)	0	0	189	0	0	107	0	27	0	0
Lane Group Flow (vph)	27	0	932	0	1722	153	174	7	0	0
Turn Type	Prot		custom			Perm		Perm		
Protected Phases	7				8		6			
Permitted Phases			4			8		6		
Actuated Green, G (s)	1.6		58.5		52.9	52.9	19.5	19.5		
Effective Green, g (s)	1.6		58.5		52.9	52.9	19.5	19.5		
Actuated g/C Ratio	0.02		0.65		0.59	0.59	0.22	0.22		
Clearance Time (s)	4.0		6.0		6.0	6.0	6.0	6.0		
Vehicle Extension (s)	3.0		3.0		3.0	3.0	3.0	3.0		
Lane Grp Cap (vph)	61		1812		2080	930	744	343		
v/s Ratio Prot	0.01				c0.49		c0.05			
v/s Ratio Perm			c0.33			0.10		0.00		
v/c Ratio	0.44		0.51		0.83	0.16	0.23	0.02		
Uniform Delay, d1	43.8		8.3		14.9	8.5	29.1	27.7		
Progression Factor	1.00		1.00		1.00	1.00	1.00	1.00		
Incremental Delay, d2	5.1		0.2		2.9	0.1	0.7	0.1		
Delay (s)	48.8		8.5		17.8	8.5	29.8	27.9		
Level of Service	D		A		B	A	C	C		
Approach Delay (s)		9.5			16.5		29.5		0.0	
Approach LOS		A			B		C		A	

Intersection Summary			
HCM Average Control Delay	14.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	59.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
1: Courthouse Road & Austin Ridge Drive

Westgate Center TIA
1/27/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	NWL	NWR
Lane Configurations										
Volume (vph)	124	0	1503	0	880	455	259	118	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		6.0		6.0	6.0	6.0	6.0		
Lane Util. Factor	0.97		0.88		0.91	1.00	0.94	1.00		
Frt	1.00		0.85		1.00	0.85	1.00	0.85		
Flt Protected	0.95		1.00		1.00	1.00	0.95	1.00		
Satd. Flow (prot)	3433		2787		5085	1583	4990	1583		
Flt Permitted	0.95		1.00		1.00	1.00	0.95	1.00		
Satd. Flow (perm)	3433		2787		5085	1583	4990	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
Adj. Flow (vph)	131	0	1582	0	926	479	273	124	0	0
RTOR Reduction (vph)	0	0	103	0	0	229	0	96	0	0
Lane Group Flow (vph)	131	0	1479	0	926	250	273	28	0	0
Turn Type	Prot		custom			Perm		Perm		
Protected Phases	7				8		6			
Permitted Phases			4			8		6		
Actuated Green, G (s)	6.9		57.9		47.0	47.0	20.1	20.1		
Effective Green, g (s)	6.9		57.9		47.0	47.0	20.1	20.1		
Actuated g/C Ratio	0.08		0.64		0.52	0.52	0.22	0.22		
Clearance Time (s)	4.0		6.0		6.0	6.0	6.0	6.0		
Vehicle Extension (s)	3.0		3.0		3.0	3.0	3.0	3.0		
Lane Grp Cap (vph)	263		1793		2656	827	1114	354		
v/s Ratio Prot	0.04				0.18		c0.05			
v/s Ratio Perm			c0.53			0.16		0.02		
v/c Ratio	0.50		0.83		0.35	0.30	0.25	0.08		
Uniform Delay, d1	39.9		12.2		12.6	12.2	28.7	27.6		
Progression Factor	1.00		1.00		1.00	1.00	1.00	1.00		
Incremental Delay, d2	1.5		3.2		0.1	0.2	0.5	0.4		
Delay (s)	41.4		15.4		12.6	12.4	29.2	28.1		
Level of Service	D		B		B	B	C	C		
Approach Delay (s)		17.4			12.6		28.9		0.0	
Approach LOS		B			B		C		A	

Intersection Summary			
HCM Average Control Delay	16.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	57.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
1: Courthouse Road & Austin Ridge Drive

Westgate Center TIA
1/27/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	NWL	NWR
Lane Configurations										
Volume (vph)	167	0	1067	0	1636	912	920	193	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4 0		6 0		6 0	6 0	6 0	6.0		
Lane Util. Factor	0.97		0.88		0.91	1.00	0.94	1 00		
Frt	1 00		0 85		1 00	0 85	1.00	0 85		
Flt Protected	0.95		1.00		1.00	1.00	0 95	1.00		
Satd Flow (prot)	3433		2787		5085	1583	4990	1583		
Flt Permitted	0.95		1.00		1.00	1.00	0.95	1.00		
Satd. Flow (perm)	3433		2787		5085	1583	4990	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
Adj Flow (vph)	176	0	1123	0	1722	960	968	203	0	0
RTOR Reduction (vph)	0	0	5	0	0	447	0	117	0	0
Lane Group Flow (vph)	176	0	1118	0	1722	513	968	86	0	0
Turn Type	Prot		custom			Perm		Perm		
Protected Phases	7				8		6			
Permitted Phases			4			8		6		
Actuated Green, G (s)	7 0		54 0		43 0	43.0	24 0	24 0		
Effective Green, g (s)	7.0		54.0		43.0	43.0	24.0	24.0		
Actuated g/C Ratio	0 08		0 60		0 48	0 48	0 27	0 27		
Clearance Time (s)	4.0		6.0		6.0	6.0	6.0	6.0		
Vehicle Extension (s)	3.0		3.0		3.0	3.0	3 0	3.0		
Lane Grp Cap (vph)	267		1672		2430	756	1331	422		
v/s Ratio Prot	0 05				c0 34		c0 19			
v/s Ratio Perm			c0.40			0.32		0.05		
v/c Ratio	0 66		0 67		0 71	0.68	0 73	0 20		
Uniform Delay, d1	40.3		12.0		18.6	18.2	30.0	25.6		
Progression Factor	1 00		1 00		1 00	1 00	1 00	1 00		
Incremental Delay, d2	5.8		1.0		1.0	2.4	3.5	1.1		
Delay (s)	46 1		13 0		19 5	20 6	33 5	26 7		
Level of Service	D		B		B	C	C	C		
Approach Delay (s)		17 5			19 9		32 3		0 0	
Approach LOS		B			B		C		A	

Intersection Summary			
HCM Average Control Delay	22.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0 74		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	69 6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
1: Courthouse Road & Austin Ridge Drive

Westgate Center TIA
1/27/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	NWL	NWR
Lane Configurations										
Volume (vph)	60	0	1588	0	931	148	97	88	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		6.0		6.0	6.0	6.0	6.0		
Lane Util. Factor	0.97		0.88		0.95	1.00	0.97	1.00		
Frt	1.00		0.85		1.00	0.85	1.00	0.85		
Flt Protected	0.95		1.00		1.00	1.00	0.95	1.00		
Satd. Flow (prot)	3433		2787		3539	1583	3433	1583		
Flt Permitted	0.95		1.00		1.00	1.00	0.95	1.00		
Satd. Flow (perm)	3433		2787		3539	1583	3433	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
Adj. Flow (vph)	63	0	1672	0	980	156	102	93	0	0
RTOR Reduction (vph)	0	0	487	0	0	90	0	60	0	0
Lane Group Flow (vph)	63	0	1185	0	980	66	102	33	0	0
Turn Type	Prot		custom			Perm		Perm		
Protected Phases	7				8		6			
Permitted Phases			4			8		6		
Actuated Green, G (s)	4.0		46.1		38.1	38.1	31.9	31.9		
Effective Green, g (s)	4.0		46.1		38.1	38.1	31.9	31.9		
Actuated g/C Ratio	0.04		0.51		0.42	0.42	0.35	0.35		
Clearance Time (s)	4.0		6.0		6.0	6.0	6.0	6.0		
Vehicle Extension (s)	3.0		3.0		3.0	3.0	3.0	3.0		
Lane Grp Cap (vph)	153		1428		1498	670	1217	561		
v/s Ratio Prot	0.02				0.28		c0.03			
v/s Ratio Perm			c0.43			0.04		0.02		
v/c Ratio	0.41		0.83		0.65	0.10	0.08	0.06		
Uniform Delay, d1	41.9		18.6		20.7	15.6	19.3	19.2		
Progression Factor	1.00		1.00		1.00	1.00	1.00	1.00		
Incremental Delay, d2	1.8		4.1		1.0	0.1	0.1	0.2		
Delay (s)	43.7		22.8		21.7	15.7	19.5	19.4		
Level of Service	D		C		C	B	B	B		
Approach Delay (s)		23.5			20.9		19.4		0.0	
Approach LOS		C			C		B		A	

Intersection Summary			
HCM Average Control Delay	22.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	60.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
1: Courthouse Road & Austin Ridge Drive

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	NWL	NWR
Lane Configurations										
Volume (vph)	28	0	1127	0	1719	260	175	34	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		6.0		6.0	6.0	6.0	6.0		
Lane Util. Factor	0.97		0.88		0.95	1.00	0.97	1.00		
Frt	1.00		0.85		1.00	0.85	1.00	0.85		
Flt Protected	0.95		1.00		1.00	1.00	0.95	1.00		
Satd. Flow (prot)	3433		2787		3539	1583	3433	1583		
Flt Permitted	0.95		1.00		1.00	1.00	0.95	1.00		
Satd. Flow (perm)	3433		2787		3539	1583	3433	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
Adj. Flow (vph)	29	0	1186	0	1809	274	184	36	0	0
RTOR Reduction (vph)	0	0	167	0	0	111	0	29	0	0
Lane Group Flow (vph)	29	0	1019	0	1809	163	184	7	0	0
Turn Type	Prot		custom			Perm		Perm		
Protected Phases	7				8		6			
Permitted Phases			4			8		6		
Actuated Green, G (s)	2.4		59.8		53.4	53.4	18.2	18.2		
Effective Green, g (s)	2.4		59.8		53.4	53.4	18.2	18.2		
Actuated g/C Ratio	0.03		0.66		0.59	0.59	0.20	0.20		
Clearance Time (s)	4.0		6.0		6.0	6.0	6.0	6.0		
Vehicle Extension (s)	3.0		3.0		3.0	3.0	3.0	3.0		
Lane Grp Cap (vph)	92		1852		2100	939	694	320		
v/s Ratio Prot	0.01				c0.51		c0.05			
v/s Ratio Perm			c0.37			0.10		0.00		
v/c Ratio	0.32		0.55		0.86	0.17	0.27	0.02		
Uniform Delay, d1	43.0		8.0		15.2	8.3	30.3	28.8		
Progression Factor	1.00		1.00		1.00	1.00	1.00	1.00		
Incremental Delay, d2	2.0		0.3		3.9	0.1	0.9	0.1		
Delay (s)	45.0		8.3		19.1	8.4	31.2	28.9		
Level of Service	D		A		B	A	C	C		
Approach Delay (s)		9.2			17.7		30.8		0.0	
Approach LOS		A			B		C		A	

Intersection Summary			
HCM Average Control Delay	15.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	62.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
1: Courthouse Road & Austin Ridge Drive

Westgate Center TIA
1/27/2012

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	NWL	NWR
Lane Configurations										
Volume (vph)	128	0	1588	0	931	484	264	123	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		6.0		6.0	6.0	6.0	6.0		
Lane Util. Factor	0.97		0.88		0.91	1.00	0.94	1.00		
Frt	1.00		0.85		1.00	0.85	1.00	0.85		
Flt Protected	0.95		1.00		1.00	1.00	0.95	1.00		
Satd. Flow (prot)	3433		2787		5085	1583	4990	1583		
Flt Permitted	0.95		1.00		1.00	1.00	0.95	1.00		
Satd. Flow (perm)	3433		2787		5085	1583	4990	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
Adj. Flow (vph)	135	0	1672	0	980	488	278	129	0	0
RTOR Reduction (vph)	0	0	80	0	0	219	0	104	0	0
Lane Group Flow (vph)	135	0	1592	0	980	269	278	25	0	0
Turn Type	Prot		custom			Perm		Perm		
Protected Phases	7				8		6			
Permitted Phases			4			8		6		
Actuated Green, G (s)	6.9		60.5		49.6	49.6	17.5	17.5		
Effective Green, g (s)	6.9		60.5		49.6	49.6	17.5	17.5		
Actuated g/C Ratio	0.08		0.67		0.55	0.55	0.19	0.19		
Clearance Time (s)	4.0		6.0		6.0	6.0	6.0	6.0		
Vehicle Extension (s)	3.0		3.0		3.0	3.0	3.0	3.0		
Lane Grp Cap (vph)	263		1873		2802	872	970	308		
v/s Ratio Prot	0.04				0.19		c0.06			
v/s Ratio Perm			c0.57			0.17		0.02		
v/c Ratio	0.51		0.85		0.35	0.31	0.29	0.08		
Uniform Delay, d1	39.9		11.3		11.2	10.9	30.9	29.7		
Progression Factor	1.00		1.00		1.00	1.00	1.00	1.00		
Incremental Delay, d2	1.7		3.8		0.1	0.2	0.7	0.5		
Delay (s)	41.6		15.1		11.3	11.1	31.7	30.2		
Level of Service	D		B		B	B	C	C		
Approach Delay (s)		17.1			11.2		31.2		0.0	
Approach LOS		B			B		C		A	

Intersection Summary			
HCM Average Control Delay	16.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	60.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
1: Courthouse Road & Austin Ridge Drive

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	NWL	NWR
Lane Configurations										
Volume (vph)	169	0	1127	0	1719	925	930	195	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		6.0		6.0	6.0	6.0	4.0		
Lane Util. Factor	0.97		0.88		0.91	1.00	0.94	1.00		
Frt	1.00		0.85		1.00	0.85	1.00	0.85		
Flt Protected	0.95		1.00		1.00	1.00	0.95	1.00		
Satd. Flow (prot)	3467		2787		5085	1599	5040	1599		
Flt Permitted	0.95		1.00		1.00	1.00	0.95	1.00		
Satd. Flow (perm)	3467		2787		5085	1599	5040	1599		
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	178	0	1186	0	1809	974	979	205	0	0
RTOR Reduction (vph)	0	0	1	0	0	390	0	6	0	0
Lane Group Flow (vph)	178	0	1185	0	1809	584	979	199	0	0
Heavy Vehicles (%)	1%	2%	2%	2%	2%	1%	1%	1%	2%	2%
Turn Type	Prot		custom			Prot		pm+ov		
Protected Phases	7				8	8	6	7		
Permitted Phases			4					6		
Actuated Green, G (s)	7.1		58.3		47.2	47.2	19.7	26.8		
Effective Green, g (s)	7.1		58.3		47.2	47.2	19.7	26.8		
Actuated g/C Ratio	0.08		0.65		0.52	0.52	0.22	0.30		
Clearance Time (s)	4.0		6.0		6.0	6.0	6.0	4.0		
Vehicle Extension (s)	3.0		3.0		3.0	3.0	3.0	3.0		
Lane Grp Cap (vph)	274		1805		2667	839	1103	476		
v/s Ratio Prot	0.05				0.36	c0.36	c0.19	0.03		
v/s Ratio Perm			c0.43					0.09		
v/c Ratio	0.65		0.66		0.68	0.70	0.89	0.42		
Uniform Delay, d1	40.2		9.7		15.8	16.0	34.1	25.3		
Progression Factor	1.00		1.00		1.00	1.00	1.00	1.00		
Incremental Delay, d2	5.2		1.9		1.4	4.7	8.9	0.6		
Delay (s)	45.5		11.6		17.2	20.8	42.9	25.9		
Level of Service	D		B		B	C	D	C		
Approach Delay (s)		16.0			18.4		40.0		0.0	
Approach LOS		B			B		D		A	

Intersection Summary			
HCM Average Control Delay	22.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	70.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
30: Prop. Ent. #1 & Austin Ridge Drive

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	24	10	199	8	3	167
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	25	11	209	8	3	176
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	396	214			218	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	396	214			218	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	96	99			100	
cM capacity (veh/h)	608	826			1352	

Direction, Lane #	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	25	11	218	3	176
Volume Left	25	0	0	3	0
Volume Right	0	11	8	0	0
cSH	608	826	1700	1352	1700
Volume to Capacity	0.04	0.01	0.13	0.00	0.10
Queue Length 95th (ft)	3	1	0	0	0
Control Delay (s)	11.2	9.4	0.0	7.7	0.0
Lane LOS	B	A		A	
Approach Delay (s)	10.7		0.0	0.1	
Approach LOS	B				

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	21.0%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
30: Prop. Ent. #1 & Austin Ridge Drive

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	15	6	240	25	11	179
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	16	6	253	26	12	188
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	477	266			279	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	477	266			279	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	97	99			99	
cM capacity (veh/h)	542	773			1284	

Direction, Lane #	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	16	6	279	12	188
Volume Left	16	0	0	12	0
Volume Right	0	6	26	0	0
cSH	542	773	1700	1284	1700
Volume to Capacity	0.03	0.01	0.16	0.01	0.11
Queue Length 95th (ft)	2	1	0	1	0
Control Delay (s)	11.8	9.7	0.0	7.8	0.0
Lane LOS	B	A		A	
Approach Delay (s)	11.2		0.0	0.5	
Approach LOS	B				

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	24.1%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
30: Prop. Ent. #1 & Austin Ridge Drive

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	24	10	240	8	3	241
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	25	11	253	8	3	254
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		8				
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	517	257			261	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	517	257			261	
tC, single (s)	6 4	6 2			4 1	
tC, 2 stage (s)						
tF (s)	3 5	3 3			2 2	
p0 queue free %	95	99			100	
cM capacity (veh/h)	517	782			1303	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	36	261	3	254
Volume Left	25	0	3	0
Volume Right	11	8	0	0
cSH	733	1700	1303	1700
Volume to Capacity	0 05	0 15	0 00	0 15
Queue Length 95th (ft)	4	0	0	0
Control Delay (s)	11 5	0 0	7 8	0 0
Lane LOS	B		A	
Approach Delay (s)	11 5	0 0	0 1	
Approach LOS	B			

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	23 1%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
30: Prop. Ent. #1 & Austin Ridge Drive

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	15	6	413	25	11	327
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	16	6	435	26	12	344
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		8				
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	815	448			461	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	815	448			461	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	95	99			99	
cM capacity (veh/h)	343	611			1100	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	22	461	12	344
Volume Left	16	0	12	0
Volume Right	6	26	0	0
cSH	481	1700	1100	1700
Volume to Capacity	0.05	0.27	0.01	0.20
Queue Length 95th (ft)	4	0	1	0
Control Delay (s)	14.6	0.0	8.3	0.0
Lane LOS	B		A	
Approach Delay (s)	14.6	0.0	0.3	
Approach LOS	B			

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	33.3%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
30: Prop. Ent. #1 & Austin Ridge Drive

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	24	10	254	8	3	252
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	25	11	267	8	3	265
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		8				
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	543	272			276	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	543	272			276	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	95	99			100	
cM capacity (veh/h)	499	767			1287	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	36	276	3	265
Volume Left	25	0	3	0
Volume Right	11	8	0	0
cSH	707	1700	1287	1700
Volume to Capacity	0.05	0.16	0.00	0.16
Queue Length 95th (ft)	4	0	0	0
Control Delay (s)	11.8	0.0	7.8	0.0
Lane LOS	B		A	
Approach Delay (s)	11.8	0.0	0.1	
Approach LOS	B			

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	23.9%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
30: Prop. Ent. #1 & Austin Ridge Drive

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	15	6	427	25	11	338
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	16	6	449	26	12	356
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		8				
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	842	463			476	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	842	463			476	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	95	99			99	
cM capacity (veh/h)	331	599			1086	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	22	476	12	356
Volume Left	16	0	12	0
Volume Right	6	26	0	0
cSH	464	1700	1086	1700
Volume to Capacity	0.05	0.28	0.01	0.21
Queue Length 95th (ft)	4	0	1	0
Control Delay (s)	14.9	0.0	8.3	0.0
Lane LOS	B		A	
Approach Delay (s)	14.9	0.0	0.3	
Approach LOS	B			

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	34.0%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
15: Prop. Ent. #2 & Austin Ridge Drive

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	179	32	216	376	66	199
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1583	3539	1583	1770	3539
Flt Permitted	0.95	1.00	1.00	1.00	0.33	1.00
Satd. Flow (perm)	3433	1583	3539	1583	621	3539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	188	34	227	396	69	209
RTOR Reduction (vph)	0	25	0	230	0	0
Lane Group Flow (vph)	188	9	227	166	69	209
Turn Type		Perm		pm+ov	pm+pt	
Protected Phases	8		2	8	1	6
Permitted Phases		8		2	6	
Actuated Green, G (s)	9.3	9.3	6.0	15.3	15.2	15.2
Effective Green, g (s)	9.3	9.3	6.0	15.3	15.2	15.2
Actuated g/C Ratio	0.25	0.25	0.16	0.42	0.42	0.42
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	875	403	582	924	359	1474
v/s Ratio Prot	0.05		c0.06	c0.05	0.02	c0.06
v/s Ratio Perm		0.01		0.06	0.06	
v/c Ratio	0.21	0.02	0.39	0.18	0.19	0.14
Uniform Delay, d1	10.7	10.2	13.6	6.7	7.0	6.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.0	0.4	0.1	0.3	0.0
Delay (s)	10.8	10.2	14.1	6.8	7.3	6.6
Level of Service	B	B	B	A	A	A
Approach Delay (s)	10.7		9.4			6.8
Approach LOS	B		A			A

Intersection Summary			
HCM Average Control Delay	9.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.22		
Actuated Cycle Length (s)	36.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	36.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
15: Prop. Ent. #2 & Austin Ridge Drive

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	902	159	279	781	138	204
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1583	3539	1583	1770	3539
Flt Permitted	0.95	1.00	1.00	1.00	0.37	1.00
Satd. Flow (perm)	3433	1583	3539	1583	696	3539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	949	167	294	822	145	215
RTOR Reduction (vph)	0	91	0	161	0	0
Lane Group Flow (vph)	949	76	294	661	145	215
Turn Type		Perm		pm+ov	pm+pt	
Protected Phases	8		2	8	1	6
Permitted Phases		8		2	6	
Actuated Green, G (s)	29.1	29.1	11.3	40.4	23.2	23.2
Effective Green, g (s)	29.1	29.1	11.3	40.4	23.2	23.2
Actuated g/C Ratio	0.45	0.45	0.18	0.63	0.36	0.36
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1554	716	622	1142	350	1277
v/s Ratio Prot	0.28		0.08	c0.26	c0.04	0.06
v/s Ratio Perm		0.05		0.16	0.11	
v/c Ratio	0.61	0.11	0.47	0.58	0.41	0.17
Uniform Delay, d1	13.3	10.1	23.8	7.0	14.6	14.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.1	0.6	0.7	0.8	0.1
Delay (s)	14.0	10.2	24.4	7.7	15.4	14.0
Level of Service	B	B	C	A	B	B
Approach Delay (s)	13.5		12.1			14.6
Approach LOS	B		B			B

Intersection Summary			
HCM Average Control Delay	13.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	64.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
15: Prop. Ent. #2 & Austin Ridge Drive

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	179	32	230	376	66	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1583	3539	1583	1770	3539
Flt Permitted	0.95	1.00	1.00	1.00	0.33	1.00
Satd. Flow (perm)	3433	1583	3539	1583	621	3539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	188	34	242	396	69	221
RTOR Reduction (vph)	0	25	0	225	0	0
Lane Group Flow (vph)	188	9	242	171	69	221
Turn Type		Perm		pm+ov	pm+pt	
Protected Phases	8		2	8	1	6
Permitted Phases		8		2	6	
Actuated Green, G (s)	8.5	8.5	6.0	14.5	13.1	13.1
Effective Green, g (s)	8.5	8.5	6.0	14.5	13.1	13.1
Actuated g/C Ratio	0.25	0.25	0.18	0.43	0.39	0.39
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	868	400	632	966	280	1380
v/s Ratio Prot	0.05		c0.07	c0.04	0.01	c0.06
v/s Ratio Perm		0.01		0.06	0.09	
v/c Ratio	0.22	0.02	0.38	0.18	0.25	0.16
Uniform Delay, d1	9.9	9.4	12.2	5.9	7.1	6.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	0.0	0.4	0.1	0.5	0.1
Delay (s)	10.0	9.4	12.6	6.0	7.5	6.7
Level of Service	B	A	B	A	A	A
Approach Delay (s)	10.0		8.5			6.9
Approach LOS	A		A			A

Intersection Summary			
HCM Average Control Delay	8.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.23		
Actuated Cycle Length (s)	33.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	36.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
15: Prop. Ent. #2 & Austin Ridge Drive

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	902	159	293	782	138	215
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1583	3539	1583	1770	3539
Flt Permitted	0.95	1.00	1.00	1.00	0.38	1.00
Satd. Flow (perm)	3433	1583	3539	1583	705	3539
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	949	167	308	823	145	226
RTOR Reduction (vph)	0	94	0	163	0	0
Lane Group Flow (vph)	949	73	308	660	145	226
Turn Type		Perm		pm+ov	pm+pt	
Protected Phases	8		2	8	1	6
Permitted Phases		8		2	6	
Actuated Green, G (s)	31.1	31.1	12.2	43.3	27.7	27.7
Effective Green, g (s)	31.1	31.1	12.2	43.3	27.7	27.7
Actuated g/C Ratio	0.44	0.44	0.17	0.61	0.39	0.39
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1508	695	610	1102	419	1385
v/s Ratio Prot	0.28		0.09	c0.26	c0.05	0.06
v/s Ratio Perm		0.05		0.15	0.09	
v/c Ratio	0.63	0.11	0.50	0.60	0.35	0.16
Uniform Delay, d1	15.4	11.7	26.6	8.4	14.6	14.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	0.1	0.7	0.9	0.5	0.1
Delay (s)	16.2	11.7	27.2	9.3	15.1	14.1
Level of Service	B	B	C	A	B	B
Approach Delay (s)	15.5		14.2			14.5
Approach LOS	B		B			B

Intersection Summary			
HCM Average Control Delay	14.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	70.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
19: Austin Ridge Drive & Mine Rd Ext

Westgate Center TIA
1/25/2012

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	348	140	0	22	193
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0			6.0
Lane Util. Factor		1.00	0.95			0.95
Frt		0.85	1.00			1.00
Flt Protected		1.00	1.00			0.99
Satd. Flow (prot)		1583	3539			3521
Flt Permitted		1.00	1.00			0.90
Satd. Flow (perm)		1583	3539			3197
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	366	147	0	23	203
RTOR Reduction (vph)	0	285	0	0	0	0
Lane Group Flow (vph)	0	81	147	0	0	226
Turn Type		Perm			Perm	
Protected Phases	4		2			6
Permitted Phases		4			6	
Actuated Green, G (s)		5.5	7.2			7.2
Effective Green, g (s)		5.5	7.2			7.2
Actuated g/C Ratio		0.22	0.29			0.29
Clearance Time (s)		6.0	6.0			6.0
Vehicle Extension (s)		3.0	3.0			3.0
Lane Grp Cap (vph)		352	1032			932
v/s Ratio Prot			0.04			
v/s Ratio Perm		c0.05				c0.07
v/c Ratio		0.23	0.14			0.24
Uniform Delay, d1		7.9	6.5			6.7
Progression Factor		1.00	1.00			1.00
Incremental Delay, d2		0.3	0.1			0.1
Delay (s)		8.2	6.5			6.8
Level of Service		A	A			A
Approach Delay (s)	8.2		6.5			6.8
Approach LOS	A		A			A

Intersection Summary			
HCM Average Control Delay	7.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.24		
Actuated Cycle Length (s)	24.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	35.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
19: Austin Ridge Drive & Mine Rd Ext

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	262	124	0	356	262
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0			6.0
Lane Util. Factor		1.00	0.95			0.95
Frt		0.85	1.00			1.00
Flt Protected		1.00	1.00			0.97
Satd. Flow (prot)		1583	3539			3440
Flt Permitted		1.00	1.00			0.75
Satd. Flow (perm)		1583	3539			2642
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	276	131	0	375	276
RTOR Reduction (vph)	0	229	0	0	0	0
Lane Group Flow (vph)	0	47	131	0	0	651
Turn Type		Perm			Perm	
Protected Phases	4		2			6
Permitted Phases		4			6	
Actuated Green, G (s)		5.5	14.9			14.9
Effective Green, g (s)		5.5	14.9			14.9
Actuated g/C Ratio		0.17	0.46			0.46
Clearance Time (s)		6.0	6.0			6.0
Vehicle Extension (s)		3.0	3.0			3.0
Lane Grp Cap (vph)		269	1628			1215
v/s Ratio Prot			0.04			
v/s Ratio Perm		c0.03				c0.25
v/c Ratio		0.17	0.08			0.54
Uniform Delay, d1		11.5	4.9			6.3
Progression Factor		1.00	1.00			1.00
Incremental Delay, d2		0.3	0.0			0.5
Delay (s)		11.8	4.9			6.7
Level of Service		B	A			A
Approach Delay (s)	11.8		4.9			6.7
Approach LOS	B		A			A

Intersection Summary			
HCM Average Control Delay	7.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	32.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	33.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
19: Austin Ridge Drive & Mine Rd Ext

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	358	140	0	25	193
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0			6.0
Lane Util. Factor		1.00	0.95			0.95
Frt		0.85	1.00			1.00
Flt Protected		1.00	1.00			0.99
Satd. Flow (prot)		1583	3539			3519
Flt Permitted		1.00	1.00			0.90
Satd. Flow (perm)		1583	3539			3179
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	377	147	0	26	203
RTOR Reduction (vph)	0	293	0	0	0	0
Lane Group Flow (vph)	0	84	147	0	0	229
Turn Type		Perm			Perm	
Protected Phases	4		2			6
Permitted Phases		4			6	
Actuated Green, G (s)		5.5	7.1			7.1
Effective Green, g (s)		5.5	7.1			7.1
Actuated g/C Ratio		0.22	0.29			0.29
Clearance Time (s)		6.0	6.0			6.0
Vehicle Extension (s)		3.0	3.0			3.0
Lane Grp Cap (vph)		354	1021			918
v/s Ratio Prot			0.04			
v/s Ratio Perm		c0.05				c0.07
v/c Ratio		0.24	0.14			0.25
Uniform Delay, d1		7.8	6.5			6.7
Progression Factor		1.00	1.00			1.00
Incremental Delay, d2		0.3	0.1			0.1
Delay (s)		8.2	6.6			6.9
Level of Service		A	A			A
Approach Delay (s)	8.2		6.6			6.9
Approach LOS	A		A			A

Intersection Summary			
HCM Average Control Delay	7.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.24		
Actuated Cycle Length (s)	24.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	36.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
19: Austin Ridge Drive & Mine Rd Ext

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	268	124	0	367	262
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0			6.0
Lane Util. Factor		1.00	0.95			0.95
Frt		0.85	1.00			1.00
Flt Protected		1.00	1.00			0.97
Satd. Flow (prot)		1583	3539			3439
Flt Permitted		1.00	1.00			0.75
Satd. Flow (perm)		1583	3539			2637
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	282	131	0	386	276
RTOR Reduction (vph)	0	234	0	0	0	0
Lane Group Flow (vph)	0	48	131	0	0	662
Turn Type		Perm			Perm	
Protected Phases	4		2			6
Permitted Phases		4			6	
Actuated Green, G (s)		5.5	14.9			14.9
Effective Green, g (s)		5.5	14.9			14.9
Actuated g/C Ratio		0.17	0.46			0.46
Clearance Time (s)		6.0	6.0			6.0
Vehicle Extension (s)		3.0	3.0			3.0
Lane Grp Cap (vph)		269	1628			1213
v/s Ratio Prot			0.04			
v/s Ratio Perm		c0.03				c0.25
v/c Ratio		0.18	0.08			0.55
Uniform Delay, d1		11.5	4.9			6.3
Progression Factor		1.00	1.00			1.00
Incremental Delay, d2		0.3	0.0			0.5
Delay (s)		11.8	4.9			6.8
Level of Service		B	A			A
Approach Delay (s)	11.8		4.9			6.8
Approach LOS	B		A			A

Intersection Summary			
HCM Average Control Delay	7.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	32.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	33.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
19: Austin Ridge Drive & Mine Rd Ext

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	365	364	0	23	272
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0			6.0
Lane Util. Factor		1.00	0.95			0.95
Frt		0.85	1.00			1.00
Flt Protected		1.00	1.00			1.00
Satd. Flow (prot)		1583	3539			3526
Flt Permitted		1.00	1.00			0.89
Satd. Flow (perm)		1583	3539			3146
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	384	383	0	24	286
RTOR Reduction (vph)	0	171	0	0	0	0
Lane Group Flow (vph)	0	213	383	0	0	310
Turn Type		Perm			Perm	
Protected Phases	4		2			6
Permitted Phases		4			6	
Actuated Green, G (s)		9.0	8.9			8.9
Effective Green, g (s)		9.0	8.9			8.9
Actuated g/C Ratio		0.30	0.30			0.30
Clearance Time (s)		6.0	6.0			6.0
Vehicle Extension (s)		3.0	3.0			3.0
Lane Grp Cap (vph)		476	1053			936
v/s Ratio Prot			c0.11			
v/s Ratio Perm		c0.13				0.10
v/c Ratio		0.45	0.36			0.33
Uniform Delay, d1		8.4	8.3			8.2
Progression Factor		1.00	1.00			1.00
Incremental Delay, d2		0.7	0.2			0.2
Delay (s)		9.1	8.5			8.4
Level of Service		A	A			A
Approach Delay (s)	9.1		8.5			8.4
Approach LOS	A		A			A

Intersection Summary			
HCM Average Control Delay	8.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	29.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	42.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
19: Austin Ridge Drive & Mine Rd Ext

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	277	247	0	374	481
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0			6.0
Lane Util. Factor		1.00	0.95			0.95
Frt		0.85	1.00			1.00
Flt Protected		1.00	1.00			0.98
Satd. Flow (prot)		1583	3539			3463
Flt Permitted		1.00	1.00			0.73
Satd. Flow (perm)		1583	3539			2568
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	292	260	0	394	506
RTOR Reduction (vph)	0	250	0	0	0	0
Lane Group Flow (vph)	0	42	260	0	0	900
Turn Type		Perm			Perm	
Protected Phases	4		2			6
Permitted Phases		4			6	
Actuated Green, G (s)		5.5	20.4			20.4
Effective Green, g (s)		5.5	20.4			20.4
Actuated g/C Ratio		0.15	0.54			0.54
Clearance Time (s)		6.0	6.0			6.0
Vehicle Extension (s)		3.0	3.0			3.0
Lane Grp Cap (vph)		230	1905			1382
v/s Ratio Prot			0.07			
v/s Ratio Perm		c0.03				c0.35
v/c Ratio		0.18	0.14			0.65
Uniform Delay, d1		14.2	4.4			6.2
Progression Factor		1.00	1.00			1.00
Incremental Delay, d2		0.4	0.0			1.1
Delay (s)		14.6	4.4			7.3
Level of Service		B	A			A
Approach Delay (s)	14.6		4.4			7.3
Approach LOS	B		A			A

Intersection Summary			
HCM Average Control Delay	8.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	37.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	41.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
19: Austin Ridge Drive & Mine Rd Ext

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	407	364	0	92	272
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0			6.0
Lane Util. Factor		1.00	0.95			0.95
Frt		0.85	1.00			1.00
Flt Protected		1.00	1.00			0.99
Satd. Flow (prot)		1583	3539			3495
Flt Permitted		1.00	1.00			0.77
Satd. Flow (perm)		1583	3539			2724
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	428	383	0	97	286
RTOR Reduction (vph)	0	165	0	0	0	0
Lane Group Flow (vph)	0	263	383	0	0	383
Turn Type		Perm			Perm	
Protected Phases	4		2			6
Permitted Phases		4			6	
Actuated Green, G (s)		10.8	10.6			10.6
Effective Green, g (s)		10.8	10.6			10.6
Actuated g/C Ratio		0.32	0.32			0.32
Clearance Time (s)		6.0	6.0			6.0
Vehicle Extension (s)		3.0	3.0			3.0
Lane Grp Cap (vph)		512	1123			865
v/s Ratio Prot			0.11			
v/s Ratio Perm		c0.17				c0.14
v/c Ratio		0.51	0.34			0.44
Uniform Delay, d1		9.2	8.7			9.1
Progression Factor		1.00	1.00			1.00
Incremental Delay, d2		0.9	0.2			0.4
Delay (s)		10.0	8.9			9.4
Level of Service		B	A			A
Approach Delay (s)	10.0		8.9			9.4
Approach LOS	B		A			A

Intersection Summary			
HCM Average Control Delay	9.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	33.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	45.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
19: Austin Ridge Drive & Mine Rd Ext

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	442	247	0	523	481
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0			6.0
Lane Util. Factor		1.00	0.95			0.95
Frt		0.85	1.00			1.00
Flt Protected		1.00	1.00			0.97
Satd. Flow (prot)		1583	3539			3449
Flt Permitted		1.00	1.00			0.70
Satd. Flow (perm)		1583	3539			2479
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	465	260	0	551	506
RTOR Reduction (vph)	0	403	0	0	0	0
Lane Group Flow (vph)	0	62	260	0	0	1057
Turn Type		Perm			Perm	
Protected Phases	4		2			6
Permitted Phases		4			6	
Actuated Green, G (s)		5.6	24.6			24.6
Effective Green, g (s)		5.6	24.6			24.6
Actuated g/C Ratio		0.13	0.58			0.58
Clearance Time (s)		6.0	6.0			6.0
Vehicle Extension (s)		3.0	3.0			3.0
Lane Grp Cap (vph)		210	2063			1445
v/s Ratio Prot			0.07			
v/s Ratio Perm		c0.04				c0.43
v/c Ratio		0.29	0.13			0.86dl
Uniform Delay, d1		16.5	4.0			6.4
Progression Factor		1.00	1.00			1.00
Incremental Delay, d2		0.8	0.0			1.9
Delay (s)		17.3	4.0			8.3
Level of Service		B	A			A
Approach Delay (s)	17.3		4.0			8.3
Approach LOS	B		A			A

Intersection Summary			
HCM Average Control Delay	10.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	42.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	45.8%	ICU Level of Service	A
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane
c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
19: Austin Ridge Drive & Mine Rd Ext

Westgate Center TIA
1/27/2012

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	388	396	0	24	292
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0			6.0
Lane Util. Factor		1.00	0.95			0.95
Frt		0.85	1.00			1.00
Flt Protected		1.00	1.00			1.00
Satd. Flow (prot)		1583	3539			3526
Flt Permitted		1.00	1.00			0.89
Satd. Flow (perm)		1583	3539			3143
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	408	417	0	25	307
RTOR Reduction (vph)	0	143	0	0	0	0
Lane Group Flow (vph)	0	265	417	0	0	332
Turn Type		Perm			Perm	
Protected Phases	4		2			6
Permitted Phases		4			6	
Actuated Green, G (s)		10.5	9.6			9.6
Effective Green, g (s)		10.5	9.6			9.6
Actuated g/C Ratio		0.33	0.30			0.30
Clearance Time (s)		6.0	6.0			6.0
Vehicle Extension (s)		3.0	3.0			3.0
Lane Grp Cap (vph)		518	1058			940
v/s Ratio Prot			c0.12			
v/s Ratio Perm		c0.17				0.11
v/c Ratio		0.51	0.39			0.35
Uniform Delay, d1		8.7	8.9			8.8
Progression Factor		1.00	1.00			1.00
Incremental Delay, d2		0.9	0.2			0.2
Delay (s)		9.6	9.2			9.0
Level of Service		A	A			A
Approach Delay (s)	9.6		9.2			9.0
Approach LOS	A		A			A

Intersection Summary			
HCM Average Control Delay	9.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	32.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	45.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
19: Austin Ridge Drive & Mine Rd Ext

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	293	268	0	397	519
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0			6.0
Lane Util. Factor		1.00	0.95			0.95
Frt		0.85	1.00			1.00
Flt Protected		1.00	1.00			0.98
Satd. Flow (prot)		1583	3539			3464
Flt Permitted		1.00	1.00			0.72
Satd. Flow (perm)		1583	3539			2540
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	308	282	0	418	546
RTOR Reduction (vph)	0	265	0	0	0	0
Lane Group Flow (vph)	0	43	282	0	0	964
Turn Type		Perm			Perm	
Protected Phases	4		2			6
Permitted Phases		4			6	
Actuated Green, G (s)		5.6	22.2			22.2
Effective Green, g (s)		5.6	22.2			22.2
Actuated g/C Ratio		0.14	0.56			0.56
Clearance Time (s)		6.0	6.0			6.0
Vehicle Extension (s)		3.0	3.0			3.0
Lane Grp Cap (vph)		223	1974			1417
v/s Ratio Prot			0.08			
v/s Ratio Perm		c0.03				c0.38
v/c Ratio		0.19	0.14			0.68
Uniform Delay, d1		15.1	4.2			6.3
Progression Factor		1.00	1.00			1.00
Incremental Delay, d2		0.4	0.0			1.4
Delay (s)		15.5	4.3			7.6
Level of Service		B	A			A
Approach Delay (s)	15.5		4.3			7.6
Approach LOS	B		A			A

Intersection Summary			
HCM Average Control Delay	8.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	39.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	43.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
19: Austin Ridge Drive & Mine Rd Ext

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	430	396	0	93	292
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0			6.0
Lane Util. Factor		1.00	0.95			0.95
Frt		0.85	1.00			1.00
Flt Protected		1.00	1.00			0.99
Satd. Flow (prot)		1583	3539			3497
Flt Permitted		1.00	1.00			0.76
Satd. Flow (perm)		1583	3539			2700
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	453	417	0	98	307
RTOR Reduction (vph)	0	138	0	0	0	0
Lane Group Flow (vph)	0	315	417	0	0	405
Turn Type		Perm			Perm	
Protected Phases	4		2			6
Permitted Phases		4			6	
Actuated Green, G (s)		12.8	11.7			11.7
Effective Green, g (s)		12.8	11.7			11.7
Actuated g/C Ratio		0.35	0.32			0.32
Clearance Time (s)		6.0	6.0			6.0
Vehicle Extension (s)		3.0	3.0			3.0
Lane Grp Cap (vph)		555	1134			865
v/s Ratio Prot			0.12			
v/s Ratio Perm		c0.20				c0.15
v/c Ratio		0.57	0.37			0.47
Uniform Delay, d1		9.6	9.6			9.9
Progression Factor		1.00	1.00			1.00
Incremental Delay, d2		1.3	0.2			0.4
Delay (s)		10.9	9.8			10.3
Level of Service		B	A			B
Approach Delay (s)	10.9		9.8			10.3
Approach LOS	B		A			B

Intersection Summary			
HCM Average Control Delay	10.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	36.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	47.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
19: Austin Ridge Drive & Mine Rd Ext

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	458	268	0	546	519
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0			6.0
Lane Util. Factor		1.00	0.95			0.95
Frt		0.85	1.00			1.00
Flt Protected		1.00	1.00			0.97
Satd. Flow (prot)		1583	3539			3451
Flt Permitted		1.00	1.00			0.69
Satd. Flow (perm)		1583	3539			2452
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	482	282	0	575	546
RTOR Reduction (vph)	0	419	0	0	0	0
Lane Group Flow (vph)	0	63	282	0	0	1121
Turn Type		Perm			Perm	
Protected Phases	4		2			6
Permitted Phases		4			6	
Actuated Green, G (s)		6.0	27.7			27.7
Effective Green, g (s)		6.0	27.7			27.7
Actuated g/C Ratio		0.13	0.61			0.61
Clearance Time (s)		6.0	6.0			6.0
Vehicle Extension (s)		3.0	3.0			3.0
Lane Grp Cap (vph)		208	2145			1486
v/s Ratio Prot			0.08			
v/s Ratio Perm		c0.04				c0.46
v/c Ratio		0.30	0.13			0.89dl
Uniform Delay, d1		18.0	3.9			6.5
Progression Factor		1.00	1.00			1.00
Incremental Delay, d2		0.8	0.0			2.2
Delay (s)		18.8	3.9			8.8
Level of Service		B	A			A
Approach Delay (s)	18.8		3.9			8.8
Approach LOS	B		A			A

Intersection Summary			
HCM Average Control Delay	10.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	45.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	47.7%	ICU Level of Service	A
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane
c Critical Lane Group

units as originally reported in **Table 3** of the TIA to 1,827 total dwelling units (1,370 single-family and 457 townhomes)) to reflect a more accurate understanding of current anticipated market conditions. Given the significant size of the Embrey Mill development, it was assumed that build-out to the revised density above would be pro-rated through year 2020, the first horizon year for full build-out of the proposed Westgate Center analyzed in the TIA. In the updated analyses contained herein, all other approved/unbuilt developments were assumed to be built-out to 100% by year 2020, which is consistent with the original TIA. **Table 3B** presents the updated, assumed approved/unbuilt development trips anticipated in year 2020 with continued pro-rated build-out of Embrey Mill.

The updated projected 2026 approved/unbuilt trip generation (including full build-out of Embrey Mill, along with the projected full-build out of the other approved/unbuilt developments) is shown in **Table 3C** in **Attachment B**. Due to the increases in projected Embrey Mill traffic, the updated total daily trips anticipated from the set of approved/unbuilt developments has increased from 34,771 vehicle-trips/day as originally reported in **Table 3** of the TIA to 45,841 vehicle-trips/day in 2020 (as reported in **Table 3B**) and 47,177 vehicle-trips/day in 2026 (as reported in **Table 3C**).

* Note that **Table 3A, Table 3B,** and **Table 3C** discussed above shall collectively take the place of **Table 3** from the original TIA.

3. The intersection geometries under projected 2015 Background and 2015 Total Future conditions have been adjusted to match existing lane configurations at all existing intersections. Compared to the 2015 intersection geometries in the original TIA, this change reverts Courthouse Road back to a two-lane roadway through its intersection with Austin Ridge Drive and the I-95 interchange ramps, and it also reverts the analysis of the southbound Austin Ridge Drive approach at Courthouse Road back to a dedicated right-turn lane, a dedicate through lane, and a dedicated left-turn lane. It is noted that a future connection of Mine Road Extended is still anticipated in the 2015 scenarios, and the projected 2015 laneage at that intersection remains unchanged from the original TIA.

4. The projected 2020 and 2026 Total Future geometry in the vicinity of the Courthouse Road / Relocated Austin Ridge Drive intersection has been revised as follows to add capacity improvements, which are illustrated graphically in **Attachment D**:
    a. Upgraded the southbound Relocated Austin Ridge Drive approach to have a dedicated right-turn lane (400' storage x 200' taper) and triple left-turn lanes.
    b. Added a third eastbound lane to Courthouse Road, beginning at Relocated Austin Ridge Drive and terminating at the right-turn movement onto the proposed southbound I-95 on-ramp.
    c. Converted the westbound Courthouse Road right-turn lane at Relocated Austin Ridge Drive to a third westbound through lane, and added a new dedicated westbound right-turn lane (600' storage x 200' taper).
    d. Added a third lane along westbound Courthouse Road from Relocated Austin Ridge Drive extending approximately 1,800' west to connect to the future westbound right-turn lane (by others) which will turn onto future northbound Embrey Mill Drive.

It is anticipated that the above improvements will be built in conjunction with the VDOT I-95/Route 630 Interchange project (the Interchange). These improvements are intended to be added to the conceptual roadway, turn lane, and traffic signal improvements shown in Alternative A2 of the VDOT Interchange Modification Report (IMR) for the Interchange.

These improvements have an approximate value of $450,000.00 based on estimated quantities and unit prices from recent VDOT bid tabs. The computation for this value is included in **Attachment E**. This value assumes the improvements are designed and constructed as part of the VDOT Interchange project. It is recommended that the County consider applying the calculated Transportation proffer for this Rezoning Request to VDOT's project budget for the Interchange in order to provide a direct offset of this Rezoning Request's anticipated traffic impacts.

5. All projected Background and Total Future analyses were conducted with peak hour factors (PHFs) assumed to be 0.95.

With the study adjustments above and the proposed improvements at the Courthouse Road / Relocated Austin Ridge Drive intersection, the following key conclusions are offered:

- The signalized intersections within the study network all operate with overall level of service (LOS) C or better during projected 2020 and 2026 Total Future AM and PM peak hour scenarios.

- Of particular note under Total Future conditions are the Austin Ridge Drive/Proposed Entrance # 2 intersection and the Courthouse Road/Relocated Austin Ridge Drive intersection.

    - The Austin Ridge Drive/Proposed Entrance # 2 (assumed to be signalized) operates at overall LOS A and B during AM and PM peak hour conditions (respectively) under projected 2020 and 2026 Total Future conditions.

    - The Courthouse Road/Relocated Austin Ridge Drive intersection (with mitigation measures identified above) operates with LOS B and C during AM and PM peak hour conditions (respectively) under projected 2020 and 2026 Total Future conditions. When compared to existing conditions, the overall delay per vehicle for the Total Future conditions at this intersection (with mitigation measures in place) is reduced by over 25% in both the AM and PM peak hours.

- The critical movements at the study area's only unsignalized intersection (Austin Ridge Drive/Proposed Entrance # 1) operate at LOS B or better under projected 2020 and 2026 Total Future AM and PM peak hour conditions.

This comment response submittal includes digital (PDF) copies of this letter and attachments along with relevant updated Synchro files, for VDOT's review.

VDOT's Summary of Key Findings:

Comment 1: The proposal is a rezoning to allow a mixed use residential/commercial development on a 73.3 acre agriculturally zoned property. The property fronts on Austin Ridge Drive (Route 1486). The development would be served by two full movement entrances with the northerly entrance serving 51 single family detached homes and the southerly entrance serving two 100-room hotels, 100,000 sf of office space and a 425,000 sf shopping center. Austin Ridge Drive has a center two-way left turn lane along the proposed entrance locations and has one through lane in each direction at the proposed residential entrance (#1, northerly) and two in each direction at the proposed commercial entrance (#2, southerly).

BCG Response: Advisory comment, noted.

Comment 2: The report does not clearly identify the existing lanes on Austin Ridge Drive. There is a continuous center two-way left turn lane for much of the length of Austin Ridge Drive that appears to serve the proposed entrances. The various diagrams and report text should identify this condition, if this is the case.

BCG Response: All attached figures showing laneage and LOS have been revised to more clearly show the two-way left-turn lane. Also, it is noted that the description of the site access (Section 3.2 page 16) and the description of Austin Ridge Drive (Section 3.4 page 20) in the report note the continuous two-way left-turn lane.

Comment 3: The trip generation presented the analysis appears to be appropriate / accurate.

BCG Response: Advisory comment, noted.

Comment 4: The turning movement diagrams were spot checked and the following comments are offered:

a. Not enough information was provided to determine how traffic was reassigned from Austin Ridge Drive to the Mine Road Connector so that area could not be checked.

BCG Response: Based on an assessment of anticipated future local travel patterns and engineering judgment, traffic was reassigned from Austin Ridge Drive to the Mine Road Connector based on the assumption that 50% of the outbound and 25% of the inbound traffic (existing + historic growth) that travels onto/off of Courthouse Road via Austin Ridge Drive would divert to the Mine Road Connector in each of the future analysis scenarios. New Figures 7A, B, and C have been prepared (Attachment A) to graphically show the rerouting of traffic during each of the scenarios.

Using the 2015 AM Peak hour as an example (Figure 7A), the traffic was rerouted as follows:

- **Southbound Direction**

- **Assume 50% of traffic approaching Courthouse Road would divert**
  - **160+3+171 = 334, so 334/2 = 167 diverted trips**
- **Apportion those trips based on the existing split of southbound right and left traffic.**
  - **160 + 171 = 331 so 160/331 = 0.483, 171/331 = 0.517**
  - **SBR = 0.483 x 167 = 81**
  - **SBL = 0.52 x 167 = 86**
- **Divert the trips from Austin Ridge Drive and assign them to the Mine Road Connector as shown on Figure 7A.**

- **Northbound Direction**
  - **Assume 25% of the eastbound left and westbound right traffic would divert**
    - **EBL = 71 x 0.25 = 18 diverted trips**
    - **WBR = 177 x 0.25 = 44 diverted trips**
  - **Divert the trips from Austin Ridge Drive and assign them to the Mine Road Connector as shown on Figure 7A.**

b. *At the ramps, there appeared to be errors in the "Projected Background 2015" figure. For example, the southbound right turns from the I-95 ramp is shown as 322 and should be 332. The eastbound movements for the PM period at the northbound ramps appear to be off as well. VDOT did not check the 2020 and 2026 background volumes but recommend that all three background volume figures be rechecked by the engineer.*

BCG Response: We have checked all background volume figures and the discrepancies noted by VDOT were clerical in nature and were not evident in our inputs to the Synchro analysis; therefore, the discrepancies did not have an effect on the analysis or results of the report. However, due to other changes in background traffic driven by the aforementioned pro-rating of approved-unbuilt trips, the correction of this discrepancy will not be apparent on the revised figure in Attachment A because that turning movement volume has changed.

c. *While VDOT questions that zero trips are assigned to Austin Ridge Drive for the "Approved/Unbuilts" in Figure 9, we would not ask that this be changed at this point.*

BCG Response: Advisory comment, noted.

d. *The westbound through and right-turn PM peak hour volumes appear to be incorrect for Courthouse Road at Austin Ridge Drive on Figure 17.*

BCG Response: The volumes on Figure 17 are actually correct and are consistent with the volume analyzed in Synchro. However, our review of this question uncovered an error on the westbound through and right-turn PM peak hour volumes on Figure 14 (Projected Total Background 2015). The westbound through volume should be 1,405 and the right-turn volume should be 203. When these volumes are added to the 22 PM peak hour right-turns

shown on Figure 12 (Proposed Phase 1 Site Trips), the result is the volumes shown on Figure 17. This error was again clerical and was not found in our Synchro inputs; therefore, this change does not affect the 2015 Total Background analysis results reported in the traffic impact analysis (TIA). However, due to other changes in background traffic driven by the aforementioned pro-rating of approved-unbuilt trips, the correction of this discrepancy will not be apparent on the revised figure in Attachment A because that turning movement volume has changed.

e. *The southbound left-turn volumes appear to be incorrect for both AM and PM peak hours on Austin Ridge Drive at Courthouse Road on Figure 18.*

BCG Response: The volumes on Figure 18 are actually correct and are consistent with the volumes analyzed in Synchro. The discrepancy lies in the reassigning of existing trips to/from the Park and Ride Lot when the lot is moved and its entrance relocated with reconstruction of the interchange. As shown on Figure 2 of the TIA, the Park and Ride Lot layout will be modified, and its existing entrance will be relocated to the east along Courthouse Road. The only access to the new Park and Ride Lot would be from westbound Courthouse Road. Consequently the existing traffic has been reassigned to the new location.

For clarification, new Figures 7D thru 7F have been added to graphically show the anticipated reassignment of the existing Park and Ride trips.

- **Inbound Traffic xx (xx) AM (PM), see New Figure 7D**
  - **Westbound Left – currently 27 (76) AM (PM) vehicles enter the lot by making a westbound left. In the future, these trips will enter the new lot at the proposed entrance location (shown on Figure 2 of the TIA); however, this entrance location's connection to Courthouse Road was not included in the analysis.**
  - **Eastbound Right – currently 8 (5) AM (PM) vehicles enter the lot by making an eastbound right. In the future, these vehicles will travel through the Austin Ridge Drive intersection and "around" the entire interchange before making a westbound left into the lot.**
  - **Southbound Through – currently 3 (3) AM (PM) vehicles enter the lot by traveling southbound through the Austin Ridge Drive intersection. In the future, these vehicles will make a southbound left from Relocated Austin Ridge Drive onto Courthouse Road and travel "around" the entire interchange before making a westbound left into the lot.**

- **Outbound Traffic xx (xx) AM (PM), see New Figure 7E**
  - **Northbound Left – currently 1 (58) AM (PM) vehicles make a northbound left out of the lot. In the future, these vehicles will make a northbound left out of the new lot and show up as**

westbound through volumes at the Courthouse Road/Austin Ridge Drive intersection.

- **Northbound Through – currently 0 (33) AM (PM) vehicles travel northbound through out of the lot. In the future, these vehicles will make a northbound left out of the new lot and show up as westbound right turns at the Courthouse Road/Relocated Austin Ridge Drive intersection.**
- **Northbound Right – currently 14 (197) AM (PM) vehicles make a northbound right out of the lot. Based on the existing PM counts at the Courthouse Road/I-95 SB On Ramp, we assumed that 60% of those trips travel eastbound on Courthouse Road and 40% travel southbound on I-95. Therefore:**
  - **14 (197) x 60% = 8 (118) would now make a northbound left out of the lot, westbound left onto the ramp, and a southbound left onto eastbound Courthouse Road.**
  - **14 (197) x 40% = 6 (79) would now make a northbound left out of the lot, westbound left onto the ramp, and travel southbound through onto southbound I-95.**

- **The combined inbound and outbound re-routes for the Park and Ride Lot are shown on new Figure 7F.**

Comment: These apparent errors are minor in nature and would not affect the results of the analysis, but they should be corrected or explained.

BCG Response: Where necessary, corrections have been completed as discussed above. Additionally, our review of the proposed interchange reconstruction allowed us to correct a misunderstanding of the interchange operation. In the report, we assigned all trips that are traveling westbound on Courthouse Road to southbound on I-95 to the ramp just west of the existing Park and Ride Lot (see Figure 2) which is the ramp analyzed in our study. However, upon further review, those trips would use the main southbound on-ramp to I-95 just *east* of the existing Park and Ride Lot, which is an intersection that was *not* analyzed under projected future conditions in the TIA. This correction results in significantly lower volumes at the Eastbound Courthouse Road/Southbound I-95 On-ramp intersection analyzed in our study. The resulting improved LOS results at this intersection are shown in updated Tables 6A and 6B (Attachment B).

Comment 5: Under 2026 build-out conditions, the analysis indicates 931 southbound left turns are expected at the Courthouse Road – Austin Ridge Drive intersection during the PM peak hour. This left-turn volume exceeds the capacity of the dual left-turn lane analyzed. Although the Synchro analysis indicates that this movement is expected to operate at level-of-service (LOS) "D" during the PM peak hour, the 95th percentile queue length exceeds the storage capacity and may result in a false LOS reading. SimTraffic should be utilized to analyze the operations at this intersection.

BCG Response: A SimTraffic queuing analysis (average of 5 runs of 30 minutes each) of all scenarios has been conducted. The results have been added to the updated tables in Attachment B. It is specifically noted that the results also reflect adjustments to intersection laneage under projected 2015, 2020, and 2026 scenarios discussed previously, as well as the updated peak hour factor of 0.95.

Comment 6: The study identifies expansion of Courthouse Road to four lanes for the 2015 analyses, where the expansion is unlikely to occur by 2015. Even with this expansion, operations are forecast to be very problematic along Courthouse Road. The reported Synchro results show that the level-of-service is forecast to be the worst in the PM peak hour with overall LOS "E" and two left turn movements at LOS "F" at the Courthouse Road intersections with the I-95 ramps. Additionally, the Synchro queuing results show long queues that may be even longer than indicated due to limitations of the model. For this congested condition, it would be appropriate to use a simulation model to see what really happens since Synchro does not provide reliable results under these conditions. CRO ran the simulation program SimTraffic using Bowman Consulting's input data to get a quick visualization of the forecast operations. This showed extensive queues spilling back to adjacent intersections along Courthouse Road and backing up the I-95 ramps for the PM condition, with somewhat better, but still not acceptable operations for the AM peak period. The results showed inadequate turn lane storage lengths and possibly the need to refine the timing plan. CRO recommends that the applicant provide a SimTraffic analysis and identify appropriate mitigation measures based on that analysis.

BCG Response: See response to Comment 5. It is noted that projected 2015 conditions (LOS and queuing) as reported in the updated tables herein may be overstated given that "peak spreading" will likely occur, particularly during that AM peak hour, given the longer commutes of many of residents in the area.

Comment 7: Similar to the above, operations were reviewed for the 2026 conditions with the proposed interchange in place. SimTraffic shows problematic operations and queuing, primarily in the PM peak hour with Austin Ridge Drive queues extending back from Courthouse Road to the proposed southerly entrance to the project, and long queues westbound on Courthouse Road at Austin Ridge Drive. The applicant needs to identify what additional measures may be needed as part of the interchange project to acceptably accommodate the proposed project-related traffic.

BCG Response: See response to Comment 5. Mitigation measures have been identified which result in 2026 Total Future AM and PM peak hour LOS that are improved when compared to existing conditions.

Comment 8: VDOT guidelines recommend that left turns be "protected only" when crossing more than two through lanes or speeds greater than 50 mph. Therefore, the analysis should show the southbound left-turn movement on Austin Ridge Drive at Entrance 2 to be protected/permitted operation.

BCG Response: Noted. The analysis has been revised to show the southbound left-turn as protected/permitted. Since background trips were not applied to Austin Ridge (and therefore not changed), it is appropriate to note the resultant changes to LOS at Entrance 2: under projected 2020 and 2026 Total Future conditions, the overall AM and PM peak hour LOS at this intersection remains LOS B and C, respectively, with slight overall reductions in vehicle/delay for each of these scenarios.

Comment 9: Figure 28 shows "Proposed Laneage Total Future 2020/2026". This shows the existing center turn lane at Entrances 1 and 2 to be proposed and of short lengths. The applicant should confirm that the center turn lane exists at these entrances and revise the figure accordingly. Also, the proposed northbound right-turn lane at Entrance 2 is shown as 100 feet long, but the capacity analysis uses 200 feet. The length on the diagram should show what is needed based on forecast queuing with a minimum length of 200 feet of storage and a 200 foot taper.

BCG Response: As noted in the response to Comment #2, the two-way left-turn lane is shown on the updated figures (Attachment A) at the site entrances. The applicant is proposing to stripe out turn lanes from the two-way left-turn lanes at the site entrances as the turn lane warrant analysis indicated that left-turn lanes were warranted. The short length noted on Figure 28 reflects only the length of the exclusive left turn lane that would be striped out and not the full storage capacity of the two-way left-turn lane. The storage length of the northbound right-turn lane should be shown as 200' on Figure 18. Figure 18 has been revised and is attached.

Comment 10: At a later stage of the project development process, CRO needs to see a plan showing the speed limits and intersection sight distances for the proposed entrances to Austin Ridge Drive.

BCG Response: Advisory comment, noted.

Comment 11: The applicant proposes to signalize Entrance 2. A full traffic signal warrant analysis will be required in the future for VDOT consideration. A signal will not be allowed until it is clearly warranted and justified.

BCG Response: Advisory comment, noted. The Applicant's proffer statement has been modified to reflect this requirement.

Comment 12: The proposed signalized Entrance 2 is forecast to operate acceptably in the future. However, CRO notes that the movements in and out of this entrance will become the dominant movement on Austin Ridge Drive. There are 902 left turns projected to be coming out of the proposed development in dual left turn lanes. The 451 vehicles-per-lane result is higher than desirable for a left-turn lane. Consideration should be given to making the entrance to this development the through road with Austin Ridge teeing off to the north. This would help provide separation of the commercial area and the residential area to the north on Austin Ridge Drive and also control speeds on this area of Austin Ridge Drive. The TIA

submission package does not include a site plan for review to determine if this alternative has any merit. This could eliminate the need for a traffic signal assuming there will be some internal connection between Entrance 1 and Entrance 2.

BCG Response: The applicant has discussed this comment with VDOT and the County and all are in agreement that teeing off Austin Ridge Drive is not feasible. No changes to the analysis have been made as a result of this comment.

VDOT Conclusions:

The analyses show that there are forecast operational challenges for both Phase 1 and Phase 2. With only 51 single family homes proposed in Phase 1, the issue is primarily background growth and other development traffic. VDOT has no objection to Phase 1 in itself, but the cumulative impacts clearly show significant problems along Courthouse Road in 2015 total build out, even with four lanes on Courthouse Road. The 2020 and 2026 analyses are similarly problematic, especially for Austin Ridge Drive. The applicant should analyze operations using the average of a minimum of five runs of SimTraffic and determine what measures would be necessary to achieve acceptable operations for the three analysis horizons. These should reflect any necessary corrections as identified in the comments.

An assessment of redirecting the through movement to Entrance 2, assuming this could be a public road, should be provided.

BCG Response: The analysis has been revised to include SimTraffic runs as discussed above. Additional mitigation measures have been identified at the Courthouse Road/Austin Ridge Drive intersection as well as along eastbound Courthouse Road between Austin Ridge Drive and the proposed Courthouse Road/I-95 Southbound Ramp intersection and westbound Courthouse Road between Austin Ridge Drive and future Mine Road Extended. Also, at the direction of VDOT and the County, the level of development assumed for the Approved/Unbuilt developments has been reduced in the 2015 scenario to 25% (with the exception of the Rappahannock Regional Jail Expansion) and the development program for Embrey Mill changed for all scenarios. At the suggestion of VDOT, the peak hour factor for all future scenarios has been set to 0.95. Please see the revised figures and tables in Attachments A and B, respectively. Also, as noted above, redirecting the through movement to Entrance 2 is not feasible.

Should you have any questions or comments, please contact our office at (804) 616-3240

Sincerely,

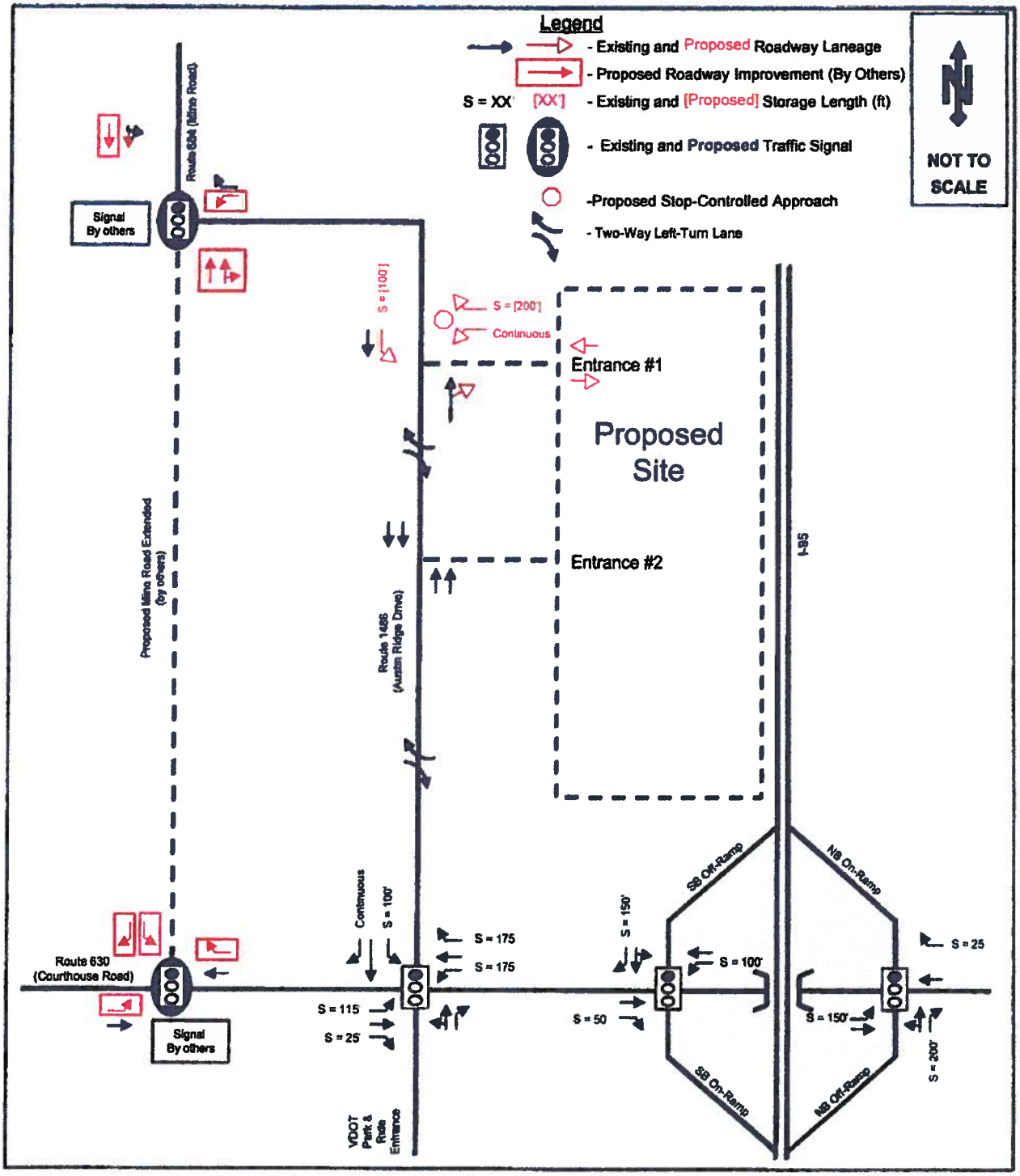
BOWMAN CONSULTING GROUP, LTD.

John D. Riley, PE
Sr. Project Manager

Attachments

Attachment A

Revised Figures



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PROPOSED LANEAGE TOTAL FUTURE 2015
Proposed Westgate Center
Traffic Impact Analysis – Stafford County, Virginia

FIGURE
EX-1
Page 5
Revised January, 2012

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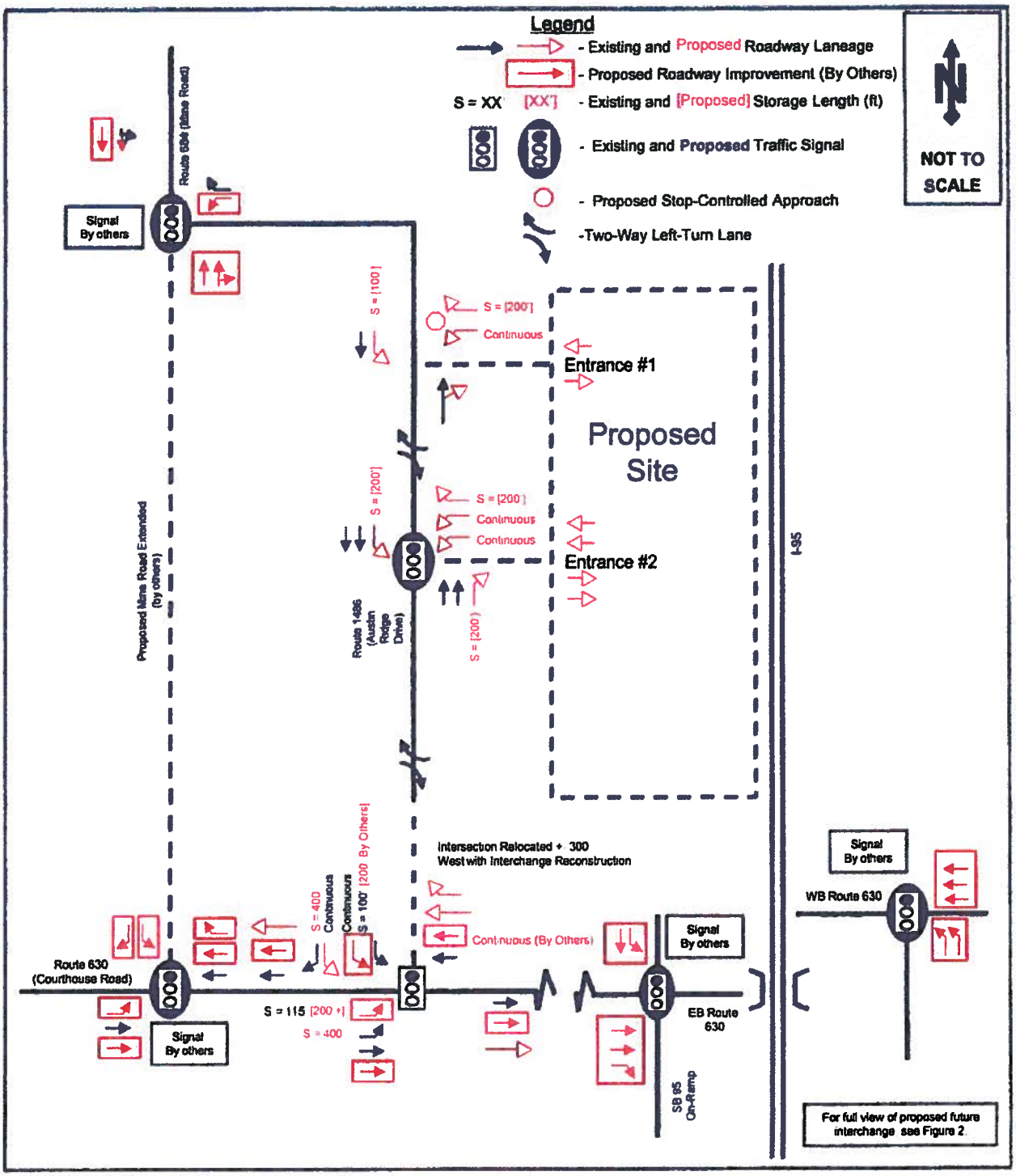

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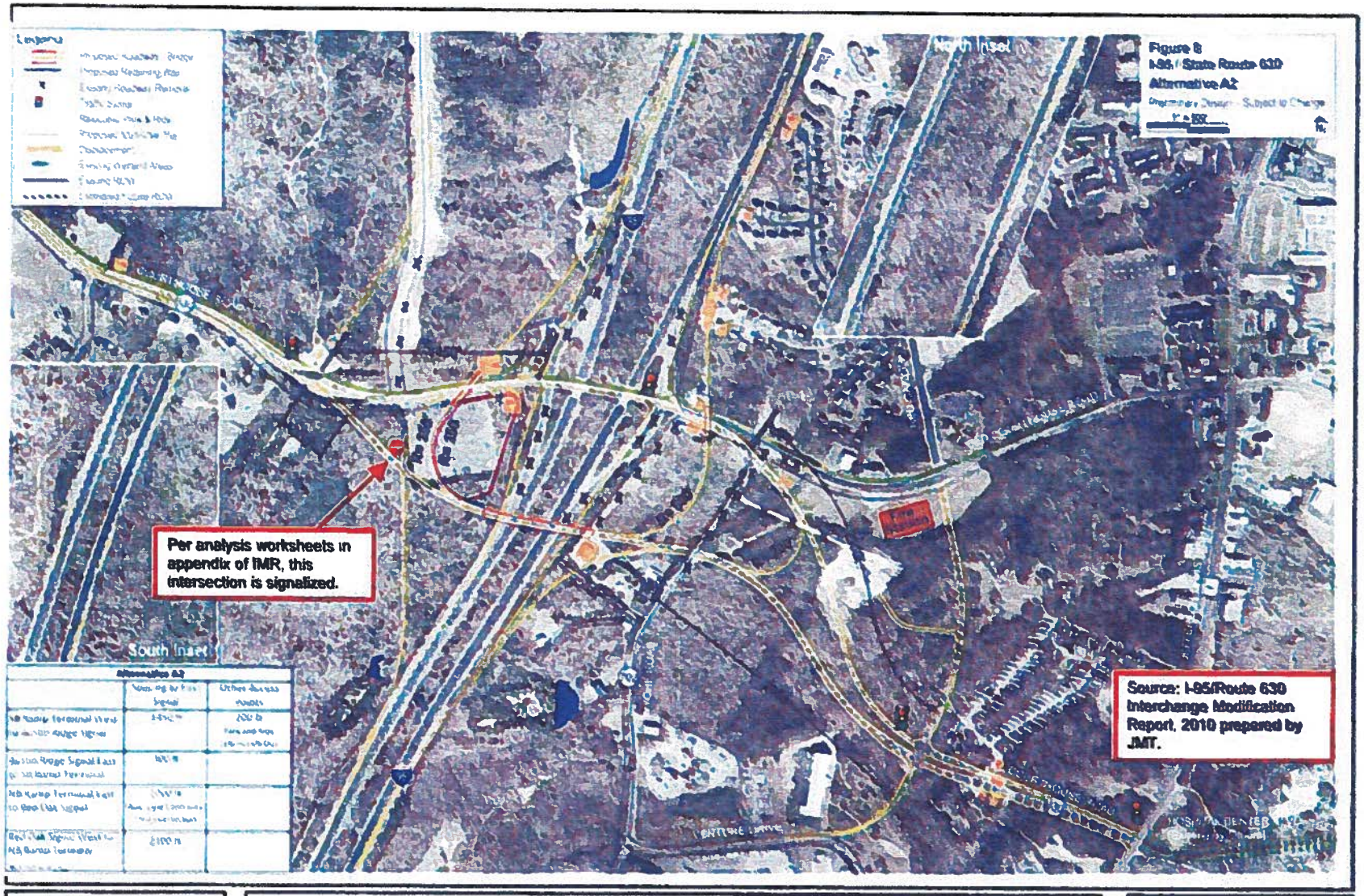
PROPOSED LANEAGE TOTAL FUTURE 2020/2026
Proposed Westgate Center
Traffic Impact Analysis – Stafford County, Virginia

FIGURE EX-2
Page 6
Revised January, 2012

BCG Project # 9350-01-001

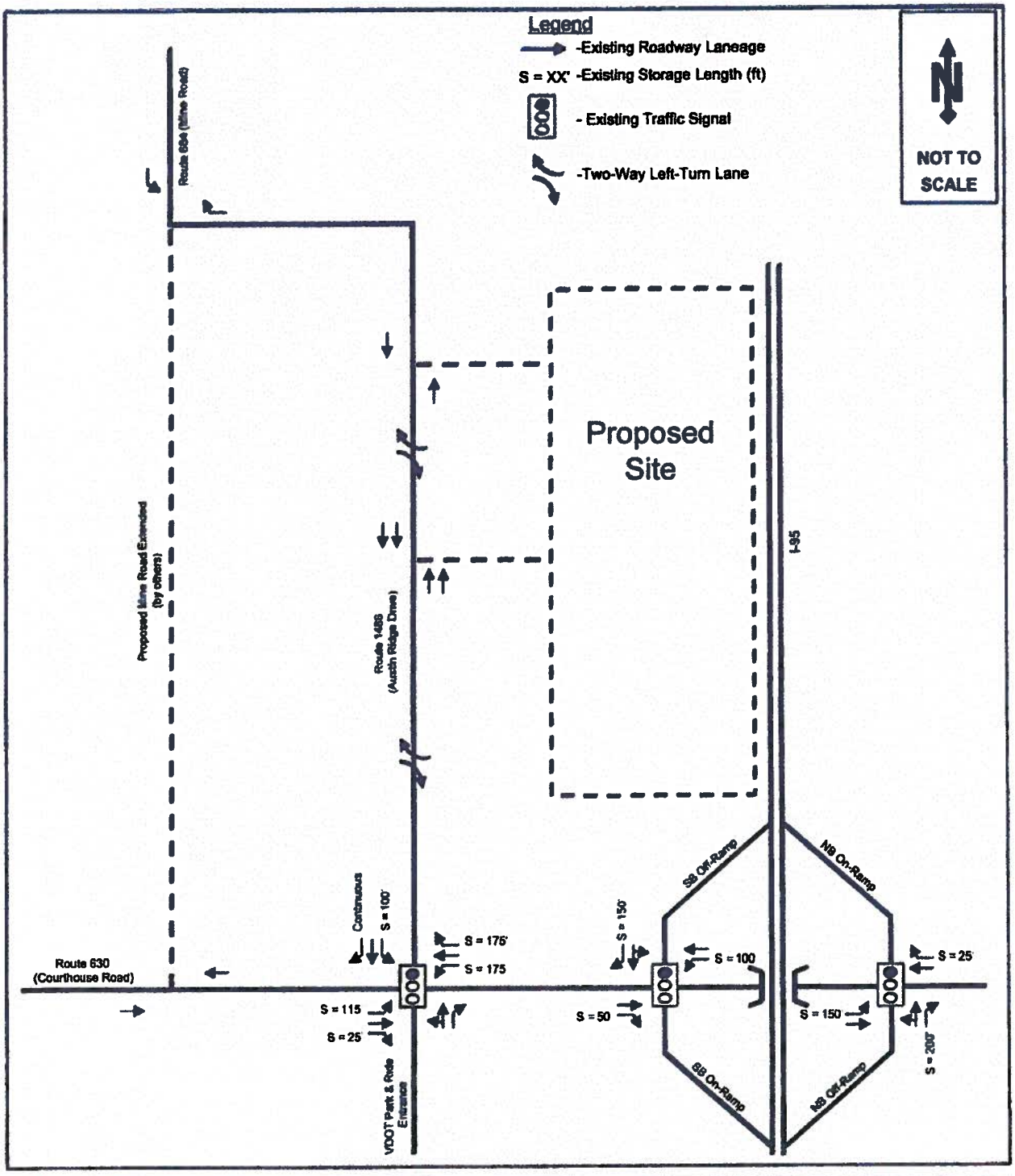


Bowman

CONCEPTUAL I-95/RTE. 630 INTERCHANGE RECONSTRUCTION – ALTERNATIVE A2
Proposed Westgate Center
Traffic Impact Analysis – Stafford County, Virginia

FIGURE 2
Page 11

BCG Project # 2010-01-001



Bowman

EXISTING LANEAGE (2010)
Proposed Westgate Center
Traffic Impact Analysis – Stafford County, Virginia

FIGURE 6
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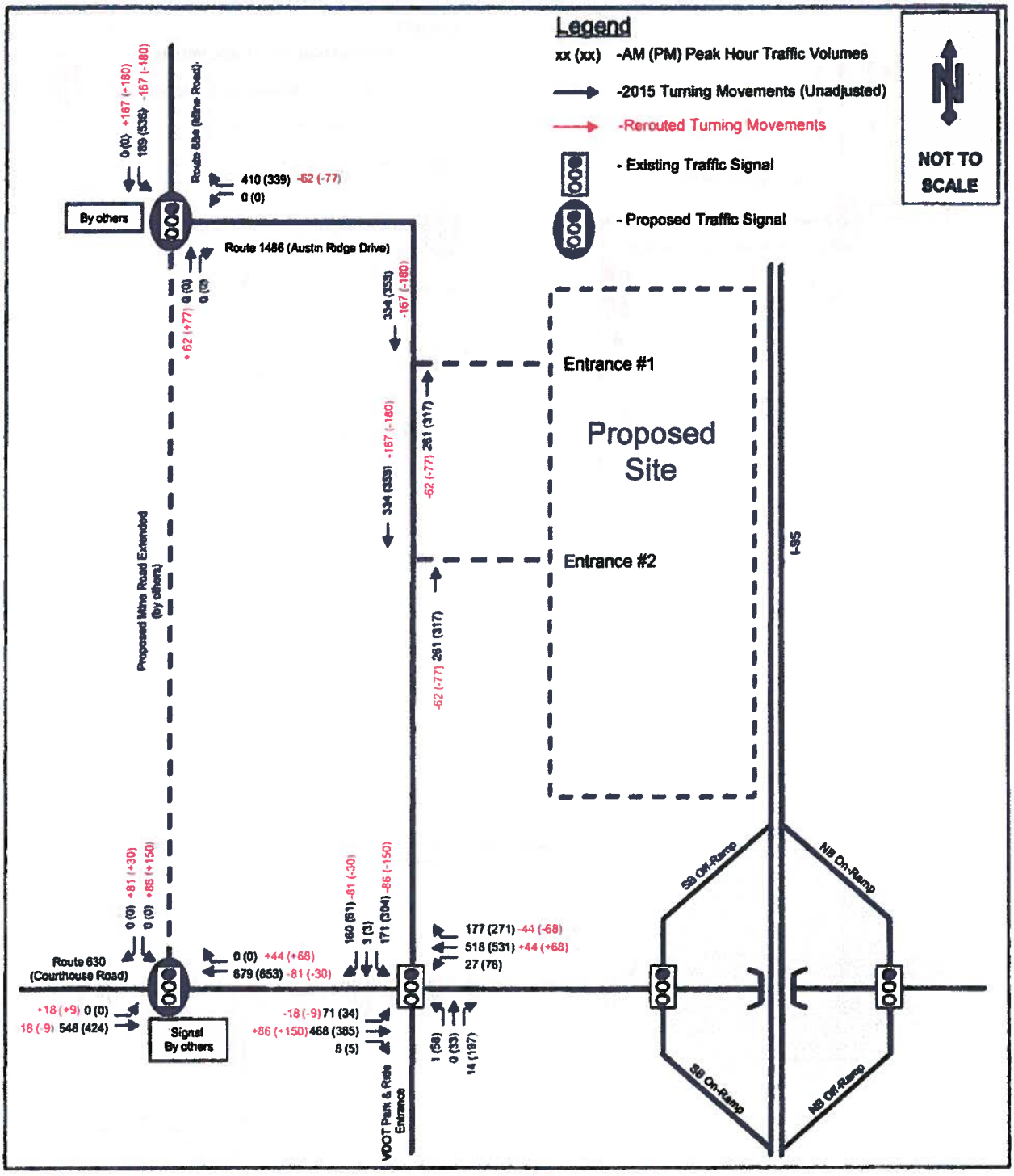
Revised January, 2012

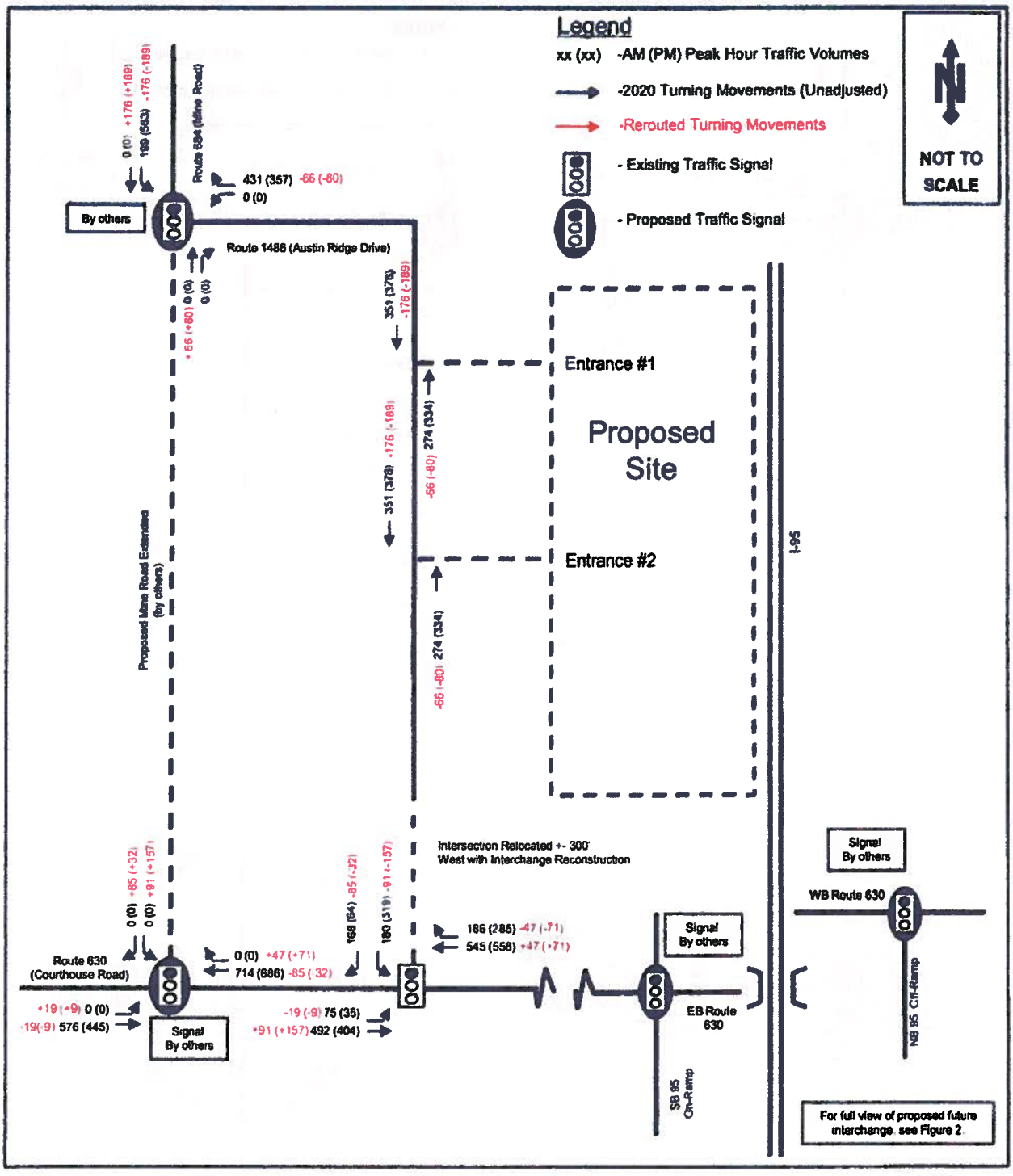
BCG Project # 9350-01-001



MINE ROAD EXTENDED REROUTES (2015)
Proposed Westgate Center
Traffic Impact Analysis – Stafford County, Virginia

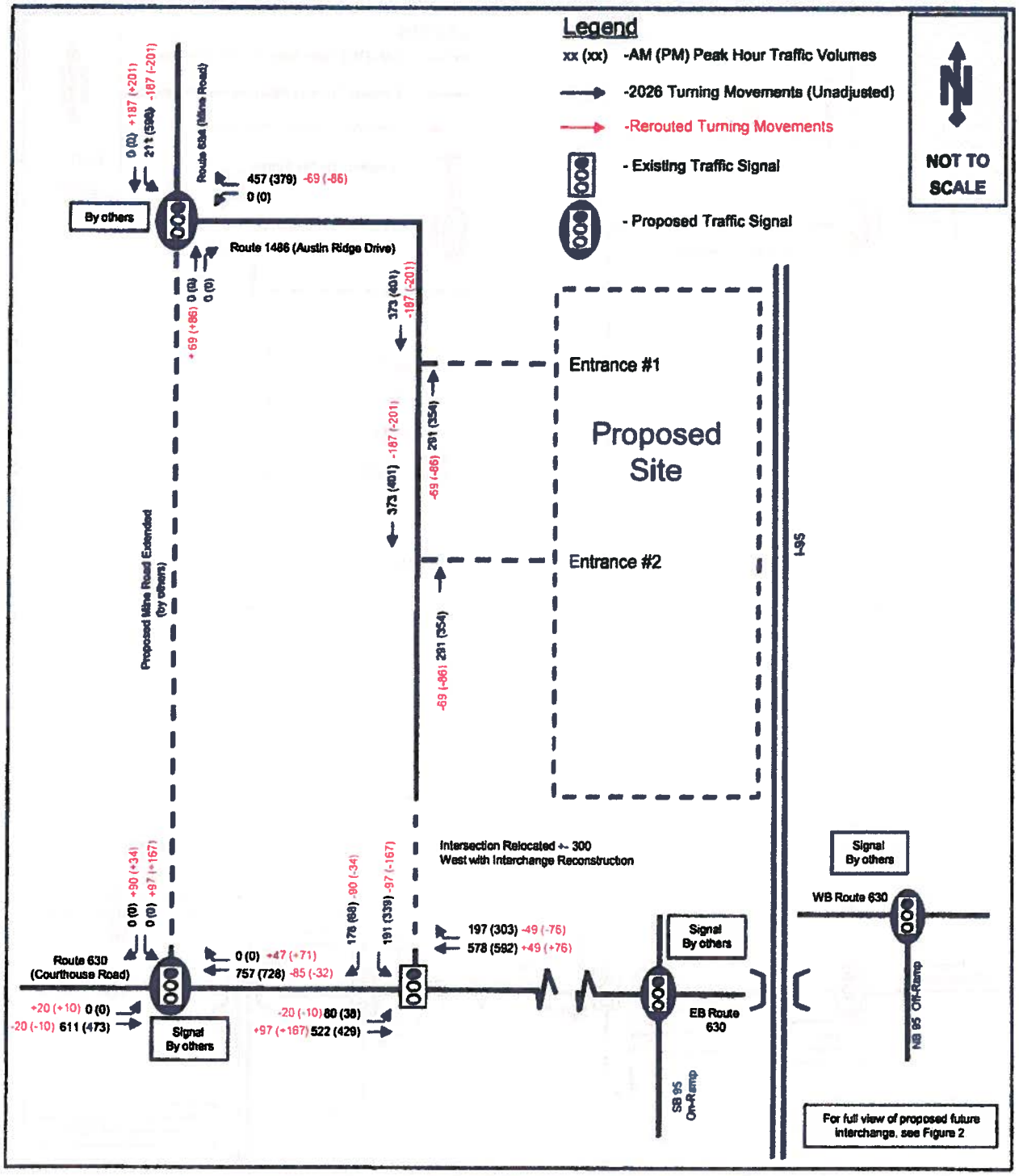
FIGURE 7A

BCG Project # 9350-01-001



Bowman	MINE ROAD EXTENDED REROUTES (2020) Proposed Westgate Center Traffic Impact Analysis – Stafford County, Virginia	FIGURE 7B

BCG Project # 9350-01-001

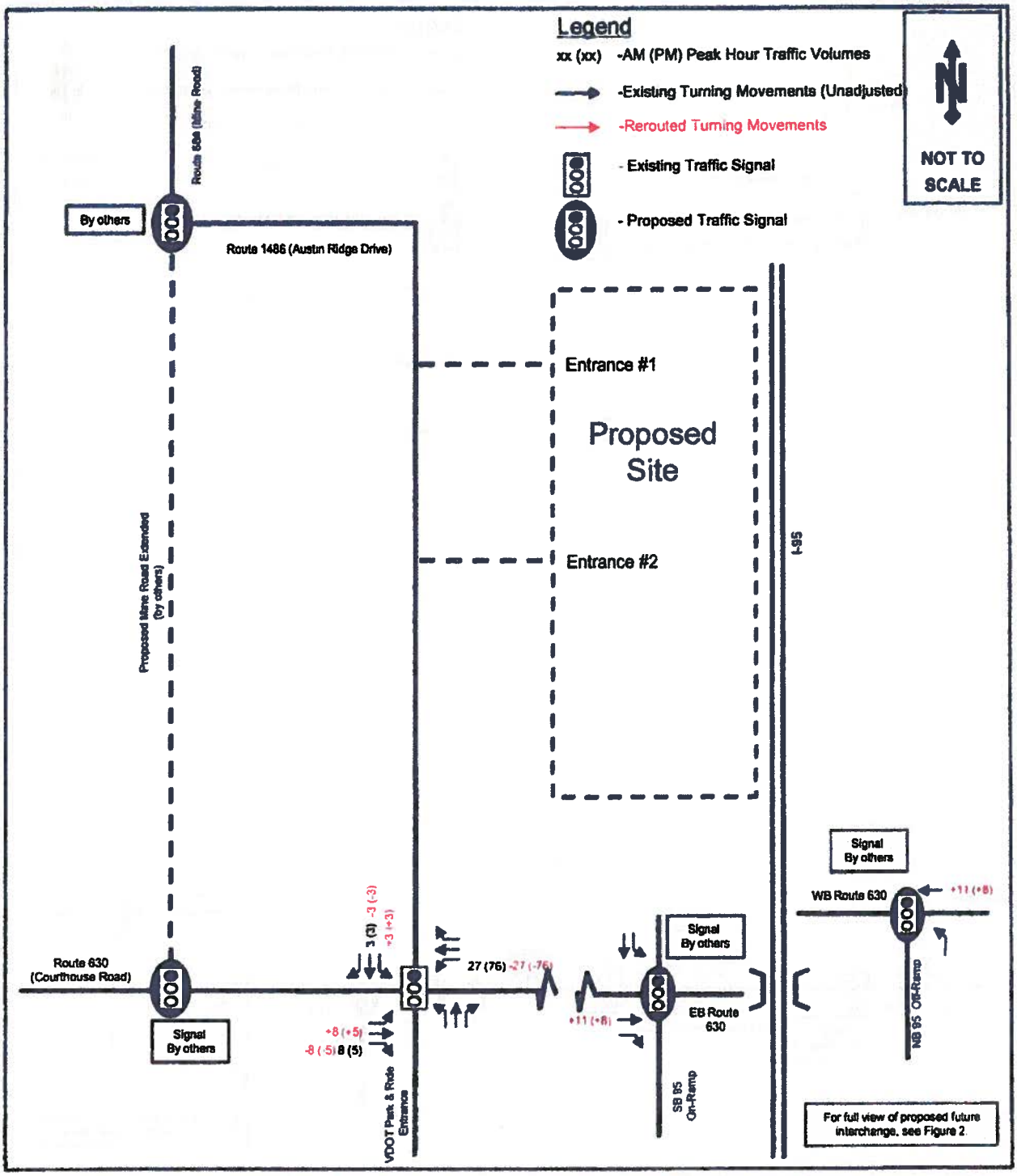


Bowman

MINE ROAD EXTENDED REROUTES (2026)
Proposed Westgate Center
Traffic Impact Analysis – Stafford County, Virginia

FIGURE 7C

BCG Project # 9350-01-001

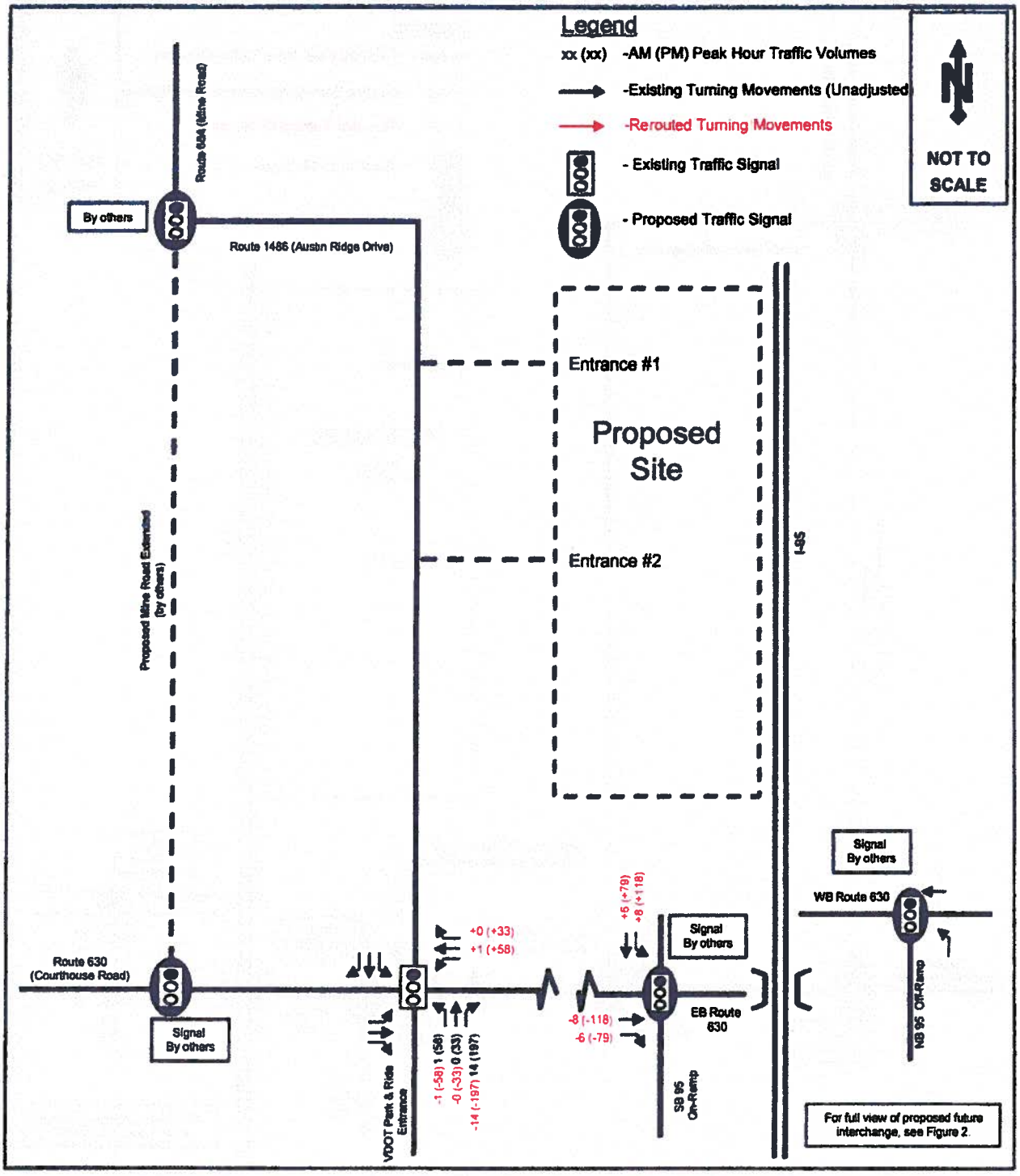


Bowman

PARK AND RIDE REROUTES - INBOUND
Proposed Westgate Center
Traffic Impact Analysis – Stafford County, Virginia

FIGURE 7D

BCG Project # 9350-01-001

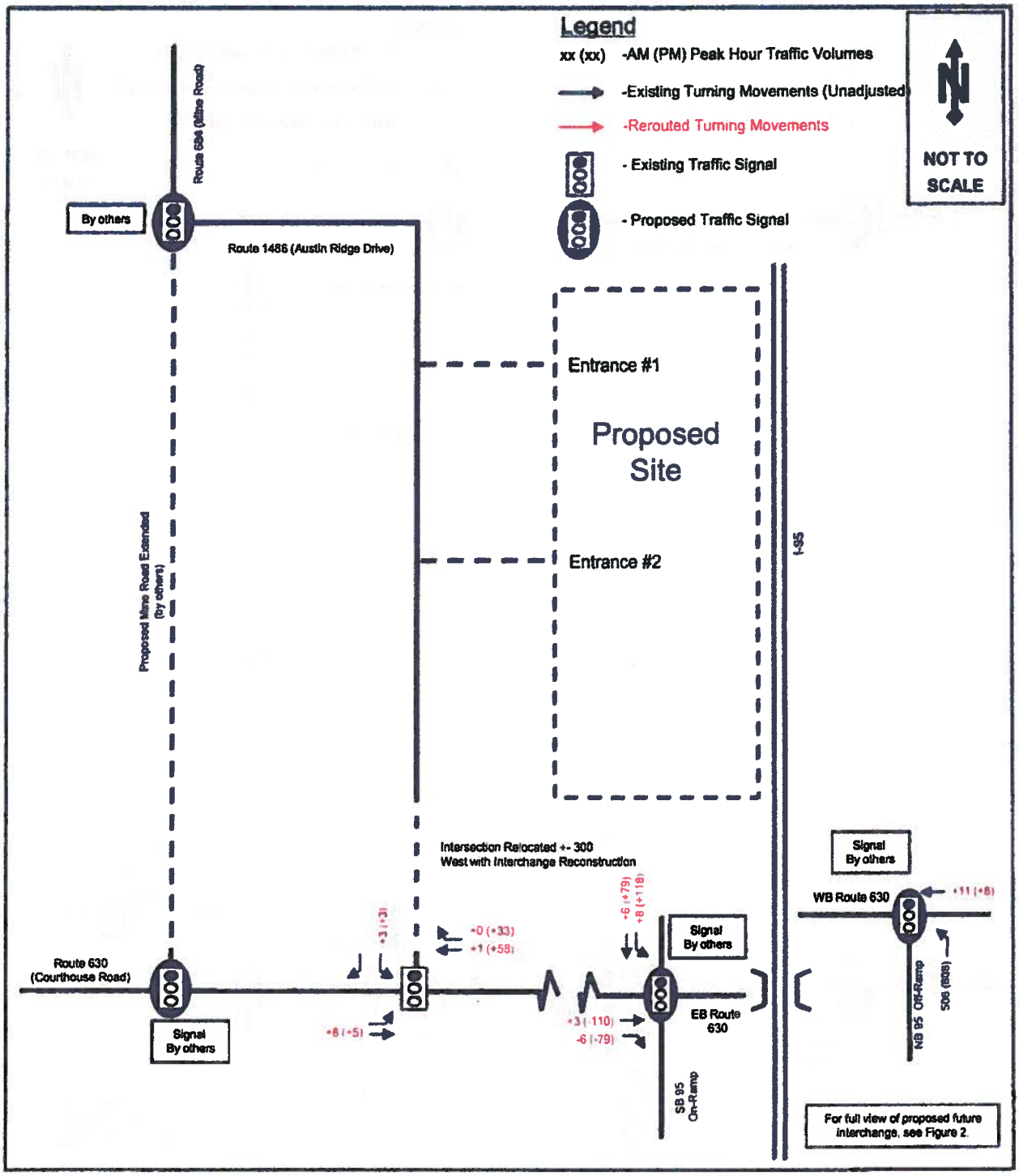


Bowman

PARK AND RIDE REROUTES - OUTBOUND
Proposed Westgate Center
Traffic Impact Analysis – Stafford County, Virginia

FIGURE 7E

BCG Project # 9350-01-001

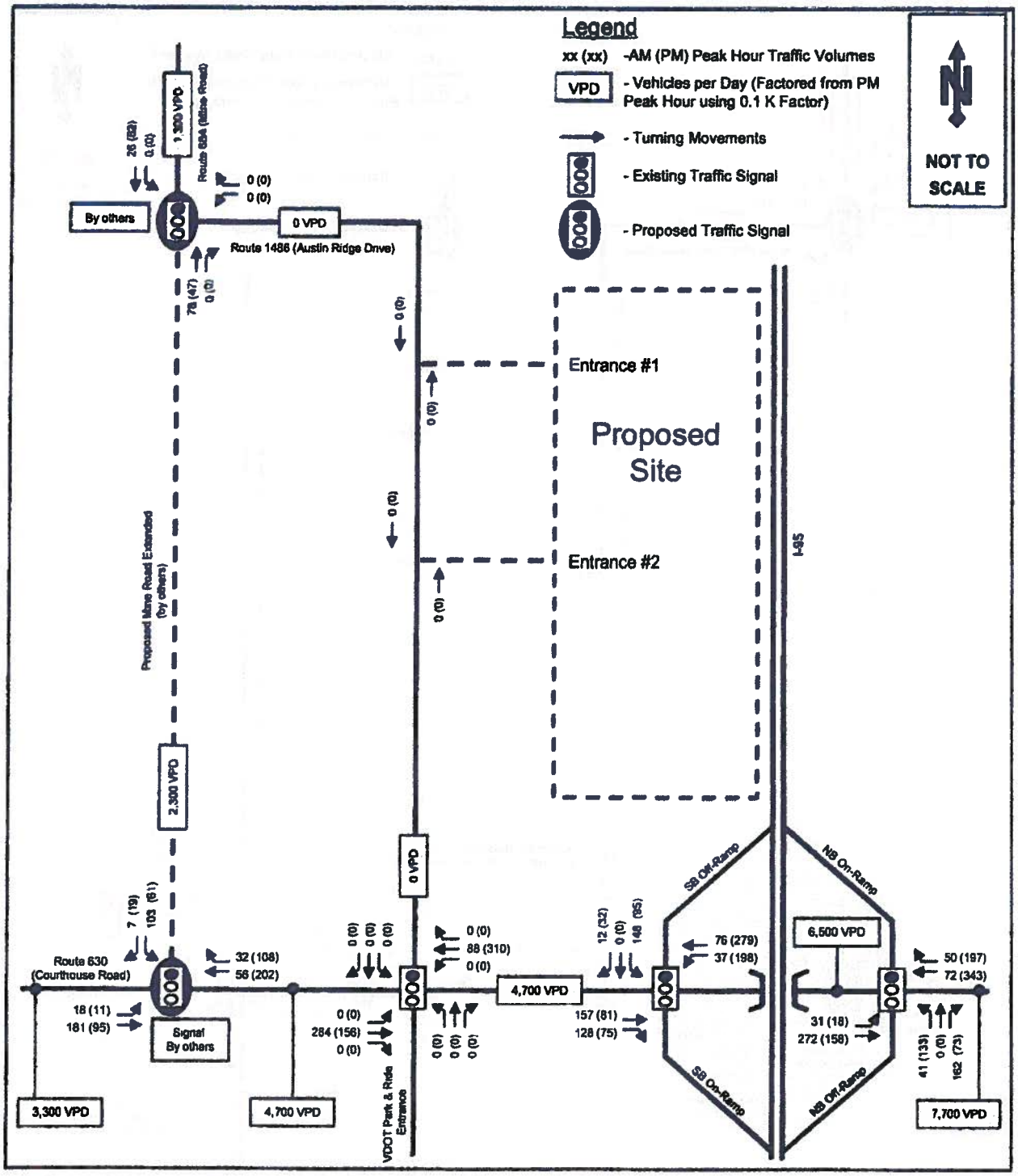


Bowman

PARK AND RIDE REROUTES - OVERALL
Proposed Westgate Center
Traffic Impact Analysis – Stafford County, Virginia

FIGURE 7F

BCG Project # 9350-01-001

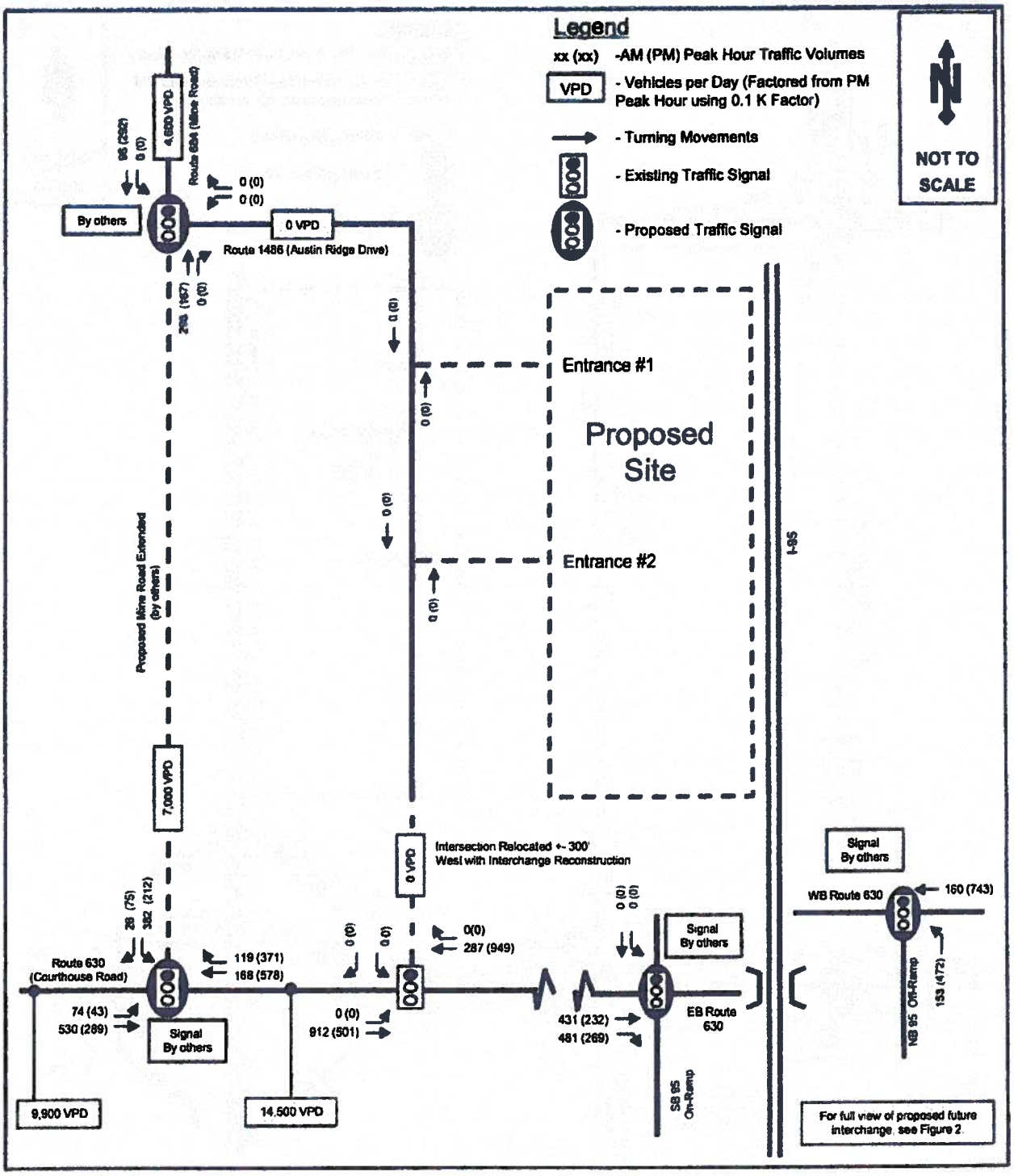


Bowman

APPROVED/UNBUILTS (2015)
Proposed Westgate Center
Traffic Impact Analysis – Stafford County, Virginia

FIGURE 9A

BCG Project # 9350-01-001



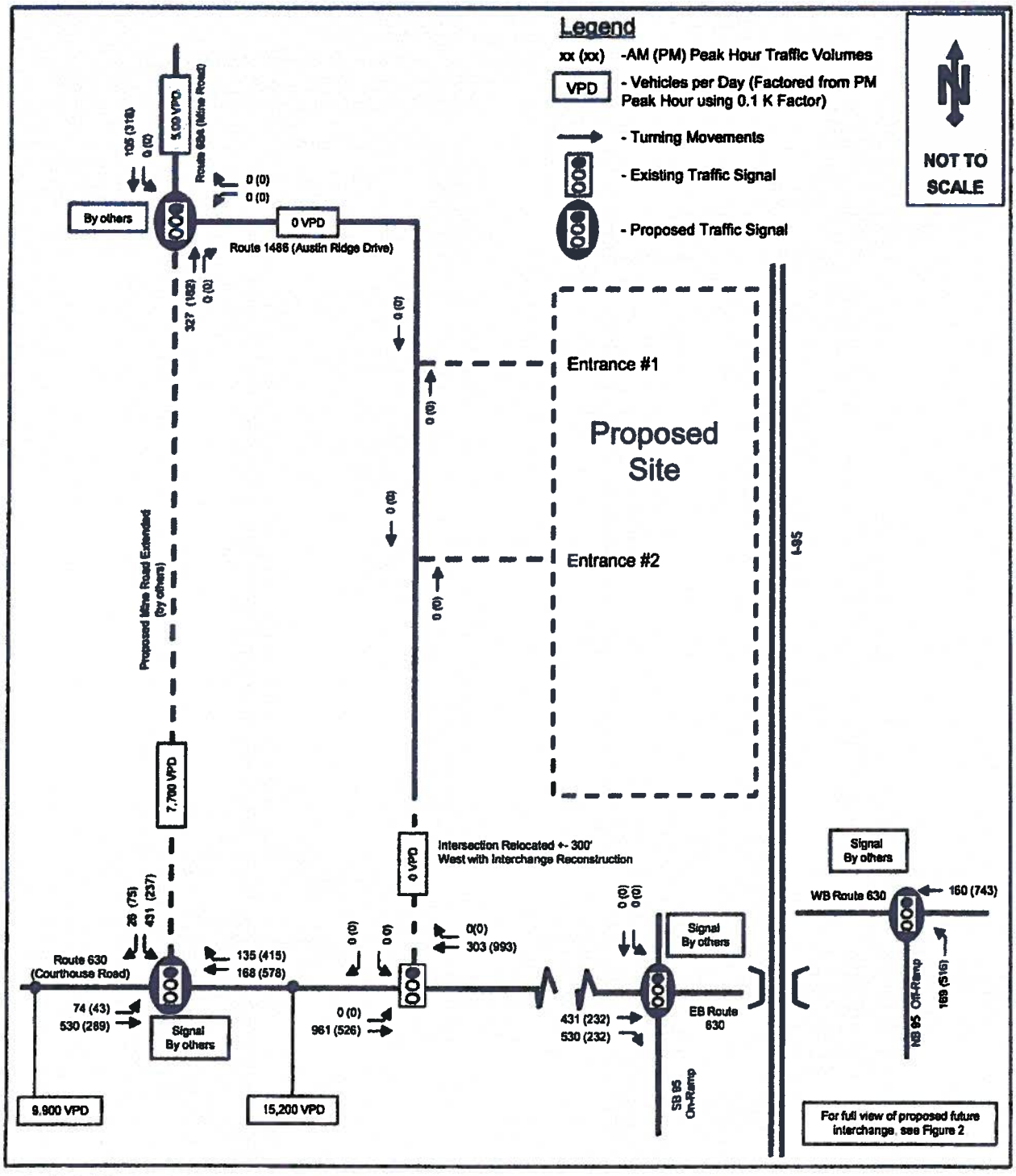
Bowman

APPROVED/UNBUILTS (2020)

Proposed Westgate Center
Traffic Impact Analysis – Stafford County, Virginia

FIGURE 9B

BCG Project # 9350-01-001

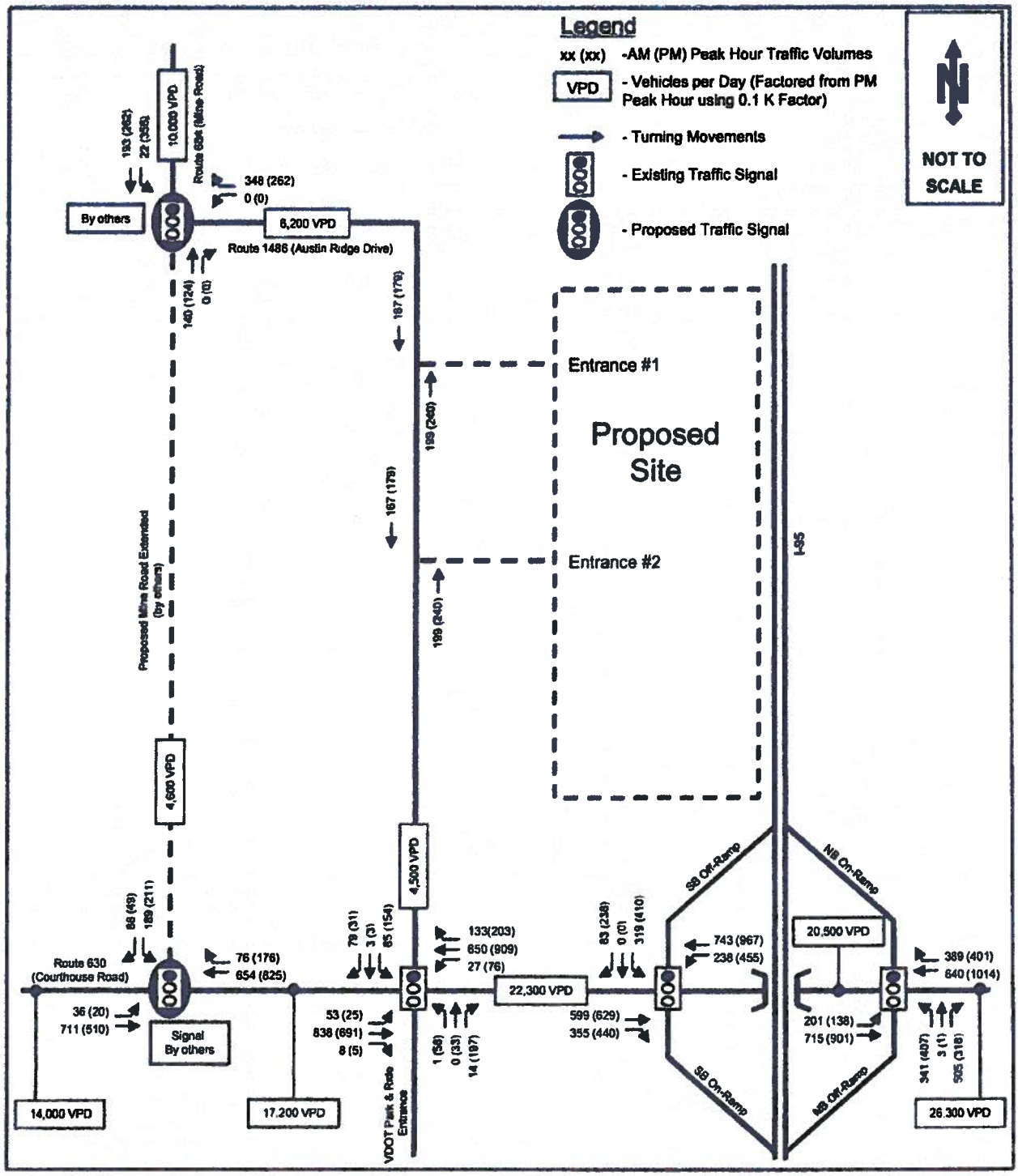


Bowman

APPROVED/UNBUILTS (2026)
Proposed Westgate Center
Traffic Impact Analysis – Stafford County, Virginia

FIGURE 9C

BCG Project # 9350-01-001



Bowman

PROJECTED BACKGROUND 2015

Proposed Westgate Center
Traffic Impact Analysis – Stafford County, Virginia

FIGURE 14
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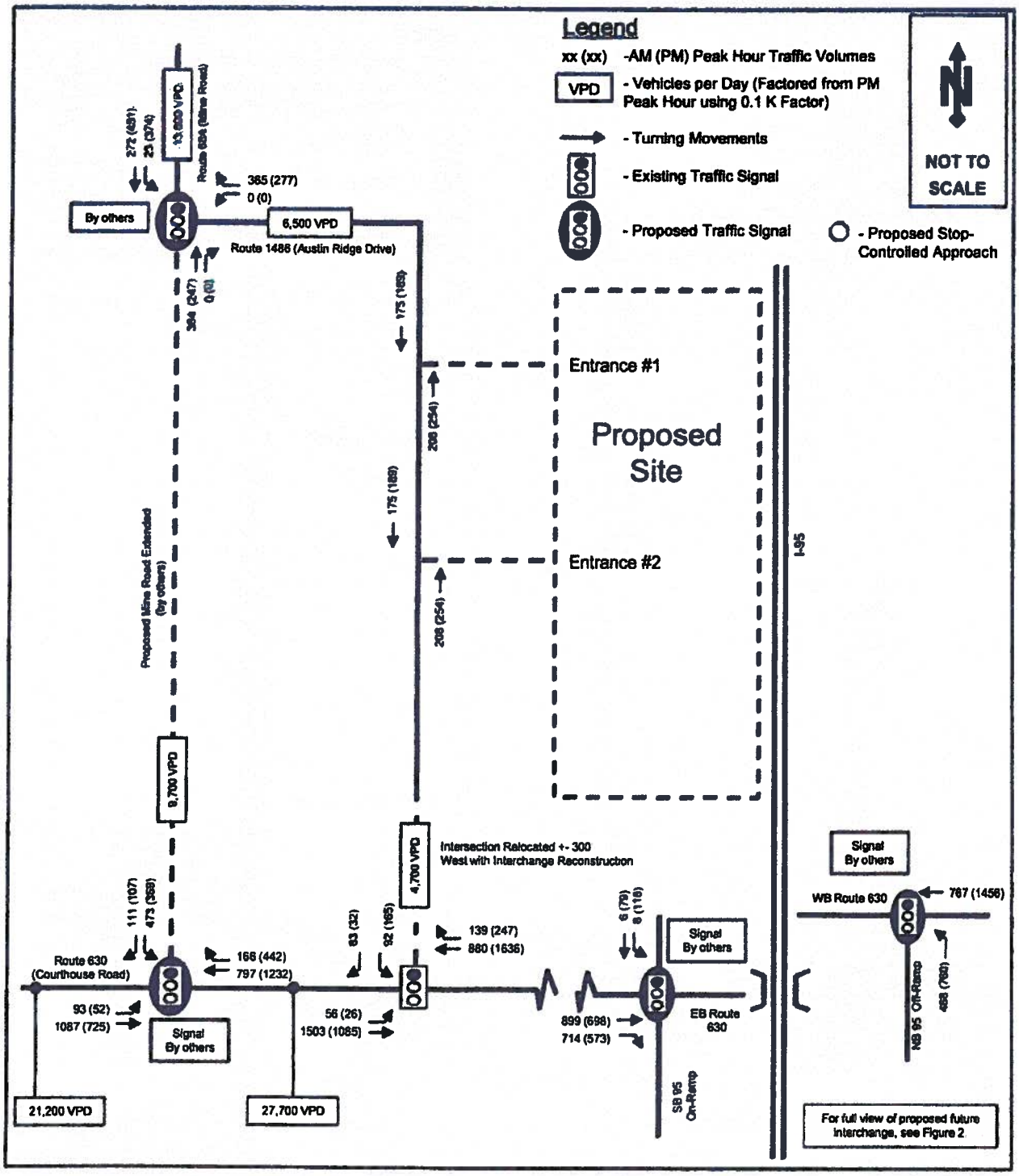
BCG Project # 9350-01-001



Bowman

PROJECTED BACKGROUND 2020

Proposed Westgate Center

Traffic Impact Analysis -- Stafford County, Virginia

FIGURE 15
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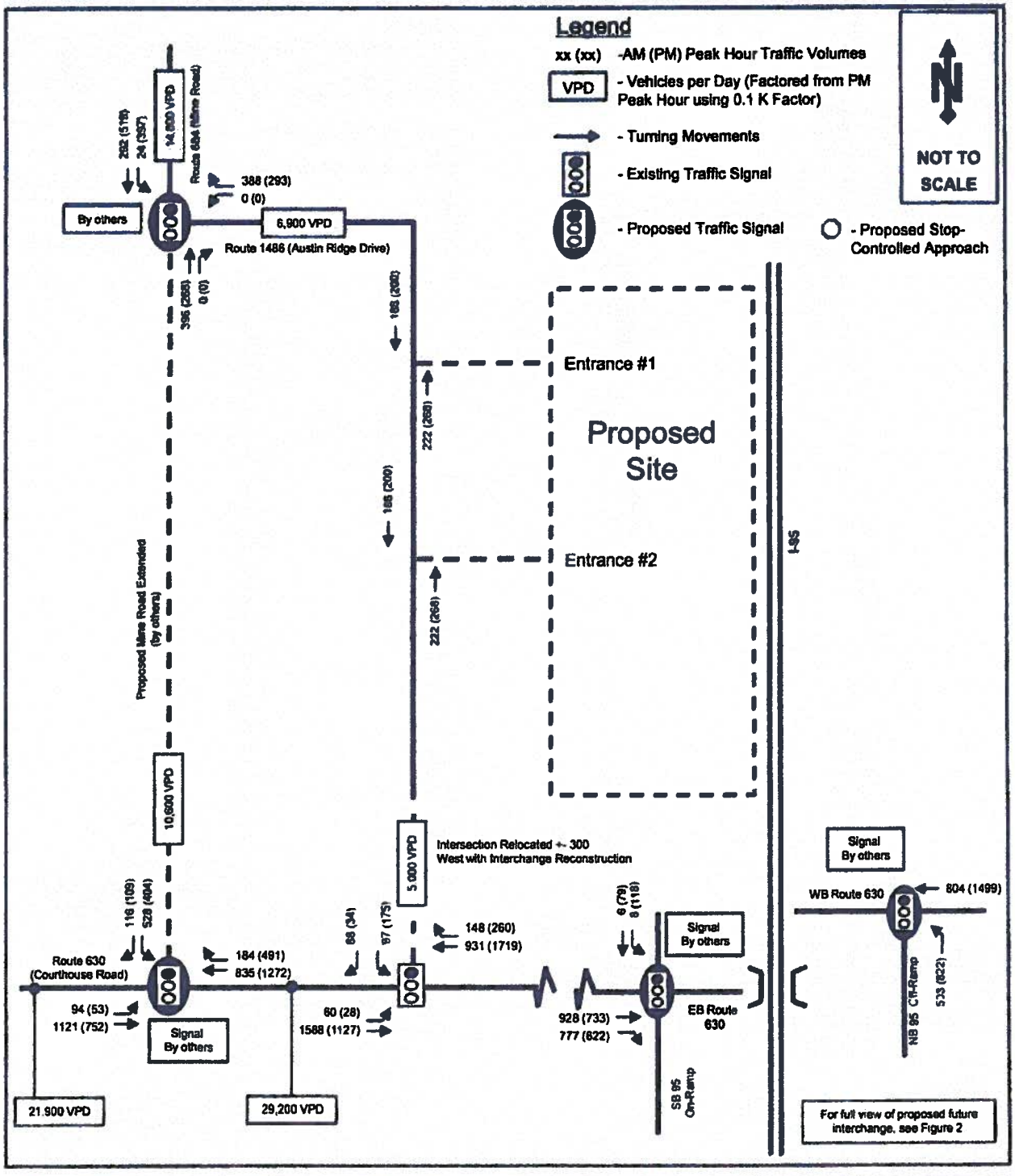
BCG Project # 9350-01-001



Bowman

PROJECTED BACKGROUND 2026

Proposed Westgate Center
Traffic Impact Analysis – Stafford County, Virginia

FIGURE 16
Page 54
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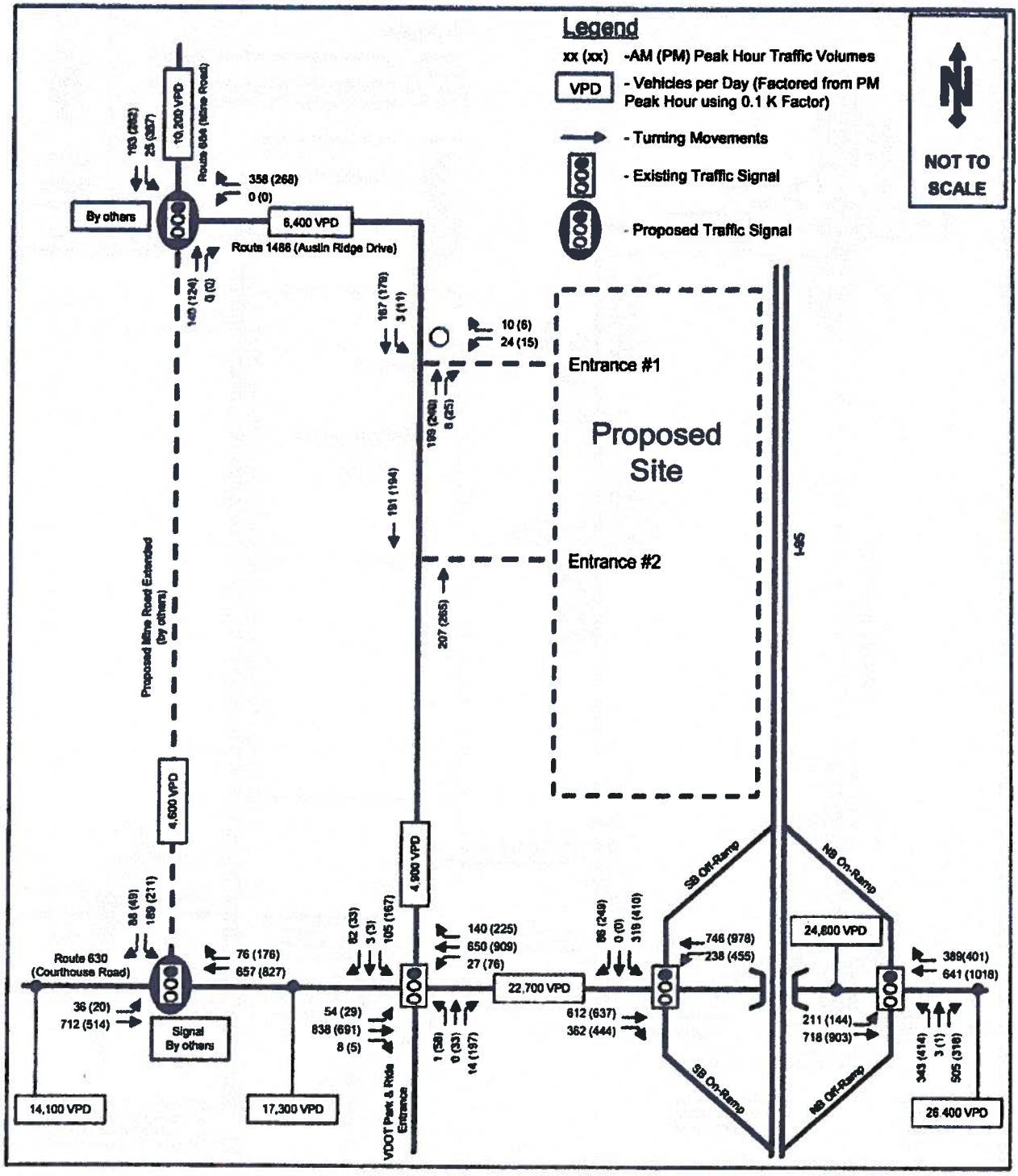
BCG Project # 9350-01-001



Bowman

PROJECTED TOTAL FUTURE 2015

Proposed Westgate Center
Traffic Impact Analysis – Stafford County, Virginia

FIGURE 17
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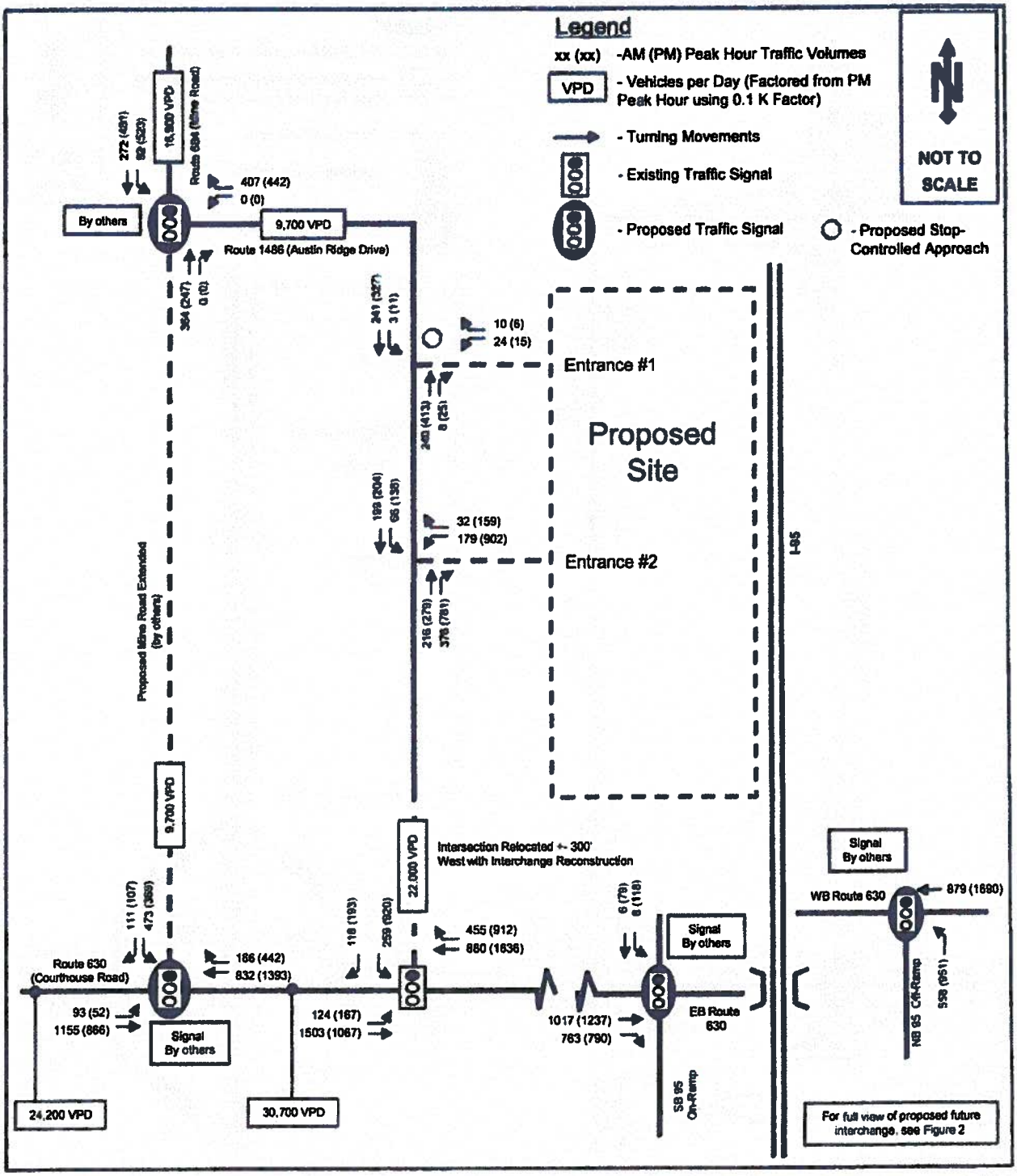
BCG Project # 9350-01-001



Bowman

PROJECTED TOTAL FUTURE 2020

Proposed Westgate Center

Traffic Impact Analysis – Stafford County, Virginia

FIGURE 18

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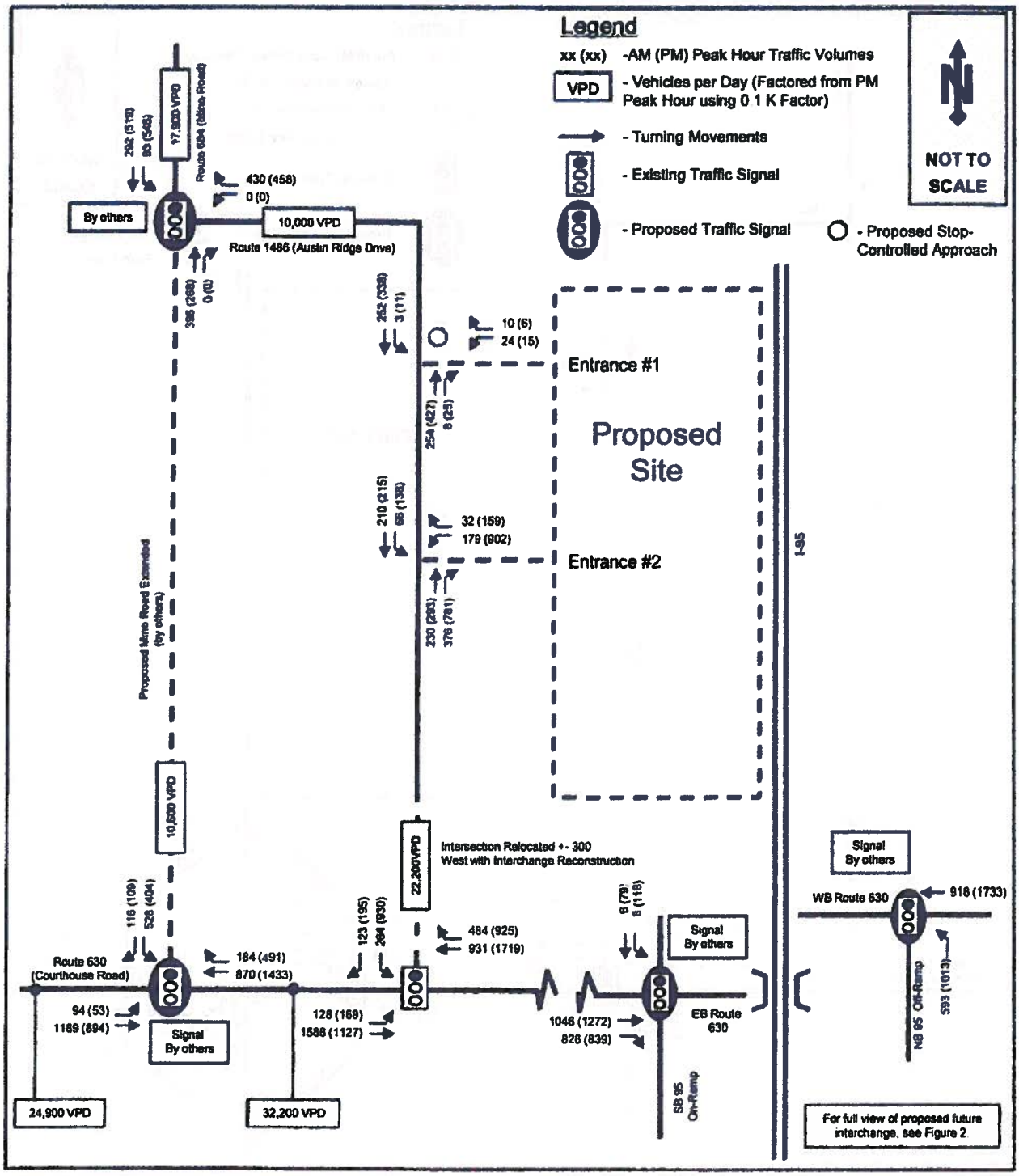
BCG Project # 9350-01-001



Bowman

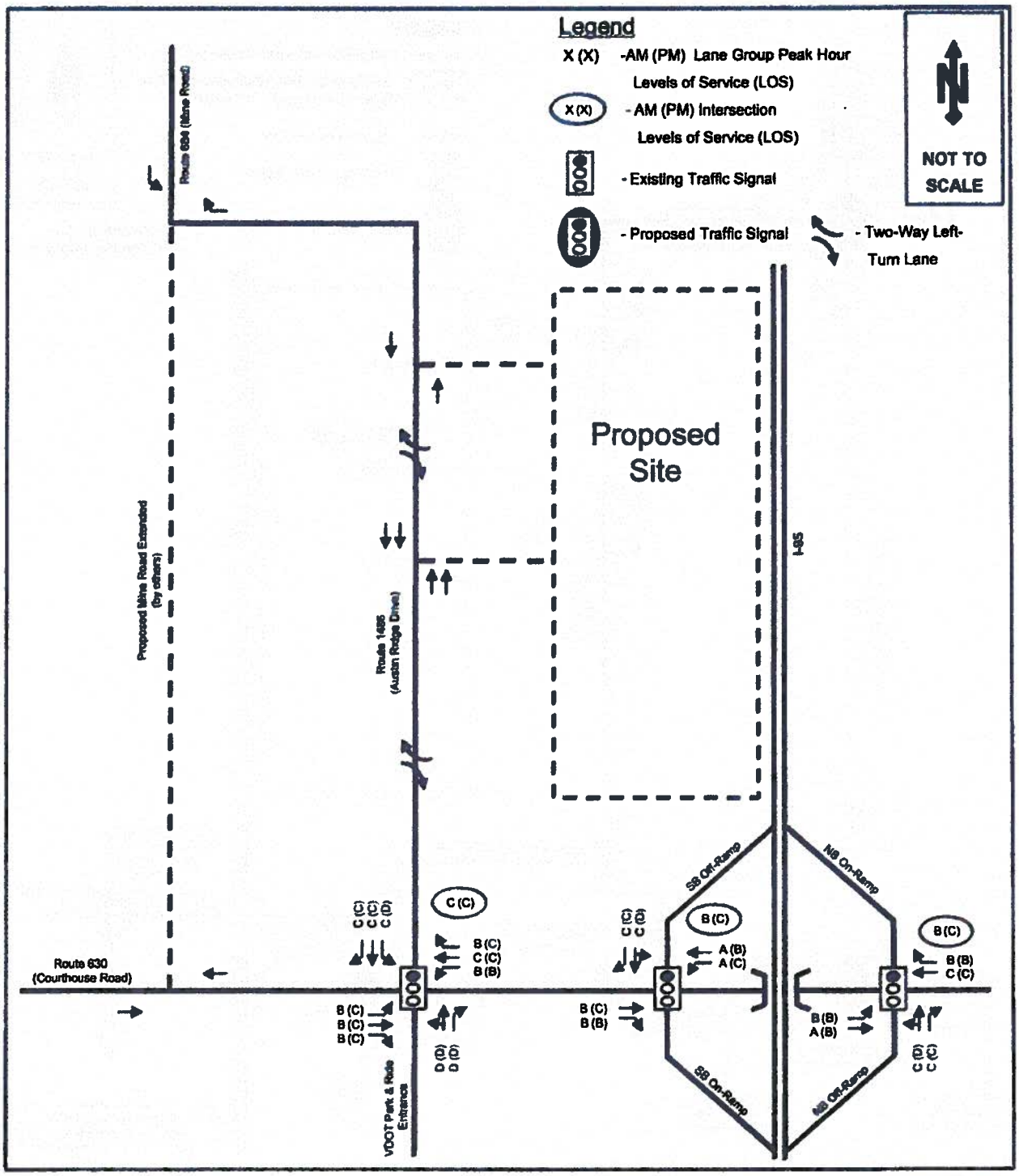
PROJECTED TOTAL FUTURE 2026

Proposed Westgate Center

Traffic Impact Analysis – Stafford County, Virginia

FIGURE 19
Page 57
Revised January, 2012

BCG Project # 9350-01-001



Bowman

EXISTING (2010) LOS

Proposed Westgate Center
Traffic Impact Analysis – Stafford County, Virginia

FIGURE 20
Page 58
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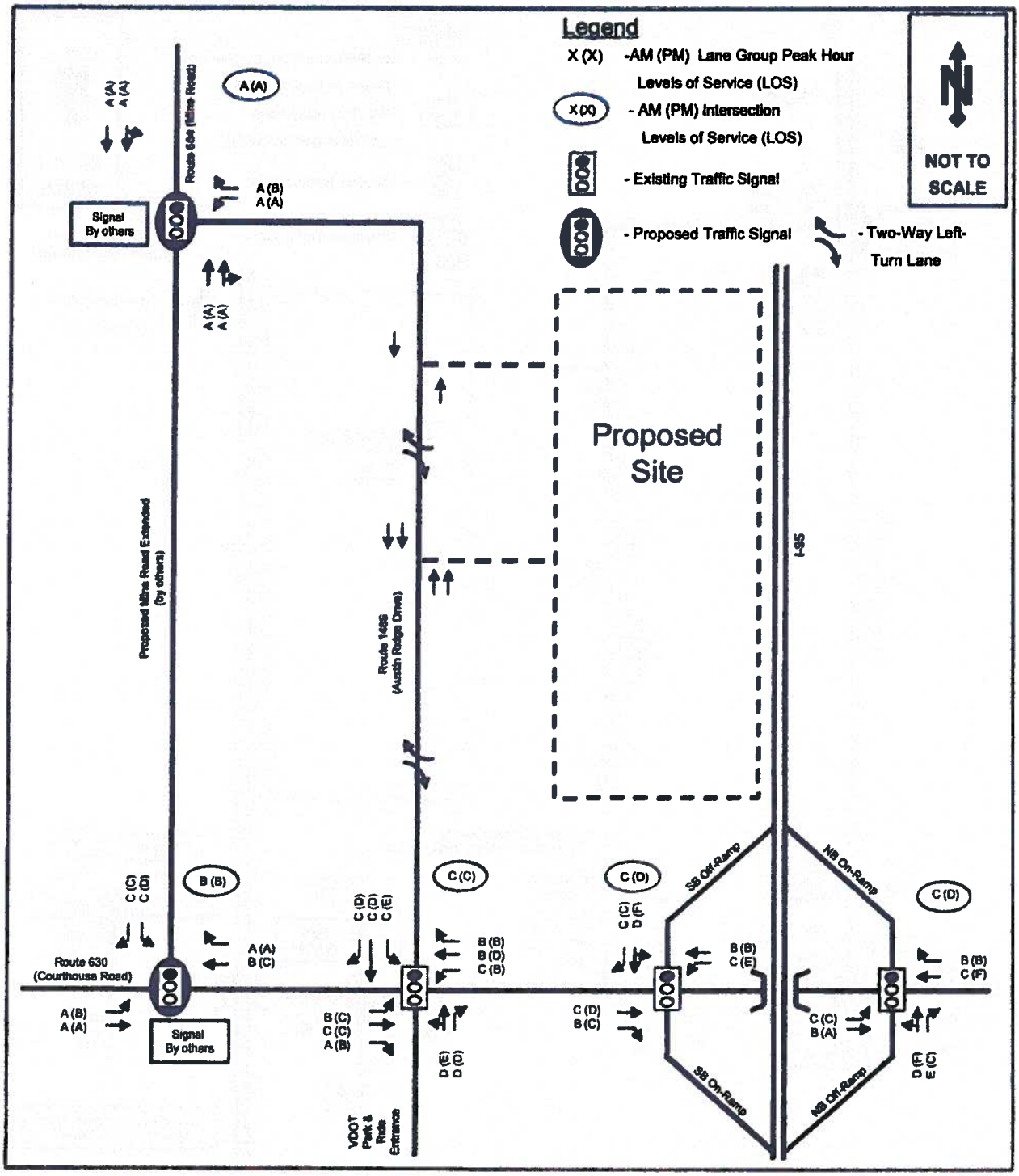
BCG Project # 9350-01-001



Bowman

PROJECTED BACKGROUND 2015 LOS

Proposed Westgate Center
Traffic Impact Analysis – Stafford County, Virginia

FIGURE 21
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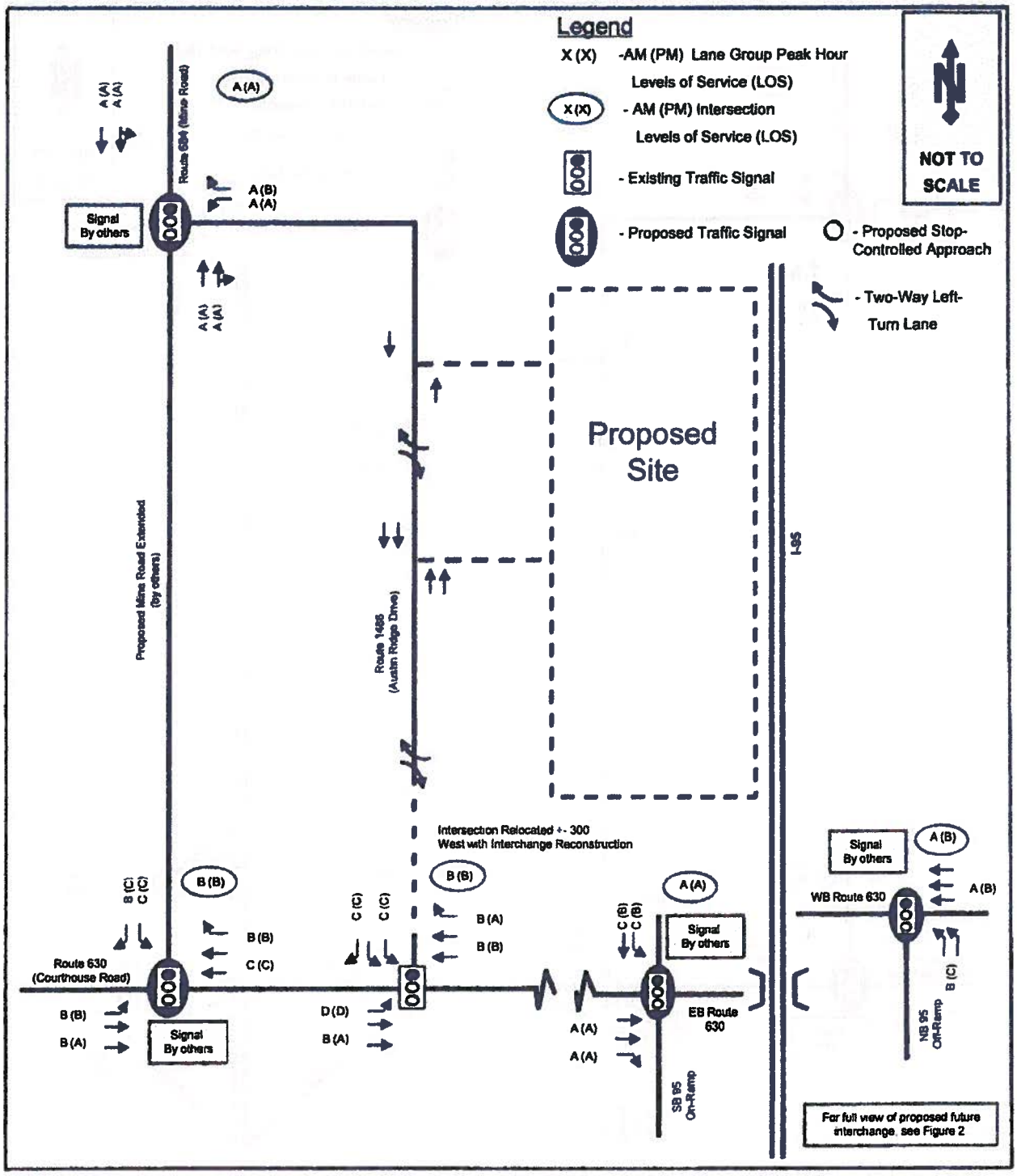
BCG Project # 9350-01-001



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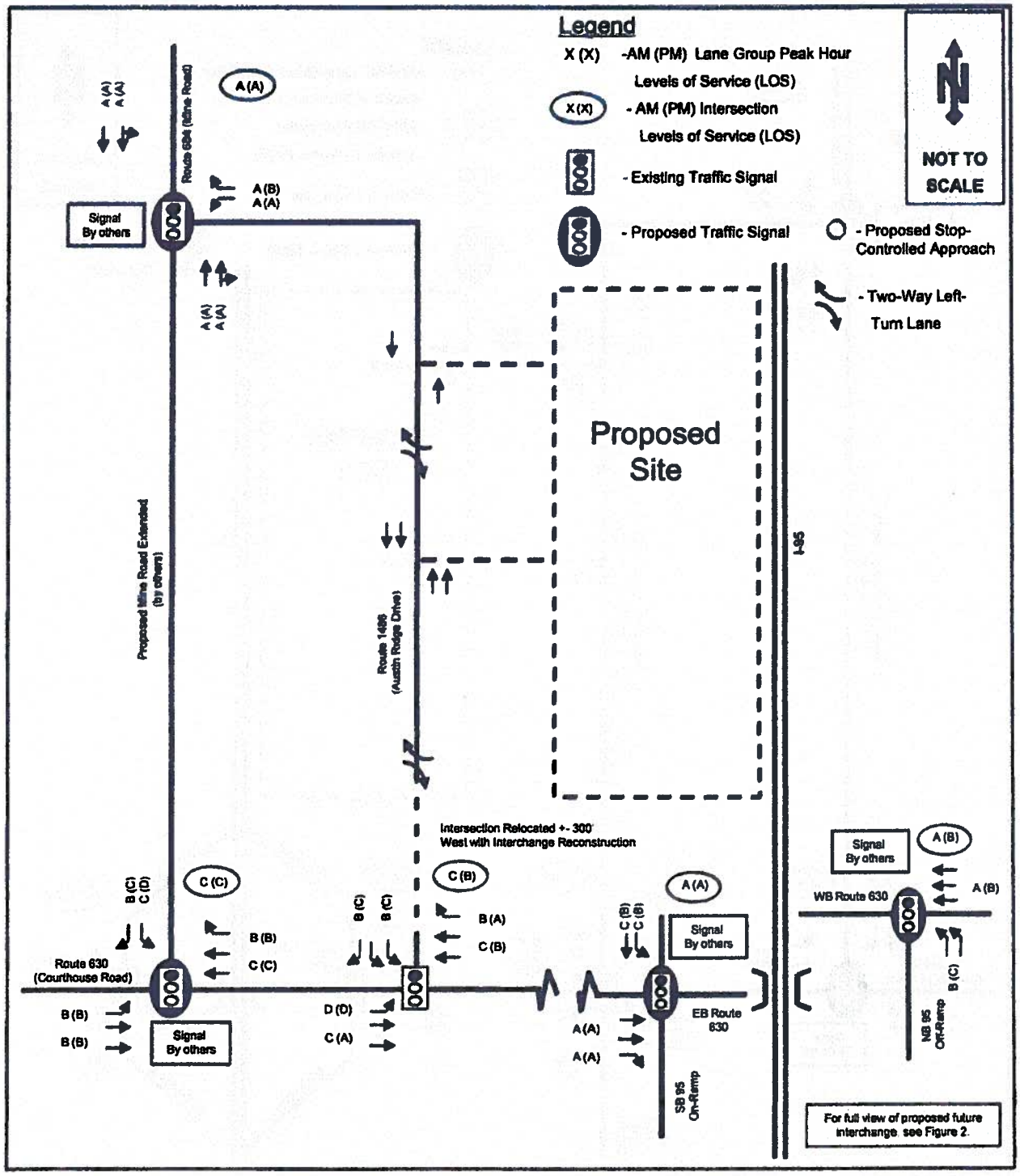
PROJECTED BACKGROUND 2020 LOS

Proposed Westgate Center
Traffic Impact Analysis – Stafford County, Virginia

FIGURE 22
Page 60
Revised January, 2012

BCG Project # 9350-01-001



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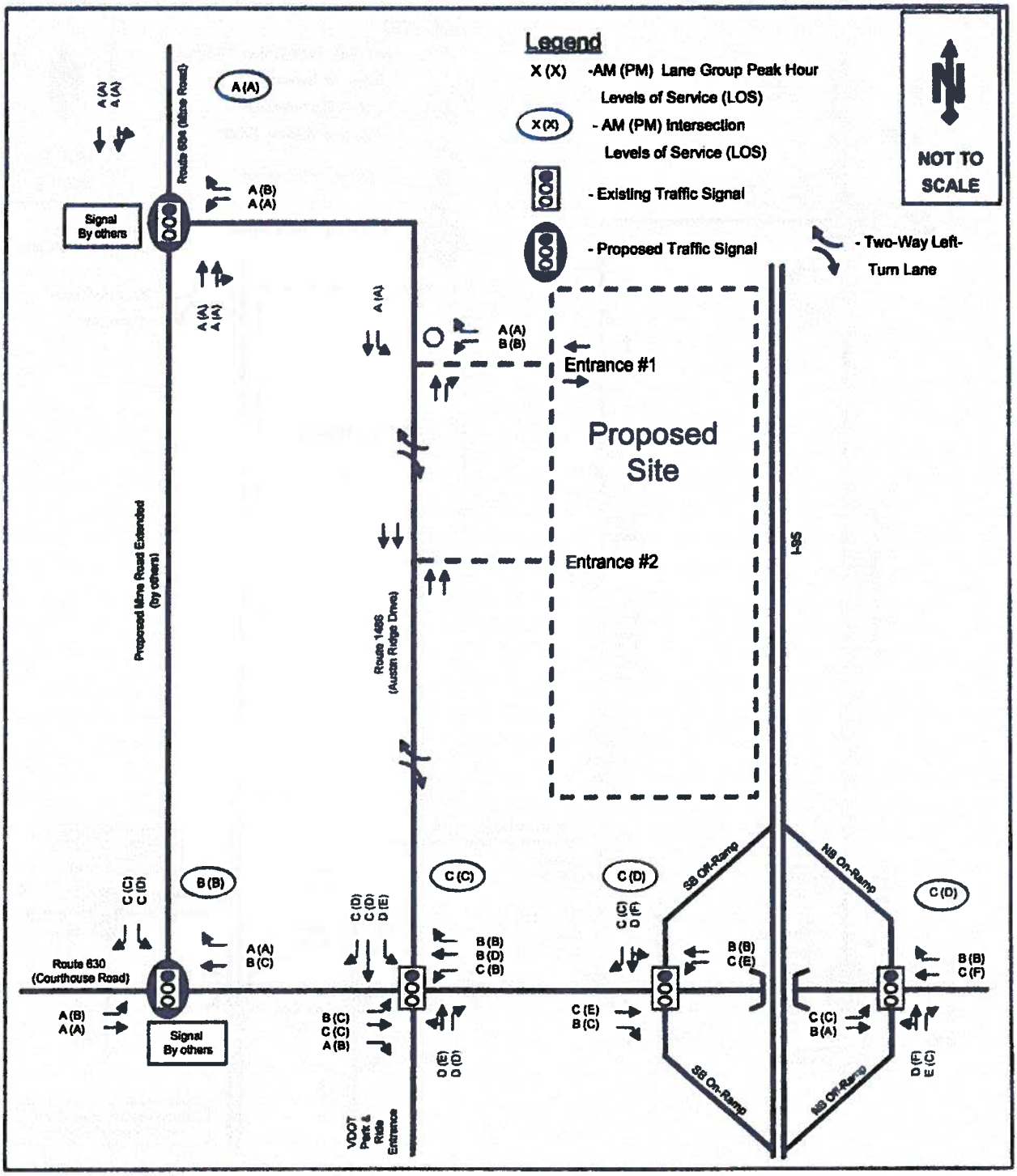
PROJECTED BACKGROUND 2026 LOS
Proposed Westgate Center
Traffic Impact Analysis – Stafford County, Virginia

FIGURE 23
Page 61
Revised January, 2012

BCG Project # 9350-01-001



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PROJECTED TOTAL FUTURE 2015 LOS

Proposed Westgate Center
Traffic Impact Analysis – Stafford County, Virginia

FIGURE 24
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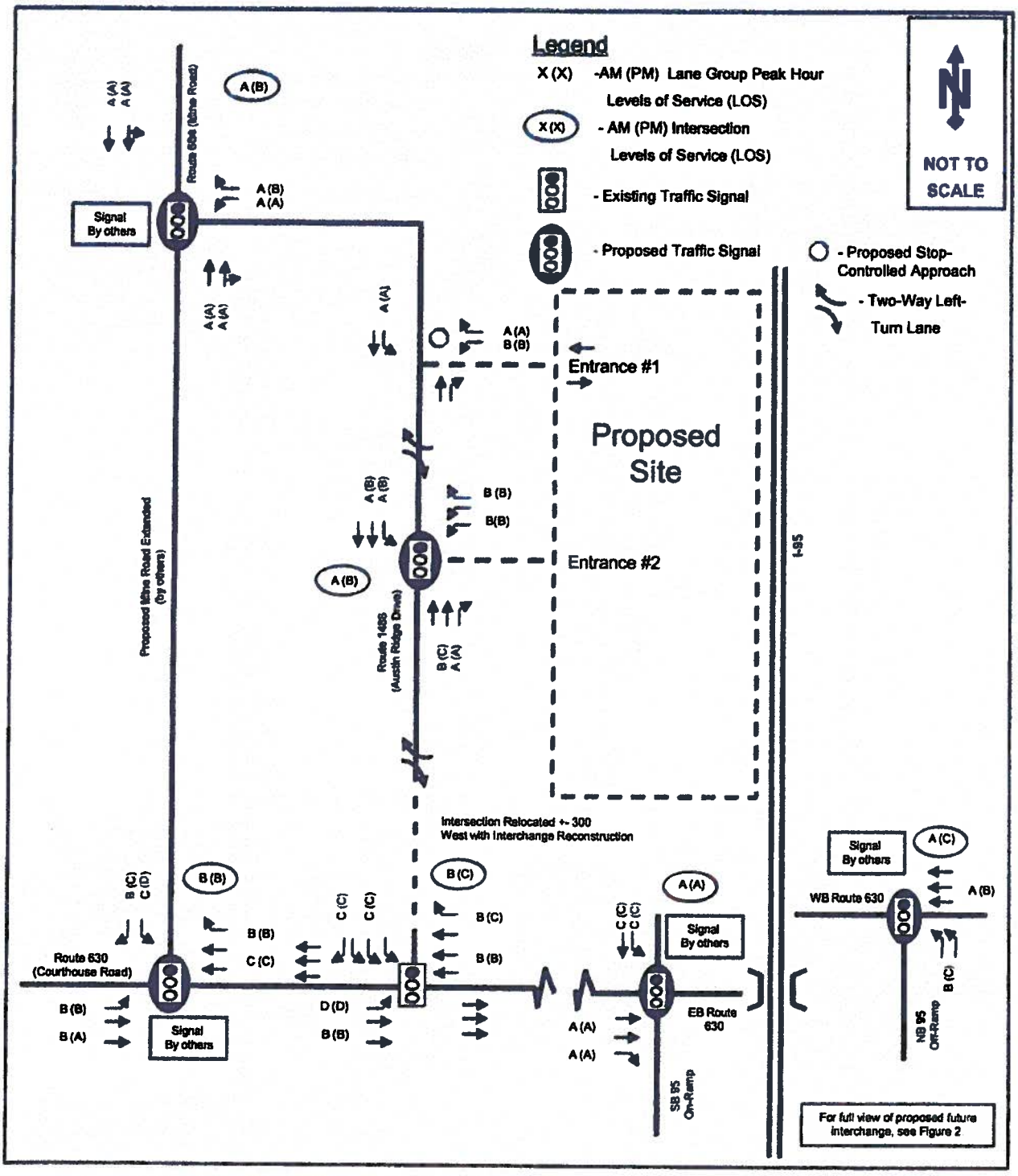
BCG Project # 9350-01-001



Bowman

PROJECTED TOTAL FUTURE 2020 LOS

Proposed Westgate Center
Traffic Impact Analysis – Stafford County, Virginia

FIGURE 25
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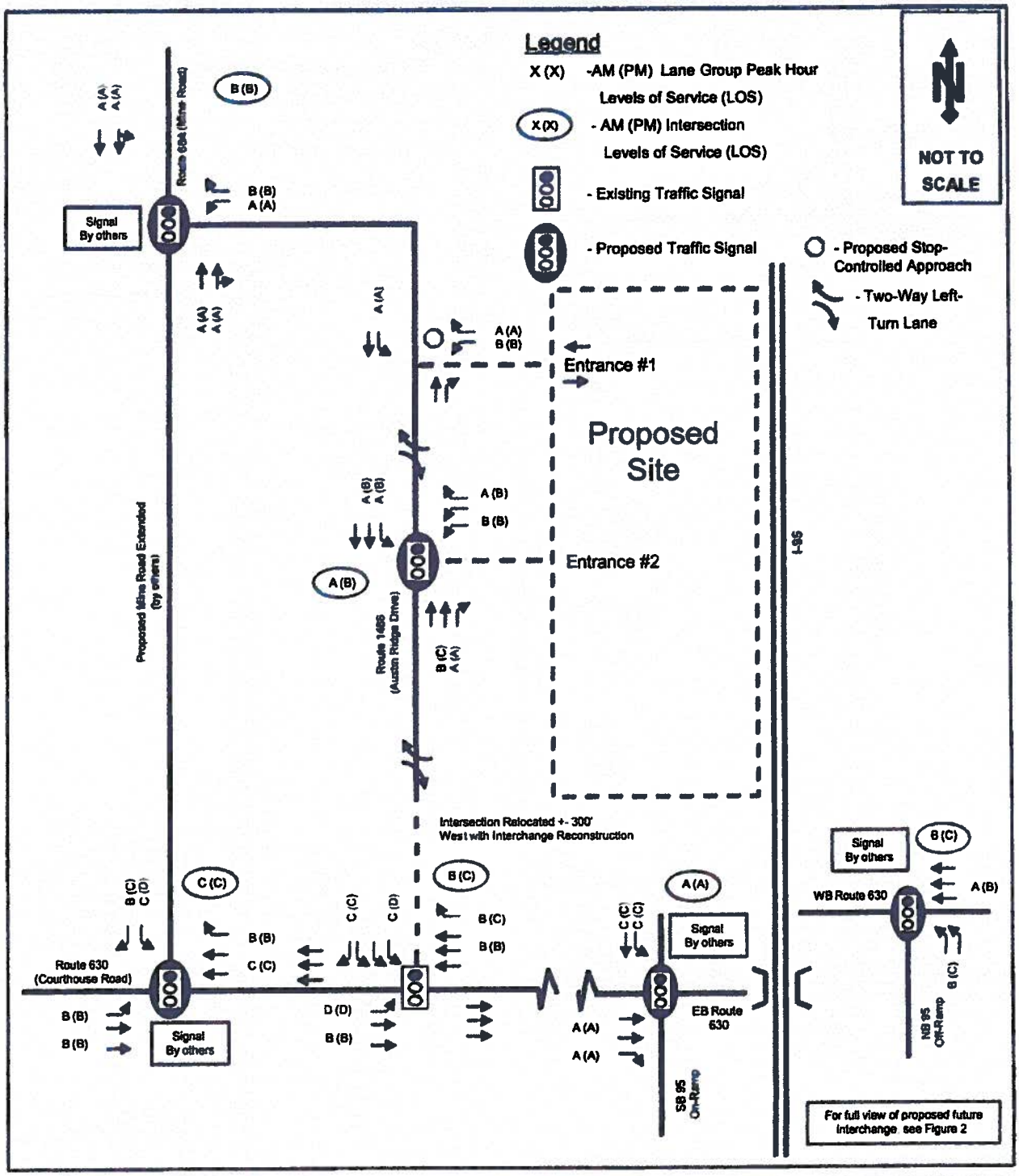
Revised January, 2012

BCG Project # 9350-01-001



Bowman

PROJECTED TOTAL FUTURE 2026 LOS

Proposed Westgate Center

Traffic Impact Analysis – Stafford County, Virginia

FIGURE 26
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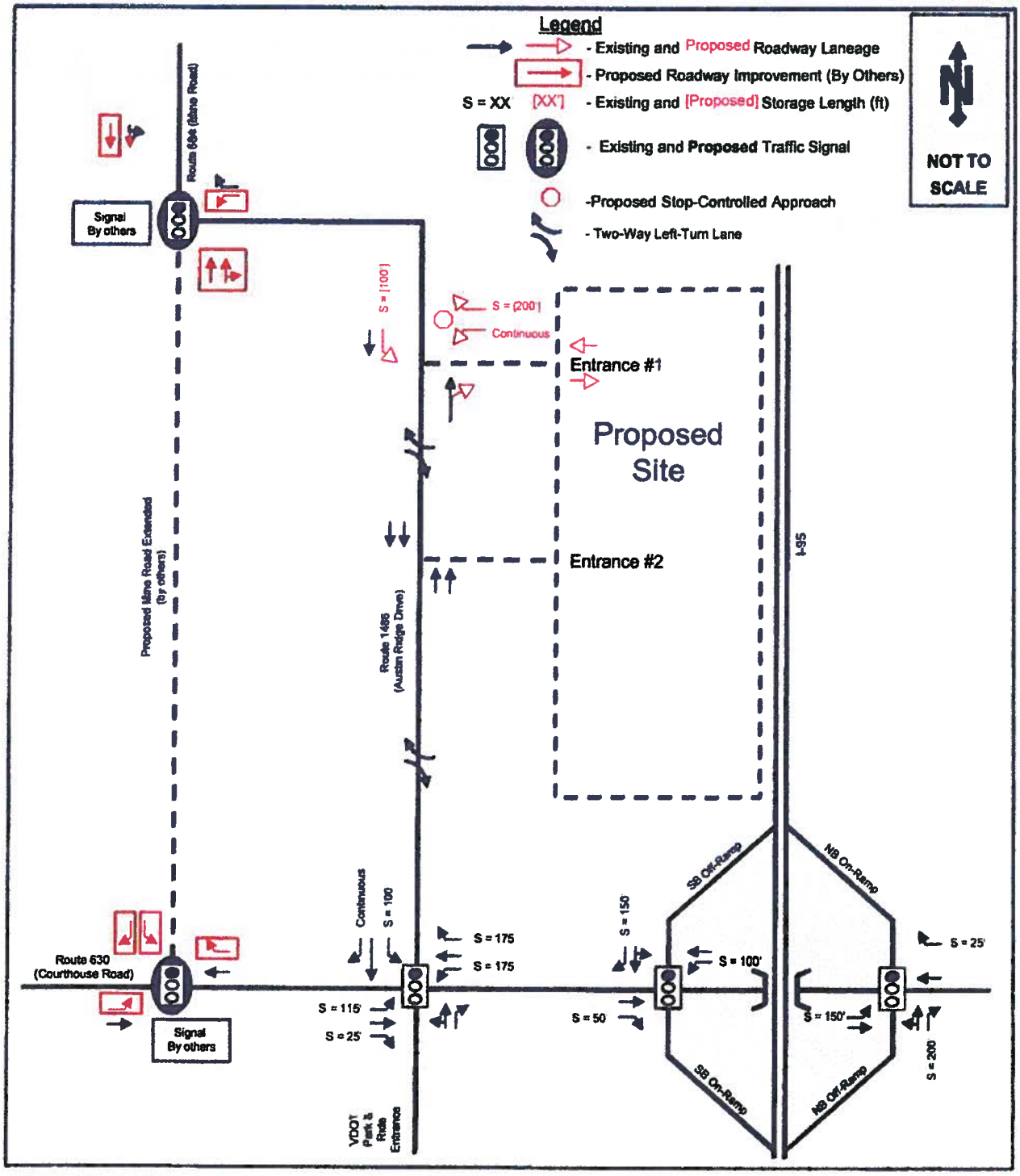

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PROPOSED LANEAGE TOTAL FUTURE 2015
Proposed Westgate Center
Traffic Impact Analysis – Stafford County, Virginia

FIGURE 27
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Revised January, 2012

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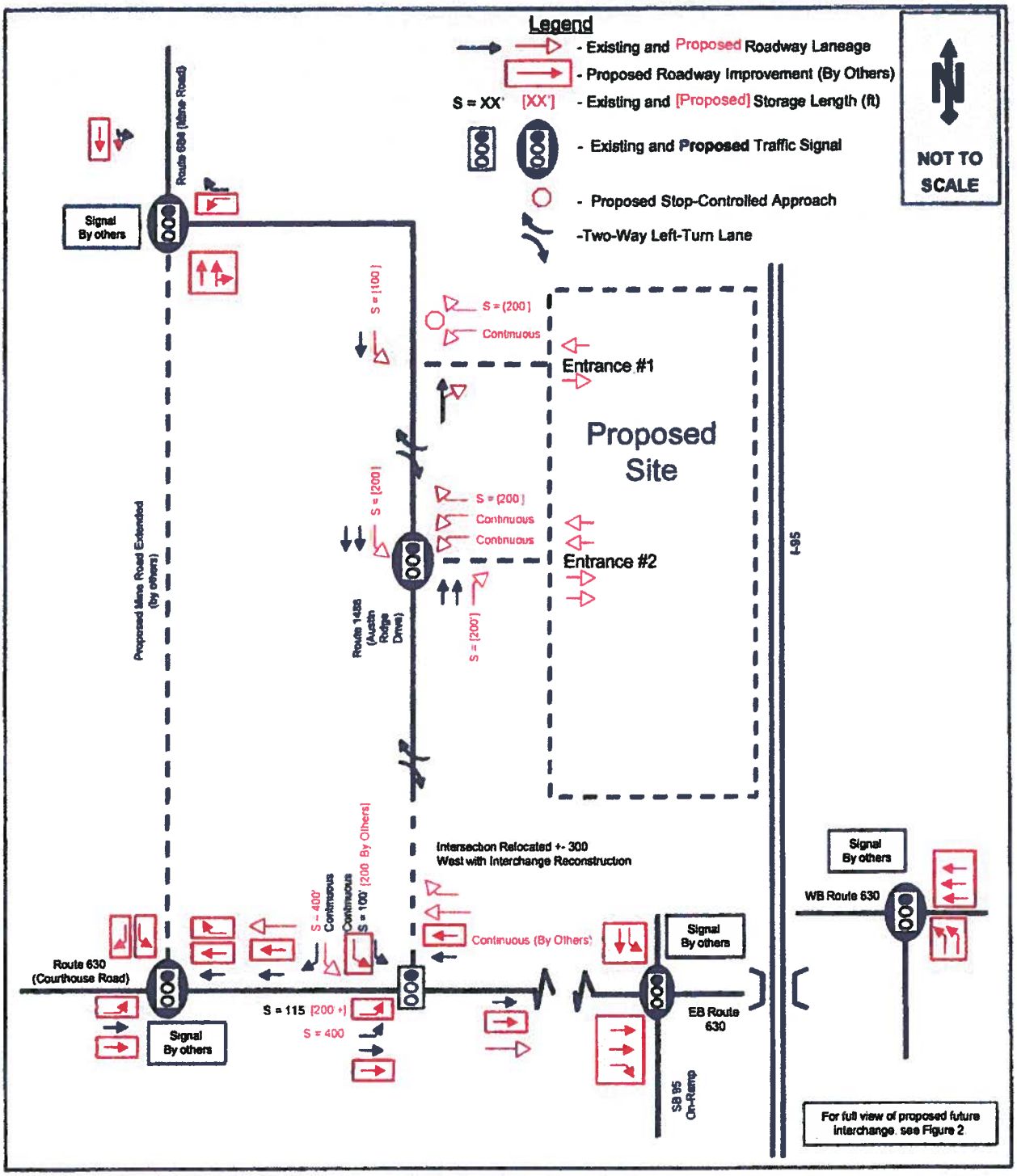

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PROPOSED LANEAGE TOTAL FUTURE 2020/2026
Proposed Westgate Center
Traffic Impact Analysis – Stafford County, Virginia

FIGURE 28
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Attachment B

Revised Tables

8.2 Courthouse Road/I-95 NB Ramps

Table 5A – Courthouse Road/I-95 NB Ramps Intersection LOS

Intersection	Movement Approach	2010 Existing* AM Peak Hour Level of Service (Seconds)		PM Peak Hour Level of Service (Seconds)		2015 Background - Phase 1** AM Peak Hour Level of Service (Seconds)		PM Peak Hour Level of Service (Seconds)		2015 Total Future - Phase 1** AM Peak Hour Level of Service (Seconds)		PM Peak Hour Level of Service (Seconds)		2020 Background - Phase 2*** AM Peak Hour Level of Service (Seconds)		PM Peak Hour Level of Service (Seconds)		2020 Total Future - Phase 2*** AM Peak Hour Level of Service (Seconds)		PM Peak Hour Level of Service (Seconds)		2025 Background*** AM Peak Hour Level of Service (Seconds)		PM Peak Hour Level of Service (Seconds)		2025 Total Future*** AM Peak Hour Level of Service (Seconds)		PM Peak Hour Level of Service (Seconds)	
Courthouse Road & I-95 NB Ramps (Signalized)	EBL	B	11.0	B	14.4	C	26.2	C	33.6	C	30.7	C	32.0																
	EBT	A	7.6	B	11.9	B	12.4	A	8.3	B	12.4	A	7.5																
	EB Approach	A	8.5	B	12.2	B	15.4	B	11.7	B	15.6	B	10.8																
	WBT	C	27.0	C	24.4	C	32.9	F	80.5	C	33.1	F	82.4	A	7.9	B	12.8	A	8.9	B	17.4	A	8.4	B	14.1	A	9.4	B	19.0
	WBR	B	14.7	B	14.0	B	17.3	B	15.6	B	17.3	B	15.6																
	NB Approach	B	19.2	C	22.0	C	27.0	E	62.1	C	27.1	E	63.5	A	7.9	B	12.8	A	8.9	B	17.4	A	8.4	B	14.1	A	9.4	B	19.0
	NBLT	C	32.9	D	40.0	D	36.9	F	106.3	D	37.4	F	113.3	B	10.3	C	20.1	B	11.4	C	25.8	B	10.6	C	21.4	B	11.8	C	26.5
	NBR	C	21.0	C	28.7	E	60.1	C	34.3	E	60.5	C	34.4																
	NB Approach	C	26.5	D	35.2	D	50.7	E	74.8	D	51.1	E	79.0	B	10.3	C	20.1	B	11.4	C	25.8	B	10.6	C	21.4	B	11.8	C	26.5
Overall Intersection		B	18.4	C	21.3	C	26.4	D	48.5	C	26.9	D	49.8	A	8.8	B	15.4	A	9.9	C	26.4	A	9.2	B	16.7	B	10.3	C	21.0

*Note: Scenario study and work on using signal timings provided by VDOT and existing timings

**Note: Optimized cycle length and splits by others

***Note: Assumes Interchange Alternative A2 in place (by others)

Table 5B – Courthouse Road/I-95 NB Ramps Intersection 95th Percentile Queue Analysis

Intersection	Lane Group	Storage Length (ft) E = Existing / P = Proposed	2010 Existing Signalized AM	2010 Existing Signalized PM	2015 Background Signalized AM	2015 Background Signalized PM	2015 Total Future Signalized AM	2015 Total Future Signalized PM	2020 Background* Signalized AM	2020 Background* Signalized PM	2020 Total Future* Signalized AM	2020 Total Future* Signalized PM	2025 Background* Signalized AM	2025 Background* Signalized PM	2025 Total Future* Signalized AM	2025 Total Future* Signalized PM
Courthouse Road & I-95 NB Ramps (Signalized)	EBL	E = 150'	116	113	159	101	161	93								
	EBT	-	159	360	301	111	289	149								
	EBT	-														
	WBT	-	552	651	553	559	565	560	79	175	63	282	78	202	62	249
	WBT	-							95	207	91	352	95	242	104	340
	WBT	-							75	152	126	399	85	154	126	406
	WBR	E = 25'	59	58	54	59	58	60								
	NBLT	-	475	406	849	703	734	706	71	169	72	219	71	162	78	257
	NBLT	-							92	185	113	287	84	191	123	286
	NBR	E = 230'	251	162	258	276	229	276								

All Queue Lengths in Feet

Queues are average 95th percentile queues as reported by SimTraffic after 5 runs of 30 minutes each.

(-) Continuous lane

*Note: Assumes Interchange Alternative A2 in place (by others)

8.3 Courthouse Road/I-95 SB Ramps

Table 6A – Courthouse Road/I-95 SB Ramps Intersection LOS

Intersection	Movement Approach	2015 Existing* AM Peak Hour Level of Service (Sec/Veh)		PM Peak Hour Level of Service (Sec/Veh)		2015 Background - Phase 1** AM Peak Hour Level of Service (Sec/Veh)		PM Peak Hour Level of Service (Sec/Veh)		2015 Total Future - Phase 1** AM Peak Hour Level of Service (Sec/Veh)		PM Peak Hour Level of Service (Sec/Veh)		2020 Background - Phase 2*** AM Peak Hour Level of Service (Sec/Veh)		PM Peak Hour Level of Service (Sec/Veh)		2020 Total Future - Phase 2*** AM Peak Hour Level of Service (Sec/Veh)		PM Peak Hour Level of Service (Sec/Veh)		2035 Background*** AM Peak Hour Level of Service (Sec/Veh)		PM Peak Hour Level of Service (Sec/Veh)		2035 Total Future*** AM Peak Hour Level of Service (Sec/Veh)		PM Peak Hour Level of Service (Sec/Veh)	
Courthouse Road & I-95 SB Ramps (Signalized)	EBT	B	16.4	C	23.5	C	25.7	D	50.8	C	25.2	E	58.6	A	2.7	A	5.1	A	2.5	A	4.2	A	2.5	A	4.9	A	2.4	A	4.4
	EBR	B	12.2	B	18.5	B	15.3	C	28.3	B	14.9	C	29.7	A	3.2	A	5.3	A	3.0	A	5.4	A	3.2	A	5.2	A	3.3	A	5.5
	EB Approach	B	15.9	C	21.5	C	21.8	D	41.6	C	21.4	D	46.7	A	2.9	A	5.2	A	2.7	A	4.7	A	2.8	A	5.1	A	2.8	A	4.8
	WBL	A	6.5	C	21.4	C	23.5	E	58.5	C	23.4	E	62.1																
	WBT	A	6.8	B	10.1	B	11.7	B	11.9	B	11.2	B	12.1																
	WB Approach	A	6.8	B	13.1	B	14.6	C	26.8	B	14.2	C	28.0																
	SBLT	C	27.6	D	43.5	D	38.3	F	91.3	D	42.5	F	91.3																
	SBL	-	-	-	-	-	-	-	-	-	-	-	-	C	20.3	B	14.9	C	23.4	C	29.3	C	22.2	B	15.9	C	24.7	C	30.1
	SBT	-	-	-	-	-	-	-	-	-	-	-	-	C	23.4	B	15.0	C	27.5	C	31.1	C	25.8	B	17.1	C	28.2	C	30.5
	SBR	C	20.3	C	27.7	C	21.8	C	30.0	C	21.5	C	30.4																
	SB Approach	C	25.0	D	37.3	C	30.7	E	68.8	D	38.8	E	68.3	C	21.6	B	15.3	C	25.2	C	30.0	C	23.7	B	16.4	C	26.2	C	30.2
Overall Intersection		B	18.3	C	21.6	C	21.9	D	49.5	C	21.7	D	49.8	A	3.1	A	6.5	A	2.9	A	6.9	A	3.0	A	6.5	A	3.0	A	7.0

*Note: Scenario analyzed with existing signal timings provided by VDOT and existing timings

**Note: Optimized cycle length and splits (by others)

***Note: Assumes Interchange Alternative A2 is in place (by others). Intersection becomes Stop controlled with new interchange.

Table 6B – Courthouse Road/I-95 SB Ramps Intersection 95th Percentile Queue Analysis

Intersection	Lane Group	Storage Length (ft) E = Existing / P = Proposed	2010 Existing Signalized AM	2010 Existing Signalized PM	2015 Background Signalized AM	2015 Background Signalized PM	2015 Total Future Signalized AM	2015 Total Future Signalized PM	2020 Background* Signalized AM	2020 Background* Signalized PM	2020 Total Future* Signalized AM	2020 Total Future* Signalized PM	2035 Background* Signalized AM	2035 Background* Signalized PM	2035 Total Future* Signalized AM	2035 Total Future* Signalized PM
Courthouse Road & I-95 SB Ramps (Signalized)	EBT	-	250	916	860	820	856	820	35	85	43	156	35	77	41	163
	EBT	-							52	111	70	193	60	111	57	270
	EBR	E = 50'	92	98	90	96	93	92	58	117	177	181	69	106	249	186
	WBL	E = 100'	118	149	144	138	142	134								
	WBT	-	179	641	406	772	391	768								
	WBT	-														
	SBLT	-	134	733	529	709	691	718								
	SBL	-							23	57	26	70	23	68	26	69
	SBT	-							25	95	30	109	31	98	29	108
	SBR	E = 150'	51	210	193	219	217	222								

All Queue Lengths in Feet

Queues are average 95th percentile queues as reported by SimTraffic after 5 runs of 30 minutes each.

|-| Continuous lane

*Note: Assumes Interchange Alternative A2 is in place (by others)

8.4 Courthouse Road/Austin Ridge Drive/VDOT Park & Ride

Table 7A – Courthouse Road/Austin Ridge Drive/VDOT Park & Ride Intersection LOS

Intersection	Movement / Approach	2018 Existing AM Peak Hour Level of Service (Delay)	2018 Existing PM Peak Hour Level of Service (Delay)	2018 Background – Phase I* AM Peak Hour Level of Service (Delay)	2018 Background – Phase I* PM Peak Hour Level of Service (Delay)	2018 Total Future – Phase I* AM Peak Hour Level of Service (Delay)	2018 Total Future – Phase I* PM Peak Hour Level of Service (Delay)	2028 Background** AM Peak Hour Level of Service (Delay)	2028 Background** PM Peak Hour Level of Service (Delay)	2028 Total Future** AM Peak Hour Level of Service (Delay)	2028 Total Future** PM Peak Hour Level of Service (Delay)	2028 Background** AM Peak Hour Level of Service (Delay)	2028 Background** PM Peak Hour Level of Service (Delay)	2028 Total Future** AM Peak Hour Level of Service (Delay)	2028 Total Future** PM Peak Hour Level of Service (Delay)
Courthouse Road & Austin Ridge Drive (Signalized)	EBL	B 11.4	C 23.0	B 17.8	C 23.7	B 18.4	C 26.4	D 45.6	D 43.0	D 41.4	D 46.1	D 43.7	D 45.0	D 41.8	D 48.5
	EBT	B 17.6	C 31.6	C 25.8	C 29.6	C 26.2	C 34.2	B 15.2	A 8.5	B 15.4	B 13.8	C 23.6	A 8.3	B 15.1	B 11.6
	EBR	B 12.3	C 23.4	A 9.8	B 13.8	A 9.2	B 13.9								
	EB Approach	B 15.7	C 30.8	C 25.2	C 25.6	C 25.6	C 34.0	B 16.3	A 9.5	B 17.4	B 17.5	C 23.5	A 9.2	B 17.1	B 16.0
	WBL	B 12.6	B 19.2	C 29.2	B 15.7	C 30.2	B 15.8								
	WBT	C 27.8	C 34.2	B 17.6	D 35.5	B 18.8	D 36.4	B 13.7	B 17.8	B 12.9	B 19.5	C 21.7	B 19.1	B 11.3	B 17.2
	WBR	B 15.3	C 21.5	B 10.2	B 12.9	B 10.5	B 13.2	B 10.5	A 8.5	B 12.4	C 20.8	B 10.7	A 8.4	B 11.9	C 20.9
	WB Approach	C 20.5	C 28.4	B 14.7	C 30.4	B 17.1	C 30.7	B 13.2	B 16.5	B 12.5	B 13.9	C 20.9	B 17.7	B 11.2	B 17.4
	NBLT	D 39.9	D 46.8	D 43.9	E 62.2	D 45.5	E 66.1								
	NBR	D 36.5	D 38.6	D 38.9	D 45.7	D 40.6	D 45.4								
	NB Approach	D 38.7	D 43.0	D 37.2	D 54.6	D 40.3	D 51.9								
	SBL	C 30.5	D 49.8	C 35.0	E 62.7	D 36.0	E 63.1	C 25.8	C 29.6	C 29.2	C 33.5	B 19.5	C 31.2	C 33.7	D 42.9
	SBT	C 29.6	C 34.1	C 33.2	D 46.1	C 33.4	D 45.8								
	SBR	C 20.7	C 31.6	C 33.4	D 46.2	C 33.7	D 45.1	C 25.6	C 27.9	C 26.1	C 26.7	B 19.4	C 23.5	C 26.2	C 25.5
	SB Approach	C 29.1	D 43.5	C 33.7	E 59.7	C 34.5	E 59.9	C 25.7	C 28.5	C 28.9	C 32.3	B 19.9	C 28.8	C 31.2	D 39.1
Overall Intersection		C 21.1	C 28.9	C 22.6	C 33.7	C 23.6	C 36.3	B 15.8	B 16.9	B 15.8	C 23.3	C 20.3	B 18.6	B 16.3	C 23.6

*Note: Scenarios modified with the existing signal timings provided by VDOT and existing timings

*Note: Optimized with lengths and splits by others

**Note: Assumes construction of the 1,000 feet turn lane and Park and Ride entrance as indicated with construction of the new roundabout. All improvements assume Courthouse Road by others

***Note: Assumes improvements proposed by site which include triple southbound lefts, additional westbound through lane, and signal modifications

Table 7B – Courthouse Road/Austin Ridge Drive/VDOT Park & Ride Intersection 95th Percentile Queue Analysis

Intersection	Lane Group	Storage Length (ft) E = Existing / P = Proposed	2018 Existing Signalized AM	2018 Existing Signalized PM	2018 Background Signalized AM	2018 Background Signalized PM	2018 Total Future Signalized AM	2018 Total Future Signalized PM	2028 Background* Signalized AM	2028 Background* Signalized PM	2028 Total Future** Signalized AM	2028 Total Future** Signalized PM	2028 Background* Signalized AM	2028 Background* Signalized PM	2028 Total Future** Signalized AM	2028 Total Future** Signalized PM
Courthouse Road & Austin Ridge Drive (Signalized)	EBL	E = 115' / P = 200'	62	105	130	47	116	41	67	45	73	94	52	41	88	105
	EBL	P = 400'							53	38	128	98	51	37	159	116
	EBT	-	192	585	731	591	737	589	153	133	345	269	231	161	449	296
	EBT	-							238	191	301	250	321	230	389	253
	EBR	E = 25'	26	20	27	23	29	24								
	WBL	E = 175'	46	136	37	136	41	107								
	WBT	-	234	667	537	440	411	372	192	413	126	271	201	365	119	261
	WBT	-							221	467	159	302	243	468	149	277
	WBT	-									94	259			106	241
	WBR	E = 175'	120	216	66	140	105	100	43	60	116	519	45	55	153	459
	NBLT	VDOT Park & Ride	5	118	10	223	5	176								
	NBR	VDOT Park & Ride	27	242	35	419	29	362								
	SBL	E = 100' / P=200'	116	130	137	129	150	128	35	57	74	212	39	76	73	417
	SBL	-							59	90	65	233	56	96	83	435
	SBL	-									74	225			75	409
	SBT	-	71	979	102	965	282	831								
	SBR	-	94	277	60	149	55	38	51	22	34	102	59	45	27	153

All Queue Lengths in Feet

Queues are average 95th percentile queues as reported by Synchro after 5 runs of 30 minutes each.

[+] Continuous lane

*Note: Assumes 4-lane Courthouse Road (by others)

**Note: Assumes improvements proposed by site which include triple southbound lefts, additional westbound through lane, and signal modifications

8.5 Austin Ridge Drive/Proposed Entrance #1 (Full-Movement)

Table 8A – Austin Ridge Drive/Proposed Entrance #1 Intersection LOS

Intersection	Movement Approach	2015 Total Future - Phase 1				2020 Total Future - Phase 2				2026 Total Future - Phase 2			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Level of Service (Sec/Veh)				Level of Service (Sec/Veh)				Level of Service (Sec/Veh)			
Austin Ridge Drive & Proposed Entrance #1 (Unsignalized)	WBL	B	11.2	B	11.2	B	11.5	B	14.6	B	11.8	B	14.9
	WBR	A	9.4	A	9.7	A	0.0	A	0.0	A	0.0	A	0.0
	SBL	A	7.7	A	7.8	A	7.8	A	8.3	A	7.8	A	8.3

Table 8B – Austin Ridge Drive/Proposed Entrance #1 Intersection 95th Percentile Queue Analysis

Intersection	Lane Group	Storage Length (ft) E = Existing / P = Proposed	2015 Total Future Unsignalized		2020 Total Future Unsignalized		2026 Total Future Unsignalized	
			AM	PM	AM	PM	AM	PM
Austin Ridge Drive & Proposed Entrance #1 (Unsignalized)	WBL	Site Access	40	92	42	36	38	34
	WBR	Site Access	35	25	33	29	35	27
	SBL	P = 100'	6	69	6	18	0	20

All Queue Lengths in Feet

Queues are average 95th percentile queues as reported by SimTraffic after 5 runs of 30 minutes each.

(~) Continuous lane

8.6 Austin Ridge Drive/Proposed Entrance #2 (Full-Movement)

Table 9A – Austin Ridge Drive/Proposed Entrance #2 Intersection LOS

Intersection	Movement Approach	2020 Total Future - Phase 2*				2026 Total Future - Phase 2*			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Level of Service (Sec/Veh)				Level of Service (Sec/Veh)			
Austin Ridge Drive & Proposed Entrance #2 (Signalized)	WBL	B	10.8	B	14.0	B	10.0	B	16.2
	WBR	B	10.2	B	10.2	A	9.4	B	11.7
	WB Approach	B	10.7	B	13.5	A	10.0	B	15.5
	NBT	B	14.1	C	24.4	B	12.6	C	27.2
	NBR	A	6.8	A	7.7	A	6.0	A	9.3
	NB Approach	A	9.4	B	12.1	A	8.5	B	14.2
	SBL	A	7.3	B	15.4	A	7.5	B	15.1
	SBT	A	6.6	B	14.0	A	6.7	B	14.1
	SB Approach	A	6.8	B	14.6	A	6.9	B	14.8
Overall Intersection		A	9.0	B	13.0	A	8.4	B	14.8

*Note: Optimized cycle length and splits

Table 9B – Austin Ridge Drive/Proposed Entrance #2 Intersection 95th Percentile Queue Analysis

Intersection	Lane Group	Storage Length (ft) E = Existing / P = Proposed	2020 Total Future Signalized		2026 Total Future Signalized	
			AM	PM	AM	PM
Austin Ridge Drive & Proposed Entrance #2 (Signalized)	WBL	Site Access	51	250	53	271
	WBL	Site Access	63	264	58	287
	WBR	Site Access	34	98	35	147
	NBT	-	118	223	108	251
	NBT	-	35	170	48	224
	NBR	P = 200'	84	176	87	213
	SBL	P = 200'	61	115	59	140
	SBT	-	54	87	59	114
	SBT	-	65	88	62	118

All Queue Lengths in Feet

Queues are average 95th percentile queues as reported by SimTraffic after 5 runs of 30 minutes each.

(-) Continuous lane

8.7 Austin Ridge Drive/Mine Road/Future Mine Road Extended

Table 10A – Austin Ridge Drive/Mine Road/Future Mine Road Extended Intersection LOS

Intersection	Movement/ Approach	2015 Background*				2015 Total Future - Phase 1*				2020 Background*				2020 Total Future*				2035 Background*				2035 Total Future*			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Level of Service (Sec/Veh)				Level of Service (Sec/Veh)				Level of Service (Sec/Veh)				Level of Service (Sec/Veh)				Level of Service (Sec/Veh)				Level of Service (Sec/Veh)			
Austin Ridge Drive & Mine Road (Signalized)	WBL	A		A		A		A		A		A		A		A		A		A		A		A	
	WBR	A	8.2	B	11.8	A	8.2	B	11.8	A	9.1	B	14.6	B	10.0	B	17.3	A	9.6	B	15.5	B	10.9	B	18.9
	WB Approach	A	8.2	B	11.8	A	8.2	B	11.8	A	9.1	B	14.6	B	10.0	B	17.3	A	9.6	B	15.5	B	10.9	B	18.9
	NBT	A	6.5	A	4.9	A	6.6	A	4.9	A	8.5	A	4.4	A	8.9	A	4.0	A	9.2	A	4.3	A	9.9	A	3.9
	NBR	A		A		A		A		A		A		A		A		A		A		A		A	
	NB Approach	A	6.5	A	4.8	A	6.6	A	4.9	A	8.5	A	4.4	A	8.9	A	4.0	A	9.2	A	4.3	A	9.8	A	3.9
	SBLT	A	6.8	A	6.7	A	6.9	A	6.8	A	8.4	A	7.3	A	9.4	A	8.3	A	9.0	A	7.8	B	10.3	A	8.8
	SB Approach	A	6.8	A	6.7	A	6.9	A	6.8	A	8.4	A	7.3	A	9.4	A	8.3	A	9.0	A	7.8	B	10.3	A	8.8
Overall Intersection		A	7.4	A	7.8	A	7.5	A	7.9	A	8.7	A	8.3	A	9.5	B	10.6	A	9.3	A	8.5	B	10.4	B	10.8

*Note: Optimized cycle length and splits (by others)

^: LOS or delay not provided for movements w/ least volume

Table 10B – Austin Ridge Drive/Mine Road/Future Mine Road Extended Intersection 95th Percentile Queue Analysis

Intersection	Lane Group	Storage Length (ft) E = Existing / P = Proposed	2015 Background Signalized		2015 Total Future Signalized		2020 Background Signalized		2020 Total Future Signalized		2035 Background Signalized		2035 Total Future Signalized	
			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Austin Ridge Drive & Mine Road (Signalized)	WBL	-	0	0	0	0	0	0	0	0	0	0	0	0
	WBR	P = 200'†	77	79	85	77	127	116	135	194	124	112	126	205
	NBT	-	31	12	37	30	70	33	59	39	73	23	84	46
	NBTR	-	52	36	48	30	85	55	80	76	87	55	93	70
	SBLT	-	48	120	41	100	60	136	81	273	69	148	85	245
	SBT	-	64	62	59	46	67	67	79	120	71	83	81	117

All Queue Lengths in Feet

Queues are average 95th percentile queues as reported by SimTraffic after 5 runs of 30 minutes each.

(-) Continuous lane

† Planned improvement by Others

8.8 Courthouse Road/Future Mine Road Extended

Table 11A – Courthouse Road/Future Mine Road Extended Intersection LOS

Intersection	Movement Approach	2015 Background* AM Peak Hour		2015 Background* PM Peak Hour		2015 Total Future - Phase 1* AM Peak Hour		2015 Total Future - Phase 1* PM Peak Hour		2020 Background** AM Peak Hour		2020 Background** PM Peak Hour		2020 Total Future** AM Peak Hour		2020 Total Future** PM Peak Hour		2035 Background** AM Peak Hour		2035 Background** PM Peak Hour		2035 Total Future** AM Peak Hour		2035 Total Future** PM Peak Hour	
		Level of Service (Sec/Veh)																							
Courthouse Road & Mine Road Extended (Signalized)	EBL	A	8.7	B	17.8	A	8.7	B	18.0	B	13.5	B	14.1	B	13.8	B	16.0	B	15.6	B	15.1	B	16.3	B	17.4
	EBT	A	9.6	A	6.3	A	9.8	A	6.3	B	15.5	A	9.4	B	16.0	A	9.6	B	17.5	B	10.1	B	18.5	B	10.5
	EB Approach	A	9.5	A	8.7	A	9.5	A	9.6	B	15.3	A	9.7	B	15.6	A	9.9	B	17.4	B	10.5	B	18.2	B	10.8
	WBT	B	17.4	C	20.8	B	17.6	C	21.1	C	22.6	C	20.1	C	21.6	C	22.3	C	24.0	C	23.2	C	24.5	C	23.5
	WBR	A	8.7	A	8.2	A	8.7	A	8.2	B	16.6	B	13.3	B	15.9	B	12.7	B	17.3	B	14.8	B	17.3	B	14.3
	WB Approach	B	16.5	B	18.6	B	16.7	B	18.8	C	21.6	B	18.3	C	20.8	B	20.0	C	22.8	C	20.8	C	23.3	C	24.9
	SBL	C	24.4	D	35.3	C	24.5	D	35.3	C	28.2	C	34.6	C	29.6	D	39.6	C	31.9	D	39.4	C	32.3	D	42.6
	SBR	C	20.3	C	25.1	C	20.3	C	25.1	B	15.7	C	21.1	B	16.2	C	22.8	B	15.7	C	21.3	B	15.9	C	22.3
	SB Approach	C	23.1	C	33.3	C	23.2	C	33.3	C	25.8	C	31.6	C	27.1	D	35.6	C	28.6	C	36.7	C	29.4	D	37.5
Overall Intersection		B	14.6	B	17.2	B	14.7	B	17.4	B	19.8	B	18.2	B	19.9	B	18.5	C	21.9	C	20.4	C	22.5	C	22.9

*Note: Optimized cycle length and splits (by others)

**Note: Assumes 4-lane Courthouse Road (by others)

Table 11B – Courthouse Road/Future Mine Road Extended Intersection 95th Percentile Queue Analysis

Intersection	Lane Group	Storage Length (ft) E = Existing / P = Proposed	2015 Background Signalized AM	2015 Background Signalized PM	2015 Total Future Signalized AM	2015 Total Future Signalized PM	2020 Background* Signalized AM	2020 Background* Signalized PM	2020 Total Future* Signalized AM	2020 Total Future* Signalized PM	2035 Background* Signalized AM	2035 Background* Signalized PM	2035 Total Future* Signalized AM	2035 Total Future* Signalized PM
Courthouse Road & Mine Road Extended (Signalized)	EBL	P = 200†	130	135	144	151	94	69	97	63	122	73	114	68
	EBT	-	1112	1131	1072	1132	236	118	273	163	273	149	311	186
	EBT	-					268	155	289	161	304	169	320	185
	WBT	-					258	342	231	327	287	374	255	404
	WBT	-	355	329	342	328	281	360	258	359	304	427	280	439
	WBR	P = 200†	0	106	63	138	127	169	17	6	178	253	15	0
	SBL	-	298	2820	371	1154	311	291	307	284	380	342	359	315
	SBR	-	57	2425	68	1054	71	82	71	87	71	73	84	90

All Queue Lengths in Feet

Queues are average 95th percentile queues as reported by SimTraffic after 5 runs of 30 minutes each.

(-) Continuous lane

† Planned improvement by Others

*Note: Assumes 4-lane Courthouse Road (by others)

Attachment C

Supporting Technical Analysis

Synchro Worksheets

HCM Signalized Intersection Capacity Analysis
25: Courthouse Road & Mine Rd Ext

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	36	711	654	76	189	88
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1863	1863	1583	1770	1583
Flt Permitted	0.18	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	333	1863	1863	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	38	748	688	80	199	93
RTOR Reduction (vph)	0	0	0	42	0	74
Lane Group Flow (vph)	38	748	688	38	199	19
Turn Type	pm+pt			Perm		Perm
Protected Phases	1	6	2		4	
Permitted Phases	6			2		4
Actuated Green, G (s)	38.1	38.1	30.2	30.2	12.7	12.7
Effective Green, g (s)	38.1	38.1	30.2	30.2	12.7	12.7
Actuated g/C Ratio	0.61	0.61	0.48	0.48	0.20	0.20
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	246	1130	896	761	358	320
v/s Ratio Prot	0.00	c0.40	c0.37		c0.11	
v/s Ratio Perm	0.09			0.02		0.01
v/c Ratio	0.15	0.66	0.77	0.05	0.56	0.06
Uniform Delay, d1	8.4	8.1	13.4	8.7	22.5	20.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	1.5	4.0	0.0	1.9	0.1
Delay (s)	8.7	9.6	17.4	8.7	24.4	20.3
Level of Service	A	A	B	A	C	C
Approach Delay (s)		9.5	16.5		23.1	
Approach LOS		A	B		C	

Intersection Summary			
HCM Average Control Delay	14.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	62.8	Sum of lost time (s)	18.0
Intersection Capacity Utilization	57.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
25: Courthouse Road & Mine Rd Ext

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	20	510	825	176	211	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1863	1863	1583	1770	1583
Flt Permitted	0.16	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	293	1863	1863	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	21	537	868	185	222	52
RTOR Reduction (vph)	0	0	0	62	0	43
Lane Group Flow (vph)	21	537	868	123	222	9
Turn Type	pm+pt			Perm		Perm
Protected Phases	5	2	6		4	
Permitted Phases	2			6		4
Actuated Green, G (s)	48.6	48.6	40.5	40.5	13.2	13.2
Effective Green, g (s)	48.6	48.6	40.5	40.5	13.2	13.2
Actuated g/C Ratio	0.66	0.66	0.55	0.55	0.18	0.18
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	235	1227	1022	869	317	283
v/s Ratio Prot	0.00	c0.29	c0.47		c0.13	
v/s Ratio Perm	0.06			0.08		0.01
v/c Ratio	0.09	0.44	0.85	0.14	0.70	0.03
Uniform Delay, d1	17.7	6.0	14.1	8.1	28.4	25.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.3	6.7	0.1	6.8	0.0
Delay (s)	17.8	6.3	20.8	8.2	35.3	25.1
Level of Service	B	A	C	A	D	C
Approach Delay (s)		6.7	18.6		33.3	
Approach LOS		A	B		C	

Intersection Summary			
HCM Average Control Delay	17.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	73.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
25: Courthouse Road & Mine Rd Ext

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	36	712	657	76	189	88
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1863	1863	1583	1770	1583
Flt Permitted	0.18	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	329	1863	1863	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	38	749	692	80	199	93
RTOR Reduction (vph)	0	0	0	41	0	74
Lane Group Flow (vph)	38	749	692	39	199	19
Turn Type	pm+pt			Perm		Perm
Protected Phases	1	6	2		4	
Permitted Phases	6			2		4
Actuated Green, G (s)	38.2	38.2	30.3	30.3	12.7	12.7
Effective Green, g (s)	38.2	38.2	30.3	30.3	12.7	12.7
Actuated g/C Ratio	0.61	0.61	0.48	0.48	0.20	0.20
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	243	1131	897	763	357	320
v/s Ratio Prot	0.00	c0.40	c0.37		c0.11	
v/s Ratio Perm	0.09			0.02		0.01
v/c Ratio	0.16	0.66	0.77	0.05	0.56	0.06
Uniform Delay, d1	8.4	8.1	13.4	8.7	22.6	20.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	1.5	4.2	0.0	1.9	0.1
Delay (s)	8.7	9.6	17.6	8.7	24.5	20.3
Level of Service	A	A	B	A	C	C
Approach Delay (s)		9.5	16.7		23.2	
Approach LOS		A	B		C	

Intersection Summary			
HCM Average Control Delay	14.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	62.9	Sum of lost time (s)	18.0
Intersection Capacity Utilization	57.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
25: Courthouse Road & Mine Rd Ext

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	20	514	827	176	211	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1863	1863	1583	1770	1583
Flt Permitted	0.16	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	290	1863	1863	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	21	541	871	185	222	52
RTOR Reduction (vph)	0	0	0	62	0	43
Lane Group Flow (vph)	21	541	871	123	222	9
Turn Type	pm+pt			Perm		Perm
Protected Phases	5	2	6		4	
Permitted Phases	2			6		4
Actuated Green, G (s)	48.6	48.6	40.5	40.5	13.2	13.2
Effective Green, g (s)	48.6	48.6	40.5	40.5	13.2	13.2
Actuated g/C Ratio	0.66	0.66	0.55	0.55	0.18	0.18
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	233	1227	1022	869	317	283
v/s Ratio Prot	0.00	c0.29	c0.47		c0.13	
v/s Ratio Perm	0.06			0.08		0.01
v/c Ratio	0.09	0.44	0.85	0.14	0.70	0.03
Uniform Delay, d1	17.8	6.1	14.1	8.1	28.4	25.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.3	7.0	0.1	6.8	0.0
Delay (s)	18.0	6.3	21.1	8.2	35.3	25.1
Level of Service	B	A	C	A	D	C
Approach Delay (s)		6.8	18.8		33.3	
Approach LOS		A	B		C	

Intersection Summary			
HCM Average Control Delay	17.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	73.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
25: Courthouse Road & Mine Rd Ext

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	93	1087	797	166	473	111
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	3539	1583	1770	1583
Flt Permitted	0.16	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	307	3539	3539	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	98	1144	839	175	498	117
RTOR Reduction (vph)	0	0	0	116	0	76
Lane Group Flow (vph)	98	1144	839	59	498	41
Turn Type	pm+pt			Perm		Perm
Protected Phases	1	6	2		4	
Permitted Phases	6			2		4
Actuated Green, G (s)	35.1	35.1	24.7	24.7	25.7	25.7
Effective Green, g (s)	35.1	35.1	24.7	24.7	25.7	25.7
Actuated g/C Ratio	0.48	0.48	0.34	0.34	0.35	0.35
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	236	1706	1201	537	625	559
v/s Ratio Prot	0.03	c0.32	0.24		c0.28	
v/s Ratio Perm	0.17			0.04		0.03
v/c Ratio	0.42	0.67	0.70	0.11	0.80	0.07
Uniform Delay, d1	12.3	14.4	20.8	16.5	21.2	15.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	1.0	1.8	0.1	7.0	0.1
Delay (s)	13.5	15.5	22.6	16.6	28.2	15.7
Level of Service	B	B	C	B	C	B
Approach Delay (s)		15.3	21.6		25.8	
Approach LOS		B	C		C	

Intersection Summary			
HCM Average Control Delay	19.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	72.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	68.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
25: Courthouse Road & Mine Rd Ext

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	52	725	1232	442	369	107
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	3539	1583	1770	1583
Flt Permitted	0.09	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	173	3539	3539	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	55	763	1297	465	388	113
RTOR Reduction (vph)	0	0	0	239	0	82
Lane Group Flow (vph)	55	763	1297	226	388	31
Turn Type	pm+pt			Perm		Perm
Protected Phases	1	6	2		4	
Permitted Phases	6			2		4
Actuated Green, G (s)	45.2	45.2	37.1	37.1	22.0	22.0
Effective Green, g (s)	45.2	45.2	37.1	37.1	22.0	22.0
Actuated g/C Ratio	0.57	0.57	0.47	0.47	0.28	0.28
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	141	2020	1658	742	492	440
v/s Ratio Prot	0.01	c0.22	c0.37		c0.22	
v/s Ratio Perm	0.21			0.14		0.02
v/c Ratio	0.39	0.38	0.78	0.30	0.79	0.07
Uniform Delay, d1	12.3	9.3	17.7	13.0	26.4	21.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.8	0.1	2.5	0.2	8.2	0.1
Delay (s)	14.1	9.4	20.1	13.3	34.6	21.1
Level of Service	B	A	C	B	C	C
Approach Delay (s)		9.7	18.3		31.6	
Approach LOS		A	B		C	

Intersection Summary			
HCM Average Control Delay	18.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	79.2	Sum of lost time (s)	18.0
Intersection Capacity Utilization	72.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
25: Courthouse Road & Mine Rd Ext

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	93	1155	832	166	473	111
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	3539	1583	1770	1583
Flt Permitted	0.16	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	301	3539	3539	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	98	1216	876	175	498	117
RTOR Reduction (vph)	0	0	0	112	0	76
Lane Group Flow (vph)	98	1216	876	63	498	41
Turn Type	pm+pt			Perm		Perm
Protected Phases	1	6	2		4	
Permitted Phases	6			2		4
Actuated Green, G (s)	36.3	36.3	26.6	26.6	25.8	25.8
Effective Green, g (s)	36.3	36.3	26.6	26.6	25.8	25.8
Actuated g/C Ratio	0.49	0.49	0.36	0.36	0.35	0.35
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	221	1734	1270	568	616	551
v/s Ratio Prot	0.02	c0.34	0.25		c0.28	
v/s Ratio Perm	0.20			0.04		0.03
v/c Ratio	0.44	0.70	0.69	0.11	0.81	0.07
Uniform Delay, d1	12.4	14.7	20.2	15.9	21.9	16.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.4	1.3	1.6	0.1	7.7	0.1
Delay (s)	13.8	16.0	21.8	15.9	29.6	16.2
Level of Service	B	B	C	B	C	B
Approach Delay (s)		15.8	20.8		27.1	
Approach LOS		B	C		C	

Intersection Summary

HCM Average Control Delay	19.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	74.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
25: Courthouse Road & Mine Rd Ext

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	52	866	1393	442	389	107
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	3539	1583	1770	1583
Flt Permitted	0.09	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	160	3539	3539	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	55	912	1466	465	388	113
RTOR Reduction (vph)	0	0	0	237	0	79
Lane Group Flow (vph)	55	912	1466	228	388	34
Turn Type	pm+pt			Perm		Perm
Protected Phases	1	6	2		4	
Permitted Phases	6			2		4
Actuated Green, G (s)	48.6	48.6	40.5	40.5	22.0	22.0
Effective Green, g (s)	48.6	48.6	40.5	40.5	22.0	22.0
Actuated g/C Ratio	0.59	0.59	0.49	0.49	0.27	0.27
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	135	2082	1735	776	471	422
v/s Ratio Prot	0.01	c0.26	c0.41		c0.22	
v/s Ratio Perm	0.23			0.14		0.02
v/c Ratio	0.41	0.44	0.84	0.29	0.82	0.08
Uniform Delay, d1	14.0	9.4	18.3	12.5	28.5	22.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.0	0.1	4.0	0.2	11.2	0.1
Delay (s)	16.0	9.6	22.3	12.7	39.6	22.8
Level of Service	B	A	C	B	D	C
Approach Delay (s)		9.9	20.0		35.8	
Approach LOS		A	B		D	

Intersection Summary			
HCM Average Control Delay	19.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	82.6	Sum of lost time (s)	18.0
Intersection Capacity Utilization	73.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
25: Courthouse Road & Mine Rd Ext

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	94	1121	835	184	528	116
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	3539	1583	1770	1583
Flt Permitted	0.15	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	281	3539	3539	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	99	1180	879	194	556	122
RTOR Reduction (vph)	0	0	0	127	0	77
Lane Group Flow (vph)	99	1180	879	67	556	45
Turn Type	pm+pt			Perm		Perm
Protected Phases	1	6	2		4	
Permitted Phases	6			2		4
Actuated Green, G (s)	36.5	36.5	26.8	26.8	28.8	28.8
Effective Green, g (s)	36.5	36.5	26.8	26.8	28.8	28.8
Actuated g/C Ratio	0.47	0.47	0.35	0.35	0.37	0.37
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	204	1671	1227	549	659	590
v/s Ratio Prot	0.02	c0.33	0.25		c0.31	
v/s Ratio Perm	0.21			0.04		0.03
v/c Ratio	0.49	0.71	0.72	0.12	0.84	0.08
Uniform Delay, d1	13.8	16.2	21.9	17.2	22.2	15.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.8	1.4	2.0	0.1	9.6	0.1
Delay (s)	15.6	17.5	24.0	17.3	31.8	15.7
Level of Service	B	B	C	B	C	B
Approach Delay (s)		17.4	22.8		28.9	
Approach LOS		B	C		C	

Intersection Summary			
HCM Average Control Delay	21.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	77.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	72.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
25: Courthouse Road & Mine Rd Ext

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	53	752	1272	491	404	109
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	3539	1583	1770	1583
Flt Permitted	0.09	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	171	3539	3539	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	56	792	1339	517	425	115
RTOR Reduction (vph)	0	0	0	258	0	82
Lane Group Flow (vph)	56	792	1339	259	425	33
Turn Type	pm+pt			Perm		Perm
Protected Phases	1	6	2		4	
Permitted Phases	6			2		4
Actuated Green, G (s)	46.4	46.4	37.5	37.5	23.7	23.7
Effective Green, g (s)	46.4	46.4	37.5	37.5	23.7	23.7
Actuated g/C Ratio	0.57	0.57	0.46	0.46	0.29	0.29
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	153	2000	1616	723	511	457
v/s Ratio Prot	0.01	c0.22	c0.38		c0.24	
v/s Ratio Perm	0.19			0.16		0.02
v/c Ratio	0.37	0.40	0.83	0.36	0.83	0.07
Uniform Delay, d1	13.7	10.0	19.5	14.5	27.3	21.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.5	0.1	3.7	0.3	11.1	0.1
Delay (s)	15.1	10.1	23.2	14.8	38.4	21.3
Level of Service	B	B	C	B	D	C
Approach Delay (s)		10.5	20.8		34.7	
Approach LOS		B	C		C	

Intersection Summary			
HCM Average Control Delay	20.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	82.1	Sum of lost time (s)	18.0
Intersection Capacity Utilization	75.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
25: Courthouse Road & Mine Rd Ext

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	94	1189	870	184	528	116
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	3539	1583	1770	1583
Flt Permitted	0.14	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	258	3539	3539	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	99	1252	916	194	556	122
RTOR Reduction (vph)	0	0	0	126	0	77
Lane Group Flow (vph)	99	1252	916	68	556	45
Turn Type	pm+pt			Perm		Perm
Protected Phases	1	6	2		4	
Permitted Phases	6			2		4
Actuated Green, G (s)	37.1	37.1	27.4	27.4	29.0	29.0
Effective Green, g (s)	37.1	37.1	27.4	27.4	29.0	29.0
Actuated g/C Ratio	0.48	0.48	0.35	0.35	0.37	0.37
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	194	1681	1242	555	657	588
v/s Ratio Prot	0.02	c0.35	0.26		c0.31	
v/s Ratio Perm	0.22			0.04		0.03
v/c Ratio	0.51	0.74	0.74	0.12	0.85	0.08
Uniform Delay, d1	14.1	16.7	22.2	17.2	22.5	15.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.3	1.8	2.3	0.1	9.8	0.1
Delay (s)	16.3	18.5	24.5	17.3	32.3	15.9
Level of Service	B	B	C	B	C	B
Approach Delay (s)		18.3	23.3		29.4	
Approach LOS		B	C		C	

Intersection Summary			
HCM Average Control Delay	22.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	78.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	73.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
25: Courthouse Road & Mine Rd Ext

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	53	894	1433	491	404	109
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	3539	1583	1770	1583
Flt Permitted	0.09	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	164	3539	3539	1583	1770	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	56	941	1508	517	425	115
RTOR Reduction (vph)	0	0	0	274	0	78
Lane Group Flow (vph)	56	941	1508	243	425	37
Turn Type	pm+pt			Perm		Perm
Protected Phases	1	6	2		4	
Permitted Phases	6			2		4
Actuated Green, G (s)	48.5	48.5	39.5	39.5	23.8	23.8
Effective Green, g (s)	48.5	48.5	39.5	39.5	23.8	23.8
Actuated g/C Ratio	0.58	0.58	0.47	0.47	0.28	0.28
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	152	2036	1658	742	500	447
v/s Ratio Prot	0.01	c0.27	c0.43		c0.24	
v/s Ratio Perm	0.20			0.15		0.02
v/c Ratio	0.37	0.46	0.91	0.33	0.85	0.08
Uniform Delay, d1	15.9	10.4	20.7	14.1	28.6	22.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.5	0.2	7.7	0.3	13.0	0.1
Delay (s)	17.4	10.5	28.5	14.3	41.6	22.3
Level of Service	B	B	C	B	D	C
Approach Delay (s)		10.9	24.8		37.5	
Approach LOS		B	C		D	

Intersection Summary

HCM Average Control Delay	22.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	84.3	Sum of lost time (s)	18.0
Intersection Capacity Utilization	76.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

SimTraffic Worksheets

Queuing and Blocking Report

Westgate Center TIA
1/16/2012

Intersection: 1: Courthouse Road & NB Ramp

Movement	EB	EB	WB	WB	NB	NB
Directions Served	L	T	T	R	LT	R
Maximum Queue (ft)	174	244	567	67	663	225
Average Queue (ft)	64	87	548	49	233	117
95th Queue (ft)	116	159	552	59	475	251
Link Distance (ft)		650	533		681	
Upstream Blk Time (%)			40			
Queuing Penalty (veh)			0			
Storage Bay Dist (ft)	150			25		200
Storage Blk Time (%)	0	1	48	14	16	0
Queuing Penalty (veh)	0	1	155	75	54	1

Intersection: 7: Courthouse Road & SB Ramp

Movement	EB	EB	WB	WB	SB	SB
Directions Served	T	R	L	T	LT	R
Maximum Queue (ft)	357	75	125	263	181	70
Average Queue (ft)	118	54	63	94	81	28
95th Queue (ft)	250	92	118	179	134	51
Link Distance (ft)	805			650	686	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		50	100			150
Storage Blk Time (%)	17	1	1	5	0	
Queuing Penalty (veh)	36	4	9	9	0	

Intersection: 9: Courthouse Road & Austin Ridge Drive

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	T	R	LT	R	L	T	R
Maximum Queue (ft)	128	275	50	71	290	200	25	46	125	181	156
Average Queue (ft)	27	99	6	16	131	40	0	8	66	11	49
95th Queue (ft)	62	192	26	46	234	120	5	27	116	71	94
Link Distance (ft)		523			805		326	326		703	703
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	115		25	175		175			100		
Storage Blk Time (%)	0	22	0		2	0			3		
Queuing Penalty (veh)	0	17	1		4	0			0		

Queuing and Blocking Report

Intersection: 1: Courthouse Road & NB Ramp

Movement	EB	EB	WB	WB	NB	NB
Directions Served	L	T	T	R	LT	R
Maximum Queue (ft)	174	380	556	78	696	225
Average Queue (ft)	53	206	407	45	181	81
95th Queue (ft)	113	360	651	58	406	162
Link Distance (ft)		650	533		681	
Upstream Blk Time (%)			9		1	
Queuing Penalty (veh)			0		0	
Storage Bay Dist (ft)	150			25		200
Storage Blk Time (%)	0	7	42	8	6	0
Queuing Penalty (veh)	0	8	81	53	13	1

Intersection: 7: Courthouse Road & SB Ramp

Movement	EB	EB	WB	WB	SB	SB
Directions Served	T	R	L	T	LT	R
Maximum Queue (ft)	825	78	125	673	702	175
Average Queue (ft)	783	65	111	363	379	119
95th Queue (ft)	916	98	149	641	733	210
Link Distance (ft)	805			650	686	
Upstream Blk Time (%)	23			2	10	
Queuing Penalty (veh)	193			17	0	
Storage Bay Dist (ft)		50	100			150
Storage Blk Time (%)	48	5	26	19	41	1
Queuing Penalty (veh)	168	27	171	46	80	4

Queuing and Blocking Report

Westage Center TIA
1/16/2012

Intersection: 9: Courthouse Road & Austin Ridge Drive

Movement	EB	EB	EB	B2	WB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	T	R	T	L	T	R	LT	R	L	T	R
Maximum Queue (ft)	140	582	42	262	200	805	200	137	341	125	790	743
Average Queue (ft)	32	318	4	15	48	336	87	65	121	124	578	50
95th Queue (ft)	105	585	20	95	136	667	216	118	242	130	979	277
Link Distance (ft)		523		1050		805		326	326		703	703
Upstream Blk Time (%)		7				0			1		40	1
Queuing Penalty (veh)		27				0			0		69	2
Storage Bay Dist (ft)	115		25		175		175			100		
Storage Blk Time (%)	0	66	0			18	0			76		
Queuing Penalty (veh)	0	24	0			60	0			2		

Intersection: 9: Courthouse Road & Austin Ridge Drive

Movement	B14	B14
Directions Served	T	T
Maximum Queue (ft)	782	494
Average Queue (ft)	190	26
95th Queue (ft)	605	205
Link Distance (ft)	1245	1245
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 15: Prop. Ent. #2 & Austin Ridge Drive

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Queuing and Blocking Report

Westgate Center TIA
1/25/2012

Intersection: 1: Courthouse Road & NB Ramp

Movement	EB	EB	WB	WB	NB	NB
Directions Served	L	T	T	R	LT	R
Maximum Queue (ft)	174	414	568	54	719	225
Average Queue (ft)	85	188	548	49	549	217
95th Queue (ft)	159	301	553	54	849	258
Link Distance (ft)		650	533		681	
Upstream Blk Time (%)			43		11	
Queuing Penalty (veh)			0		0	
Storage Bay Dist (ft)	150			25		200
Storage Blk Time (%)	0	8	52	16	20	31
Queuing Penalty (veh)	3	16	200	102	101	107

Intersection: 7: Courthouse Road & SB Ramp

Movement	EB	EB	WB	WB	SB	SB
Directions Served	T	R	L	T	LT	R
Maximum Queue (ft)	824	78	125	652	683	175
Average Queue (ft)	805	71	102	195	297	81
95th Queue (ft)	860	90	144	406	529	193
Link Distance (ft)	805			650	686	
Upstream Blk Time (%)	26			0	0	
Queuing Penalty (veh)	244			1	0	
Storage Bay Dist (ft)		50	100			150
Storage Blk Time (%)	46	6	10	14	44	0
Queuing Penalty (veh)	162	38	73	34	36	0

Queuing and Blocking Report

Westgate Center TIA
1/25/2012

Intersection: 9: Courthouse Road & Austin Ridge Drive

Movement	EB	EB	EB	B2	B26	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	T	T	L	T	R	LT	R	L	T
Maximum Queue (ft)	140	606	44	1150	611	50	820	200	27	67	125	175
Average Queue (ft)	43	549	6	949	433	12	182	21	1	11	81	20
95th Queue (ft)	130	731	27	1553	860	37	537	86	10	35	137	102
Link Distance (ft)		523		1050	591		805		326	326		703
Upstream Blk Time (%)		43		36	19		1					
Queuing Penalty (veh)		387		320	174		7					
Storage Bay Dist (ft)	115		25			175		175			100	
Storage Blk Time (%)	0	48	0				9				13	
Queuing Penalty (veh)	0	29	1				14				0	

Intersection: 9: Courthouse Road & Austin Ridge Drive

Movement	SB
Directions Served	R
Maximum Queue (ft)	89
Average Queue (ft)	27
95th Queue (ft)	60
Link Distance (ft)	703
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 15: Prop. Ent. #2 & Austin Ridge Drive

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Queuing and Blocking Report

Westgate Center TIA
1/25/2012

Intersection: 19: Austin Ridge Drive & Mine Rd Ext

Movement	WB	NB	NB	SB	SB
Directions Served	R	T	TR	LT	T
Maximum Queue (ft)	100	31	71	72	110
Average Queue (ft)	50	9	21	19	28
95th Queue (ft)	77	31	52	48	64
Link Distance (ft)		1823	1823	729	729
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	200				
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 25: Courthouse Road & Mine Rd Ext

Movement	EB	EB	WB	SB	SB
Directions Served	L	T	T	L	R
Maximum Queue (ft)	224	859	434	456	70
Average Queue (ft)	35	547	174	146	30
95th Queue (ft)	130	1112	355	298	57
Link Distance (ft)		820	591	4171	4171
Upstream Blk Time (%)		33			
Queuing Penalty (veh)		0			
Storage Bay Dist (ft)	200				
Storage Blk Time (%)	0	37	4		
Queuing Penalty (veh)	0	13	3		

Intersection: 30: Prop. Ent. #1 & Austin Ridge Drive

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty: 2068

Queuing and Blocking Report

Intersection: 1: Courthouse Road & NB Ramp

Movement	EB	EB	WB	WB	NB	NB
Directions Served	L	T	T	R	LT	R
Maximum Queue (ft)	174	181	585	66	723	225
Average Queue (ft)	52	56	549	47	696	206
95th Queue (ft)	101	111	559	59	703	276
Link Distance (ft)		650	533		681	
Upstream Blk Time (%)			45		60	
Queuing Penalty (veh)			0		0	
Storage Bay Dist (ft)	150			25		200
Storage Blk Time (%)	0	0	50	8	69	6
Queuing Penalty (veh)	0	0	201	82	220	23

Intersection: 7: Courthouse Road & SB Ramp

Movement	EB	EB	WB	WB	SB	SB
Directions Served	T	R	L	T	LT	R
Maximum Queue (ft)	824	75	125	678	725	175
Average Queue (ft)	811	68	122	619	702	142
95th Queue (ft)	820	96	138	772	709	219
Link Distance (ft)	805			650	686	
Upstream Blk Time (%)	43			15	58	
Queuing Penalty (veh)	444			220	0	
Storage Bay Dist (ft)		50	100			150
Storage Blk Time (%)	55	12	29	28	66	3
Queuing Penalty (veh)	241	77	282	128	156	13

Intersection: 9: Courthouse Road & Austin Ridge Drive

Movement	EB	EB	EB	B2	B28	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	T	T	L	T	R	LT	R	L	T
Maximum Queue (ft)	139	618	50	1159	613	199	624	200	341	365	125	797
Average Queue (ft)	8	582	4	1114	572	44	192	42	98	317	122	698
95th Queue (ft)	47	591	23	1203	769	136	440	140	223	419	129	965
Link Distance (ft)		523		1050	591		805		326	326		703
Upstream Blk Time (%)		73		70	56				1	77		74
Queuing Penalty (veh)		524		507	404				0	0		67
Storage Bay Dist (ft)	115		25			175		175			100	
Storage Blk Time (%)	0	73	0			0	6	0			94	
Queuing Penalty (veh)	0	22	1			0	16	0			3	

Intersection: 9: Courthouse Road & Austin Ridge Drive

Movement	SB	B14	B14
Directions Served	R	T	T
Maximum Queue (ft)	676	1277	1238
Average Queue (ft)	20	656	403
95th Queue (ft)	148	1470	1226
Link Distance (ft)	703	1245	1245
Upstream Blk Time (%)		24	2
Queuing Penalty (veh)		22	2
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 15: Prop. Ent. #2 & Austin Ridge Drive

Movement	SB	B28	B10
Directions Served	T	T	T
Maximum Queue (ft)	192	357	593
Average Queue (ft)	51	77	41
95th Queue (ft)	187	307	225
Link Distance (ft)	120	298	948
Upstream Blk Time (%)	24	14	
Queuing Penalty (veh)	42	26	
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Queuing and Blocking Report

Intersection: 19: Austin Ridge Drive & Mine Rd Ext

Movement	WB	NB	NB	SB	SB
Directions Served	R	T	TR	LT	T
Maximum Queue (ft)	134	31	54	245	76
Average Queue (ft)	48	1	11	61	22
95th Queue (ft)	79	12	36	120	62
Link Distance (ft)		1823	1823	729	729
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	200				
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 25: Courthouse Road & Mine Rd Ext

Movement	EB	EB	WB	WB	SB	SB
Directions Served	L	T	T	R	L	R
Maximum Queue (ft)	224	856	487	225	2572	2475
Average Queue (ft)	29	750	148	15	1422	1122
95th Queue (ft)	135	1131	329	106	2820	2425
Link Distance (ft)		820	591		4171	4171
Upstream Blk Time (%)		71				
Queuing Penalty (veh)		0				
Storage Bay Dist (ft)	200			200		
Storage Blk Time (%)		73	4	0		
Queuing Penalty (veh)		15	8	0		

Intersection: 30: Prop. Ent. #1 & Austin Ridge Drive

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty: 3744

Queuing and Blocking Report

Westgate Center TIA
1/25/2012

Intersection: 1: Courthouse Road & NB Ramp

Movement	EB	EB	WB	WB	NB	NB
Directions Served	L	T	T	R	LT	R
Maximum Queue (ft)	174	331	585	67	733	225
Average Queue (ft)	92	182	551	50	693	224
95th Queue (ft)	161	289	565	58	734	229
Link Distance (ft)		650	533		681	
Upstream Blk Time (%)			45		29	
Queuing Penalty (veh)			0		0	
Storage Bay Dist (ft)	150			25		200
Storage Blk Time (%)	1	7	54	16	30	36
Queuing Penalty (veh)	6	15	208	101	150	123

Intersection: 7: Courthouse Road & SB Ramp

Movement	EB	EB	WB	WB	SB	SB
Directions Served	T	R	L	T	LT	R
Maximum Queue (ft)	828	75	125	678	750	175
Average Queue (ft)	805	67	93	176	567	105
95th Queue (ft)	856	93	142	381	891	217
Link Distance (ft)	805			650	686	
Upstream Blk Time (%)	26			1	40	
Queuing Penalty (veh)	248			8	0	
Storage Bay Dist (ft)		50	100			150
Storage Blk Time (%)	46	5	12	10	67	1
Queuing Penalty (veh)	166	32	86	24	58	2

Queuing and Blocking Report

Westgate Center TIA
1/25/2012

Intersection: 9: Courthouse Road & Austin Ridge Drive

Movement	EB	EB	EB	B2	B26	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	T	T	L	T	R	LT	R	L	T
Maximum Queue (ft)	140	618	50	1156	611	72	819	200	27	47	125	351
Average Queue (ft)	36	542	6	913	437	13	140	26	0	11	99	90
95th Queue (ft)	116	737	29	1589	855	41	411	105	5	29	150	282
Link Distance (ft)		523		1050	591		805		326	326		703
Upstream Blk Time (%)		42		37	21		0					
Queuing Penalty (veh)		381		334	188		2					
Storage Bay Dist (ft)	115		25			175		175			100	
Storage Blk Time (%)	0	49	0				7	0			36	0
Queuing Penalty (veh)	0	30	1				11	0			1	0

Intersection: 9: Courthouse Road & Austin Ridge Drive

Movement	SB
Directions Served	R
Maximum Queue (ft)	67
Average Queue (ft)	29
95th Queue (ft)	55
Link Distance (ft)	703
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 15: Prop. Ent. #2 & Austin Ridge Drive

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Queuing and Blocking Report

Westgate Center TIA
1/25/2012

Intersection: 19: Austin Ridge Drive & Mine Rd Ext

Movement	WB	NB	NB	SB	SB
Directions Served	R	T	TR	LT	T
Maximum Queue (ft)	128	56	75	52	74
Average Queue (ft)	52	12	21	18	26
95th Queue (ft)	85	37	48	41	59
Link Distance (ft)		1823	1823	729	729
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	200				
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 25: Courthouse Road & Mine Rd Ext

Movement	EB	EB	WB	WB	SB	SB
Directions Served	L	T	T	R	L	R
Maximum Queue (ft)	224	872	569	225	520	132
Average Queue (ft)	38	530	154	6	178	33
95th Queue (ft)	144	1072	342	63	371	68
Link Distance (ft)		820	591		4171	4171
Upstream Blk Time (%)		25				
Queuing Penalty (veh)		0				
Storage Bay Dist (ft)	200			200		
Storage Blk Time (%)	0	37	3	0		
Queuing Penalty (veh)	0	13	2	0		

Intersection: 30: Prop. Ent. #1 & Austin Ridge Drive

Movement	WB	WB	SB
Directions Served	L	R	L
Maximum Queue (ft)	50	31	31
Average Queue (ft)	16	11	0
95th Queue (ft)	40	35	6
Link Distance (ft)	679	679	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			200
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty 2192

Queuing and Blocking Report

Intersection: 1: Courthouse Road & NB Ramp

Movement	EB	EB	WB	WB	NB	NB
Directions Served	L	T	T	R	LT	R
Maximum Queue (ft)	134	349	578	67	720	225
Average Queue (ft)	48	66	549	47	697	206
95th Queue (ft)	93	149	580	60	706	276
Link Distance (ft)		650	533		681	
Upstream Blk Time (%)			45		58	
Queuing Penalty (veh)			0		0	
Storage Bay Dist (ft)	150			25		200
Storage Blk Time (%)	0	0	51	9	66	7
Queuing Penalty (veh)	0	1	203	93	210	28

Intersection: 7: Courthouse Road & SB Ramp

Movement	EB	EB	WB	WB	SB	SB
Directions Served	T	R	L	T	LT	R
Maximum Queue (ft)	828	75	125	677	742	175
Average Queue (ft)	811	70	123	618	704	141
95th Queue (ft)	820	92	134	768	718	222
Link Distance (ft)	805			650	686	
Upstream Blk Time (%)	43			16	57	
Queuing Penalty (veh)	453			233	0	
Storage Bay Dist (ft)		50	100			150
Storage Blk Time (%)	55	15	30	28	63	4
Queuing Penalty (veh)	246	95	293	130	157	17

Queuing and Blocking Report

Westgate Center TIA
1/25/2012

Intersection: 9: Courthouse Road & Austin Ridge Drive

Movement	EB	EB	EB	B2	B26	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	T	T	L	T	R	LT	R	L	T
Maximum Queue (ft)	139	608	50	1141	614	199	548	200	341	360	125	778
Average Queue (ft)	9	582	4	1115	564	37	185	31	86	336	122	762
95th Queue (ft)	41	589	24	1197	772	107	372	100	176	362	128	831
Link Distance (ft)		523		1050	591		805		326	326		703
Upstream Blk Time (%)		71		69	53				0	80		86
Queuing Penalty (veh)		515		497	383				0	0		84
Storage Bay Dist (ft)	115		25			175		175			100	
Storage Blk Time (%)	0	72	0				6	0			95	
Queuing Penalty (veh)	0	24	0				17	0			3	

Intersection: 9: Courthouse Road & Austin Ridge Drive

Movement	SB	B14	B14
Directions Served	R	T	T
Maximum Queue (ft)	64	1286	1254
Average Queue (ft)	11	954	681
95th Queue (ft)	38	1701	1482
Link Distance (ft)	703	1245	1245
Upstream Blk Time (%)		55	4
Queuing Penalty (veh)		54	4
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 15: Prop. Ent. #2 & Austin Ridge Drive

Movement	SB	B28	B10
Directions Served	T	T	T
Maximum Queue (ft)	192	381	953
Average Queue (ft)	109	188	323
95th Queue (ft)	258	471	991
Link Distance (ft)	120	298	931
Upstream Blk Time (%)	53	46	21
Queuing Penalty (veh)	102	89	40
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Queuing and Blocking Report

Westgate Center TIA
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Intersection: 19: Austin Ridge Drive & Mine Rd Ext

Movement	WB	NB	SB	SB
Directions Served	R	TR	LT	T
Maximum Queue (ft)	95	77	190	71
Average Queue (ft)	49	7	55	16
95th Queue (ft)	77	30	100	46
Link Distance (ft)		1823	729	729
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	200			
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 25: Courthouse Road & Mine Rd Ext

Movement	EB	EB	WB	WB	SB	SB
Directions Served	L	T	T	R	L	R
Maximum Queue (ft)	224	875	457	225	1019	996
Average Queue (ft)	34	743	157	24	681	419
95th Queue (ft)	151	1132	328	138	1154	1054
Link Distance (ft)		820	591		4171	4171
Upstream Blk Time (%)		72				
Queuing Penalty (veh)		0				
Storage Bay Dist (ft)	200			200		
Storage Blk Time (%)	0	75	4	0		
Queuing Penalty (veh)	0	15	6	0		

Intersection: 30: Prop. Ent. #1 & Austin Ridge Drive

Movement	WB	WB	SB	SB	B17
Directions Served	L	R	L	T	T
Maximum Queue (ft)	178	31	224	1138	190
Average Queue (ft)	25	6	9	135	7
95th Queue (ft)	92	25	69	652	62
Link Distance (ft)	679	679		1087	640
Upstream Blk Time (%)				3	
Queuing Penalty (veh)				12	
Storage Bay Dist (ft)			200		
Storage Blk Time (%)				15	
Queuing Penalty (veh)				2	

Network Summary

Network wide Queuing Penalty: 4008

Queuing and Blocking Report

Westgate Center TIA
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Intersection: 1: Courthouse Road & Austin Ridge Drive

Movement	EB	EB	EB	EB	WB	WB	WB	SB	SB	SB
Directions Served	L	L	R	R	T	T	R	L	L	R
Maximum Queue (ft)	114	55	250	291	320	345	52	58	94	78
Average Queue (ft)	30	26	83	143	86	118	22	14	24	18
95th Queue (ft)	87	53	153	238	192	221	43	36	58	51
Link Distance (ft)			1029	1029	1654	1654	1654		603	603
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	300	300						200		
Storage Blk Time (%)										
Queuing Penalty (veh)										

Intersection: 2: Courthouse Road & I-95 NB Ramp

Movement	WB	WB	WB	NB	NB
Directions Served	T	T	T	L	L
Maximum Queue (ft)	96	116	111	130	135
Average Queue (ft)	46	63	37	40	58
95th Queue (ft)	79	95	75	71	92
Link Distance (ft)	1606	1606	1606		1432
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)				300	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 4: EB Courthouse & I-95 SB Ramp

Movement	EB	EB	EB	SB	SB
Directions Served	T	T	R	L	T
Maximum Queue (ft)	54	116	78	31	31
Average Queue (ft)	7	14	22	5	6
95th Queue (ft)	35	52	58	23	25
Link Distance (ft)	655	655		1043	1043
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			300		
Storage Blk Time (%)					
Queuing Penalty (veh)					

Queuing and Blocking Report

Westgate Center TIA
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Intersection: 15: Prop. Ent. #2 & Austin Ridge Drive

Movement	
Directions Served	
Maximum Queue (ft)	
Average Queue (ft)	
95th Queue (ft)	
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 19: Austin Ridge Drive & Mine Rd Ext

Movement	WB	NB	NB	SB	SB
Directions Served	R	T	TR	LT	T
Maximum Queue (ft)	166	97	115	74	96
Average Queue (ft)	73	32	47	28	29
95th Queue (ft)	127	70	85	60	67
Link Distance (ft)		1823	1823	729	729
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	200				
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 25: Courthouse Road & Mine Rd Ext

Movement	EB	EB	EB	WB	WB	WB	SB	SB
Directions Served	L	T	T	T	T	R	L	R
Maximum Queue (ft)	144	294	294	307	416	225	387	92
Average Queue (ft)	52	147	177	148	162	21	201	34
95th Queue (ft)	94	236	268	258	281	127	311	71
Link Distance (ft)		816	816	647	647		4158	4158
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	200					200		
Storage Blk Time (%)		1			4	0		
Queuing Penalty (veh)		1			6	0		

Queuing and Blocking Report

Intersection: 1: Courthouse Road & Austin Ridge Drive

Movement	EB	EB	EB	EB	WB	WB	WB	SB	SB	SB
Directions Served	L	L	R	R	T	T	R	L	L	R
Maximum Queue (ft)	53	53	263	268	661	754	117	81	126	33
Average Queue (ft)	16	12	67	110	221	275	32	26	45	7
95th Queue (ft)	45	36	133	191	413	487	60	57	90	22
Link Distance (ft)			1029	1029	1654	1654	1654		603	603
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	300	300						200		
Storage Blk Time (%)										
Queuing Penalty (veh)										

Intersection: 2: Courthouse Road & i-95 NB Ramp

Movement	WB	WB	WB	NB	NB
Directions Served	T	T	T	L	L
Maximum Queue (ft)	225	247	200	247	263
Average Queue (ft)	106	133	85	102	116
95th Queue (ft)	175	207	152	169	185
Link Distance (ft)	1606	1606	1606		1432
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)				300	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 4: EB Courthouse & I-95 SB Ramp

Movement	EB	EB	EB	SB	SB
Directions Served	T	T	R	L	T
Maximum Queue (ft)	98	139	160	79	116
Average Queue (ft)	40	56	63	38	55
95th Queue (ft)	85	111	117	57	95
Link Distance (ft)	655	655		1043	1043
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			300		
Storage Blk Time (%)					
Queuing Penalty (veh)					

Queuing and Blocking Report

Intersection: 15: Prop. Ent. #2 & Austin Ridge Drive

Movement	
Directions Served	
Maximum Queue (ft)	
Average Queue (ft)	
95th Queue (ft)	
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 19: Austin Ridge Drive & Mine Rd Ext

Movement	WB	NB	NB	SB	SB
Directions Served	R	T	TR	LT	T
Maximum Queue (ft)	157	53	75	203	96
Average Queue (ft)	75	10	24	75	31
95th Queue (ft)	116	33	55	136	67
Link Distance (ft)		1823	1823	729	729
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	200				
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 25: Courthouse Road & Mine Rd Ext

Movement	EB	EB	EB	WB	WB	WB	SB	SB
Directions Served	L	T	T	T	T	R	L	R
Maximum Queue (ft)	94	138	207	425	490	225	366	114
Average Queue (ft)	35	67	93	175	184	35	165	40
95th Queue (ft)	69	118	155	342	360	168	291	82
Link Distance (ft)		816	816	647	647		4158	4158
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	200					200		
Storage Blk Time (%)					3	0		
Queuing Penalty (veh)					13	0		

Queuing and Blocking Report

Westgate Center TIA
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Intersection: 1: Courthouse Road & Austin Ridge Drive

Movement	EB	EB	EB	EB	WB	WB	WB	WB	SB	SB	SB	SB
Directions Served	L	L	R	R	T	T	T	R	L	L	L	R
Maximum Queue (ft)	94	400	470	449	188	216	113	182	122	92	97	77
Average Queue (ft)	43	54	201	169	68	96	50	67	42	33	37	11
95th Queue (ft)	73	128	345	301	126	156	94	116	74	65	74	34
Link Distance (ft)			1023	1023	1645	1645	1645			588	588	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	300	300						600	400			400
Storage Blk Time (%)			1									
Queuing Penalty (veh)			1									

Intersection: 2: Courthouse Road & i-95 NB Ramp

Movement	WB	WB	WB	NB	NB
Directions Served	T	T	T	L	L
Maximum Queue (ft)	74	127	173	107	135
Average Queue (ft)	34	55	79	43	73
95th Queue (ft)	63	91	126	72	113
Link Distance (ft)	1606	1606	1606		1432
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)				300	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 4: EB Courthouse & I-95 SB Ramp

Movement	EB	EB	EB	SB	SB
Directions Served	T	T	R	L	T
Maximum Queue (ft)	76	94	765	31	51
Average Queue (ft)	10	22	31	6	8
95th Queue (ft)	43	70	177	26	30
Link Distance (ft)	649	649	649	1043	1043
Upstream Blk Time (%)			0		
Queuing Penalty (veh)			0		
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Queuing and Blocking Report

Westgate Center TIA
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Intersection: 15: Prop. Ent. #2 & Austin Ridge Drive

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	R	T	T	R	L	T	T
Maximum Queue (ft)	66	71	44	177	106	141	76	73	74
Average Queue (ft)	27	34	13	69	6	50	34	26	34
95th Queue (ft)	51	63	34	118	35	84	61	54	65
Link Distance (ft)	521	521		1303	1303			329	329
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)			200			200	200		
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 19: Austin Ridge Drive & Mine Rd Ext

Movement	WB	NB	NB	SB	SB
Directions Served	R	T	TR	LT	T
Maximum Queue (ft)	196	77	110	96	116
Average Queue (ft)	77	23	42	43	38
95th Queue (ft)	135	59	80	81	79
Link Distance (ft)		1823	1823	729	729
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	200				
Storage Blk Time (%)	0				
Queuing Penalty (veh)	0				

Intersection: 25: Courthouse Road & Mine Rd Ext

Movement	EB	EB	EB	WB	WB	WB	SB	SB
Directions Served	L	T	T	T	T	R	L	R
Maximum Queue (ft)	224	335	353	338	328	47	396	113
Average Queue (ft)	49	163	183	126	148	2	200	35
95th Queue (ft)	97	273	289	231	258	17	307	71
Link Distance (ft)		816	816	647	647	647	4158	4158
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	200							
Storage Blk Time (%)		3						
Queuing Penalty (veh)		3						

Queuing and Blocking Report

Westgate Center TIA
1/27/2012

Intersection: 30: Prop. Ent. #1 & Austin Ridge Drive

Movement	WB	WB	SB
Directions Served	L	R	L
Maximum Queue (ft)	51	31	28
Average Queue (ft)	16	10	0
95th Queue (ft)	42	33	6
Link Distance (ft)	679		
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		200	100
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty 5

Queuing and Blocking Report

Westgate Center TIA
1/27/2012

Intersection: 1: Courthouse Road & Austin Ridge Drive

Movement	EB	EB	EB	EB	WB	WB	WB	WB	SB	SB	SB	SB
Directions Served	L	L	R	R	T	T	T	R	L	L	L	R
Maximum Queue (ft)	97	134	359	319	335	404	597	699	244	273	276	177
Average Queue (ft)	63	58	191	159	183	219	168	269	144	162	148	42
95th Queue (ft)	94	96	289	250	271	302	299	519	212	233	225	102
Link Distance (ft)			1023	1023	1645	1645	1645			588	588	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	300	300						600	400			400
Storage Blk Time (%)			0				0	1				
Queuing Penalty (veh)			1				1	3				

Intersection: 2: Courthouse Road & i-95 NB Ramp

Movement	WB	WB	WB	NB	NB
Directions Served	T	T	T	L	L
Maximum Queue (ft)	381	513	575	268	368
Average Queue (ft)	141	213	252	132	185
95th Queue (ft)	262	362	399	219	287
Link Distance (ft)	1606	1606	1606		1432
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)				300	
Storage Blk Time (%)					1
Queuing Penalty (veh)					2

Intersection: 4: EB Courthouse & I-95 SB Ramp

Movement	EB	EB	EB	SB	SB
Directions Served	T	T	R	L	T
Maximum Queue (ft)	200	244	326	94	157
Average Queue (ft)	76	106	82	44	64
95th Queue (ft)	156	193	181	70	109
Link Distance (ft)	649	649	649	1043	1043
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Queuing and Blocking Report

Westgate Center TIA
1/27/2012

Intersection: 15: Prop. Ent. #2 & Austin Ridge Drive

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	R	T	T	R	L	T	T
Maximum Queue (ft)	300	331	225	327	285	224	140	96	98
Average Queue (ft)	148	161	32	143	57	98	66	44	50
95th Queue (ft)	250	284	98	223	170	176	115	87	88
Link Distance (ft)	521	521		1303	1303			324	324
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)			200			200	200		
Storage Blk Time (%)		3	0		0	0			
Queuing Penalty (veh)		5	0		0	0			

Intersection: 19: Austin Ridge Drive & Mine Rd Ext

Movement	WB	WB	NB	NB	SB	SB
Directions Served	L	R	T	TR	LT	T
Maximum Queue (ft)	310	225	81	97	440	160
Average Queue (ft)	11	116	10	30	150	56
95th Queue (ft)	99	194	39	76	273	120
Link Distance (ft)	1976		1823	1823	729	729
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		200				
Storage Blk Time (%)		1				
Queuing Penalty (veh)		0				

Intersection: 25: Courthouse Road & Mine Rd Ext

Movement	EB	EB	EB	WB	WB	WB	SB	SB
Directions Served	L	T	T	T	T	R	L	R
Maximum Queue (ft)	87	204	203	434	469	31	319	130
Average Queue (ft)	32	94	102	150	175	0	175	43
95th Queue (ft)	63	163	161	327	369	6	284	87
Link Distance (ft)		816	816	647	647	647	4158	4158
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	200							
Storage Blk Time (%)		0						
Queuing Penalty (veh)		0						

Queuing and Blocking Report

Intersection: 30: Prop. Ent. #1 & Austin Ridge Drive

Movement	WB	WB	B28	SB
Directions Served	L	R	T	L
Maximum Queue (ft)	29	31	412	31
Average Queue (ft)	13	7	16	3
95th Queue (ft)	36	29	150	18
Link Distance (ft)	679		324	
Upstream Blk Time (%)			0	
Queuing Penalty (veh)			0	
Storage Bay Dist (ft)		200		100
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 12

Queuing and Blocking Report

Westgate Center TIA
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Intersection: 1: Courthouse Road & Austin Ridge Drive

Movement	EB	EB	EB	EB	WB	WB	WB	SB	SB	SB
Directions Served	L	L	R	R	T	T	R	L	L	R
Maximum Queue (ft)	72	55	294	454	275	347	53	61	78	126
Average Queue (ft)	25	24	118	195	106	139	26	15	23	18
95th Queue (ft)	52	51	231	321	201	243	45	39	56	56
Link Distance (ft)			1029	1029	1654	1654	1654		603	603
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	300	300						200		
Storage Blk Time (%)			0							
Queuing Penalty (veh)			0							

Intersection: 2: Courthouse Road & i-95 NB Ramp

Movement	WB	WB	WB	NB	NB
Directions Served	T	T	T	L	L
Maximum Queue (ft)	96	117	118	101	111
Average Queue (ft)	47	59	46	40	54
95th Queue (ft)	78	95	85	71	84
Link Distance (ft)	1606	1606	1606		1432
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)				300	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 4: EB Courthouse & I-95 SB Ramp

Movement	EB	EB	EB	SB	SB
Directions Served	T	T	R	L	T
Maximum Queue (ft)	74	118	117	31	54
Average Queue (ft)	8	16	21	5	8
95th Queue (ft)	39	60	69	23	31
Link Distance (ft)	655	655		1043	1043
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			300		
Storage Blk Time (%)					
Queuing Penalty (veh)					

Queuing and Blocking Report

Intersection: 15: Prop. Ent. #2 & Austin Ridge Drive

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 19: Austin Ridge Drive & Mine Rd Ext

Movement	WB	NB	NB	SB	SB
Directions Served	R	T	TR	LT	T
Maximum Queue (ft)	164	98	118	98	76
Average Queue (ft)	75	36	50	27	36
95th Queue (ft)	124	73	87	60	71
Link Distance (ft)		1823	1823	729	729
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	200				
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 25: Courthouse Road & Mine Rd Ext

Movement	EB	EB	EB	WB	WB	WB	SB	SB
Directions Served	L	T	T	T	T	R	L	R
Maximum Queue (ft)	224	355	337	421	458	225	498	115
Average Queue (ft)	52	171	203	158	172	39	234	33
95th Queue (ft)	122	273	304	287	304	178	380	71
Link Distance (ft)		816	816	647	647		4158	4158
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	200					200		
Storage Blk Time (%)		3			5	0		
Queuing Penalty (veh)		2			9	0		

Queuing and Blocking Report
2026 Background PM Peak Hour (New Interchange)

Westgate Center TIA
1/27/2012

Intersection: 1: Courthouse Road & Austin Ridge Drive

Movement	EB	EB	EB	EB	WB	WB	WB	SB	SB	SB
Directions Served	L	L	R	R	T	T	R	L	L	R
Maximum Queue (ft)	54	48	265	312	491	672	70	107	142	80
Average Queue (ft)	15	14	77	127	213	278	31	33	43	13
95th Queue (ft)	41	37	161	230	385	468	55	76	95	45
Link Distance (ft)			1029	1029	1654	1654	1654		603	603
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	300	300						200		
Storage Blk Time (%)										
Queuing Penalty (veh)										

Intersection: 2: Courthouse Road & i-95 NB Ramp

Movement	WB	WB	WB	NB	NB
Directions Served	T	T	T	L	L
Maximum Queue (ft)	230	290	178	230	242
Average Queue (ft)	126	161	95	113	127
95th Queue (ft)	202	242	154	182	191
Link Distance (ft)	1606	1606	1606		1432
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)				300	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 4: EB Courthouse & I-95 SB Ramp

Movement	EB	EB	EB	SB	SB
Directions Served	T	T	R	L	T
Maximum Queue (ft)	80	163	180	94	140
Average Queue (ft)	37	57	53	39	53
95th Queue (ft)	77	111	106	66	98
Link Distance (ft)	655	655		1043	1043
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			300		
Storage Blk Time (%)					
Queuing Penalty (veh)					

Queuing and Blocking Report
2026 Background PM Peak Hour (New Interchange)

Intersection: 15: Prop. Ent. #2 & Austin Ridge Drive

Movement	
Directions Served	
Maximum Queue (ft)	
Average Queue (ft)	
95th Queue (ft)	
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 19: Austin Ridge Drive & Mine Rd Ext

Movement	WB	NB	NB	SB	SB
Directions Served	R	T	TR	LT	T
Maximum Queue (ft)	159	31	76	204	115
Average Queue (ft)	68	5	19	82	35
95th Queue (ft)	112	23	55	148	83
Link Distance (ft)		1823	1823	729	729
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	200				
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 25: Courthouse Road & Mine Rd Ext

Movement	EB	EB	EB	WB	WB	WB	SB	SB
Directions Served	L	T	T	T	T	R	L	R
Maximum Queue (ft)	116	188	204	556	616	225	484	93
Average Queue (ft)	36	85	104	213	234	78	187	40
95th Queue (ft)	73	148	169	374	427	253	342	73
Link Distance (ft)		816	816	647	647		4158	4158
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	200					200		
Storage Blk Time (%)		0			8	0		
Queuing Penalty (veh)		0			37	1		

Queuing and Blocking Report
2026 Total Future AM Peak Hour Improved

Westgate Center TIA
1/27/2012

Intersection: 1: Courthouse Road & Austin Ridge Drive

Movement	EB	EB	EB	EB	WB	WB	WB	WB	SB	SB	SB	SB
Directions Served	L	L	R	R	T	T	T	R	L	L	L	R
Maximum Queue (ft)	114	398	632	569	168	194	155	224	101	114	96	48
Average Queue (ft)	45	61	267	219	63	94	53	76	42	29	37	10
95th Queue (ft)	88	159	449	393	119	149	106	153	73	63	75	27
Link Distance (ft)			1023	1023	1645	1645	1645			588	588	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	300	300						600	400			400
Storage Blk Time (%)			6									
Queuing Penalty (veh)			7									

Intersection: 2: Courthouse Road & i-95 NB Ramp

Movement	WB	WB	WB	NB	NB
Directions Served	T	T	T	L	L
Maximum Queue (ft)	74	128	140	120	155
Average Queue (ft)	36	62	82	46	78
95th Queue (ft)	62	104	125	78	123
Link Distance (ft)	1606	1606	1606		1432
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)				300	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 4: EB Courthouse & I-95 SB Ramp

Movement	EB	EB	EB	SB	SB
Directions Served	T	T	R	L	T
Maximum Queue (ft)	74	94	763	31	51
Average Queue (ft)	8	13	39	6	8
95th Queue (ft)	41	57	241	26	29
Link Distance (ft)	649	649	649	1043	1043
Upstream Blk Time (%)			0		
Queuing Penalty (veh)			0		
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Queuing and Blocking Report
2026 Total Future AM Peak Hour Improved

Westgate Center TIA
1/27/2012

Intersection: 15: Prop. Ent. #2 & Austin Ridge Drive

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	R	T	T	R	L	T	T
Maximum Queue (ft)	74	71	62	121	102	117	76	76	72
Average Queue (ft)	25	33	11	69	11	51	36	25	35
95th Queue (ft)	53	68	35	108	48	87	59	59	62
Link Distance (ft)	520	520		1303	1303			372	372
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)			200			200	200		
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 19: Austin Ridge Drive & Mine Rd Ext

Movement	WB	NB	NB	SB	SB
Directions Served	R	T	TR	LT	T
Maximum Queue (ft)	184	136	138	97	116
Average Queue (ft)	82	38	51	51	41
95th Queue (ft)	126	84	93	86	81
Link Distance (ft)		1823	1823	729	729
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	200				
Storage Blk Time (%)	0				
Queuing Penalty (veh)	0				

Intersection: 25: Courthouse Road & Mine Rd Ext

Movement	EB	EB	EB	WB	WB	WB	SB	SB
Directions Served	L	T	T	T	T	R	L	R
Maximum Queue (ft)	224	377	397	295	312	48	416	154
Average Queue (ft)	52	197	214	147	168	2	235	35
95th Queue (ft)	114	311	320	255	280	15	359	84
Link Distance (ft)		816	816	647	647	647	4158	4158
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	200							
Storage Blk Time (%)		5						
Queuing Penalty (veh)		4						

Queuing and Blocking Report
2026 Total Future AM Peak Hour Improved

Westgate Center TIA
1/27/2012

Intersection: 30: Prop. Ent. #1 & Austin Ridge Drive

Movement	WB	WB
Directions Served	L	R
Maximum Queue (ft)	51	31
Average Queue (ft)	14	11
95th Queue (ft)	38	35
Link Distance (ft)	679	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		200
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 12

Queuing and Blocking Report
2026 Total Future PM Improved

Westgate Center TIA
1/27/2012

Intersection: 1: Courthouse Road & Austin Ridge Drive

Movement	EB	EB	EB	EB	WB	WB	WB	WB	SB	SB	SB	SB
Directions Served	L	L	R	R	T	T	T	R	L	L	L	R
Maximum Queue (ft)	158	140	337	299	309	323	275	666	499	548	521	499
Average Queue (ft)	63	64	194	159	175	202	149	235	256	278	263	54
95th Queue (ft)	105	116	296	253	261	277	241	459	417	435	428	193
Link Distance (ft)			1023	1023	1645	1645	1645			588	588	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	300	300						600	400			400
Storage Blk Time (%)			0					0	2	4	3	
Queuing Penalty (veh)			1					1	5	11	6	

Intersection: 2: Courthouse Road & i-95 NB Ramp

Movement	WB	WB	WB	NB	NB
Directions Served	T	T	T	L	L
Maximum Queue (ft)	307	404	475	304	320
Average Queue (ft)	153	221	268	157	203
95th Queue (ft)	249	340	406	257	286
Link Distance (ft)	1606	1606	1606		1432
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)				300	
Storage Blk Time (%)				0	0
Queuing Penalty (veh)				1	1

Intersection: 4: EB Courthouse & I-95 SB Ramp

Movement	EB	EB	EB	SB	SB
Directions Served	T	T	R	L	T
Maximum Queue (ft)	248	766	286	92	120
Average Queue (ft)	69	106	84	42	57
95th Queue (ft)	163	270	186	69	106
Link Distance (ft)	649	649	649	1043	1043
Upstream Blk Time (%)		0			
Queuing Penalty (veh)		0			
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Queuing and Blocking Report
2026 Total Future PM Improved

Westgate Center TIA
1/27/2012

Intersection: 15: Prop. Ent. #2 & Austin Ridge Drive

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	R	T	T	R	L	T	T
Maximum Queue (ft)	414	423	225	287	300	225	222	163	161
Average Queue (ft)	160	171	44	173	71	118	81	60	65
95th Queue (ft)	271	287	147	251	224	213	140	114	118
Link Distance (ft)	520	520		1303	1303			278	278
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)			200			200	200		
Storage Blk Time (%)		3	0		0	1	0		
Queuing Penalty (veh)		5	0		1	1	0		

Intersection: 19: Austin Ridge Drive & Mine Rd Ext

Movement	WB	WB	NB	NB	SB	SB
Directions Served	L	R	T	TR	LT	T
Maximum Queue (ft)	258	225	74	96	352	188
Average Queue (ft)	10	121	12	29	143	47
95th Queue (ft)	91	205	46	70	245	117
Link Distance (ft)	1976		1823	1823	729	729
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		200				
Storage Blk Time (%)		1				
Queuing Penalty (veh)		0				

Intersection: 25: Courthouse Road & Mine Rd Ext

Movement	EB	EB	EB	WB	WB	SB	SB
Directions Served	L	T	T	T	T	L	R
Maximum Queue (ft)	97	244	228	552	592	368	117
Average Queue (ft)	33	110	117	205	231	199	45
95th Queue (ft)	68	185	185	404	438	315	90
Link Distance (ft)		816	816	647	647	4158	4158
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	200						
Storage Blk Time (%)		0					
Queuing Penalty (veh)		0					

Queuing and Blocking Report
2026 Total Future PM Improved

Westgate Center TIA
1/27/2012

Intersection: 30: Prop. Ent. #1 & Austin Ridge Drive

Movement	WB	WB	B28	SB
Directions Served	L	R	T	L
Maximum Queue (ft)	29	30	365	31
Average Queue (ft)	11	6	10	4
95th Queue (ft)	34	27	107	20
Link Distance (ft)	679		278	
Upstream Blk Time (%)			0	
Queuing Penalty (veh)			0	
Storage Bay Dist (ft)		200		100
Storage Blk Time (%)				
Queuing Penalty (veh)				

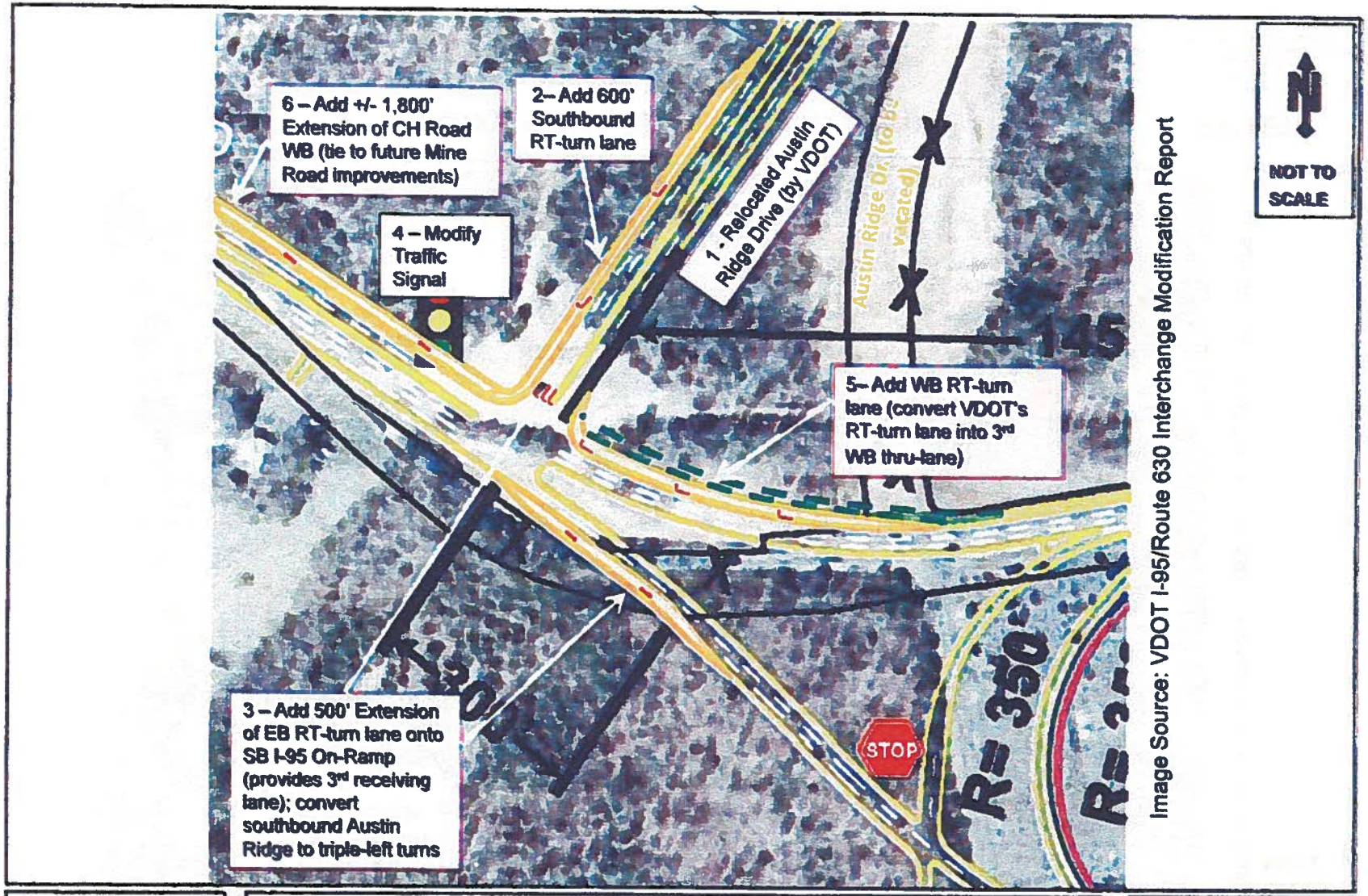
Network Summary

Network wide Queuing Penalty 34

Attachment D

Conceptual Roadway Improvements at the

Courthouse Road/Relocated Austin Ridge Drive Intersection



Bowman

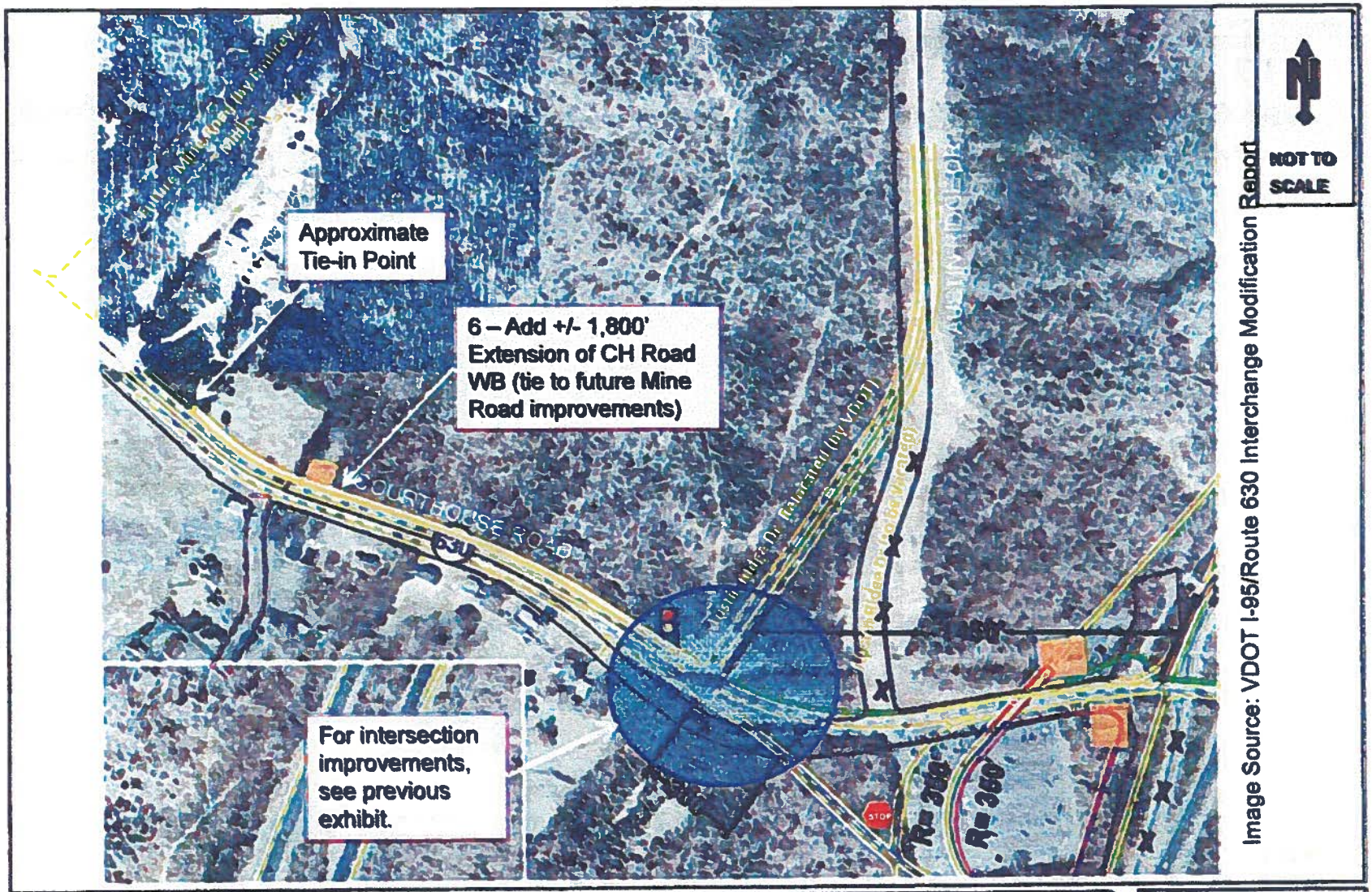
CONCEPTUAL OFF-SITE IMPROVEMENTS EXHIBIT

Proposed Westgate Center
Traffic Impact Analysis – Stafford County, Virginia

EXHIBIT D1

January 2012

BCE Project # 2050-01-000



Bowman CONSULTING

CONCEPTUAL IMPROVEMENT EXHIBIT

Proposed Westgate Center
Traffic Impact Analysis – Stafford County, Virginia

EXHIBIT D2

January 2012

SCG Project # 2050-01-001

Attachment E

Cost Estimates of Conceptual Improvements at the

Courthouse Road/Relocated Austin Ridge Drive Intersection

Table E - Summary of Bid Level Costs at Courthouse Road/Austin Ridge Road Intersection[1]
Full Build-Out of Westgate Center

Item	Improvement	Qty	Unit	Right-Of-Way Acquisition Unit Cost: $100,000 per Acre		Clearing and Grubbing Unit Cost: $10,000 per Acre		Aggregate Base Material[2] Unit Cost: $27 per ton		Base Asphalt Concrete Ty. BM-25.0A[3] Unit Cost: $95 per ton		Intermediate Asphalt Concrete Ty. IM-19.0D[4] Unit Cost: $115 per ton		Surface Asphalt Concrete Ty. SM-9.5D[5] Unit Cost: $123 per ton		Total Improvement Cost	Comment
				Acre	Cost	Acre	Cost	Tons	Cost	Tons	Cost	Tons	Cost	Tons	Cost		
1	Relocation of Austin Ridge Road	1	Each		$0		$0		$0		$0		$0		$0	$0	By VDOT as part of I-95/630 Interchange Reconstruction
2	Add Southbound Right-Turn Lane on Austin Ridge Road																
	Storage	4,800	Sq. Ft.	0.11	$11,000	0.11	$1,100	300	$8,100	13	$1,235	8	$920	5	$615	$22,970	Assumes 400' storage with 200' taper Also assumes
	Taper	1,200	Sq. Ft.	0.03	$3,000	0.03	$300	75	$2,025	3	$285	2	$230	1	$123	$5,963	12' width lanes with a straight line taper
3	Add 500' to Eastbound Right-Turn Lane at SB I-95 On-Ramp																
	Storage	6,000	Sq. Ft.	0.14	$14,000	0.14	$1,400	375	$10,125	17	$1,615	10	$1,150	7	$861	$29,151	Assumes 500' of storage and 12' width lanes
4	Modify Traffic Signal	1	Ea.													$175,000	
5	Add Westbound Right-Turn Lane																
	Storage	7,200	Sq. Ft.	0.17	$17,000	0.17	$1,700	450	$12,150	20	$1,900	12	$1,380	8	$984	$35,114	Assumes 600' storage with 200' taper Also assumes
	Taper	1,200	Sq. Ft.	0.03	$3,000	0.03	$300	75	$2,025	3	$285	2	$230	1	$123	$5,963	12' width lanes with a straight line taper
6	Add +/-1,800' of Westbound Through-Lane (b/t Austin Ridge Rd and Future Mine Rd.)																
	Full Width	21,600	Sq. Ft.	0.50	$50,000	0.50	$5,000	1,350	$36,450	60	$5,700	36	$4,140	24	$2,952	$104,242	Assumes 1,800' length and 12' width lanes
7	Subtotal 1 (Sum of Lines 1-6)				$98,000		$9,800		$70,875		$11,020		$8,050		$5,658	$378,000	Construction sub-total (rounded to Nearest $1,000)
8	Signing and Striping	1%	LS												Signing and Striping	$4,000	1% of Construction sub-total (Rounded to Nearest $1,000)
9	Construction Surveying	2%	LS												Construction Surveying	$8,000	2% of Construction sub-total (Rounded to Nearest $1,000)
10	Subtotal 2 (Sum of Lines 7-9)														Subtotal 2 (Lines 7-9)	$390,000	
11	Contingency	15%	LS												Contingency	$59,000	15% of Construction sub-total (Rounded to Nearest $1,000)
	Total Bid Level Costs of Improvements														Total	$449,000	

[1] Costs derived from 2011 VDOT Bid Tabs for similar size and scope projects
[2] Assumes 10" Base Layer and stone weight of 150lbs/ft^3
[3] Assumes 5" Base Layer and asphalt weight of 120 lbs/yd^2/in
[4] Assumes 3" Intermediate Layer and asphalt weight of 120 lbs/yd^2/in
[5] Assumes 2" Surface Layer and asphalt weight of 120 lbs/yd^2/in

■ S. PATZ & ASSOCIATES, INC ■
■ REAL ESTATE CONSULTANTS ■

February 1, 2012

Mr. Charles W. Payne, Jr.
Attorney at Law
Hirschler Fleischer
725 Jackson Street, Suite 200
Fredericksburg, Virginia 22401

Dear Mr. Payne:

S. Patz & Associates, Inc. (SPA) is pleased to submit to you our fiscal impacts study for the proposed new mixed use development to be called Westgate Center. Westgate Center is located in central Stafford County, Virginia, strategically placed between Interstate I-95 and Austin Ridge Drive just north of the interchange between I-95 and Courthouse Road. This development will have 51 upscale single family homes, 645,000 square feet of commercial space, including retail and office, and two hotels. It promises to be a significant cornerstone to the development planned by the County around the Stafford County Administration Building. Westgate Center is to be located adjacent to the upscale Austin Ridge subdivision.

Westgate Center will generate substantial new taxes for Stafford County. Our analysis shows that the center will yield an annual $3.0 million in surplus revenues for the County above the costs of services and facilities to serve the center at project build-out. Tax revenues generated would total $3.8 million annually at buildout, in constant year 2011 dollars, compared to costs to the County of $0.8 million. Both the residential and commercial components of the proposed center would create revenue surplus over costs, including the costs of educating children. Thus, it will be a positive contribution to the tax base of Stafford County from the start of development to completion and for each year after project build-out.

SPA would be pleased to answer any questions or clarifications about our study that you may have. If needed, please contact us at as we remain available to assist in the successful approval of the development.

Sincerely,

Philip G. Hammer, Jr.
Vice President

PGH/mes

46175 Westlake Drive • Suite 400 • Potomac Falls, Virginia 20165 • 703.421.8101 • 703.421.8109 fax • spatzec@comcast.net

Fiscal Impact Analysis
Westgate Center
Stafford County, Virginia

Prepared For:

Mr. Charles W. Payne, Jr.
Attorney at Law
Hirschler Fleischer

May, 2011
Revised February 2, 2012

S. Patz and Associates, Inc.
46175 Westlake Plaza
Suite 400
Potomac Falls, Virginia 20165

February 1, 2012

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Attorney at Law
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Introduction

This report presents a study and analysis of the fiscal impacts for Stafford County from a proposed mixed-use development, to be called Westgate Center, which is to be located in the Austin Ridge vicinity of the County near the Planned Courthouse Development District (see Map A). Westgate Center will be an upscale development, featuring a mix of single family homes, and 645,000 square feet of mixed commercial space, including office, retail and hotels. The homes will be priced in the $450,000 to $500,000 price range, although for analysis purposes an average assessed value of $400,000 per unit will be assumed, in keeping with neighborhood trends. The commercial buildings will be competitive with other buildings of this type in Stafford County.

With this strong non-residential tax base, the proposed development will contribute significantly to the fiscal balance of the County. The prices of the homes also assure that their impact on the County will be positive, including the costs of education for resident public school children. At buildout, Westgate Center will create a net fiscal surplus of $3.0 million for the County, the difference between $3.8 million in tax revenues and $0.8 million in tax-supported costs. This compares to the current real estate taxes on the vacant land of $16,700.

The following chart summarizes the fiscal impact analysis of the development program for Westgate Center. For comparison purposes, Stafford County has requested that we prepare impact analyses for two alternative scenarios: one with surface parking only, called here the Alternate Plan (the development program contains structured parking); and one for the By-Right scenario. All data are shown in constant 2011 dollars which eliminates the factor of inflation. The chart shows that the Alternate Plan would have a net fiscal benefit of $1.4 million, compared to the $3.0 million benefit of the proposed development program. The By-Right scenario, which would allow only 17 homes under present zoning, would have a net fiscal benefit of $19,000. The detailed

fiscal impact analysis is presented in the following subsections of the report after a description of the site and proposed development plan.

Total Fiscal Impact from On-Site Uses At Westgate Center At Buildout (constant $2011)

	Development Program	Alternate Plan	By-Right Scenario
County Tax Revenues	$3,809,100	$1,844,960	$99,650
Less: Costs to the County	-$795,460	-$464,780	-$80,220
Total Net Fiscal Benefit	$3,013,640	$1,380,180	$19,430

Site Description and Setting

The Westgate Center site is a 73-acre tract that is triangular in shape and fronts on Interstate I-95 along its eastern border. The site abuts the Austin Ridge subdivision of attractive single family homes on the north. The south side of the property is located near SR 630 and the I-95 right-of-way, but is on the east side of another planned development parcel along Austin Ridge Drive at this location. This is also true for the property's west side.

The following two sets of photos show the vacant property's topography and densely treed land area. Site views are shown south from the Austin Ridge subdivision and east from Austin Ridge Drive where the site abuts the roadway. The property has rolling topography throughout. One of the unique site features is the dense treed areas that will provide excellent buffers from I-95 and the Austin Ridge subdivision once development commences.

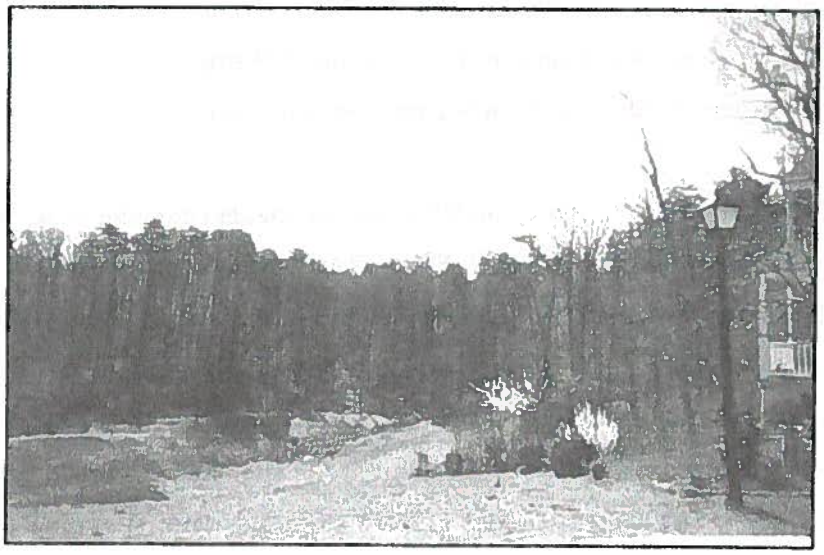
Map A shows the site location along Austin Ridge Drive and north of Courthouse Road on the west side of I-95. This is a relatively rural section of Stafford

County, but one that is in close proximity to the Courthouse area, located at the intersection of SR 630 and U.S. Route 1, Jefferson Davis Highway, east of I-95. The Austin Ridge subdivision was begun in 1993 and has 829 single family homes. In 2010 the subdivision neared buildout with only a few lots remaining.

The full Austin Ridge site is a full 500 acres, which also includes 50 acres adjacent to the Westgate Center site along Austin Ridge Drive and shown as #1 on the map on page 9. This area is zoned B-2 commercial. It is owned by Rocky Ridge Joint Venture/George H. Rucker Realty; the company has tentative plans for a mixed-use center, with the potential for office space and a neighborhood shopping center. No specific plans have been made for development at the site, but a site plan was worked up in the past for a 250,000 square-foot grocery store anchored shopping center. At present all development plans are on hold.

The Westgate Center site is located about seven miles south of the main gate at Marine Corps Base Quantico on U.S. Route 1 at interchange 150 with Interstate I-95, where major expansion will occur with the Base Realignment and Closure (BRAC) program of the Department of Defense. Thus, the site is directly south of Quantico via Interstate I-95. The BRAC program and its impacts will be discussed later in this section. Of importance is that Stafford County is planning two major redevelopment areas between the Westgate Center site and Quantico. These are at Boswell's Corner and at the Courthouse, both on U.S. Route 1. These developments, although somewhat in the future, could offer competition for office and commercial development with Westgate Center. The Silver Companies have already constructed a large office center between Boswell's Corner and the base.

Westgate Center



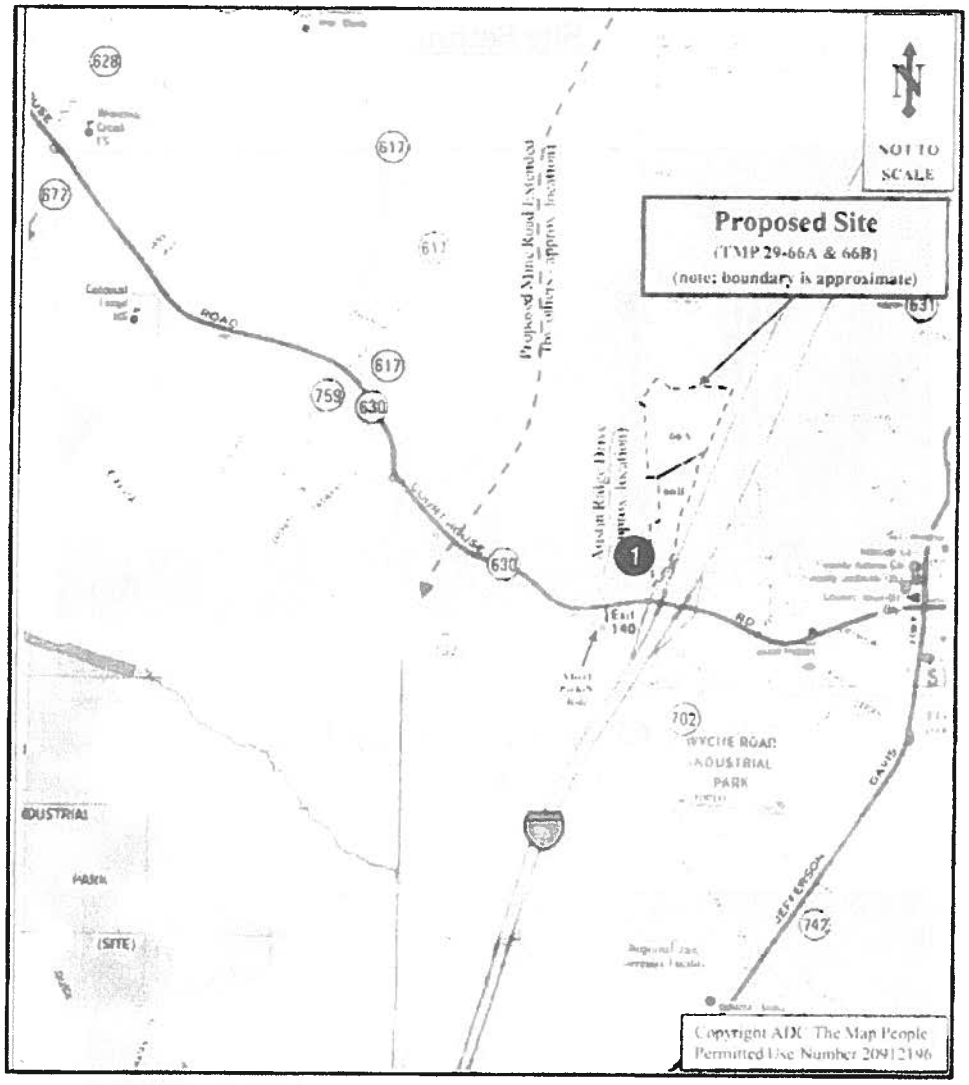
View South From Dollane Court
In Austin Ridge Community

View East From Austin Ridge Drive

Site Setting

Route 630 at Austin Ridge Drive
Just West of I-95

Austin Ridge Subdivision Located on
North Side of Westgate Center



Note: 1/ Location of Rocky Ridge Joint Venture Site

Site Development Program and Supporting Analyses

As noted above, Westgate Center will consist of a master planned community of single family homes and commercial development. Both land uses will be separated and will have separate entrance points from Austin Ridge Drive, as shown in the schematic master plan to follow.

There are two distinct land bays in the master plan. These are described in the paragraphs which follow.

Land Bay #1 will include 51 single family detached homes to be priced in the $450,000 to $500,000 range, in 2011 constant dollars, with an assumed average assessed value of $400,000 per home. This land bay contains 25 acres and is assessed at $375,000. In 2008, at the time of active development at the existing Austin Ridge subdivision, the average sales price was $490,000. Available sites in Austin Ridge today are largely infill lots for homes priced at this range. Available resales in Austin Ridge today range from $400,000 to $460,000, with prices slightly repressed due to the slow housing market in the region. With the gradual reemergence of housing demand, prices in the area should tend toward $500,000, as seen as the upper limit at Westgate Center. By-right development under current zoning, which the County suggests be calculated at 4.35 acres per home, would allow 17 single family homes on the total of 73 acres in Land Bay #1 and Land Bay #2 together.

Land Bay #2, with 48 acres, will contain the commercial development at the site. Uses are to include retail, office and hotel, as described below. This parcel is assessed at $1.17 million. The basis for the magnitude of development provided at Land Bay #2 is described in the following paragraphs.

> The major thrust to economic development in Stafford County at this time is from the Base Realignment and Closing (BRAC) activity of the U.S. Department of Defense, which will bring new personnel to the nearby Quantico Marine Corps base and attract military contractors to the region. Due to the 2005 Base Realignment and Closure recommendations, Marine Corps Base Quantico, part of which is in northern Stafford County, is undergoing major expansions with significant employment impacts. Five military investigative agencies will relocate to the base by September 15, 2011, bringing 2,770± jobs directly to the base. The Stafford Economic Development Authority projects that this will create an additional 1,120 "spin off" jobs in Stafford County alone. Of the 2,770 employees, 351 are to be military, 1,861 are to be civilians, 555 are to be contractors and about 200 are students in two training academies.
>
> In terms of construction activity, there is a single construction project on the base associated with BRAC. A 719,000 square foot facility at the intersection of Russell

and Telegraph roads, called the Russell-Knox Building, was completed in December, 2010 to house over 2,700 employees. The project includes considerable offsite road widening and bridge improvements, parking for 2,500 vehicles, improvements to the existing Ponderosa Gate at the base and stormwater management. In April, 2011, approximately 200 employees from the impacted agencies began moving into the new facility. Each week additional employees will be relocated there until the 2,770 employees have fully relocated on or about September 15, 2011. Recently, it has been determined that an even greater amount of space will be needed just to accommodate an increase of 2,000 personnel on site not related to BRAC.

There is approximately 1.3 million square feet of office space in northern Stafford County. Private sector development for office space in the area adjacent to Marine Corps Base Quantico has been constructed to attract military contractors seeking space within close proximity to the base. The largest project includes the construction of one-million square feet of office, research, hotel and retail space at the Quantico Corporate Center, located along Interstate 95 and US Route 1 adjacent to Marine Corps Base Quantico.

The first two office buildings at Quantico Corporate Center, 925 and 1000 Corporate Drive, collectively contain 280,000 square feet of space. The two buildings were built in 2007 and 2009, respectively, and are fully leased. They house major defense contractors that include BAE Systems, General Dynamics, MITRE and ManTech. Construction on a third, four-story, 140,000 square foot building is slated to begin shortly and be completed by mid-2012. The building is already 50% preleased to QinetiQ North America, a defense contractor. Two additional retail buildings covering 70,000 square feet are in the planning stages as well.

Stafford County has entered into a course of planning of redevelopment of older commercial areas in the County. Westgate Center would lie in the fringe vicinity of the planning area for the Courthouse Redevelopment Area, centering on the County Courthouse and Administrative Building at the corner of Courthouse Road (Rt. 630) and Route 1, only a few miles from the Westgate Center site. Demand for new development in the redevelopment area focuses on two sources. One is the County Administration Building and the second is the new Stafford County Hospital located further south on Route 1. The intention is to establish a Town Center in the area. The hospital is building a 66,000 square foot medical office building at the site. The redevelopment plan calls for another 84,000 square feet of medical office space in the Town Center, plus 265,000 square feet of professional office space intended for government use. The site is seen as not having the visibility for a major retail center. Residential demand projected for the redevelopment area is 2,000 new homes. The time horizon for this development is 2020, with no active projects at this time.

Discussions are also ongoing on the efforts to redevelop the Boswell's Corner area on Route 1, located not far south of Quantico, into a mixed-use urban area

intended to attract defense contractors. It is located on both sides of Highway US-1 and extends about 2 miles south from Russell Road which is adjacent to Marine Corps Base Quantico. Preliminary plans include the construction of 1.1 million square feet of office space, 586,950 square feet of retail space, 1,700 residential units and a 219-room hotel. Collectively, the project will cover 3,218,870 square feet of space.

Widewater Heights is a proposed office development at the intersection of Jefferson Davis Highway and Telegraph Road, adjacent to Marine Corps Base Quantico. Plans are for two, four-story, 90,000 square foot buildings with 22,500 square feet on each floor.

The North Stafford Center for Business & Technology (NSCBT) is a 50-acre high-tech park located on Route 610 near the Marine Corps Systems Command, The Basic School and the FBI Academy and Lab at Quantico. The office park consists of five buildings. Two buildings have been built to date. "Building 1" is a 44,500 square foot, two-story building, constructed in 2008. "Building 3" covers 94,755 square feet of office space and was completed in 2006. "Building 2" is planned to cover 35,000 square feet of office space. It has not been constructed yet, though civil and architectural permits have been issued. "Building 4" will cover 45,000 square feet of office space. Civil and architectural drawings are currently being created for the property. "Building 5" will be the largest of the buildings covering 106,000 square feet of space. Civil and architectural designs are currently being tailored for the building. When completed NSCBT will include over 400,000 square feet of office and 30,000 square feet of commercial space.

Stafford Commerce Park I & II is located at 65 and 75 Barrett Heights Road, approximately two miles from the Onville Road gate at the Marine Corps Base Quantico. The property is comprised of two, three-story office buildings built in 2006 and 2007, collectively covering 117,930 square feet of space. Almost 80% of the tenants at these buildings service the base or the FBI. Tenants include Raytheon, GSA, Harris Corporation and Smartronics.

These developments indicate an expanding market for office space in Stafford County, primarily due to BRAC. It was noted above that over 1,100 "spin-off" jobs are expected from Quantico, indicating a direct demand for as much as 400,000 square feet of office space. In the last five years, over 500,000 square feet of office space has been constructed in northern Stafford County near Quantico, with 140,000 square feet under construction and 400,000 additional square feet planned. It is to be noted in the office development program for Westgate Center that 100,000 square feet of office space at Westgate Center, or 40 percent of all office space, is targeted for Federal contractors. Westgate Center is in close proximity to the administrative center at Courthouse Road

and Route 1 where the County is planning the Courthouse Redevelopment Area. Thus, the development of Land Bay #2 is to build upon the current development trends within a market area that serves the site.

Construction on the 51 single family homes at Westgate Center would likely begin in the summer of 2012 with two- to three-year build out. Table 1 gives a very preliminary concept plan for the non-residential development program that is proposed for Westgate Center, totaling 645,000 square feet of space. The sponsor envisions that the retail component of 245,000 square feet could include several anchor stores, an entertainment venue, a sports/fitness facility, and specialty shops. This is a conceptual plan that is being studied by the sponsor. The hotels would contain 200± rooms in two buildings. As noted above, it is anticipated that as much as 100,000 square feet of the Class A office space could be leased by federal contractors. Construction of the commercial section of Westgate Center would tentatively start in 2014 to 2015, with a seven- to nine-year build out. The site plan for Westgate Center follows Table 1.

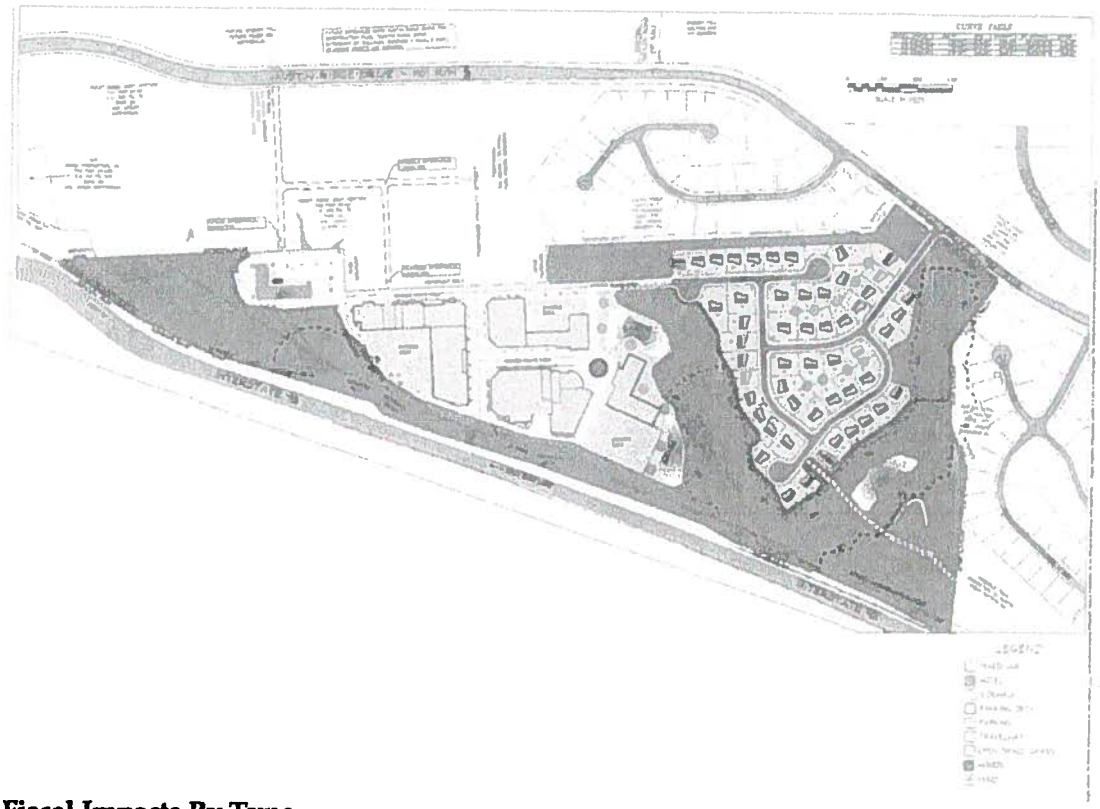
Table 1 also shows an Alternate Plan for comparison to the planned development program of 645,000 square feet of space. This Alternate Plan shows a concept based on all surface parking, as requested by the County for comparison, while the proposed development program would contain structured parking. The Alternate Plan totals 290,000 square feet of space. This would include 870 surface parking spaces. This allocation of parking spaces is based on a ratio of three spaces per 1,000 square feet for the total of 290,000 square feet.

Table 1. Preliminary Concept Plan for the Non-residential Development Program of Westgate Center, Stafford County, Virginia

Floor Space by Type	Development Program		Alternate Plan	
	Square Feet	Percent	Square Feet	Percent
Retail Space	245,000	38.0%	75,000	25.9%
Restaurants	30,000	4.6%	10,000	3.4%
Two Hotels (200 Rooms)	120,000	18.6%	100,000	34.5%
Class A Office Space	250,000	38.8%	105,000	36.2%
	645,000	100.0%	290,000	100.0%

Source: Arturus Land Services.

These floor space estimates may change, as the market may "require" more office space or more hotel rooms, given the highway interchange location of the property. The future development plans of the adjacent Rocky Ridge Joint Venture property could also affect the development program of the Land Bay #2 development program. However, the 645,000 square foot total will remain.



Fiscal Impacts By Type

At buildout, when stable occupancies are achieved, Westgate Center should yield $3.8 million in taxes per year to Stafford County, in constant 2011 dollars. Because of the scope of the commercial component of the development, it will contribute over 90 percent of these tax revenues. Table 2 shows that while the residential component has a much lesser fiscal impact, it still generates enough revenue to cover costs to the County, including costs for public education. The benefit-cost ratio of 4.79 shown in the table indicates that for every dollar the County entails as costs to Westgate Center, it will receive $4.83 in tax revenues.

Table 2. Summary of Fiscal Impacts for Stafford County from Westgate Center at Buildout, Stafford, Virginia (in constant $2011)

	Residential Component	Commercial Component	Total Center
Tax Revenues	$298,950	$3,510,150	$3,809,100
Tax-supported Costs	-$240,660	-$554,800	-$795,460
Net Fiscal Benefit	$58,290	$2,955,350	$3,013,640
Benefit/Cost Ratio	1.24	6.33	4.79

Source: S. Patz & Associates, Inc.

We did not separate the fiscal impacts to the County by year due to the uncertainty of the timing development of the commercial component. However, data in Table 2 show that the impacts will be positive from the start of development.

The fiscal impacts of the Alternate Plan, featuring all surface parking, are shown in Table 3, below. Again, the commercial component of 290,000 square feet would produce a significant net benefit of $1.4 million, while the residential component still covers all costs to the County, including the costs of education for public school children. Total tax revenues of $1.8 million are compared to total tax-supported costs of $0.4 million, for the net fiscal benefit of $1.4 million annually. The benefit-cost ratio for the Alternate Plan is similar to that for the proposed development program. The ratio is the same for the residential component (1.24), but the ratio for the commercial component is slightly higher. This derives from the fact that the Alternated Plan is relatively less employment dense than is the proposed development program.

Table 3. Summary of Fiscal Impacts for Stafford County from Westgate Center at Buildout for the Alternative Plan, Stafford, Virginia (in constant $2011)

	Residential Component	Commercial Component	Total Center
Tax Revenues	$298,950	$1,546,010	$1,844,960
Tax-supported Costs	-$240,660	-$224,120	-$464,780
Net Fiscal Benefit	$58,290	$1,321,890	$1,380,180
Benefit/Cost Ratio	1.24	6.90	3.97

Note: The Alternative Plan contains no structured parking but only surface parking.

Source: S. Patz & Associates, Inc.

Fiscal benefits from the By-Right scenario are quite small compared to the proposed development program and the Alternate Plan (see Table 4). This derives from the fact that only 17 single family homes could be built on the total site of 73 acres. An assessed value of $400,000 per home is assumed.

Table 4. Summary of Fiscal Impacts for Stafford County from Westgate Center at Buildout, By-Right Scenario, Stafford, Virginia (in constant $2011)

	Residential Component	Commercial Component	Total Center
Tax Revenues	$99,650	--	$99,650
Tax-supported Costs	-$80,220	--	-$80,220
Net Fiscal Benefit	$19,430	--	$19,430
Benefit/Cost Ratio	1.24	--	1.24

Source: S. Patz & Associates, Inc.

Tax Revenues

The summary in the Introduction stated that Westgate Center will contribute to the County $3.8 million in taxes at buildout and stabilized occupancy, and every year thereafter. (All dollar amounts in this report are in constant 2011 dollars.) The real estate tax is by far the largest source of taxes, with $1.4 million, or 37 percent of the total. The retail sales tax would contribute about 28 percent of the tax revenues. A summary of all expected tax revenues to be generated by the proposed development program for Westgate Center is given in Table 5.

Table 5. Summary of Tax Revenues for Stafford County from Buildout of Westgate Center, Stafford Virginia (in constant $2011)

	Residential Component	Commercial Component	Total Tax Revenue
Real Estate Tax	$220,320	$1,207,110	$1,427,430
Personal Property Tax	$70,380	$259,400	$329,780
Retail Sales Tax	$0	$1,053,750	$1,053,750
Meals Tax	$0	$540,000	$540,000
Hotel Tax	$0	$260,970	$260,970
Consumer Utility Tax	$5,230	$187,990	$193,220
Motor Vehicle License	$2,760	$0	$2,760
Recordation Tax	$260	$930	$1,190
Total Taxes	$298,950	$3,510,150	$3,809,100

Source: S. Patz & Associates, Inc.

The residential impacts for the Alternate Plan with surface parking are the same as for the proposed development program with structured parking, as both call for 51 single family homes at an average assessed value of $400,000 per home. The impacts for the commercial component for the Alternate Plan are substantially less than for the

proposed development program due to the significant reduction in square footage to allow for all surface parking. The revenues by type for the Alternate Plan are given in Table 6.

Table 6. Summary of Tax Revenues for Stafford County from Buildout of Westgate Center for the Alternative Plan, Stafford Virginia (in constant $2011)

	Residential Component	Commercial Component	Total Tax Revenue
Real Estate Tax	$220,320	$554,190	$774,510
Personal Property Tax	$70,380	$148,230	$218,610
Retail Sales Tax	$0	$326,250	$326,250
Meals Tax	$0	$180,000	$180,000
Hotel Tax	$0	$260,970	$260,970
Consumer Utility Tax	$5,230	$75,940	$81,170
Motor Vehicle License	$2,760	$0	$2,760
Recordation Tax	$260	$430	$690
Total Taxes	$298,950	$1,546,010	$1,844,960

Note: The Alternative Plan contains no structured parking but only surface parking.

Source: S. Patz & Associates, Inc.

Because under present zoning only 17 single family homes would be permissible, the total revenues from the By-Right scenario are quite limited, at roughly $100,000 per year. The bulk of these revenues would come from the real estate tax on the homes, followed by the personal property tax. These two property taxes would account for 97 percent of the taxes from the site for By-Right development.

Table 7. Summary of Tax Revenues for Stafford County from Buildout of Westgate Center, By-Right Scenario, Stafford Virginia (in constant $2011)

	Residential Component	Commercial Component	Total Tax Revenue
Real Estate Tax	$73,440	--	$73,440
Personal Property Tax	$23,460	--	$23,460
Retail Sales Tax	$0	--	$0
Meals Tax	$0	--	$0
Hotel Tax	$0	--	$0
Consumer Utility Tax	$1,740	--	$1,740
Motor Vehicle License	$920	--	$920
Recordation Tax	$90	--	$90
Total Taxes	$99,650	--	$99,650

Source: S. Patz & Associates, Inc.

Real Estate Tax

The real estate at Westgate Center consists of residential and commercial units, with the commercial "commanding" by far the greatest value and real estate taxes. The 51 single family homes are expected to be priced between $450,000 and $500,000 in 2011 dollars; an average assessed value of $400,000 is used here for computing taxes. The commercial buildings will cost between $160 and $178 per square foot as reported by the project engineer, allowing 30 percent for land value and land development. An average of $169 per square foot is used here. Total development costs would come to $132 million, based on these development cost data. At the current tax rate of $1.08 per $100 of valuation, the real estate taxes for Westgate Center would be $1.4 million. These data are shown in Table 8.

Table 8. Real Estate Taxes for Stafford County from Westgate Center at Buildout, Stafford, Virginia (in constant $2011)

	Numbers or Units	Average Cost	Total Cost	Tax at $1.08/$100
Single Family Homes	51 DU	$400,000	$20,400,000	$220,320
Commercial				
Retail/Mixed Use	275,000 SF	$169	$46,475,000	$501,930
Office Buildings	250,000 SF	$169	$42,250,000	$456,300
Hotels	120,000 SF	$192	$23,044,320	$248,880
Subtotal	645,000 SF		$111,769,320	$1,207,110
Total Real Estate			$132,169,320	$1,427,430

Sources: Arturus Land Services, R.S. Means Construction Cost Data, and S. Patz & Associates, Inc.

Real estate taxes for an Alternate Plan with surface parking would be about half of the real estate taxes for the proposed development program, given the more restricted square footage of commercial space. Residential real estate taxes would be the same. Table 8 shows that for an assessed value of $72 million, the real estate taxes would be $775,000.

Table 8. Real Estate Taxes for Stafford County from Westgate Center at Buildout for the Alternative Plan, Stafford, Virginia (in constant $2011)

	Numbers or Units	Average Cost	Total Cost	Tax at $1.08/$100
Single Family Homes	51 DU	$400,000	$20,400,000	$220,320
Commercial				
Retail/Mixed Use	85,000 SF	$169	$14,365,000	$155,140
Office Buildings	105,000 SF	$169	$17,745,000	$191,650
Hotels	100,000 SF	$192	$19,203,600	$207,400
Subtotal	290,000 SF		$51,313,600	$554,190
Total Real Estate			$71,713,600	$774,510

Note: The Alternative Plan contains no structured parking but only surface parking.

Sources: Arturus Land Services, R.S. Means Construction Cost Data, and S. Patz & Associates, Inc.

At an average assessed value of $400,000 per single family home, the By-Right scenario would produce $6.8 million in total assessed value and $73,000 in real estate taxes.

Table 9. Real Estate Taxes for Stafford County from Westgate Center, By-Right Scenario, Stafford County, Virginia (constant $2011)

	Amount
Single Family Homes	17
Average Assessed Value	$400,000
Total Assessed Value	$6,800,000
Real Estate Tax Rate Per $100	$1.08
Real Estate Taxes	$73,440

Sources: Arturus Land Services and Stafford County.

Personal Property Taxes

The depreciated market value of residential vehicles is taxed as personal property in Virginia counties, as is the depreciated value of business equipment. The tax on vehicles, known in Virginia as the "car tax", has been slated to be phased out, with the state replacing those revenues with equivalent revenues for local jurisdictions. At this point, the state's re-imbursement phasing is only partially complete and presently covers approximately 30 percent of the County's personal property tax levy, as shown below. However, the State legislature has recently capped the state reimbursement amount, so that the percentage local levy is likely to increase over time, while the state share may remain at FY2004 levels.

Data in Table 10 provide the background for computing the residential personal property tax from the proposed Westgate Center community, based on County data from the FY 2011 County Budget. The table derives the total residential depreciated vehicle value by applying the Personal Property Tax Relief Act (PPTRA) grant to the total tax levy and the resulting total vehicle assessed taxes in the County, for the residential and non-residential shares. In this analysis, the personal property tax covers both direct county tax and the state's PPTRA replacement share. The proportion of the personal property tax that is residential is assumed to be the same as for the real property tax, 75 percent, as reported by the Commissioner of Revenue's office. Total residential personal depreciated personal property assessed value is estimated at $1.5 billion.

Table 10. Summary of Personal Property Data for Stafford County, Adopted FY 2011 County Budget (current $).

	FY 2011 Amount
Total Personal Property Tax	$35,063,461
Percent Residential	0.75
Residential Personal Property Tax	$26,297,596
Estimated PPTRA (State Re-imbursement)	$12,500,000
Local Residential Vehicle Tax Levy	$38,797,596
Estimated Vehicles Over $20,000 at 20%	$2,500,000
Total Residential Vehicle Tax	$41,297,596
Local Residential Vehicle Tax Levy @ $6.89/$100	$41,297,596
Local Residential Assessed Value	$599,384,554
Local Total Residential Depreciated Vehicle Value @40%	$1,498,461,384

Sources: Adopted 2011 Budget for Stafford County, and S. Patz & Associates, Inc.

A key variable in the computation of the personal property tax for the Westgate Center community is the depreciated value per residential vehicle in the County. The following chart derives that value by dividing the total residential depreciated value in the County (from Table 10) by the number of residential vehicles within the County. Also shown is the average number of residential vehicles per capita in the County.

Stafford County, 2011	Amount
Estimated Residential Vehicles	96,720
Estimated Population	128,960
Vehicles Per Capita	0.75
Residential Personal Property Depreciated Value	$1,498,461,384
Depreciated Value Per Vehicle	$15,493

The average income of residents at Westgate Center is expected to be 37 percent greater than the average for Stafford County as a whole, based on the real estate rule of

thumb that a household can afford a home which represents three times its annual income. The households at Westgate Center would, therefore, have an automobile with a depreciated value 1.37 times greater than the County average, or $21,300. The average household income in the County is from the IRS, as calculated annually for the federal Low Income Housing Tax Credit Program.. This derivation is shown in the following chart.

	Amount
Westgate Center Average Home Value	$400,000
Average Income at 1/3 Home Value	$133,300
Stafford County Average Income	$97,000
Ratio	1.37
Depreciated Assessed Value at Ratio	$21,296

Based on these data, the estimation of the personal property taxes for the residential component of Westgate Center is relatively straightforward. This is accomplished in Table 11 for the proposed development program, where the derivation for the community is presented with comparable data for Stafford County:

- Population is multiplied by vehicles per capita to estimate the number of vehicles;
- The depreciated value per vehicle is multiplied by the number of vehicles to determine the total depreciated value of residential vehicles;
- This number is multiplied by 40 percent to produce the assessed value;
- The tax rate of $6.89 per $100 is applied to the assessed value to produce the tax amount

Table 11. Derivation of Personal Property Taxes for Residences at the Proposed Westgate Center Community, Stafford County, Virginia (constant $2011)

	Stafford County	Westgate Center
Number of Persons	128,960	160
Vehicles Per Capita	0.75	0.75
Number of Vehicles	96,720	120
Depreciated Values Per Vehicle	$15,493	$21,296
Total Depreciated Vehicle Value	$1,498,361,384	$2,553,673
Personal Property Tax Assessment at 40%	$599,384,554	$1,021,469
Residential Personal Property Taxes @$6.89/$100	$41,297,596	$70,380

Sources: U.S. Census of Population, Stafford County FY 2011 Adopted Budget, and S. Patz & Associates, Inc,

Residential personal property and the property tax are the same for the Alternative Plan as for the proposed development plan, as they have the same residential development component. For the By-Right scenario, a total depreciated assessed value of $0.85 million yields a residential personal property tax of $23,500, as shown in the following chart.

By-Right Development	Amount
Population	53
Vehicles	40
Dep. Value Per Vehicle	$21,296
Total Depreciated Value	$851,224
Assessment	$340,490
Tax	$23,460

Business Personal Property Taxes

Business personal property taxes are based on the assessed value of furniture, furnishings and equipment (FF&E) in the place of business. FF&E is projected at $25 per square foot for the commercial buildings and $35 per square foot for hotels. These figures multiplied by the respective square footage of the buildings give the value of taxable business property at Westgate Center. This amount is depreciated according to the rate of replacement of the FF&E. The depreciation for the hotels would be 50 percent, assuming replacement every five years. The retail and office buildings would be depreciated by 80 percent. This assumes that computers are replaced at least every five years but that other furniture and fixtures would not be replaced before 10 years. The total value of depreciated business property at Westgate Center would be $4.7 million, in constant 2011 dollars, for the proposed development program. At the tax rate of $5.49 per $100 of valuation for business property, the tax would come to $259,400.

Table 12. Derivation of Business Personal Property Taxes at Westgate Center, Stafford, Virginia (in constant $2011)

	Amount
Mixed Use Buildings (Square Feet)	525,000
FF&E Per Square Foot	$25
Mixed Use Business Property	$13,125,000
Depreciated at Rate	0.2
Depreciated Business Property	$2,625,000
Hotels (Square Feet)	120,000
FF&E Per Square Foot	$35
Hotel Business Property	$4,200,000
Depreciates at Rate	0.5
Depreciated Business Prop	$2,100,000
Total Depreciated Business Property	$4,725,000
Tax @ per $100 Valuation	$5.49
Business Property Tax	$259,400

Sources: Arturus Land Services & S. Patz & Associates, Inc.

The reduced square footage of the Alternate Plan with surface parking means substantially reduced business personal property taxes, due to lesser FF&E expenditures. The tax on a total of $2.7 million in depreciated business personal property would be $148,000, as shown in Table 12.

Table 12. Derivation of Business Personal Property Taxes at Westgate Center for the Alternative Plan, Stafford, Virginia (in constant $2011)

	Amount
Mixed Use Buildings (Square Feet)	190,000
FF&E Per Square Foot	$25
Mixed Use Business Property	$4,750,000
Depreciated at Rate	0.2
Depreciated Business Property	$950,000
Hotels (Square Feet)	100,000
FF&E Per Square Foot	$35
Hotel Business Property	$3,500,000
Depreciates at Rate	0.5
Depreciated Business Property	$1,750,000
Total Depreciated Business Property	$2,700,000
Tax @ per $100 Valuation	$5.49
Business Property Tax	$148,230

Sources: Arturus Land Services & S. Patz & Associates, Inc.

There is no business personal property at Westgate Center for the By-Right Scenario. Total personal property tax for the three scenarios would be: $330,000 for the proposed development program, and $219,000 for the Alternate Plan with surface parking.

Retail Sales Taxes

Not all commercial uses at the site have taxable revenues. The retail outlets will be subject to the one percent retail sales tax that is returned to the County from the State, but the entertainment and sports venues will not be taxable. The hotels have a separate tax. The restaurants are subject to both the retail sales tax and to the meals tax. Table 13 sets forth the uses taxable as retail sales for the development program. The sales per square foot are relatively productive, as befits a quality center with many boutique and niche outlets. It is assumed that the anchor is a big box store or similar high end store. Altogether, five clusters of stores would have gross taxable sales of $105 million, in constant 2011 dollars. At a rate of one percent, the retail sales tax will be $1,053,750.

Table 13. Retail Sales at Commercial Establishments at Westgate Center, Stafford, Virginia (in constant $2011)

	Square Feet	Sales Per SF	Total Sales
Anchor Stores	245,000	$375	$91,875,000
Restaurants	30,000	$450	$13,500,000
Total Retail	275,000		$105,375,000
Sales Tax at 1.0%			$1,053,750

Sources: Census of Business, U.S. Department of Commerce, and S. Patz & Associates, Inc.

The Alternate Plan with surface parking would have 85,000 square feet of retail and restaurant space, with sales of $32.6 million. At the one percent tax rate for retail sales, the resulting tax would be $326,250, as shown in Table 14.

Table 14. Retail Sales at Commercial Establishments at Westgate Center for the Alternative Plan, Stafford, Virginia (in constant $2011)

	Square Feet	Sales Per SF	Total Sales
Anchor Stores	75,000	$375	$28,125,000
Restaurants	10,000	$450	$4,500,000
Total Retail	85,000		$32,625,000
Sales Tax at 1.0%			$326,250

Sources: Census of Business, U.S. Department of Commerce, and S. Patz & Associates, Inc.

There is no retail sales tax for the By-Right scenario.

Meals Tax

Restaurants are subject to a tax of four percent. The State allows no more than a nine percent tax, when added to the five percent sales tax. Table 13 indicates restaurant sales of $13.5 million. At four percent, the meals tax would come to $540,000. For the Alternate Plan, restaurant sales of $4.5 million would result in a meals tax of $180,000. There would be no meals tax for the By-Right scenario.

Hotel Tax

The two hotels in the development program are shown at 200 rooms in two buildings. A conservative annual occupancy rate of 65 percent is assumed, given the excellent locations of the hotels. At 65 percent, each hotel would have 237 occupied room nights per room per year. The average room rate would be $110 per night.

Together, these two hotels would have annual revenues of $5.2 million. The four percent hotel tax would produce taxes of $260,970 annually. If the average occupancy should achieve 70 percent annually, the hotel taxes would rise to $281,050. The Alternate Plan with surface parking would also have 200 hotel rooms. Given the same assumptions for room occupancy and average room rate, this Plan would also produce $260,970 in room taxes. There is no hotel tax for the By-Right scenario.

Consumer Utility Tax

Residential utility taxes on water, sewer, electricity and telephone are capped by statute at $3.00 per month. It is assumed that the 48 occupied households each pays three utility taxes at the maximum of $3.00 per month (allowance of five percent vacancy for normal turnover). This is $108 per year per household, or a total utility tax of $5,230 for Westgate Center per year. The residential consumer utility tax for the Alternative Plan would be the same as for the proposed development program. With only 16 occupied homes in the case of the By-Right, the residential consumer utility tax would be $1,740 annually.

Calculating business utility taxes is more complicated and is done in an approximate fashion, since actual utility consumption by businesses is not easily known. The methodology is to deduct utility taxes by residents from total utility taxes and to divide the residual by the number of employees in the County. This per capita utility tax amount is multiplied by the number of employees on site at Westgate Center to give the total business utility taxes of $187,990, as shown in Table 15.

Table 15. Consumer Utility Taxes by Businesses at Westgate Center, Stafford, Virginia (constant $2011)	
	Amount
County Utility Tax	$9,046,113
Number of Households	42,122
Tax per Household	$108
Residential Utility Taxes	$4,549,176
Non-resident Utility Taxes (residual)	$4,496,937
Employment	36,121
Tax Per Employee	$124
Total Employment On Site	1,510
Business Utility Tax	$187,990

Sources: Adopted FY 2011 Budget of Stafford County, Stafford County Department of Economic Development, Virginia Employment Commission, and S. Patz & Associates, Inc.

For the Alternative Plan there would be 610 employees. At $124 in taxes per employee, the business consumer utility tax would be $75,940. There is no business utility tax for the By-Right scenario. Total consumer utility taxes, residential plus non-residential, would come to $193,220 for the development program, and $81,170 for the Alternate Plan. The By-Right scenario, with residential consumer utility taxes only, would have $1,740 in utility taxes.

Motor Vehicle Licenses

Motor vehicles in Stafford County are charged a fee of $23 annually. In the calculations for the personal property tax, it was shown that there will be 120 vehicles at Westgate Center. This gives a total motor vehicle license fee of $2,760 per year. The fee would be the same for the Alternative Plan. For the By-Right scenario, 16 occupied homes would yield $920 each year.

Recordation Taxes

A recordation tax of $0.25 per $1,000 of valuation is assessed by the State every time a property changes hands. Of this amount, one-third – or $0.0833 per $1,000 – is returned to the County of origin. It is presumed that each property will be sold as constructed. Residences are assumed to sell two more times within 20 years, and non-residential properties to sell one time within 20 years. The total amount of property turned over in 20 years is $285 million, which amounts to an annual average of $1,190 in taxes. Of this $260 is residential, and $930 is non-residential. For the Alternative Plan, total property turned over in 20 years is $164 million, for a tax of $690 per year. With 17 single family homes for the By-Right scenario, total 20-year turnover would be $20 million, for annual taxes of $90 per year.

Summary

This section has derived $3.8 million in taxes to be generated for Stafford County by Westgate Center. Most of these taxes – $3.5 million – are attributable to the non-residential component of the planned development. Real estate taxes are nearly 40 percent the total, at $1.4 million. These data are all in constant year 2011 dollars. On a per capita basis, residents contribute $1,870 per year in taxes, and employees contribute $2,330 per person annually. The actual amount of taxes generated by Westgate may change with any future changes in the distribution of the commercial space. However, the fiscal impacts will remain very positive.

Tables 5, 6 and 7 above presented taxes by type for the three cases for residential and commercial components separately: the proposed development program; the Alternative Plan without structured parking; and the By-Right scenario. Table 16 below summarizes this comparison for total tax revenues anticipated each year from the three cases.

Table 16. Summary of Tax Revenues for Stafford County from Buildout of Westgate Center Proposed Development Program, the Alternative Plan, and the By-Right Scenario, Stafford Virginia (in constant $2011)

	Development Program	Alternative Plan	By-Right Scenario
Real Estate Tax	$1,427,430	$774,510	$73,440
Personal Property Tax	$329,780	$218,610	$23,460
Retail Sales Tax	$1,053,750	$326,250	$0
Meals Tax	$540,000	$180,000	$0
Hotel Tax	$260,970	$260,970	$0
Consumer Utility Tax	$193,220	$81,170	$1,740
Motor Vehicle License	$2,760	$2,760	$920
Recordation Tax	$1,190	$690	$90
Total Taxes	$3,809,100	$1,844,960	$99,650

Source: S. Patz & Associates, Inc.

The next section, Section II, turns to the derivation of tax-supported costs to Stafford County from the development of Westgate Center.

Costs of Stafford County Services

Stafford County budget data are the primary source of information on the costs of the provision of public services in the County. This section reviews those budget data and demonstrates how per capita cost parameters are derived for use in this fiscal impacts study. Critical in this application is the concept of comparing tax revenues from the proposed Westgate Center community with the tax-supported costs of serving the development with County services. Need for local taxes by department or function are given in the County budget document. These costs are expressed on a per capita basis and are applied to the development to project the costs of services and facilities to Stafford County for Westgate Center.

County Expenditure Trends

Table 17 is a summary of Stafford County's actual and budgeted General Fund expenditures for the fiscal years 2009 to 2011. Data in Table 17 illustrate some significant trends. Most indicative is the share of the total General Fund budget which goes to education, which in Stafford County has remained fairly stable in the 56 percent to 54 percent range over these three years, declining one percentage point each year. Education expenditures increased very slightly from 2009 to 2010 but dropped sharply (over five million dollars) by 2011. However, the total General Fund budget followed a similar pattern, hence the relative stability in the share going to education. After schools public safety is the largest function, at 15.5 percent of the budget. No other major function commands more than six percent of the budget.

Only two budget functions saw increases over this period, and these were small. The two functions to increase were public safety - increasing at nine percent since FY 2010 – and recreation and culture - increasing at 3.5 percent. All other functions exhibited slow decreases, from 0.7 percent (miscellaneous) to 7.7 percent (judicial and courts). (See Appendix Table A-1 for further detail on the County budget.)

Table 17. Summary of General Fund Budget for Stafford County, Virginia, by Major Function, FY2009 to FY 2011. (In current dollars)

Function	Fiscal Year 2009 Actual	Fiscal Year 2010 Budget	Fiscal Year 2011 Budget
General Government	$13,293,062	$12,971,383	$12,296,531
Judicial and Courts	$12,184,030	$13,398,286	$12,367,242
Public Safety	$29,793,096	$31,125,370	$33,916,045
Health & Welfare	$13,781,621	$14,519,940	$14,089,677
Recreation & Culture	$13,666,455	$13,852,056	$14,335,445
Planning & Public Works	$6,678,837	$6,456,594	$6,296,410
Miscellaneous 1/	$11,082,126	$14,164,877	$14,062,405
General Fund Except Schools	$100,479,227	$106,488,506	$107,363,755
Schools 1/	$130,049,088	$131,997,156	$126,319,712
TOTAL GENERAL FUND	$230,528,315	$238,485,662	$233,683,467

1/ Includes debt service.

Source: Adopted FY2011 Budget, Stafford County, Virginia

Tax-Supported Costs

Table 18 shows the FY2011 budget by function and the share of each function which must be supported by local taxes. Eighty-eight percent of General Fund expenditures must be covered by local taxes, including 100-percent tax funding for schools (General Fund proportion), 82 percent for General Government and 71 percent for Public Safety. The lowest share of tax funding is for planning and public works, which receive proffers, fees and grants. (Further detail is presented in Appendix Table A-2.) Development at Westgate Center will need to make at least proportional tax contributions to maintain a net fiscal surplus for the County.

Table 18. Net Tax Support by General Fund Budget Function, Stafford County, Virginia (in current dollars)

Function	Fiscal Year 2011 Budget	Designated Revenues	Net Tax Support	Pct. Tax Support
General Government	$12,296,531	$2,235,422	$10,061,109	81.8%
Judicial and Courts	$12,367,242	$2,197,904	$10,169,338	82.2%
Public Safety	$33,916,045	$9,718,591	$24,197,454	71.3%
Health & Welfare	$14,089,677	$8,084,799	$6,004,878	42.6%
Recreation & Culture	$14,335,445	$1,817,794	$12,517,651	87.3%
Planning & Public Works	$6,296,410	$3,752,336	$2,544,074	40.4%
Miscellaneous 1/	$14,062,405	$381,063	$13,681,342	97.3%
Gen. Fund Except Schools	$107,363,755	$28,187,909	$79,175,846	73.7%
Schools 1/	$126,319,712	$0	$126,319,712	100.0%
TOTAL GENERAL FUND	$233,683,467	$28,187,909	$205,495,558	87.9%

1/ Includes debt service.

Source: Adopted FY2011 Budget, Stafford County, Virginia

Per Capita Tax-Support by User Type

In order to allocate the costs of government to the proper source, or user, the fiscal impacts analysis separates out demands for public (County) services by residents, businesses (employees), and pupils, as follows:

- Businesses demand little in the way of services except for public safety and infrastructure, plus a fair share of general government operations; here they are given their proportional share based on number of persons, except for recreation and culture, and health and welfare,
- Residents in general need the full range of local government services; here they are given their proportional share based on number of persons, and all of recreation and culture, and health and welfare costs, and
- Pupils demand school services, including debt service, plus their needs as residents.

The fiscal impacts analysis compares tax revenues from the Westgate Center community with the tax-supported costs of services needed by those residences and impacted businesses. Table 19 below summarizes the portions of County services costs that must be supported by local taxes, as set forth in the County budget (see Table 18, above). These are allocated to employment, population, and pupils according to the estimated extent of usage in proportion to each type of user, except as noted above. The tax-supported costs can be expressed on a per capita basis by dividing them by numbers of residents, employees, or public school pupils.

- Removing non-tax revenues from the analysis eliminates the need for projecting such sources as state and federal grants into the future.
- It also avoids unnecessary accounting of these items on a per capita basis on both the credit and debit sides of the fiscal impact equation.
- Fees and charges for self-supporting public services in general are likewise equal credits (revenue) and debits (expenditures) and need not be considered.
- Resulting per capita tax-supported operating costs are $511 for residents, $367 for employees, and $4,722 for pupils.

Table 19. Total Required General Fund Tax Support, and Population, Employment, and Pupil Shares, Stafford County, Virginia

Function	Population Share	Employment Share	Total Tax Support
General Government	$7,859,708	$2,201,401	$10,061,109
Judicial and Courts	$7,944,256	$2,225,082	$10,169,338
Public Safety	$18,902,978	$5,294,476	$24,197,454
Health & Welfare	$6,004,878	$0	$6,004,878
Recreation & Culture	$12,517,651	$0	$12,517,651
Planning & Public Works	$1,987,423	$556,651	$2,544,074
Miscellaneous 1/	$10,687,823	$2,993,519	$13,681,342
Gen. Fund Except Schools	$65,904,718	$13,271,128	$79,175,846
Persons	128,960	36,120	$165,080
Expenditures Per Capita	$511	$367	$480
Schools /1	$126,319,712	$0	$126,319,712
School Enrollment	26,750	0	$26,750
Expenditure Per Capita	$4,722	$0	$4,722

1/ Includes debt service.

Sources: Adopted FY2011 Budget, Stafford County, Virginia, School District of Stafford County, Virginia, and the U.S. 2010 Census of Population.

Community Cost Impacts

This section will calculate the tax-supported costs of County services and facilities demanded by residents and businesses in the Westgate Center community. Applying these costs against the projected taxes the community generates gives a measure of the net fiscal benefit of the community for Stafford County. Costs are derived by multiplying the per capita costs of different types of persons on-site times their per capita costs, as derived in Table 19, above.

Demographics

The costs of services and facilities from Stafford County to Westgate Center will depend on the per capita costs, as derived above, and the numbers of persons on site. The chart below demonstrates that there will be 160 residents in the 48 occupied single family homes (or households) in the community. This will be the same for both the proposed development program and the Alternative Plan. With 16 occupied single family homes, the By-Right scenario will have 53 occupants.

	Amount
Households	48
Average Persons Per Household	3.3
Total Number of Residents (rounded)	160

Table 20 tabulates the number of employees in the commercial component of the development at Westgate Center. Fifty-five percent of the total of 1,510 employees will be in the Class A offices, or 830 employees. The remaining 680 employees could be distributed over a wide range of commercial uses with greatly differing ratios of floor space per employee. The densest is restaurants, with 250 square feet per employee, and the most spacious is the anchor destination, at 500 square feet per employee.

Table 20. Estimation of On-site Employment, Westgate Center After Buildout and Stable Occupancy

	Square Feet	Employees /Sq. Foot	Employ -ment 1/
Commercial Floor Space	275,000	450	610
Hotels	120,000	1 per 3 rooms	70
Office Space	250,000	300	830
Total Floor Space	645,000		1,510

1/ Total employment is rounded for all spaces.

Source: S. Patz & Associates, Inc.

The same parameters would yield 610 employees for the Alternate Plan.

Table 21. Estimation of On-site Employment, Westgate Center After Buildout and Stable Occupancy, for the Alternate Plan

	Square Feet	Employees /Sq. Foot	Employ -ment 1/
Commercial Floor Space	85,000	450	190
Hotels	100,000	1 per 3 rooms	70
Office Space	105,000	300	350
Total Floor Space	290,000		610

1/ Total employment is rounded for all spaces.

Source: S. Patz & Associates, Inc.

There will be no employees on site for the By-Right scenario.

The number of public school children that are generated by different types of housing units are defined in the Proffer Guidelines for Stafford County. The chart below gives pupil generation for the types of housing units, by level of school. The chart shows that single family homes at Westgate Center would generate 0.66 public school pupils per unit. For 51 units this would be 34 pupils. The pupil generation rates are to be applied to gross numbers of housing units, without correction for vacancies. This number of pupils will also hold for the Alternate Plan. For 17 homes in the By-Right scenario there would be 11 pupils.

By School Level	K-5	Middle	High	Total
Apartment, condo	0.18	0.06	0.08	0.32
Duplex	0.26	0.16	0.24	0.66
Single Family	0.26	0.16	0.24	0.66
Townhome	0.31	0.14	0.18	0.63

Annual Costs

County services costs are determined by multiplying the number of users at the Westgate Center site by the cost per user. For example, the new community is expected to have approximately 34 pubic school pupils at an overall average of 0.66 pupils per unit. At $4,720 in taxes needed per pupil, the tax-supported cost is $158,950 annually. One-hundred sixty persons at $511 per capita is $81,710 in costs. For employment, 1,510 employees at $367 per capita is $554,800 in costs. Table 22 summarizes the calculations for uses at the site, for total costs of $795,460.

Table 22. Annual Tax-Supported Costs At Buildout, Westgate Center, Stafford County, Virginia (constant 2011 dollars)

Type of Use	Units 1/	Tax-Supported Operating Costs
Proposed Residential Component		
General Government	160 persons	$81,710
Public Schools	34 pupils	$158,950
Subtotal		$240,660
Proposed Commercial Component	1,510 employees	$554,800
Total Costs from Westgate Center		$795,460

Source: S. Patz & Associates, Inc.

For the Alternative Plan, the residential costs would be the same as for the proposed development program, for 51 homes. With 610 employees, the commercial component would entail costs of $224,120, for total costs of $464,780 (see Table 23).

Table 23. Annual Tax-Supported Costs At Buildout, Westgate Center, for the Alternate Plan, Stafford County, Virginia (constant 2011 dollars)

Type of Use	Units 1/	Tax-Supported Operating Costs
Proposed Residential Component		
General Government	160 persons	$81,710
Public Schools	34 pupils	$158,950
Subtotal		$240,660
Proposed Commercial Component	610 employees	$224,120
Total Costs from Westgate Center		$464,780

Source: S. Patz & Associates, Inc.

Table 24 presents the costs associated with the By-Right scenario. With 53 residents and 11 school-age public school pupils, the total costs would come to $80,220.

Table 24. Annual Tax-Supported Costs At Buildout, Westgate Center, for the By-Right Scenario, Stafford County, Virginia (constant 2011 dollars)

Type of Use	Units 1/	Tax-Supported Operating Costs
Proposed Residential Component		
General Government	53 persons	$27,240
Public Schools	11 pupils	$52,980
Subtotal		$80,220
Proposed Commercial Component	--	--
Total Costs from Westgate Center		$80,220

Source: S. Patz & Associates, Inc.

Net Fiscal Benefit

The net fiscal benefit to Stafford County is defined as the difference between the taxes generated for the County, less the costs of services and facilities that the County provides for the use of residents and employees at the new community that must be supported by taxes. This concluding section will compare data on tax revenues to be generated by the Westgate Center Community for Stafford County, with costs of public services for the County to be associated with that proposed development.

Summary of Revenues

Based on assumptions concerning real estate values, business activity and demographic characteristics of residents, it is projected that Westgate Center will produce **$3.8** million in tax revenues for Stafford County annually. The Alternate Plan will produce $1.8 million, and the By-Right scenario would produce about $100,000. These are shown in Table 25 by type of tax.

Table 25. Summary of Tax Revenues for Stafford County from Buildout of Westgate Center Proposed Development Program, the Alternative Plan, and the By-Right Scenario, Stafford Virginia (in constant $2011)

	Development Program	Alternative Plan	By-Right Scenario
Real Estate Tax	$1,427,430	$774,510	$73,440
Personal Property Tax	$329,780	$218,610	$23,460
Retail Sales Tax	$1,053,750	$326,250	$0
Meals Tax	$540,000	$180,000	$0
Hotel Tax	$260,970	$260,970	$0
Consumer Utility Tax	$193,220	$81,170	$1,740
Motor Vehicle License	$2,760	$2,760	$920
Recordation Tax	$1,190	$690	$90
Total Taxes	$3,809,100	$1,844,960	$99,650

Source: S. Patz & Associates, Inc.

Summary of Costs

Fiscal impacts are measured in terms of the ability to provide necessary tax revenues to cover or exceed the tax-support needed for each type of County service utilized by the new community. Table 26 provides a summary of these tax-supported requirements for Westgate Center by general type – general government (General Fund) or schools (General Fund transfers) - attributable to on-site businesses and residences, totaling $0.8 million for the development program. Costs for the Alternate Plan would come to $0.5 million, and the By-Right scenario would have costs of $80,000.

Table 26. Annual Net Tax-supported Costs At Buildout from Westgate Center, A Proposed New Community in Stafford County, Virginia (constant $2011)

Type of Use	Development Program	Alternate Plan	By-Right Scenario
Residential Development	$81,710	$81,710	$27,240
Public Schools	$158,950	$158,950	$52,980
Commercial Floor Space	$554,800	$224,120	--
Total Community Costs	$795,460	$464,780	$80,220

Source: S. Patz & Associates, Inc.

Net Fiscal Benefit

The difference is a net fiscal benefit for Stafford County of $3.0 million tax revenue surplus annually once stabilized occupancies have been achieved in the community (in constant year 2011 dollars). Table 27 breaks down tax revenue and tax-supported cost impacts by their land use origins, separating the impacts of the residential units from those of the commercial components in the community. The table shows that both components will create net fiscal benefits for the County.

Table 27. Revenues, Costs and Net Fiscal Benefit to Stafford County from the Planned Westgate Center Development (in constant $2011)

	Residential	Commercial	Total
Revenues	$298,950	$3,510,150	$3,809,100
Costs	-$240,660	-$554,800	-$795,460
Fiscal Benefit	$58,290	$2,955,350	$3,013,640
Benefit/Cost Ratio	1.24	6.33	4.79

Source: S. Patz & Associates, Inc.

With lesser commercial square footage without structured parking, the Alternative Plan would produce a significantly smaller net fiscal benefit — $1.4 million – than would the proposed development program, as shown in Table 28.

Table 28. Revenues, Costs and Net Fiscal Benefit to Stafford County from the Westgate Center Alternate Plan (in constant $2011)

	Residential	Commercial	Total
Revenues	$298,950	$1,546,010	$1,844,960
Costs	-$240,660	-$224,120	-$464,780
Fiscal Benefit	$58,290	$1,321,890	$1,380,180
Benefit/Cost Ratio	1.24	6.90	3.97

Source: S. Patz & Associates, Inc.

The net fiscal benefit for the By-Right scenario would be the case with only 17 homes on site. The net fiscal benefit would be less than $20,000, the difference between about $100,000 in tax revenues and $80,000 is tax-supported costs (see Table 29).

Table 29. Revenues, Costs and Net Fiscal Benefit to Stafford County from the Westgate Center By-Right Scenario (in constant $2011)

	Residential	Commercial	Total
Revenues	$99,650	--	$99,650
Costs	-$80,220	--	-$80,220
Fiscal Benefit	$19,430	--	$19,430
Benefit/Cost Ratio	1.24	--	1.24

Source: S. Patz & Associates, Inc.

APPENDIX TABLES

Table A-1. Summary of General Fund Expenditure Budgets by Department or Function, Stafford County, Virginia, FY 2009-FY 2011 (current dollars)

Department	Fiscal Year 2009 Actual	Fiscal Year 2010 Budget	Fiscal Year 2011 Budget
General Government			
Board of Supervisors	$612,642	$543,054	$536,599
Commissioner of the Revenue	$2,612,169	$2,724,039	$2,541,020
County Administration	$1,091,313	$1,061,761	$982,380
County Attorney	$1,154,814	$1,062,337	$1,016,906
Econ. Dev./Legislative Affairs	$1,327,825	$1,005,410	$836,945
Finance and Budget	$1,593,152	$1,525,682	$1,504,444
Human Resources	$617,230	$647,057	$564,731
Information Technology	$2,024,226	$2,091,526	$2,050,354
Registrar & Electoral Board	$404,676	$386,290	$384,823
Treasurer	$1,855,015	$1,924,227	$1,878,329
Subtotal	$13,293,062	$12,971,383	$12,296,531
Judicial and Courts			
Commonwealth's Attorney	$2,784,583	$2,800,725	$2,789,759
Corrections	$7,015,137	$8,225,515	$7,269,624
Courts	$2,384,310	$2,372,046	$2,307,859
Subtotal	$12,184,030	$13,398,286	$12,367,242
Public Safety			
Fire and Rescue	$12,482,567	$13,330,184	$13,310,039
Sheriff	$17,310,529	$17,795,186	$20,606,006
Subtotal	$29,793,096	$31,125,370	$33,916,045
Health & Welfare			
Office of Human Services	$4,397,390	$4,227,358	$4,226,063
Social Services	$7,320,667	$8,409,342	$8,008,604
Cooperative Extension	$203,165	$196,425	$183,633
Partner Agencies	$1,860,399	$1,686,815	$1,671,377
Subtotal	$13,781,621	$14,519,940	$14,089,677
Recreation & Culture			
Central Rapp. Regional Library	$4,584,972	$4,254,098	$4,585,717
Parks, Recreation, Com. Facs.	$9,081,483	$9,597,958	$9,749,728
Subtotal	$13,666,455	$13,852,056	$14,335,445
Planning & Public Works			
Planning & Zoning	$2,613,696	$2,504,751	$2,408,729
Public Works	$4,035,714	$3,951,843	$3,887,681
Solid waste	$29,427	$0	$0
Subtotal	$6,678,837	$6,456,594	$6,296,410

Table A-1. Summary of General Fund Expenditure Budgets by Department or Function, Stafford County, Virginia, FY 2009-FY 2011, continued (current dollars)

Department	Fiscal Year 2009 Actual	Fiscal Year 2010 Budget	Fiscal Year 2011 Budget
Miscellaneous			
Capital Projects	$112,675	$198,400	$1,033,585
Debt Service County	$9,846,235	$12,185,406	$10,879,943
Non-Departmental	$968,383	$1,781,071	$2,148,877
Other Transfers	$154,833	$0	$0
Subtotal	$11,082,126	$14,164,877	$14,062,405
General Fund Except Schools	$100,479,227	$106,488,506	$107,363,755
Schools			
Operating Budget Transfer	$99,474,959	$102,736,533	$100,693,774
Debt – Schools	$30,574,129	$29,260,623	$25,625,938
Subtotal	$130,049,088	$131,997,156	$126,319,712
TOTAL GENERAL FUND	$230,528,315	$238,485,662	$233,683,467

Table A-2. Summary of Total and Tax-based Expenditure Budgets by Department or Function, Stafford County, Virginia, FY 2011 (current dollars)

Department	Fiscal Year 2011 Budget	Designated Revenues	Net Tax Support	Pct. Tax Support
General Government				
Board of Supervisors	$536,599	$0	$536,599	100.0%
Commissioner of the Revenue	$2,541,020	$245,440	$2,295,580	90.3%
County Administration	$982,380	$237,583	$744,797	75.8%
County Attorney	$1,016,906	$85,723	$931,183	91.6%
Econ. Dev./Legislative Affairs	$836,945	$0	$836,945	100.0%
Finance and Budget	$1,504,444	$479,508	$1,024,936	68.1%
Human Resources	$564,731	$170,034	$394,697	69.9%
Information Technology	$2,050,354	$206,839	$1,843,515	89.9%
Registrar & Electoral Board	$384,823	$52,762	$332,061	86.3%
Treasurer	$1,878,329	$757,533	$1,120,796	59.7%
Subtotal	$12,296,531	$2,235,422	$10,061,109	81.8%
Judicial and Courts				
Commonwealth's Attorney	$2,789,759	$1,031,136	$1,758,623	63.0%
Corrections	$7,269,624	$340,000	$6,929,624	95.3%
Courts	$2,307,859	$826,768	$1,481,091	64.2%
Subtotal	$12,367,242	$2,197,904	$10,169,338	82.2%
Public Safety				
Fire and Rescue	$13,310,039	$2,397,997	$10,912,042	82.0%
Sheriff	$20,606,006	$7,320,594	$13,285,412	64.5%
Subtotal	$33,916,045	$9,718,591	$24,197,454	71.3%
Health & Welfare				
Office of Human Services	$4,226,063	$1,919,063	$2,307,000	54.6%
Social Services	$8,008,604	$6,069,619	$1,938,985	24.2%
Cooperative Extension	$183,633	$0	$183,633	100.0%
Partner Agencies	$1,671,377	$96,117	$1,575,260	94.2%
Subtotal	$14,089,677	$8,084,799	$6,004,878	42.6%
Recreation & Culture				
Central Rapp. Regional Library	$4,585,717	$74,000	$4,511,717	98.4%
Parks, Recreation, Com. Facs.	$9,749,728	$1,743,794	$8,005,934	82.1%
Subtotal	$14,335,445	$1,817,794	$12,517,651	87.3%
Planning & Public Works				
Planning & Zoning	$2,408,729	$1,017,230	$1,391,499	57.8%
Public Works	$3,887,681	$2,735,106	$1,152,575	29.6%
Solid waste	$0	$0	$0	0.0%
Subtotal	$6,296,410	$3,752,336	$2,544,074	40.4%

Table A-2. Summary of Total and Tax-based Expenditure Budgets by Department or Function, Stafford County, Virginia, FY 2011, continued (current dollars)

Department	Fiscal Year 2011 Budget	Designated Revenues	Net Tax Support	Pct. Tax Support
Miscellaneous	$0	$0	$0	0.0%
Capital Projects	$1,033,585	$0	$1,033,585	100.0%
Debt Service County	$10,879,943	$0	$10,879,943	100.0%
Non-Departmental	$2,148,877	$381,063	$1,767,814	82.3%
Other Transfers	$0	$0	$0	0.0%
Subtotal	$14,062,405	$381,063	$13,681,342	97.3%
General Fund Except Schools	$107,363,755	$28,187,909	$79,175,846	73.7%
Schools				
Operating Budget Transfer	$100,693,774	$0	$100,693,774	100.0%
Debt - Schools	$25,625,938	$0	$25,625,938	100.0%
Subtotal	$126,319,712	$0	$126,319,712	100.0%
TOTAL GENERAL FUND	$233,683,467	$28,187,909	$205,495,558	87.9%

REVISED PROFFER STATEMENT
May 29, 2012

County:	County of Stafford, Virginia
Applicant:	American Life League, Inc. (Owner of Tax Map 29-66A) &Paul A. Brown, Trustee for the Judie Anne Brown Irrevocable Trust Agreement dated June 28, 2006, as clarified and restated pursuant to that certain Clarification and Complete Restatement of the Judie Anne Brown Irrevocable Trust Agreement, dated August 23, 2007. (Owner of Tax Map 29-66B)
Rezoning Request:	Rezone from A-1 (portion PD-1) to R-2 & B-2
Properties:	Two parcels, namely being Tax Map parcel 29-66 A, consisting of 48 +/- acres(of record by instrument No. LR 03003112) and Tax Map parcel 29-66 B, consisting of 25 +/- acres (LR 060021410), located in the Rock Hill Magisterial District, Stafford County, Virginia, consisting in the aggregate of approximately 73.3168 acres (hereinafter collectively the "Properties")
Date:	Revised May 29, 2012

1. **General Requirements.**

(a) The following proffers are being made pursuant to Sections 15.2-2298 and 15.2-2303, et al. of the Code of Virginia (1950), as amended, and Section 28-164, et al. of the County Zoning Ordinance. The proffers provided herein are the only proffered conditions offered in this rezoning application, and any prior proffers in which the Properties, as applicable, may be subject to or previously offered with the Applicant's application or otherwise previously proffered are hereby superseded by these proffers, and further said prior proffers are hereby void and of no further force and effect. In addition, these proffers are conditioned upon and become effective only in the event the Applicant's rezoning application No. RC11000267 is approved (including through applicable appeal periods) by the Stafford County Board of Supervisors ("County") and these proffers are accepted by the County.

(b) Subject to the terms hereunder, the Properties will be generally developed in accordance with that certain generalized development plan submitted with our rezoning application dated June 30, 2011, as last revised March 26, 2012, prepared by The Kniseley Group, Inc. and entitled "Generalized Development Plan Westgate Center @ Stafford Courthouse", ("GDP"), and in general accordance with that certain illustrative exhibit submitted with the Applicant's application prepared by The Kniseley Group, Inc., dated January 23, 2012, as last revised March 26, 2012, and entitled "Illustrative Exhibit Westgate Center @ Stafford Courthouse" (hereinafter the "Illustrative Exhibit").

(c) The County and the Applicant further agree that all proposed parcel lines, parcel sizes, building envelopes and footprints, access points, building sizes, building locations, public road locations, private driveway, road and travel way locations, interparcel connectors, RPAs and wetland areas, utility locations, storm water management facilities, and dimensions of undeveloped areas shown on the GDP or Illustrative Exhibit may be relocated and/or amended from time-to-time by the Applicant to fulfill requirements of final development, engineering, and design requirements and/or compliance with federal or state agency regulations including, but not limited to, VDOT, DEQ, Army Corps of Engineers, etc., and compliance with the requirements of the County's development regulations and design standards manual. Changes consistent with the original general intent of the GDP or Illustrative Exhibit shall be permitted and subject to the County Zoning Administrator's review and determination thereof, as may be applicable.

(d) Applicant proffers the general urban design patterns shown on the GDP depicting proposed commercial building locations with parallel parking and surface parking to the rear of the sites or in the optional parking decks shown on the GDP.

(e) Applicant agrees to (i) restrict the number and residential use of Landbay #1 to fifty-one (51) single-family detached units and (ii) a development cap for the commercial Landbay #2 at 645,000 square feet of maximum floor area buildable space, as provided on the GDP and Illustrative Exhibit.

(f) Applicant agrees that for any commercial office space within the development, the first floor shall include retail space.

(g) These proffers shall run with the Properties and be binding upon all future assignee, successors, grantees, or lessees thereof, except as may be otherwise specifically set forth herein.

(h) Any reference to the "Applicant" shall also refer to American Life League, Inc. and The Judie Anne Brown Irrevocable Trust Agreement dated June 28, 2006, as clarified and restated pursuant to that certain Clarification and Complete Restatement of the Judie Anne Brown Irrevocable Trust Agreement, dated August 23, 2007, and their respective future assigns successors, grantees, or lessees.

2. **Architecture& Materials**: The architecture and design of the buildings for purposes of this rezoning shall be in general accordance with the Illustrative Exhibit and shall be compatible and compliment current surrounding uses. Façades facing the street, with the exception of window openings, shall consist of at least 50 percent brick, stone, or equally suitable materials. Facades shall incorporate vertical elements such as wall plane projections or recesses, with each projection or recess showing a change in color, texture, or pattern. Ground floor facades that face the street shall incorporate display windows, entry areas, awnings, or other such features along their horizontal length. Facades shall include a repeating pattern with elements such as color change, texture change, material module change, or a change in plane, such as an offset, reveal, or protecting rib. Sloping roofs or

pitched roofs shall incorporate roof features or designs such as overhanging eaves and raised accent elements such as dormer windows, gables, or chimneys. Flat roofs shall incorporate parapet walls so as to screen roof-top equipment from view. Parapet walls shall be enhanced with features such as three dimensional cornice treatments

3. **Transportation**. The Applicant, subject to necessary County and VDOT requirements for the applicable development stage of the project, agrees to provide the following transportation proffers as generally depicted on the GDP:

   A. **At Entrance # 1**, Applicant shall construct the following improvements, subject to final review and approval by VDOT and County:

      (i) southbound left-turn lane on Austin Ridge Drive; and
      (ii) exiting (westbound) dedicated left-turn and right-turn lanes

   B. **At Entrance # 2** (southern entrance), Applicant shall construct the following improvements, subject to review and approval by VDOT:

      (i) southbound left-turn lane on Austin Ridge Drive;
      (ii) northbound right-turn lane on Austin Ridge Drive;
      (iii) westbound dedicated dual left-turn lanes and a dedicated single right-turn lane;
      (iv) traffic signalization, subject to traffic signal warrants being satisfied based on updated traffic signal warrant analysis to be reviewed and approved by VDOT; and
      (v) traffic signal shall include emergency vehicle preemption devices (at Applicant's own cost, without reimbursement from VDOT or the County) as reasonably required by County and/or VDOT staff for emergency vehicles.

   C. Applicant shall construct a sidewalk network in general conformance with the GDP to provide connectivity along the primary internal roadways connecting the commercial and residential developments together, and connecting both to the northern and southern termini of the existing sidewalk segment between Entrance # 1 and Entrance # 2 along the east side of Austin Ridge Drive.

   D. Applicant shall construct publicly maintained subdivision roads for the Landbay #1 residential development. These roads will be constructed in accordance with VDOT specifications and requirements.

   E. Applicant shall construct private roads and travelways to service the Landbay #2 commercial development. These roads shall be constructed in accordance with county specifications and requirements for private roads and travelways. All private roads shall be owned and maintained by the commercial property owner.

   F. Applicant shall provide an interparcel connection of a 10' wide paved pedestrian trail access, with safety lighting meeting County standards, to be located between

the residential Landbay #1 and commercial Landbay #2, all as generally shown on the GDP. The private trail shall be owned and maintained by the owner of the commercial area. In addition, the Applicant shall provide a 20' wide fire emergency access, which shall be centered over the pedestrian trail by providing 5' of additional width to either side of the trail and shall be constructed with a roadbed adequate to support the fire emergency apparatus. Surface of emergency vehicle area shall consist of different surface material and or color from the pedestrian trail surface such as, but not limited to, concrete, concrete pavers, river rock, or other porous stone surfaces acceptable to the County's fire department. In the event that the interparcel pedestrian connection is not constructed prior to or coincident with the construction of the residential area, the developer shall erect signage at the future connection location to announce that a future trail extension is to be built and shall provide appropriate disclosure literature to be provided in the home builder's sales office at such time as lots are offered for sale by the home builder.

G. For purposes of the development of Landbay #2, the Applicant shall pay upon the issuance of a final certificate of occupancy for the first commercial building located on Landbay #2, the sum of **$449,000** , which reflects transportation impact proffers pertaining to the commercial development of Landbay #2, and such dollars will be applied towards future transportation improvements within the vicinity of the project as may be deemed necessary by the County.

H. For purposes of Landbay # 2, the Applicant is aware of VDOT planning for a proposed future I-95/Courthouse Interchange ("Interchange"), and is committed to working with VDOT on right-of-way requirements. The Applicant shall reserve this area, identified as "Possible right-of-way dedication" on the GDP, for said future right-of-way dedication upon request by VDOT or the County.

I. Notwithstanding anything to the contrary hereunder, the Applicant shall not be required to make the proffered improvements provided under this Section 3 until such improvements are reasonably required for proceeding with and constructing the development of either Landbay # 1 or Landbay #2, all as generally depicted on the GDP and Illustrative Exhibit.

J. Notwithstanding anything to the contrary under this Section 3 proffer, all of the foregoing proffer improvements are subject to the final approval of the County, VDOT, and where applicable third party property owners. In no event shall the Applicant be required to provide any additional proffers or amend any of the foregoing proffered improvements, except with the expressed written approval of the Applicant

4. **Lighting.** For purposes of any outside lighting, the Applicant shall provide "down-lighting" techniques not to exceed 1.0 foot candles at the property line or so as not to intrude upon the adjacent properties. All lighting fixtures shall be compatible with the theme of the building

architecture and shall have a maximum height of 24 feet in height. The fixtures should be cut-off style and shielded to direct light downward to minimize glare on adjoining properties. The final spacing and location of lighting shall be determined at the time of site plan to assure consistent lighting levels and energy efficiency.

5. **CPTED**. The applicant agrees to design and construct the Property to incorporate the goals of CPTED (Crime Prevention Through Environmental Design) to the appropriate extent practicable. CPTED design features may include, but not be limited to, the following:

    a. Installation of grooved concrete ramps in parking garages;
    b. Installation of peepholes on all rear delivery doors;
    c. Installation and maintenance of a minimum 2 to 4 foot candles maintained lighting levels for all parking and pedestrian areas, provided that this provision does not conflict with proffer 4 above;
    d. Use of lightened concrete inside the parking garages to help reflect lighting;
    e. To encourage the use of features such as business patios and/or outside dining in order to put more "eyes on the street."
    f. Provide rear public access points to commercial buildings and/or public pass-through access if rear public parking is offered; and.
    g. Install rear windows to face parking areas if rear parking is offered.

6. **Prohibited Uses**. The Applicant agrees that the following uses shall not be permitted on the subject property:

    - Convenience store
    - Indoor flea market
    - Adult business
    - Outdoor flea market
    - Vehicle fuel sale with accessory auto repair
    - Adult day care center
    - School, vocational
    - Warehousing, mini-storage
    - Automobile repair
    - Boat sales
    - Fleet parking
    - Motor vehicle sales
    - Building materials sales and storage
    - Mulch sales
    - Car wash
    - Lumber, building, electrical, and plumbing supply with covered storage
    - Machinery sales and service
    - Plant and tree nursery

- Greenhouse
- Automobile service
- Dwelling for a watchman or caretaker
- Motor vehicle rental
- Theater with 3,500 or more seats
- Storage warehouse
- Restaurant with drive through facility

7. **Cash Contribution** – For purposes of only Landbay #1, as shown on the GDP and Illustrative Exhibit, the Applicant, after reducing as a credit the by-right number of units of 5.6 (e.g., 5.6 x $43,101 = $241,365.60), agrees to pay the County the total sum of **$1,956,785.40** as cash proffers, which equates to $38,368.34 x 51 units, under the County's current proffer guidelines for single-family detached homes. This amount includes a discount associated with 5.6 by right units or $241,365.60 from the proffer guideline amount of $2,198,151.00 which equals $1,956,785.40. Cash proffers shall be payable pro rata to the County upon the issuance of a final certificate of occupancy for each of the 51 residential SFD units. The per unit payment, until paid, will be subject to annual increases, with prior notice to the Applicant, to be calculated on a yearly basis commencing one year after the date of final County approval of this proffer statement. Such increases shall be calculated by multiplication of the Marshall-Swift Index and not the Consumer Price Index of the Department of Labor Statistics for the current year by the original per unit cash proffer amount.

   The cash proffer contributions shall be allocated based on the following categories or subcategories:

General Government	$ $537.16 per unit
Libraries	$ 613.89 per unit
Fire and Rescue	$ 767.37 per unit
Transportation	$ 13,812.60 per unit
Schools	$ 17,649.44 per unit
Parks & Recreation	$ 4,987.88 per unit

Total Proffer Dollars: 51 units x $38,368.34 =$1,956,785.40

8. **Amenities**. For purposes of the project, the Applicant shall provide the amenities as generally shown on the GDP and Illustrative exhibit.

9. **Covenants**. The Applicant, prior to development, shall encumber the Properties (as shown on the GDP and Illustrative Exhibit) with a declaration of conditions, covenants, restrictions, and easements ("Declaration") for the purpose of (a) protecting the value and desirability of the property; (b) facilitating the planning and development of the development in a unified and consistent manner; and (c) providing for the installation, maintenance, and repair for all common area, including landscaping, on-site amenities and open space, parking areas, travelways and roads. The Applicant, as applicable, will also create a property or home owner's association as a

non-stock corporation under the laws of Virginia that will provide and ensure oversight and structure for services provided, quality standards, intercampus relationships and common area maintenance.

10. **Fire/Safety**. Fire suppression sprinkler systems shall be provided for all commercial building structures, including parking garages if proposed, in accordance with the applicable NFPA Standard. Standpipes required for structures 3-story and taller shall be provided in accordance with applicable NFPA Standard.

12. **Retaining Wall**. Retaining walls over three (3) feet in height, if any, or building walls shall be set back a minimum of twenty (20) feet from the RPA boundary to ensure construction and maintenance access is located outside the RPA.

13. **Fire Sprinklers in Residential Units**. The Applicant agrees to offer as an option to purchasers of any of the detached single-family units, but not a requirement, fire sprinkler systems within said units. In no event shall these fire sprinkler systems be a requirement for purposes of construction and/or permitting, but rather only an option payable by purchasers of said units.

14. **Landscaping Buffer**. Applicant shall provide at least a twenty-five foot (25') landscaping and/or vegetation buffer to be located within the common area along a portion of Applicant's Landbay #1 property line, and adjacent to the back of the west lots of Austin Ridge Section 7, all as more particularly shown on the GDP. Applicant shall endeavor to maintain all natural vegetation in this buffer area and shall supplement the area, if so required, with new plantings of mix evergreens (at least 50% evergreens) and deciduous trees at rates contained in County's applicable landscaping ordinance.

[AUTHORIZED SIGNATURES TO FOLLOW]

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APPLICANTS' ACKNOWLEDGMENT & CONSENT

American Life League, Inc.
a District of Columbia corporation

By: _____
Print Name: Paul A. Brown

Title: Vice President and Chief Financial Officer

STATE OF Virginia,
CITY/COUNTY/TOWN OF Spotsylvania, to wit:

I, the undersigned, a Notary Public in and for the City/County/Town and State aforesaid, do hereby certify that Vice President and Chief Financial Officer Paul A. Brown in his/her/it's capacity as for American Life League, Inc. has personally acknowledged the same before me in my aforesaid jurisdiction for the corporation.

GIVEN under my hand and seal this 12th day of June, 2012.

_____
Notary Public

Print Name: Krystal Lynn Almeida Bellinger
My Commission Expires: April 30, 2016
Registration No.: 7518635
[Seal]

The Judie Anne Brown Irrevocable Trust Agreement dated June 28, 2006, as clarified and restated pursuant to that certain Clarification and Complete Restatement of the Judie Anne Brown Irrevocable Trust Agreement, dated August 23, 2007.

By: _____
Paul A. Brown, Trustee,

STATE OF Virginia,
CITY/COUNTY/TOWN OF Spotsylvania, to wit:

I, the undersigned, a Notary Public in and for the City and Commonwealth of Virginia aforesaid, do hereby certify that Paul A. Brown, trustee for The Judie Anne Brown Irrevocable Trust Agreement dated June 28, 2006, as clarified and restated pursuant to that certain Clarification and Complete Restatement of the Judie Anne Brown Irrevocable Trust Agreement, dated August 23, 2007, has personally acknowledged the same before me in my aforesaid jurisdiction for the trust.

GIVEN under my hand and seal this 12th day of June, 2012.

_____
Notary Public

Print Name: Krystal Lynn Almeida Pollinger
My Commission Expires: April 30, 2016
Registration No.: 7518635
[Seal]

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O12-12

PROPOSED

BOARD OF SUPERVISORS
COUNTY OF STAFFORD
STAFFORD, VIRGINIA

ORDINANCE

At a regular meeting of the Stafford County Board of Supervisors (the Board) held in the Board Chambers, Stafford County Administration Center, Stafford, Virginia, on the 19th day of June, 2012:

MEMBERS: VOTE:
Susan B. Stimpson, Chairman
Cord A. Sterling, Vice Chairman
Jack R. Cavalier
Paul V. Milde III
Ty A. Schieber
Gary F. Snellings
Robert "Bob" Thomas, Jr.

On motion of , seconded by , which carried by a vote of , the following was adopted:

AN ORDINANCE TO AMEND AND REORDAIN THE ZONING ORDINANCE FOR STAFFORD COUNTY BY AMENDING THE ZONING DISTRICT MAP TO RECLASSIFY FROM A-1, AGRICULTURAL AND PD-1, PLANNED DEVELOPMENT-1 ZONING DISTRICTS, TO B-2, URBAN COMMERCIAL AND R-2, URBAN RESIDENTIAL-MEDIUM DENSITY ZONING DISTRICTS ON ASSESSOR'S PARCELS 29-66A AND 29-66B WITHIN THE GARRISONVILLE ELECTION DISTRICT

WHEREAS, American Life League, Inc, and Paul A. Brown, Trustee for the Judie Anne Brown Irrevocable Trust, applicants, have submitted application RC1100267 requesting a reclassification from A-1, Agricultural and PD-1, Planned Development-1 Zoning Districts, to B-2, Urban Commercial and R-2, Urban Residential- Medium Density Zoning Districts, on Assessor's Parcels 29-66A and 29-66B; and

WHEREAS, the Board has carefully considered the recommendations of the Planning Commission, staff, and testimony at the public hearing; and

WHEREAS, the Board has determined that the requested zoning is compatible with the surrounding land uses and zoning; and

WHEREAS, the Board finds that public necessity, convenience, general welfare, and good zoning practice require adoption of an ordinance to reclassify the subject property;

NOW, THEREFORE, BE IT ORDAINED by the Stafford County Board of Supervisors on this the 19th day of June, 2012, that the Zoning Ordinance for Stafford County be and it hereby is amended and reordained by amending the Zoning District Map to reclassify from A-1, Agricultural and PD-1, Planned Development-1 Zoning Districts, to B-2, Urban Commercial and R-2, Urban Residential-Medium Density Zoning Districts on Assessor's Parcels 29-66A and 29-66B, in the locations identified on the Zoning Exhibit Plat, prepared by The Kniseley Group, Inc., dated January 26, 2012, with proffers entitled, "Revised Proffer Statement," dated May 29, 2012.

AJR:JAH:mz

R12-105

PROPOSED

BOARD OF SUPERVISORS
COUNTY OF STAFFORD
STAFFORD, VIRGINIA

RESOLUTION

At a regular meeting of the Stafford County Board of Supervisors (the Board) held in the Board Chambers, Stafford County Administration Center, Stafford, Virginia, on the 19th day of June, 2012:

MEMBERS: VOTE:
Susan B. Stimpson, Chairman
Cord A. Sterling, Vice Chairman
Jack R. Cavalier
Paul V. Milde III
Ty A. Schieber
Gary F. Snellings
Robert "Bob" Thomas, Jr.

On motion of , seconded by , which carried by a vote of , the following was adopted:

A RESOLUTION TO DENY AN APPLICATION TO AMEND AND REORDAIN THE ZONING ORDINANCE FOR STAFFORD COUNTY BY AMENDING THE ZONING DISTRICT MAP TO RECLASSIFY FROM A-1, AGRICULTURAL AND PD-1, PLANNED DEVELOPMENT-1 ZONING DISTRICTS, TO B-2, URBAN RESIDENTIAL AND R-2, URBAN RESIDENTIAL-MEDIUM DENSITY ZONING DISTRICTS ON ASSESSOR'S PARCELS 29-66A AND 29-66B WITHIN THE GARRISONVILLE ELECTION DISTRICT

WHEREAS, American Life League, Inc, and Paul A. Brown, Trustee for the Judie Anne Brown Irrevocable Trust, applicants, have submitted application RC1100267 requesting a reclassification from A-1, Agricultural and PD-1, Planned Development-1 Zoning District, to B-2, Urban Commercial and R-2, Urban Residential-Medium Density Zoning District on Assessor's Parcels 29-66A and 29-66B; and

WHEREAS, the Board has carefully considered the recommendations of the Planning Commission, staff, and testimony at the public hearing; and

WHEREAS, the Board has determined that the requested zoning is incompatible with the surrounding land uses and zoning;

NOW, THEREFORE, BE IT RESOLVED by the Stafford County Board of Supervisors on this the 19th day of June, 2012, that application RC1100267 be and it hereby is denied.

AJR:JAH:mz