

**MOUNTAIN BROOK CITY COUNCIL
PRE-MEETING AGENDA**

**PRE-COUNCIL ROOM (A106) CITY HALL
56 CHURCH STREET
MOUNTAIN BROOK, AL 35213
JULY 13, 2015
6:00 p.m.**

1. Proposed amendments to the Telecommunication Towers ordinance to include regulations for mini-cell sites – Dana Hazen (See attached information)
2. RFP's for sports and playing field lighting project – Shanda Williams (See attached information)
3. ALDOT agreement for roundabout in Mountain Brook Village – Sam Gaston (See attached information)
4. Brookwood Road/Crosshill Road traffic improvement recommendations – Richard Caudle of Skipper Consultants (See attached information. This item may be added to the formal agenda.)
5. Executive Session

ORDINANCE NO. _____

**AN ORDINANCE TO ADOPT REGULATIONS FOR SMALL CELL TECHNOLOGY IN
THE PUBLIC RIGHT OF WAY IN THE CITY OF MOUNTAIN BROOK, ALABAMA**

WHEREAS, the City Council of the City of Mountain Brook is charged with the protection of the public health, safety, and welfare of the citizens of Mountain Brook, Alabama (“City”); and

WHEREAS, the installation, expansion, maintenance, and aesthetics of wireless support structures for Small Cell Technologies (as hereinafter defined) in City rights-of-way can have significant impacts upon: (1) other uses within the right-of-way; (2) safety of the traveling public, (3) property values of adjacent parcels; (4) the historic and aesthetic character of the City; and (5) the public health, safety, and welfare of citizens utilizing the roads and nearby properties; and

WHEREAS, the City seeks to ensure the safe and efficient integration of facilities necessary for the provision of broadband and other advanced wireless communication services throughout the City; and

WHEREAS, the City seeks to ensure the ready availability of reliable wireless communication services to the public to support personal communications, economic development, and the general welfare; and

WHEREAS, the City seeks to encourage, where feasible, the modification or collocation of Small Cell Technologies on existing support structures over the construction of new wireless support structures; and

WHEREAS, the Federal Telecommunications Act allows local governments to provide for reasonable regulations over the location, expansion, height, and maintenance of telecommunications facilities so long as service is not prohibited; and

WHEREAS, the City seeks to create certain requirements for applicants to obtain a wireless support structure permit for wireless support structures within the City rights-of-way in support of Small Cell Technologies, which ensure adequate wireless coverage while preserving the health, safety, and welfare of the citizens of the City, as well as preserving the aesthetic and historic nature of certain areas in the City; and

NOW, THEREFORE, BE IT ORDAINED by the City Council of the City of Mountain Brook, Alabama, as follows:

Section 1: A new Chapter 12_ shall be inserted to read as follows:

Chapter 12_ - Small Cell Technology

"Sec. 12_-xx Definitions

As used in this chapter, the term:

- (1) "Accessory Equipment" means any equipment serving or being used in conjunction with Small Cell Technology or a Small Cell Technology Wireless Support Structure and includes, but is not limited to, utility or transmission equipment, power supplies, generators, batteries, cables, equipment buildings, cabinets, and storage sheds, shelters, or similar structures.
- (2) "Antenna" means communications equipment that transmits and receives electromagnetic radio signals used in the provision of all types of wireless communication services.
- (3) "Application" means a formal request submitted to the City to construct a Small Cell Technology Wireless Support Structure. An application shall be deemed complete when all documents, information, and fees specifically enumerated in the City's regulations, ordinances, and forms pertaining to the location, construction, or operation of wireless facilities are submitted by the applicant to the City.
- (4) "Collocation" means the placement or installation of new Small Cell Wireless Technology on the property of a utility, or other franchisee, legally existing in the public right of way. Such term includes the placement of accessory equipment within an existing equipment compound.
- (5) "Equipment Compound" means an area surrounding or adjacent to the base of a wireless support structure within which accessory equipment is located.
- (6) "Small Cell Technology" means: (1) individual small cell wireless antennas; or (2) networks of spatially separated small cell wireless antenna nodes connected to a common source via transport medium that provides wireless service within a geographic area or structure commonly referred to as Distributed Antenna Systems."
- (7) "Small Cell Technology Wireless Support Structure" means a freestanding structure, designed to support or capable of supporting Small Cell Technology wireless facilities.
- (8) "Stealth Technology" means a method of concealing or reducing the visual impact of Small Cell Technology and/or Small Cell Technology Wireless Support Structures by use of incorporating features or design elements of the installation which either totally or partially

conceals the structure; achieves the result of having the structure blend into the surrounding environment; or otherwise minimizes the visual impact of the structure.

Section 2: A new Section 12_-xx shall be inserted to read as follows:

“Sec. 12_-xx Placement of Small Cell Technology in the Right of Way: The following Standards shall apply for the placement of Small Cell Technology in the public right of way, or on a public road, city easement or any other City property.

(a) Any Small Cell Technology in a City right-of-way shall be co-located on the property of a utility, or other franchisee, legally existing in the public right-of-way unless the applicant can demonstrate that no co-location opportunities exist in the area of need. If the applicant demonstrates that no co-location opportunities exist; the applicant may apply for a variance to allow for a Small Cell Wireless Support Structure within the area of the public right-of-way.

(b) In determining whether to issue a variance allowing the installation of a Small Cell Technology Wireless Support Structure within the right-of-way, the City Manager, or his or her designee, shall consider the following factors and make a determination if it is appropriate:

1. Demonstrated need for the Small Cell Technologies within the geographic area requested in order to deliver adequate service;
2. Proof that all co-location sites in the area of need are/were pursued and have been denied; or that there does not exist the ability to co-locate using existing structures. The Applicant must demonstrate all actions taken to achieve colocation.
3. The character of the area in which the Small Cell Technology Wireless Support Structure is requested, including evidence of surrounding properties and uses;
4. Stealth Technology, if any, proposed to be utilized by the Applicant, or proof that Stealth Technology is either: (a) unnecessary; or (b) cannot be used.
5. Proof that the proposed Small Cell Technology Wireless Support Structure is the minimal physical installation which will achieve the Applicant’s goals.
6. The safety and aesthetic impact of any proposed Small Cell Technology Wireless Support Structure, related accessory equipment, and/or Equipment Compound.

(c) Within 90 calendar days of the date an application is filed with the City, unless another date is specified in a written agreement between the local governing authority and the applicant, the local governing authority shall:

1. Make its final decision to approve or disapprove the application; and
2. Advise the applicant in writing of its final decision.

(d) Within 30 calendar days of the date an application is filed with the City, the City shall notify the applicant in writing of any information required to complete the application. To the extent additional information is required to complete the application, the time required by the applicant to provide such information shall not be counted toward the 90 calendar day review period set forth in this subsection.

(e) Any appeal of a decision rendered pursuant to the Code Section shall be made by Writ of Certiorari to the Superior Court of Jefferson County, Alabama.

Section 3. Repealer. All ordinances or parts of ordinances heretofore adopted by the City Council of the City of Mountain Brook, Alabama that are inconsistent with the provisions of this ordinance are hereby expressly repealed.

Section 4. Severability. If any part, section or subdivision of this ordinance shall be held unconstitutional or invalid for any reason, such holding shall not be construed to invalidate or impair the remainder of this ordinance, which shall continue in full force and effect notwithstanding such holding.

Section 5. Effective Date. This ordinance shall become effective immediately upon adoption and publication as provided by law.'

At the aforesaid time and place, all interested parties will be heard in relation to the changes proposed by said ordinance."

ADOPTED: The ____ day of _____, 2015.

Virginia C. Smith, Council President

APPROVED: The ____ day of _____, 2015.

Lawrence T. Oden, Mayor

CERTIFICATION

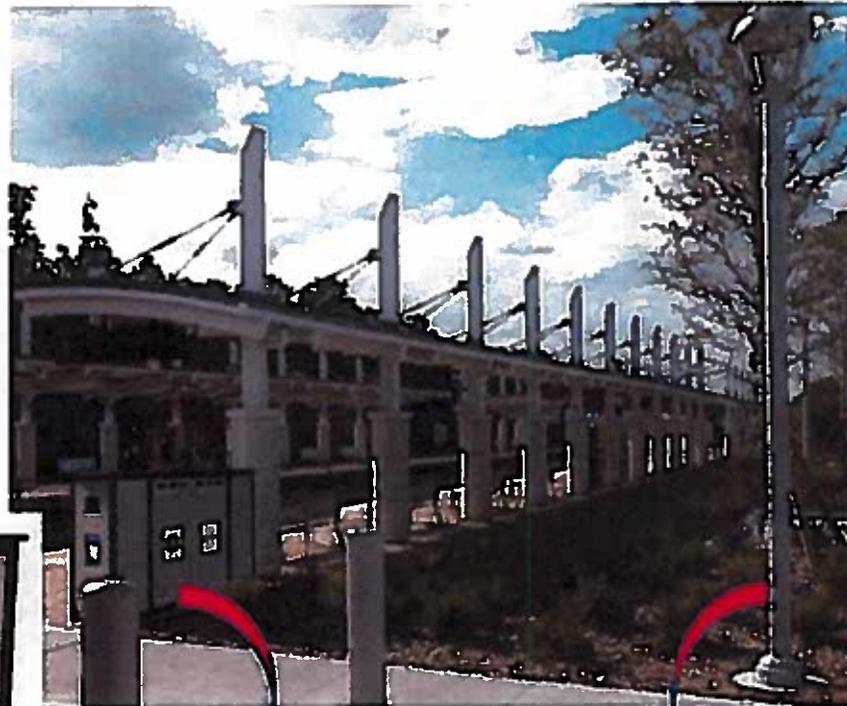
I, Steven Boone, City Clerk of the City of Mountain Brook, Alabama, hereby certify the above to be a true and correct copy of an ordinance adopted by the City Council of the City of Mountain Brook, Alabama, as its meeting held on _____, 2015, as same appears in the minutes of record of said meeting, and published by posting copies thereof on _____, 2015, at the following public places, which copies remained posted for five (5) days as required by law.

City Hall, 56 Church Street Gilchrist Pharmacy, 2805 Cahaba Road
Overton Park, 3020 Overton Road The Invitation Place, 3150 Overton Road

Steven Boone, City Clerk

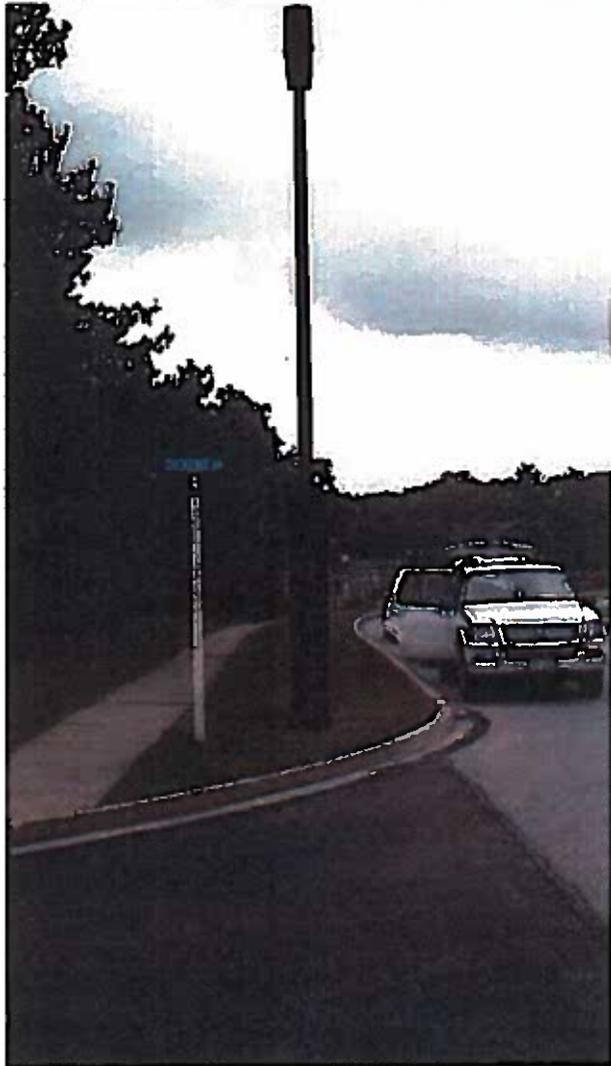


Small Cell Solutions





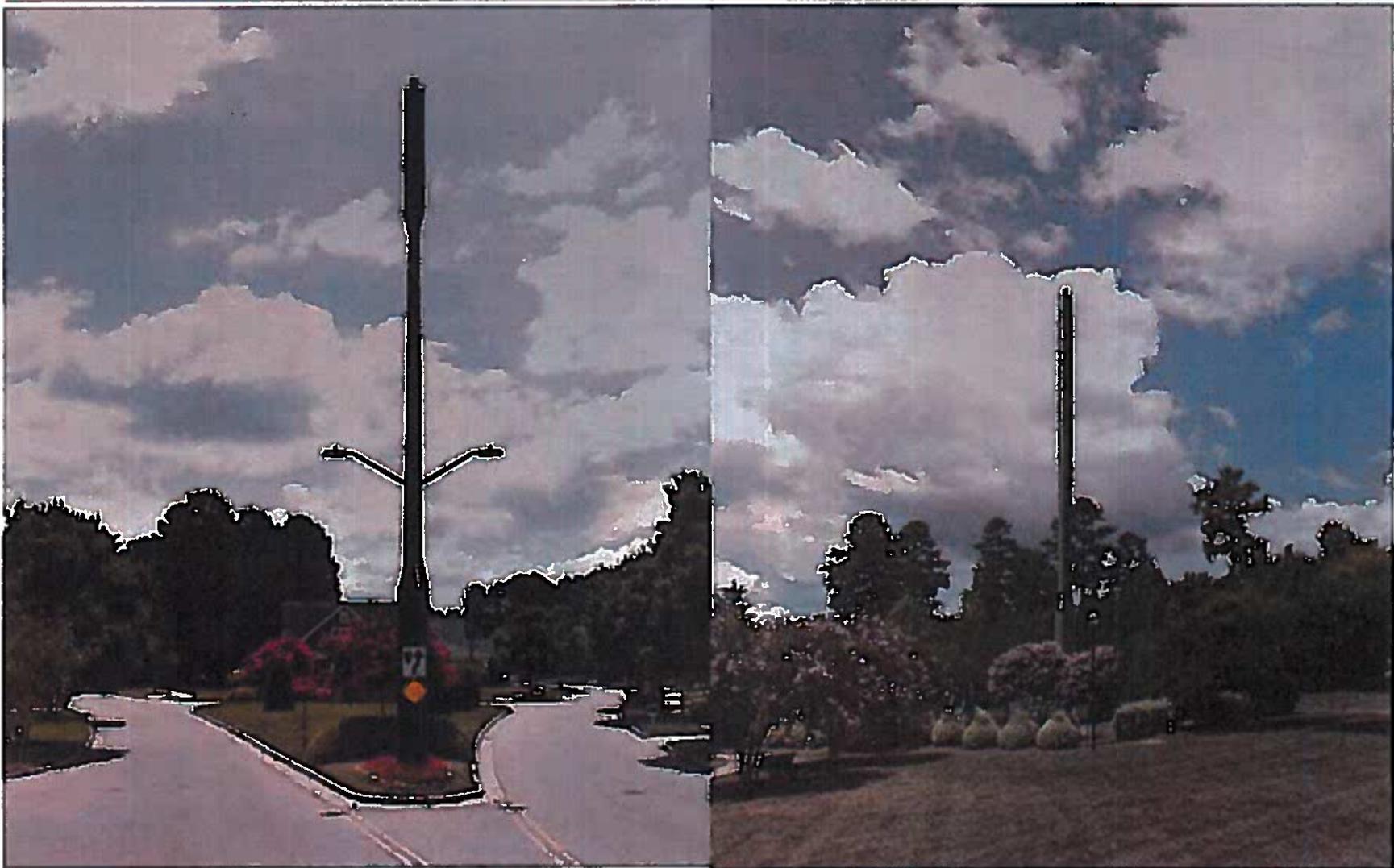
Small Cell Solutions





Small Cell Solutions





Confidential and proprietary materials for authorized Verizon personnel and outside agencies only. Use, disclosure or distribution of this material is not permitted to any unauthorized persons or third parties except by written agreement.



Small Cell Solutions





Small Cell Solutions



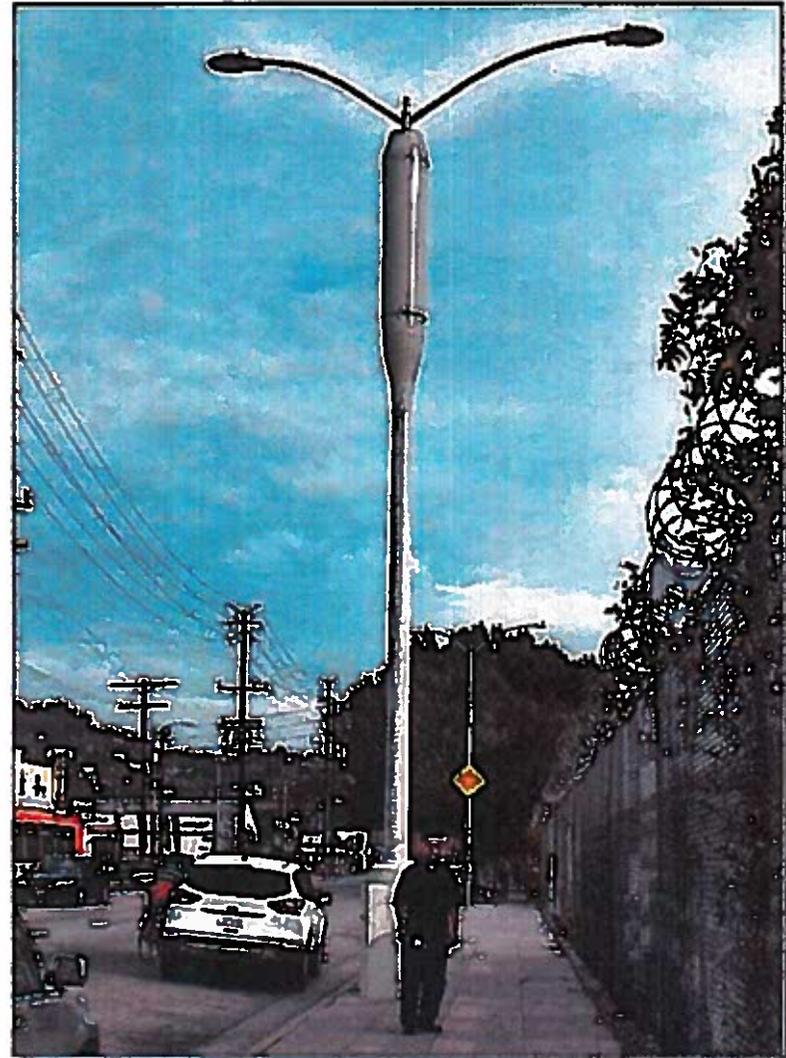


Small Cell Solutions





Small Cell Solutions





Small Cell Antenna



840 10515 840 10516

Dualband 700 MHz X-pol Tri-sector Antenna
698-694 MHz
1710-2170 MHz

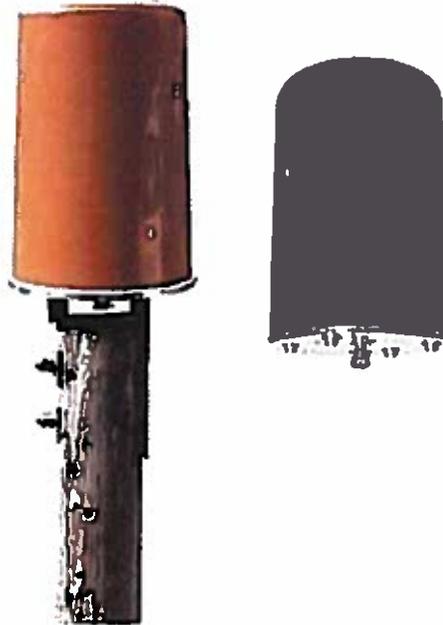
Kathrein's Dual band antennas are ready for 3G and 4G applications, covering all existing wireless bands as well as all spectrum under consideration for future systems

- Wide band operation.
- Exceptional intermodulation characteristics.
- High strength fiberglass radome.
- Each antenna section is independently accessible.

General specifications:

Frequency range	698-694 MHz 1710-2170 MHz
VSWR	<1.5:1
Impedance	50 ohms
Intermodulation (2x20w)	(M3) <-150 dBc
Polarization	+45° upper and lower band -45° upper and lower band
Connector	1/2" x 7-16 DIN female
Isolation intra-system	>30 dB
Isolation inter-system	>40 dB (C2B-804 # 1710-2170 MHz)
Radome color	Brown or Gray
Weight	34 lb (22.7 kg)
Height	24 inches (609 mm)
Radome diameter	18 inches (467 mm)
Wind load	at 93 mph (150km/h) 32 lb (14.5 kg)
Wind survival rating*	100 mph (160 km/h)
Shipping dimensions	33 x 20 x 18 inches (813 x 508 x 463 mm)
Shipping weight	37 lb (23.6 kg)
Mounting	Designed to be mounted on top of a utility pole using a custom mounting bracket supplied by the customer.

See reverse for other information.



Specifications:	698-694 MHz	698-694 MHz	1710-1990 MHz	1990-1990 MHz	1710-2170 MHz
Gain	10.4 dB	11.8 dB	13.5 dB	13.5 dB	13.9 dB
Front-to-back ratio (110° x 30°)	-34 dB (no-polar) -18 dB (full-power)	-34 dB (no-polar) -20 dB (full-power)	-32 dB (no-polar) -24 dB (full-power)	-30 dB (no-polar) -24 dB (full-power)	-29 dB (no-polar) -25 dB (full-power)
Maximum input power	250 watts (at 50°C)	260 watts (at 50°C)	200 watts (at 50°C)	200 watts (at 50°C)	200 watts (at 50°C)
+45° and -45° polarization horizontal beamwidth	71° (full-power)	68° (full-power)	60° (full-power)	62° (full-power)	64° (full-power)
+45° and -45° polarization vertical beamwidth	37° (full-power)	31° (full-power)	10° (half-power)	17.5° (half-power)	17.5° (half-power)
Cross polar ratio					
Main direction	0°	25 dB	20 dB	22 dB	25 dB
Sector (typical)	>8 dB				

July 7, 2015

Dear Council Members,

The Park Board would like to upgrade the lighting at the sports fields around Mountain Brook. They are specifically interested in using Musco brand lights. I created a RFP to engage an electrical engineer to evaluate our current lights and see what would be necessary to proceed with the upgrades. I received four responses from the following companies: CCE, Gunn & Assoc, Fisher Arnold, and Jackson, Renfro & Assoc.

After studying their submissions, I created a comparison chart with the important information they provided. It has been attached for you to view.

Of these four, I feel Gunn & Associates would be the best fit for us. They have the most noted experience with renovating sports fields, specifically listing projects at Trussville and Vestavia. Most of the others listed new projects, which I feel is not comparable to our needs. They also have worked with Musco before and are familiar with their product.

Because the total fees to evaluate all the fields are so high, I suggest breaking the project down and completing a few fields at a time. I would like to complete all the listed fields at the high school, Mountain Brook Elementary, and Brookwood Forest Elementary since these are the most used fields. The engineer fees would be less than \$49,440. The quote given for MBE could be reduced because it includes the tennis courts which would be the Board of Education's responsibility. Then Crestline Elementary, Cherokee Bend Elementary, MB Jr. High, and possibly Overton Park tennis courts could be completed for less than \$37,295. School tennis courts were included in these quotes as well.

Another aspect to keep in mind is the total cost of actually changing the lights. CCE gave us an estimate of these costs. Using their figures, completing MBHS, MBE, and BWF would cost \$890,000. This is a total of \$939,440 for engineer fees and lights.

These costs are supposed to be offset by the amount of savings we would incur from the electrical bill. The way I understand it, our bill will be reduced because:

1. We would not need as many fixtures since the Musco lights are brighter
2. The Musco lights are more efficient and cost less to operate than the fixtures we have now.

While this savings is good, it is not quick. I think if you decide to go ahead with this project, it would mostly be for the betterment of the fields and safety of the kids.

I would also like to share that while I was checking references for Gunn & Associates, Brian Vinson from Trussville stated that he really loved the Musco lights. He said it has made a great difference on their fields. I think the lights would make our fields better also. It's just a matter of how much the city is willing to pay up front to have them.

Sincerely,

Shanda Williams



City of Mountain Brook

56 Church Street
Mountain Brook, AL 35213
(205) 802-3800
www.mtnbrook.org

Request for Proposals (RFP)

Date: May 15, 2015

To: Open Invitation to all Electrical Engineering Firms

From: The City of Mountain Brook Department of Parks & Recreation

Re: Professional Services in Upgrading Athletic Field Lighting

I. GENERAL INFORMATION

The City of Mountain Brook is accepting Requests for Proposals from qualified Electrical Engineering firms to assist in all aspects of the upgrading of the lighting at various athletic fields within the city. Questions concerning this RFP must be made via email per the schedule outlined below. Responses to all submitted questions will be posted at: www.mtnbrook.org

Issue date:	Friday, May 15, 2015
Final Questions due:	Tuesday, May 26, 2015 by 12:00 PM
Final Answers posted by:	Thursday, May 28, 2015 by 12:00 PM
Proposals due:	Monday, June 8, 2015 by 12:00 PM

Inquiries/submissions to:	Shanda Williams, Superintendent Mountain Brook Parks and Recreation 3698 Bethune Drive, Mountain Brook, AL 35223 williamssh@mtnbrook.org
---------------------------	--

II. QUALIFICATIONS

All engineers submitting proposals must be licensed Electrical Engineers in the State of Alabama. All engineers must submit references of at least three similar jobs that they have completed within the last three years. The selection of the electrical engineering firm and the lighting bids will require approval from city boards, commissions, and/or City Council.

III. PROJECT DESCRIPTION

The purpose of the project is to upgrade the athletic field lighting on various fields to be more in line with the National Park and Recreation Standards. The city is requesting that a qualified electrical engineering firm coordinate the project. This will entail developing plans and specifications, creating electrical designs, conducting the administrative and onsite responsibilities of the project bidding process and assist the city in evaluating the bids.

The following athletic fields may be included in this project:

Sports Complex Ball Fields 1, 3, 4,5,6,7	
Lower Soccer Fields	Crestline Elementary (BOE)
High School Tennis Courts	Brookwood Forest Elementary (BOE)
Overton Park Tennis Courts	Cherokee Bend Elementary (BOE)
Mountain Brook Junior High (BOE)	Mountain Brook Elementary (BOE)

The City reserves the right to delete projects from the list and/or include additional projects as required. The Board of Education (BOE) shall notify the City and engineer as to whether their lighting upgrades are to be included in the invitation to bid based on pricing estimates to be prepared by the engineer after designing the upgrades. A map of the High School Sports Complex has been provided as Attachment A on page 6. For additional information on the City Mountain Brook's Parks and Recreation Department and athletic fields, please visit: www.mtnbrook.org

IV. 1. SCOPE OF WORK: The Electrical Engineer's Responsibilities

Please carefully read the following information that details the City's expectations in relation to the lighting upgrades. The selected consultant will provide the City with professional services to realize the successful completion of improved lighting on athletic fields within the city. The electrical engineer will be responsible for coordinating all work with contractors. The list and order of activities outlined below may be amended and finalized with the electrical engineer. The scope of work includes, but is not limited to, the following elements:

- A. Designing the electrical designs as needed and sports lighting specifications using Musco Sports Lighting Light Structure Sports Cluster Green Lighting System as the basis of design.
- B. Prepare cost estimates of the upgrades by area or field
- C. Creating a complete bid packet with all supporting documents.
- D. Assisting the city in evaluating all bids received for compliance with the designs and specifications.
- E. Reviewing information as submitted by the successful bidder for compliance with the designs and specifications.
- F. Overseeing the completion of the project in its entirety.
- G. Making sure contractors comply with all safety codes and that all facilities are properly secured during the construction period.
- H. Completing the final inspection, ensuring that all aspects of the project are installed correctly, meets all local codes, and is operational.
- I. Attending any and all meetings necessary to seek approvals or give updates on the project.

2. SCOPE OF WORK: The City's Responsibilities

The City of Mountain Brook will provide the following:

- A. A site plan with all dimensions of each field as well as current electrical information if available.
- B. The advertisement and solicitation of bids.
- C. A contact person who can be available to assist contractors with access to facilities.

V. RFP SUBMITTAL

Please limit the length of the response to this RFP to approximately 20 single sided pages and include the following:

1.) Technical Proposal consisting of:

- a. A description of the approach to be taken toward completion of the project, an explanation of any variances to the proposed scope of work as outlined in the RFP, and any insights into the project gained as a result of developing the proposal;
- b. A scope of work that includes steps to be taken, including any products or deliverables resulting from each task;
- c. A summary of estimated labor hours by task that clearly identifies the project team members and the number of hours performed by each team member by task;
- d. A proposed schedule that indicates project milestones and overall time for completion;
- e. Any other information deemed necessary to address the requests of this RFP.

2.) Cost Proposal consisting of:

- a. A composite schedule by field/ task of direct labor hours;
 - Field list may be altered, so an itemized list is requested. One engineering firm will be selected to complete the finalized list of fields.
- b. An itemized schedule of all estimated expenses, including both labor and direct expenses. If the use of sub-consultants is proposed, a separate schedule of hours and expenses must be provided for each sub-consultant.

Responses to this RFP must be received per the schedule outlined on Page 1 to be considered. Proposals must be submitted in a digital format (PDF), either via email or mailed CD. Applicants will receive a confirmation email once their proposal is received. Please ensure that the document is easily printable in an 8.5x11 format.

Additional requirements are as follows:

- Proposers are solely responsible for ensuring that proposals arrive on time.
- Each consultant **MUST** provide their submittal electronically as a PDF.
- Faxed proposals **WILL NOT** be accepted.
- Late replies **WILL NOT** be considered.

VI. EVALUATION CRITERIA & SELECTION PROCESS

Each proposal will be evaluated by a Selection Committee for responsiveness to the requirements of this RFP.

- A. Evaluation Criteria shall include, but are not necessarily limited to:
 - a. Priority assigned to City projects
 - b. Expertise in athletic lighting
 - i. Resume of key individuals
 - c. Managerial capability
 - d. Familiarity with Federal, State and local codes, conditions and ordinances where essential to proper performance
 - e. Past performance record and relevant experience
 - i. The firm selected and principal-in-charge of the project shall be experienced in the design and construction of all aspects of athletic lighting
 - ii. References showing names, addresses, and phone numbers
 - f. Cost proposal
 - g. Overall quality of firm and proposal
- B. Two or more firms submitting proposals may be requested to make an oral presentation to the Selection Committee to show samples of previous work, explain their proposal, and answer questions.

At the conclusion of the Selection Committee's evaluation of applicants, a recommendation will be presented to the City Council for their approval.

VII. ANTICIPATED SCHEDULE

The City anticipates the final selection of the engineering firm in June of 2015. The City reserves the right to amend dates. While this timeline may be subject to change, all participating parties will be notified.

- Week of June 8 – Review of RFP submittals and final selection
- Monday, June 22 or July 13 —City Council approval
- Project kick-off should be within two weeks of City Council approval

VIII. TERMS & CONDITIONS

Communications

It is extremely important that all respondents are given clear and consistent information. Therefore, all respondents are required to submit any questions related to this project or RFP process via email. Responses to all submitted questions will be posted on the City website at:

www.mtnbrook.org. Questions concerning this RFP must be received via email per the schedule outlined on page 1. Inquiries received after this date will not be considered or answered.

Respondents should not communicate with any City department, employee, or City Official during the submission process except as described above. Communication with any parties for any purpose other than those expressly described herein may cause an individual firm, or team to be disqualified from participating.

Other terms

Costs for preparing Proposal in response to this request are solely the responsibility of the respondent. The City of Mountain Brook reserves the right to accept or reject any or all proposals, with or without cause, and to waive immaterial defects and minor irregularities in responses. All decisions related to this solicitation by the City will be final.

The City reserves the right to request clarification of information submitted and to request additional information of one or more respondents. All materials submitted in response to this RFP will become the property of the City upon delivery. This solicitation in no way obligates the City of Mountain Brook to award a contract.

General Compliance with Laws: the Consultant shall comply with all applicable Federal, State and local laws. The City of Mountain Brook participates in the E-Verify program and will require a Memorandum of Understanding from the selected firm. Failure to comply could result in disqualification.

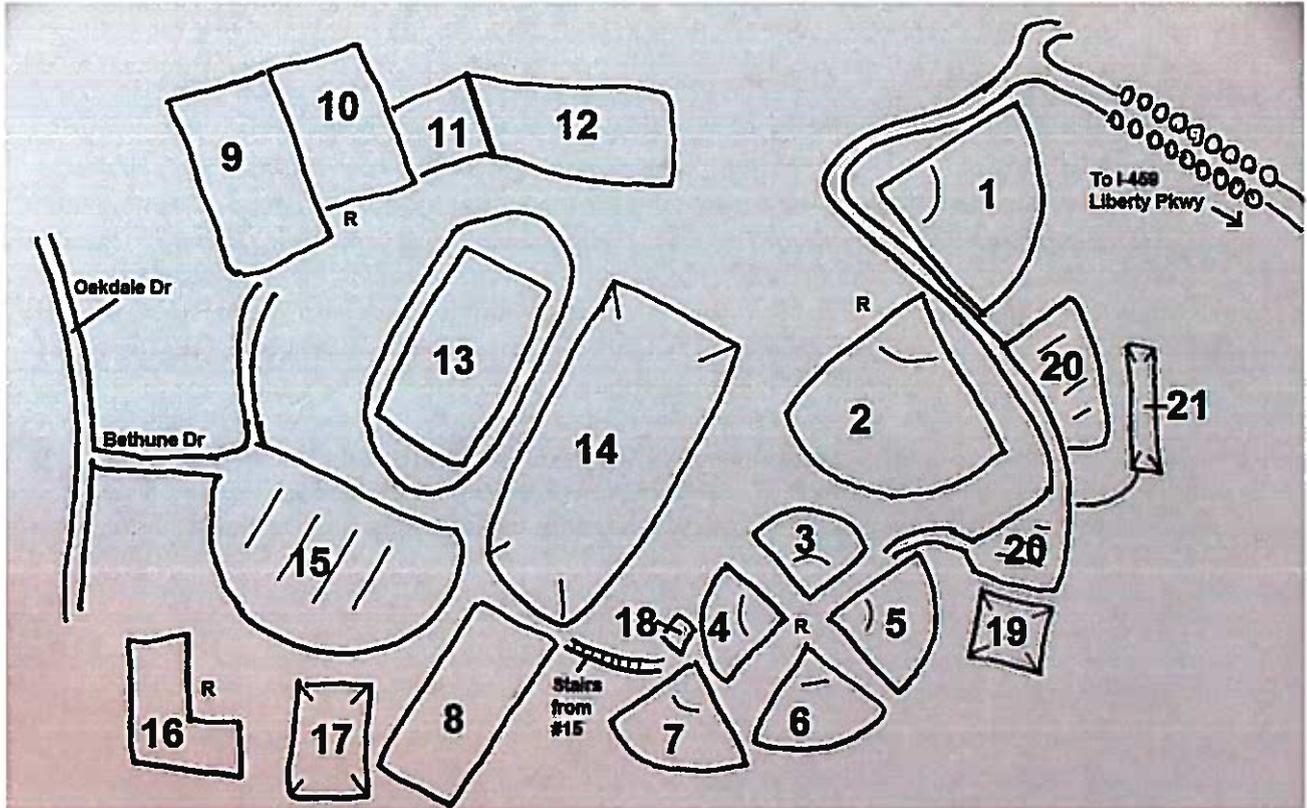
Equal Opportunity: the selection of the firm shall be made without regard to race, color, sex, age, religion, national origin, or political affiliation. The City of Mountain Brook is an Equal Opportunity Employer and encourages proposals from all qualified businesses.

It will be necessary for responding parties to comply fully with the terms and conditions outlined in this document if they are to be considered. A letter attesting that the respondent has read, understands, and has followed all procedures is a part of this RFP must be included as part of the final submittal (see Attachment B).

ATTACHMENT A

Mountain Brook High School Sports Complex

* Denotes fields and tennis courts included in the RFP



- | | |
|---------------------------------------|-----------------------------------|
| 1. *Field 1 – park baseball | 12. MBHS football practice field |
| 2. Field 2 – MBHS baseball | 13. MBHS football stadium & track |
| 3. *Field 3 – park baseball | 14. Mountain Brook High School |
| 4. *Field 4 – park baseball | 15. Main Parking lot |
| 5. *Field 5 – park baseball/softball | 16. *Tennis Courts |
| 6. *Field 6 – park baseball | 17. MBHS Gymnasium |
| 7. *Field 7 - MBHS/park softball | 18. Sports Complex playground |
| 8. Upper Soccer Field – MBHS | 19. MB Gymnastics |
| 9. *Lower Large Soccer field – park | 20. Parking for baseball, 2 lots |
| 10. *Lower Middle Soccer field – park | 21. Park and Recreation Offices |
| 11. *Lower Small Soccer field – park | R - Restrooms |

ATTACHMENT B

Understanding of RFP Procedure, Terms and Conditions

This page to be returned with qualifications submission

I acknowledge that I have read and understand all procedures and requirements of the above reference RFP and have complied fully with the general terms and conditions outlined in the RFP.

Electrical Engineering Firm: _____

Representative's Printed Name: _____

Representative's Signature: _____

Date: _____

Field Name	CCE		Gunn & Associates	
	Design Fee	Est cost	Design Fee	Est cost
Ball Field 1	8,430.00	140,000.00		
Ball Field 3				
Ball Field 4				
Ball Field 5				
Ball Field 6	7,980.00	185,000.00		
Ball Field 7	3,760.00	60,000.00		
All Ball Fields 1-7	20,170.00	385,000.00	16,490.00	
Lower Soccer Fields	10,370.00	140,000.00	9,595.00	
High School Tennis	6,840.00	110,000.00	7,420.00	
Overton Park Tennis	3,025.00	90,000.00	5,850.00	
MB Junior High	4,560.00	75,000.00		
tennis courts	6,485.00	100,000.00	10,105.00	field and tennis
Crestline Elem	12,880.00	240,000.00		
tennis courts	3,680.00	90,000.00	13,760.00	field and tennis
Brookwood Forest	8,450.00	155,000.00	9,595.00	
Cherokee Bend	5,070.00	100,000.00	7,580.00	
MB Elementary	5,920.00	100,000.00		
tennis courts	3,680.00	90,000.00	6,340.00	field and tennis
Totals	\$91,130.00	\$1,675,000.00	\$86,735.00	
Discount for all	\$85,000.00			
Experience with Athletic Lights (Highlights)	*Remediaton of light trespass from Lower Soccer Fields		*Vestavia Field light -R	
N-new	*AL State U Football Stadium- ? M		*Trussville Field light -R	
R- Renovated	*Troy U Intramural fields- ? M		*City/ Montgomery, Cramton Bowl -R	
M- Musco	*Georgiana HS Football Field- ? M		*Orange Beach Soccer -R	
	*Wetumpka Sports Complex- ? M		*AUM Softball Stadium lights -?	
	*Dunbar Park Lighting -R M		*Troy U Softball -?	
			*lots of HS football stadiums -?	
Key People	Frank Cater PE		**Kenny Gunn Jr, President	
** has the most listed athletic field experience	O. Wade Parker		J. Barry Gravlee PE, VP	
	Jason Blocker			
	**Jamie Lewis Bailey PE **			
Timeline	39 weeks		45 weeks	
	based on all being one project		design: 60 days	
	or 4 weeks per field for upgrades		City review, bid, & contracts: 75 days	
	& 8 weeks for new construction		Construction: 180 days	
Other:	Has experience with Musco Each person has experience with athletic fields listed in resume Included field lighting and layouts of all fields		Has experience with several athletic field renovations Listed Musco's Jimmy Jumper on References, but did not specify which projects used Musco	

Field Name	Fisher Arnold		Jackson, Renfro & Assoc	
	Design Fee & Const. Admin	Est cost	Design Fee	Est cost
Ball Field 1				
Ball Field 3				
Ball Field 4				
Ball Field 5				
Ball Field 6				
Ball Field 7				
All Ball Fields 1-7	11,400.00			
Lower Soccer Fields	6,800.00			
High School Tennis	5,200.00			
Overton Park Tennis	6,500.00			
MB Junior High				
tennis courts	10,000.00	field and tennis		
Crestline Elem	13,000.00			
tennis courts	0.00	not quoted		
Brookwood Forest	6,600.00			
Cherokee Bend	5,600.00			
MB Elementary	4,800.00			
tennis courts	0.00	not quoted		
Totals	\$69,900.00		\$0.00	
Discount for all				
Experience with Athletic Lights (Highlights)	* U of Montevallo softball field N *Montevallo HS softball/baseball N? M *U of Montevallo baseball field- N M *U of Montevallo intramural fields-N M	*Regions Field- N M	* Calera Sports Complex- N * Montevallo Lacrosse- R * Vestavia, Sicard Hollow- N * Samford U Track/Soccer -N * Mortimer Jordan HS - N?	
N-new R- Renovated M- Musco	* MBHS Gymnasium, field house, parking lot, MBE, MBJH N&R		*Cullman HS Football- R M *Covenant College fields-N	
Key People	Nick Brown PE, MEM		Philip Black PE- 1 sports field	
** has the most listed athletic field experience	Joseph Kiumu PE **Brian Johnson, designer Gideon Wamae, project manager		2 other partners, but no mention of their names or credentials	
Timeline	Complex-60 days Crestline Elem- 45 days Everything else - 30 days each		56 weeks	
Other:	Mostly new construction Seems to have a lot of experience with Musco, but did not list any specific athletic field projects in any individual resumes. Athletic fields was mentioned once on Brian Johnson's page		Mostly new construction Amended terms of RFP: IV-1-G: Not accept responsibility for contractors following safety codes and locked facilities Also did not bid pricing because of state board ethics requirements	



Robert Bentley
GOVERNOR

ALABAMA DEPARTMENT OF TRANSPORTATION

EAST CENTRAL REGION
100 CORPORATE PARKWAY
SUITE 450
HOOVER, AL 35242
P.O. BOX 382348
BIRMINGHAM, AL 35238-2348
TELEPHONE: (205) 327-4962

June 24, 2015



John R. Cooper
TRANSPORTATION DIRECTOR

The Honorable Lawrence T. Oden
Mayor, City of Mountain Brook
City Hall
P.O. Box 130009
Mountain Brook, Alabama 35213

RE: Jefferson County
Project No. CMAQ-3715()
Proj. Ref. No. 100064201
Proj. Ref. No. 100064202
Intersection Improvements Cahaba Road/
US-280/Culver Road/Lane Park Road

Dear Mayor Oden:

I have enclosed the original Utility and Construction Agreement (and one copy) between the State of Alabama and the City of Mountain Brook, Alabama for the above referenced project.

This Agreement is submitted to the City for approval. After execution by the City Council, please return the original document and the copy, with original signature and the City Seal affixed to both to this office for further handing. A certified resolution, which authorizes the Mayor to sign the Agreement, affixed with the City Seal should be included with the original Agreement, as well as with the copy.

If I can supply you with any additional information or clarify any point contained herein, please feel free to contact me at your convenience.

Sincerely,

DeJarvis Leonard, P.E.
East Central Region Engineer

By: 
Lance Taylor, P.E.
Asst. Region Engineer, Pre-Construction

LAT/trs
Enclosure

C: Mrs. Sandra F. P. Bonner
File w/encl.

**AGREEMENT
FOR
UTILITY AND CONSTRUCTION**

BETWEEN THE STATE OF ALABAMA '15 JUN 15 am 8:42
AND
THE CITY OF MOUNTAIN BROOK, ALABAMA

Project CMAQ-3715 ()
Project Reference Number 100064201
Project Reference Number 100064202
Intersection Improvements Cahaba Road/US-280/Culver Road/Lane Park Road
in the City of Mountain Brook

THIS AGREEMENT is made and entered into by and between the State of Alabama, acting by and through the Alabama Department of Transportation, hereinafter referred to as STATE; and the City of Mountain Brook, Alabama, hereinafter referred to as CITY; in cooperation with the United States Department of Transportation, Federal Highway Administration, hereinafter referred to as the FHWA; and

WHEREAS, a Transportation Improvement Program has been developed for the Birmingham Urbanized Area and certain transportation improvements and priorities are listed therein; and

WHEREAS, it is in the public interest for the STATE and the CITY to cooperate toward the implementation of the Transportation Improvement Program; and

WHEREAS, the STATE and CITY desire to cooperate in a utility and construction program for intersection improvements Cahaba Road/US-280/Culver Road/Lane Park Road in the City of Mountain Brook.

WHEREAS, Federal transportation funds are dedicated specifically to the Birmingham area by the 2012 Moving Ahead for Progress in the 21st Century Act (MAP-21), as directed by the Birmingham Metropolitan Planning Organization (MPO), and hereinafter referred to as Congestion Mitigation and Air Quality Improvement Program Funds (CMAQ).

NOW, THEREFORE, the parties hereto, for, and in consideration of the premises stated herein do hereby mutually promise, stipulate, and agree as follows:

- (1) This Agreement will cover utilities and all aspects of construction for the proposed improvements, including construction engineering and inspection during the course of the work, all in accordance with plans approved by the STATE.
- (2) Funding for this Agreement is subject to availability of Federal Aid funds at the time of authorization by FHWA. Any deficiency in Federal Aid, or overrun in construction costs will be borne by the CITY. In the event of an under run in construction costs, the amount of Federal Aid funds will be 80 percent of eligible costs.
- (3) The Project will be administered by the STATE and all cost will be financed, when eligible for Federal participation, on the basis of 80 percent Federal funds and 20 percent CITY funds.

The estimated cost and participation by the various parties are as follows:

	Total <u>Estimated</u>	Estimated Federal <u>Funds</u>	Estimated CITY <u>Funds</u>
Utilities	\$500,000	\$400,000	\$100,000
construction, including engineering and inspection	<u>\$2,116,000</u>	<u>\$1,692,800</u>	<u>\$423,200</u>
TOTAL	\$2,616,000	\$2,092,800	\$523,200

It is understood that the above is an estimate only, and in the event the final cost exceeds the estimate, the CITY will be responsible for its proportional share as above noted and the CITY agrees to pay same to STATE; or in the event the cost is less than the estimate, the CITY will receive a refund accordingly from the STATE.

- (4) Any cost for work not eligible for Federal reimbursement will be financed 100 percent by the CITY, which payment will be reflected in the final audit. It is expressly understood by both

parties of this Agreement that all Federal funds will be CMAQ funds, attributable to the Birmingham area.

- (5) The CITY will coordinate any required adjustments to utilities with the utility company involved in accordance with usual STATE procedures. Any utility expenses involved which are eligible for STATE reimbursement or payment under state law will be considered as a part of the Project cost and will be paid as provided herein, with the CITY paying its proportional share. The STATE will not be liable for utility expenses which are not eligible for STATE reimbursement or payment under state law.
- (6) The performance of the work covered by this Agreement will be in accordance with the current regulations and requirements of the STATE and FHWA.
- (7) The construction of the improvements will be by contract and the STATE will be responsible for advertisement and receipt of bids and for the award of the contract. Following receipt of bids and prior to the award of the contract, the STATE will invoice the CITY for its prorata share of the estimated construction cost as reflected by the bid of the successful bidder plus engineering and inspection cost, and the CITY will promptly pay this estimated cost before award of the contract. The STATE will not award the contract until it is in receipt of the estimated cost payable by the CITY as reflected by the bid of the successful bidder, plus the engineering and inspection cost.
- (8) Upon completion and acceptance of the work by the STATE, the CITY will assume full responsibility for maintenance of that part of the facility which is not part of the State Highway Maintenance System.
- (9) It is clearly understood by the parties that the STATE does not commit any STATE or Federal funds beyond those mentioned herein.

- (10) The CITY agrees that in the event the FHWA determines, under its rules and/or regulations that Federal funds expended on this Project (including but not limited to delay of the projects, or delay of projects contemplated to be developed and accomplished in sequence to the current projects) must be refunded to the FHWA, the CITY shall reimburse and pay to the STATE for and on behalf of FHWA, a sum of money equal to the total amount of STATE and Federal funds expended under this Agreement.
- (11) A final audit will be made of all Project records after completion of the Project and a copy will be furnished to the Department of Examiners of Public Accounts, in accordance with Act 1994, No. 94-414. A final financial settlement will be made between the parties as reflected by the audit and this Agreement.
- (12) The CITY will be responsible at all times for all of the work performed under this Agreement and, the CITY will protect, defend, indemnify and hold harmless the State of Alabama, the Alabama Department of Transportation, the officials, officers, and employees, in both their official and individual capacities, and their agents and/or assigns, from and against any and all action, damages, claims, loss, liabilities, attorney's fees or expense whatsoever or any amount paid in compromise thereof arising out of or connected with the work performed under this Agreement.
- (13) By entering into this Agreement, the CITY is not an agent of the STATE, its officers, employees, agents or assigns. The CITY is an independent entity from the STATE and nothing in this Agreement creates an agency relationship between the parties.
- (14) By signing this contract, the contracting parties affirm, for the duration of the Agreement, that they will not violate Federal immigration law or knowingly employ, hire for employment, or continue to employ an unauthorized alien within the State of Alabama. Furthermore, a

contracting party found to be in violation of this provision shall be deemed in breach of the Agreement and shall be responsible for all damages resulting therefrom.

- (15) The terms of this Agreement may be modified by supplemental agreement duly executed by the parties hereto.
- (16) This Agreement will remain in effect, unless otherwise terminated by either party upon the delivery of a thirty (30) day notice of termination.
- (17) Nothing will be construed under the terms of this Agreement by the STATE or the CITY that will cause any conflict with Section 23-1-63, Code of Alabama (7/24th Law).
- (18) Exhibits M and N are attached and hereby made a part of this Agreement.

IN WITNESS WHEREOF, the parties hereto cause this Agreement to be executed by those officers, officials, and persons thereunto duly authorized, and the Agreement is deemed to be dated and to be effective on the date stated hereinafter as the date of approval of the Governor of Alabama.

SEAL

ATTEST:

CITY OF MOUNTAIN BROOK, ALABAMA

City Clerk (Signature)

BY: _____
Mayor (Signature)

Type name of Clerk

Type name of Mayor

THIS AGREEMENT AS BEEN LEGALLY REVIEWED
AND APPROVED AS TO FORM AND CONTENT:

BY: _____
Chief Counsel, Jim R. Ippolito, Jr.

RECOMMENDED FOR APPROVAL:

East Central Region Engineer, DeJarvis Leonard, P. E.

Multimodal Transportation Engineer,
Robert J. Jilla

Chief Engineer, Ronald L. Baldwin, P. E.

STATE OF ALABAMA
ACTING BY AND THROUGH THE
ALABAMA DEPARTMENT OF TRANSPORTATION

Transportation Director, John R. Cooper

The foregoing Agreement is hereby approved by the Governor of the State of Alabama this
_____ day of _____, 20 ____.

GOVERNOR OF ALABAMA, ROBERT BENTLEY

7/18/90

Exhibit M

CERTIFICATION

This certification is applicable to the instrument to which it is attached whether attached directly or indirectly with other attachments to such instrument.

The prospective participant/recipient, by causing the signing of and the submission of this Federal contract, grant, loan, cooperative agreement, or other instrument as might be applicable under Section 1352, Title 31, U. S. Code, and the person signing same for and on behalf of the prospective participant/recipient each respectively certify that to the best of the knowledge and belief of the prospective participant or recipient and of the person signing for and on behalf of the prospective participant/recipient, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the prospective participant/recipient or the person signing on behalf of the participant/recipient as mentioned above, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, or other instrument as might be applicable under Section 1352, Title 31, U. S. Code, the prospective participant/recipient shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, Title 31, U. S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

The prospective participant/recipient also agrees by submitting this Federal contract, grant, loan, cooperative agreement, or other instrument as might be applicable under Section 1352, Title 31, U. S. Code, that the prospective participant/recipient shall require that the language of this certification be included in all lower tier subcontracts, which exceed \$100,000 and that all such subrecipients shall certify and disclose accordingly.

07/01/2002

EXHIBIT N

FUNDS SHALL NOT BE CONSTITUTED AS A DEBT

It is agreed that the terms and commitments contained herein shall not be constituted as a debt of the State of Alabama in violation of Article 11, Section 213 of the Constitution of Alabama, 1901, as amended by Amendment Number 26. It is further agreed that if any provision of this agreement shall contravene any statute or Constitutional provision of amendment, either now in effect or which may, during the course of this agreement, be enacted, then the conflicting provision in the agreement shall be deemed null and void.

TERMINATION DUE TO INSUFFICIENT FUNDS

If the agreement term is to exceed more than one fiscal year, then said agreement is subject to termination in the event that funds should not be appropriated for the continued payment of the agreement in subsequent fiscal years.

In the event of proration of the fund from which payment under this agreement is to be made, agreement will be subject to termination.

ADR CLAUSE

For any and all disputes arising under the terms of this contract, the parties hereto agree, in compliance with the recommendations of the Governor and Attorney General, when considering settlement of such disputes, to utilize appropriate forms of non-binding alternative dispute resolution including, but not limited to, mediation by and through the Attorney General Office of Administrative Hearings or where appropriate, private mediators.

RESOLUTION NUMBER _____

BE IT RESOLVED, by the City Council of the City of Mountain Brook, Alabama as follows:

1. That the City enters into an Agreement with the State of Alabama, acting by and through the Alabama Department of Transportation for:

Utility and construction program for Project CMAQ-3715 (), Project Reference Numbers 100064201 and 100064202 for intersection improvements Cahaba Road/US-280/Culver Road/Lane Park Road in the City of Mountain Brook; which Agreement is before this Council.

2. That the Agreement be executed in the name of the City, by its Mayor, for and on its behalf.
3. That the Agreement be attested by the City Clerk and the seal of the City affixed thereto.

BE IT FURTHER RESOLVED, that upon the completion of the execution of the Agreement by all parties, that a copy of such Agreement be kept on file by the City Clerk.

Passed, adopted, and approved this ____ day of _____, 20 ____.

ATTESTED:

City Clerk

Mayor

I, the undersigned qualified and acting clerk of the City of Mountain Brook, Alabama, do hereby certify that the above and foregoing is a true copy of a resolution passed and adopted by the City Council of the City named therein, at a regular meeting of such Council held on the ____ day of _____, 20 ____, and that such resolution is on file in the City Clerk's office.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the official seal of the City on the ____ day of _____, 20 ____.

City Clerk

**AGREEMENT
FOR
UTILITY AND CONSTRUCTION**

BETWEEN THE STATE OF ALABAMA 15 JUN 15 4:42
AND
THE CITY OF MOUNTAIN BROOK, ALABAMA

Project CMAQ-3715 ()
Project Reference Number 100064201
Project Reference Number 100064202
Intersection Improvements Cahaba Road/US-280/Culver Road/Lane Park Road
in the City of Mountain Brook

THIS AGREEMENT is made and entered into by and between the State of Alabama, acting by and through the Alabama Department of Transportation, hereinafter referred to as STATE; and the City of Mountain Brook, Alabama, hereinafter referred to as CITY; in cooperation with the United States Department of Transportation, Federal Highway Administration, hereinafter referred to as the FHWA; and

WHEREAS, a Transportation Improvement Program has been developed for the Birmingham Urbanized Area and certain transportation improvements and priorities are listed therein; and

WHEREAS, it is in the public interest for the STATE and the CITY to cooperate toward the implementation of the Transportation Improvement Program; and

WHEREAS, the STATE and CITY desire to cooperate in a utility and construction program for intersection improvements Cahaba Road/US-280/Culver Road/Lane Park Road in the City of Mountain Brook.

WHEREAS, Federal transportation funds are dedicated specifically to the Birmingham area by the 2012 Moving Ahead for Progress in the 21st Century Act (MAP-21), as directed by the Birmingham Metropolitan Planning Organization (MPO), and hereinafter referred to as Congestion Mitigation and Air Quality Improvement Program Funds (CMAQ).

NOW, THEREFORE, the parties hereto, for, and in consideration of the premises stated herein do hereby mutually promise, stipulate, and agree as follows:

- (1) This Agreement will cover utilities and all aspects of construction for the proposed improvements, including construction engineering and inspection during the course of the work, all in accordance with plans approved by the STATE.
- (2) Funding for this Agreement is subject to availability of Federal Aid funds at the time of authorization by FHWA. Any deficiency in Federal Aid, or overrun in construction costs will be borne by the CITY. In the event of an under run in construction costs, the amount of Federal Aid funds will be 80 percent of eligible costs.
- (3) The Project will be administered by the STATE and all cost will be financed, when eligible for Federal participation, on the basis of 80 percent Federal funds and 20 percent CITY funds.

The estimated cost and participation by the various parties are as follows:

	<u>Total</u> <u>Estimated</u>	<u>Estimated</u> <u>Federal</u> <u>Funds</u>	<u>Estimated</u> <u>CITY</u> <u>Funds</u>
Utilities construction, including engineering and inspection	\$500,000	\$400,000	\$100,000
	<u>\$2,116,000</u>	<u>\$1,692,800</u>	<u>\$423,200</u>
TOTAL	\$2,616,000	\$2,092,800	\$523,200

It is understood that the above is an estimate only, and in the event the final cost exceeds the estimate, the CITY will be responsible for its proportional share as above noted and the CITY agrees to pay same to STATE; or in the event the cost is less than the estimate, the CITY will receive a refund accordingly from the STATE.

- (4) Any cost for work not eligible for Federal reimbursement will be financed 100 percent by the CITY, which payment will be reflected in the final audit. It is expressly understood by both

parties of this Agreement that all Federal funds will be CMAQ funds, attributable to the Birmingham area.

- (5) The CITY will coordinate any required adjustments to utilities with the utility company involved in accordance with usual STATE procedures. Any utility expenses involved which are eligible for STATE reimbursement or payment under state law will be considered as a part of the Project cost and will be paid as provided herein, with the CITY paying its proportional share. The STATE will not be liable for utility expenses which are not eligible for STATE reimbursement or payment under state law.
- (6) The performance of the work covered by this Agreement will be in accordance with the current regulations and requirements of the STATE and FHWA.
- (7) The construction of the improvements will be by contract and the STATE will be responsible for advertisement and receipt of bids and for the award of the contract. Following receipt of bids and prior to the award of the contract, the STATE will invoice the CITY for its prorata share of the estimated construction cost as reflected by the bid of the successful bidder plus engineering and inspection cost, and the CITY will promptly pay this estimated cost before award of the contract. The STATE will not award the contract until it is in receipt of the estimated cost payable by the CITY as reflected by the bid of the successful bidder, plus the engineering and inspection cost.
- (8) Upon completion and acceptance of the work by the STATE, the CITY will assume full responsibility for maintenance of that part of the facility which is not part of the State Highway Maintenance System.
- (9) It is clearly understood by the parties that the STATE does not commit any STATE or Federal funds beyond those mentioned herein.

- (10) The CITY agrees that in the event the FHWA determines, under its rules and/or regulations that Federal funds expended on this Project (including but not limited to delay of the projects, or delay of projects contemplated to be developed and accomplished in sequence to the current projects) must be refunded to the FHWA, the CITY shall reimburse and pay to the STATE for and on behalf of FHWA, a sum of money equal to the total amount of STATE and Federal funds expended under this Agreement.
- (11) A final audit will be made of all Project records after completion of the Project and a copy will be furnished to the Department of Examiners of Public Accounts, in accordance with Act 1994, No. 94-414. A final financial settlement will be made between the parties as reflected by the audit and this Agreement.
- (12) The CITY will be responsible at all times for all of the work performed under this Agreement and, the CITY will protect, defend, indemnify and hold harmless the State of Alabama, the Alabama Department of Transportation, the officials, officers, and employees, in both their official and individual capacities, and their agents and/or assigns, from and against any and all action, damages, claims, loss, liabilities, attorney's fees or expense whatsoever or any amount paid in compromise thereof arising out of or connected with the work performed under this Agreement.
- (13) By entering into this Agreement, the CITY is not an agent of the STATE, its officers, employees, agents or assigns. The CITY is an independent entity from the STATE and nothing in this Agreement creates an agency relationship between the parties.
- (14) By signing this contract, the contracting parties affirm, for the duration of the Agreement, that they will not violate Federal immigration law or knowingly employ, hire for employment, or continue to employ an unauthorized alien within the State of Alabama. Furthermore, a

contracting party found to be in violation of this provision shall be deemed in breach of the Agreement and shall be responsible for all damages resulting therefrom.

- (15) The terms of this Agreement may be modified by supplemental agreement duly executed by the parties hereto.
- (16) This Agreement will remain in effect, unless otherwise terminated by either party upon the delivery of a thirty (30) day notice of termination.
- (17) Nothing will be construed under the terms of this Agreement by the STATE or the CITY that will cause any conflict with Section 23-1-63, Code of Alabama (7/24th Law).
- (18) Exhibits M and N are attached and hereby made a part of this Agreement.

IN WITNESS WHEREOF, the parties hereto cause this Agreement to be executed by those officers, officials, and persons thereunto duly authorized, and the Agreement is deemed to be dated and to be effective on the date stated hereinafter as the date of approval of the Governor of Alabama.

SEAL

ATTEST:

CITY OF MOUNTAIN BROOK, ALABAMA

City Clerk (Signature)

BY: _____
Mayor (Signature)

Type name of Clerk

Type name of Mayor

THIS AGREEMENT AS BEEN LEGALLY REVIEWED
AND APPROVED AS TO FORM AND CONTENT:

BY: _____
Chief Counsel, Jim R. Ippolito, Jr.

RECOMMENDED FOR APPROVAL:

East Central Region Engineer, DeJarvis Leonard, P. E.

Multimodal Transportation Engineer,
Robert J. Jilla

Chief Engineer, Ronald L. Baldwin, P. E.

STATE OF ALABAMA
ACTING BY AND THROUGH THE
ALABAMA DEPARTMENT OF TRANSPORTATION

Transportation Director, John R. Cooper

The foregoing Agreement is hereby approved by the Governor of the State of Alabama this
_____ day of _____, 20 ____.

GOVERNOR OF ALABAMA, ROBERT BENTLEY

7/18/90

Exhibit M

CERTIFICATION

This certification is applicable to the instrument to which it is attached whether attached directly or indirectly with other attachments to such instrument.

The prospective participant/recipient, by causing the signing of and the submission of this Federal contract, grant, loan, cooperative agreement, or other instrument as might be applicable under Section 1352, Title 31, U. S. Code, and the person signing same for and on behalf of the prospective participant/recipient each respectively certify that to the best of the knowledge and belief of the prospective participant or recipient and of the person signing for and on behalf of the prospective participant/recipient, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the prospective participant/recipient or the person signing on behalf of the participant/recipient as mentioned above, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, or other instrument as might be applicable under Section 1352, Title 31, U. S. Code, the prospective participant/recipient shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, Title 31, U. S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

The prospective participant/recipient also agrees by submitting this Federal contract, grant, loan, cooperative agreement, or other instrument as might be applicable under Section 1352, Title 31, U. S. Code, that the prospective participant/recipient shall require that the language of this certification be included in all lower tier subcontracts, which exceed \$100,000 and that all such subrecipients shall certify and disclose accordingly.

07/01/2002

EXHIBIT N

FUNDS SHALL NOT BE CONSTITUTED AS A DEBT

It is agreed that the terms and commitments contained herein shall not be constituted as a debt of the State of Alabama in violation of Article 11, Section 213 of the Constitution of Alabama, 1901, as amended by Amendment Number 26. It is further agreed that if any provision of this agreement shall contravene any statute or Constitutional provision of amendment, either now in effect or which may, during the course of this agreement, be enacted, then the conflicting provision in the agreement shall be deemed null and void.

TERMINATION DUE TO INSUFFICIENT FUNDS

If the agreement term is to exceed more than one fiscal year, then said agreement is subject to termination in the event that funds should not be appropriated for the continued payment of the agreement in subsequent fiscal years.

In the event of proration of the fund from which payment under this agreement is to be made, agreement will be subject to termination.

ADR CLAUSE

For any and all disputes arising under the terms of this contract, the parties hereto agree, in compliance with the recommendations of the Governor and Attorney General, when considering settlement of such disputes, to utilize appropriate forms of non-binding alternative dispute resolution including, but not limited to, mediation by and through the Attorney General Office of Administrative Hearings or where appropriate, private mediators.

RESOLUTION NUMBER _____

BE IT RESOLVED, by the City Council of the City of Mountain Brook, Alabama as follows:

1. That the City enters into an Agreement with the State of Alabama, acting by and through the Alabama Department of Transportation for:

Utility and construction program for Project CMAQ-3715 (), Project Reference Numbers 100064201 and 100064202 for intersection improvements Cahaba Road/US-280/Culver Road/Lane Park Road in the City of Mountain Brook; which Agreement is before this Council.

2. That the Agreement be executed in the name of the City, by its Mayor, for and on its behalf.
3. That the Agreement be attested by the City Clerk and the seal of the City affixed thereto.

BE IT FURTHER RESOLVED, that upon the completion of the execution of the Agreement by all parties, that a copy of such Agreement be kept on file by the City Clerk.

Passed, adopted, and approved this ____ day of _____, 20 ____.

ATTESTED:

City Clerk

Mayor

I, the undersigned qualified and acting clerk of the City of Mountain Brook, Alabama, do hereby certify that the above and foregoing is a true copy of a resolution passed and adopted by the City Council of the City named therein, at a regular meeting of such Council held on the ____ day of _____, 20 ____, and that such resolution is on file in the City Clerk's office.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the official seal of the City on the ____ day of _____, 20 ____.

City Clerk

Brookwood Road at Crosshill Road

The intersection of Overbrook Road at Crosshill Road was examined to determine the scope of both non-widening and widening projects which could alleviate existing traffic congestion experienced at the intersection. The general study area for the analysis is shown in Figure 1.



Figure 1. Site Location Map

In the vicinity of the intersection, Brookwood Road is a two lane roadway with a posted speed limit of 30 miles per hour. Crosshill Road is a two lane roadway with no posted speed limit. The configuration of the intersection is an offset intersection, forming two traffic triangles on Brookwood Road, separated by approximately 165 feet. The configuration of the intersection of Brookwood Road at Crosshill Road and the current location of stop signs is shown in Figure 2.

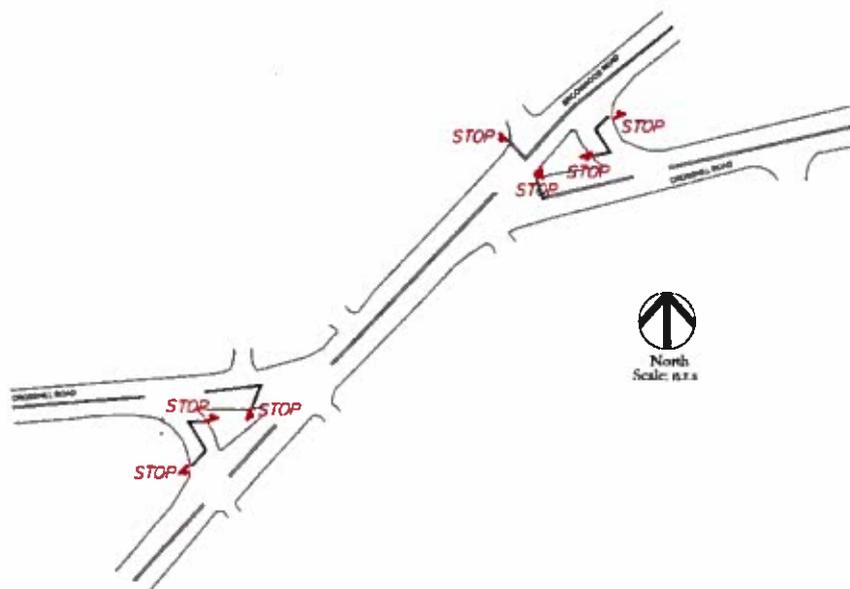


Figure 2. Existing Traffic Control

Existing Intersection Turning Movement Traffic Counts

An existing intersection turning movement traffic count was performed at the intersection of Brookwood Road at Crosshill Road on Wednesday to Thursday, March 11 to 12, 2015, during the hours of 7:00 to 9:00 a.m. and 4:00 to 6:00 p.m., by Traffic Data, LLC on behalf of Skipper Consulting, Inc. The traffic count data is included in Appendix A. Peak hour turning movement traffic volumes are illustrated in Figure 3.

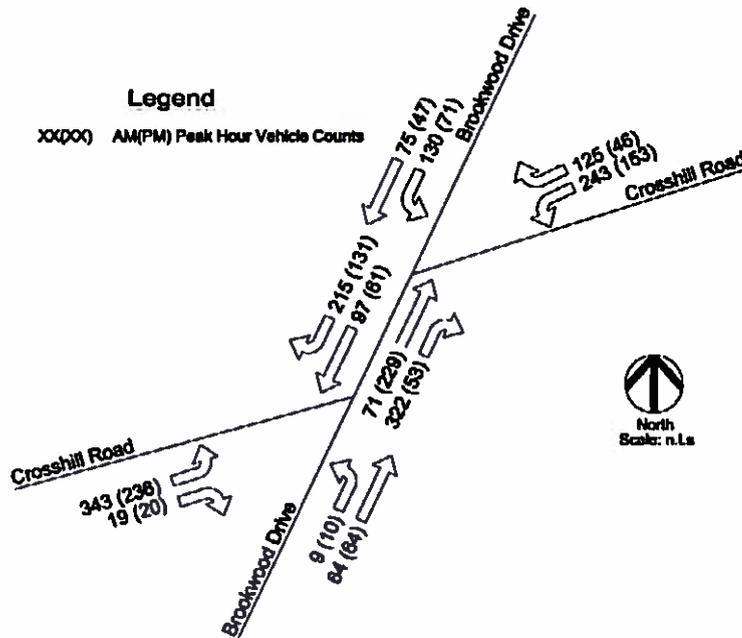


Figure 3. Existing Intersection Turning Movement Traffic Counts

Existing Intersection Capacity Analysis and Queue Calculations

Existing a.m. and p.m. peak hour intersection capacity analyses and queue calculations were performed for the intersection of Brookwood Road at Crosshill Road using the methods of analysis contained in the *Highway Capacity Manual*, published by the Transportation Research Board. Capacities are expressed as levels of service, and range from a level of service “A” (highest quality of service) to a level of service “F” (jammed conditions). As a general rule, operation at a level of service “C” or better is desirable, with a level of service “D” considered acceptable during the peak hours of traffic flow. The results of the intersection capacity analyses and queue calculations are included in Appendix B and are summarized in Table 1.

Table 1. Existing Intersection Capacity Analysis and Queue Calculations

Intersection	Approach	Movement	AM Peak			PM Peak		
			LOS	Delay	Queue	LOS	Delay	Queue
Brookwood Road at Crosshill Road (North)	Crosshill Road Westbound	Left	F	52	395'	B	14	100'
		Right	C	17		A	5	
	Brookwood Road Northbound	Through	A	7	20'	A	3	0'
		Right	A	5		A	3	
	Brookwood Road Southbound	Left	F	109	55'	A	9	65'
		Through	F	66	480'	A	10	70'
Overall intersection			D	34		A	8	
Brookwood Road at Crosshill Road (South)	Crosshill Road Eastbound	Left	D	33	380'	A	12	105'
		Right	B	15		A	7	
	Brookwood Road Northbound	Left	A	6	30'	A	6	25'
		Through	A	4		A	2	
	Brookwood Road Southbound	Through	A	3	0'	A	4	0'
		Right	A	4		A	3	
Overall Intersection			C	18		A	7	

Note: Delay is expressed in average seconds per vehicle

Crash History

Crash information for the intersection of Brookwood Road at Crosshill Road was provided by the City of Mountain Brook Police Department for 2012, 2013, and 2014. During the period, there were three crashes related to the intersection of Brookwood Road at Crosshill Road. One crash was a rear-end crash on Crosshill Road eastbound. Two crashes were right angle crashes, with one of the crashes occurring on Crosshill Road eastbound and the other crash on Crosshill Road westbound. A crash diagram is provided in Figure 4.

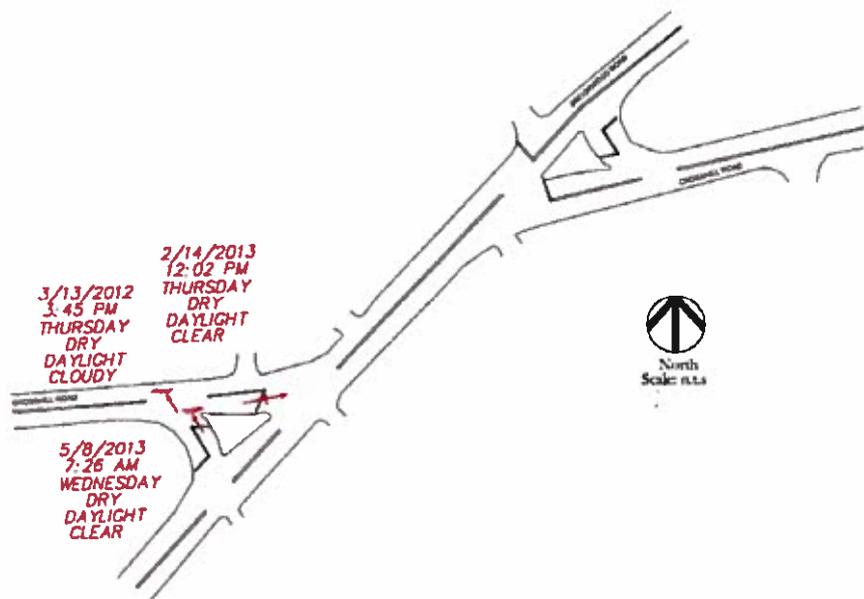


Figure 4. Crash History

Sight Distance

Sight distance measurements were made for all movements at each of the intersection for all movements where sight distance of approaching vehicles is required in order to make the desired movement. The minimum required sight distance according to the AASHTO Policy on the Geometric Design of Highways and Streets (Green Book) is 335 feet, based on the posted speed limit of 30 miles per hour on Brookwood Road. The sight distance measurements are shown in Figure 5 and Figure 6.

The only location where sight distance is limited below minimum requirements is for traffic entering the southern intersection of Crosshill Road looking to the right, where the sight distance is limited to 170 feet. In the narrative for the crash which occurred at this intersection on March 13, 2012, the driver of the vehicle entering Crosshill Road stated that she did not see the vehicle approaching from Brookwood Road.

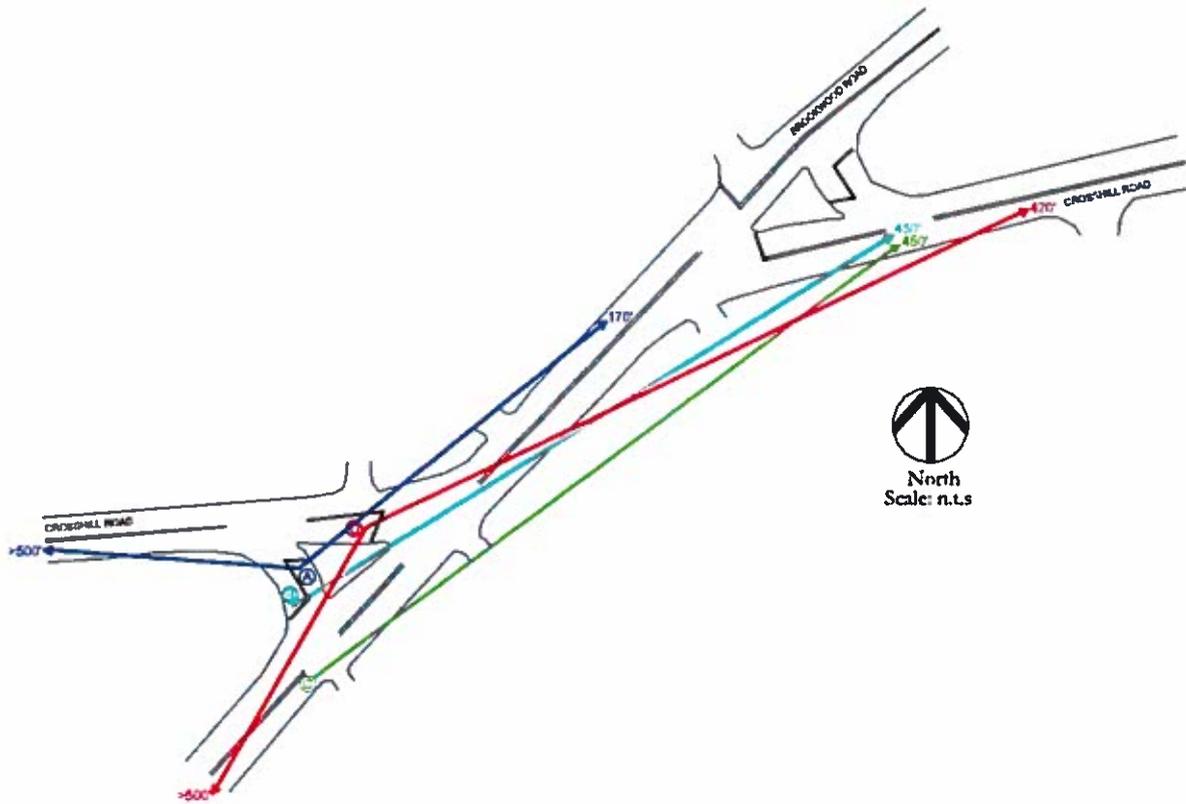


Figure 5. Sight Distance Measurements Crosshill Road (South)

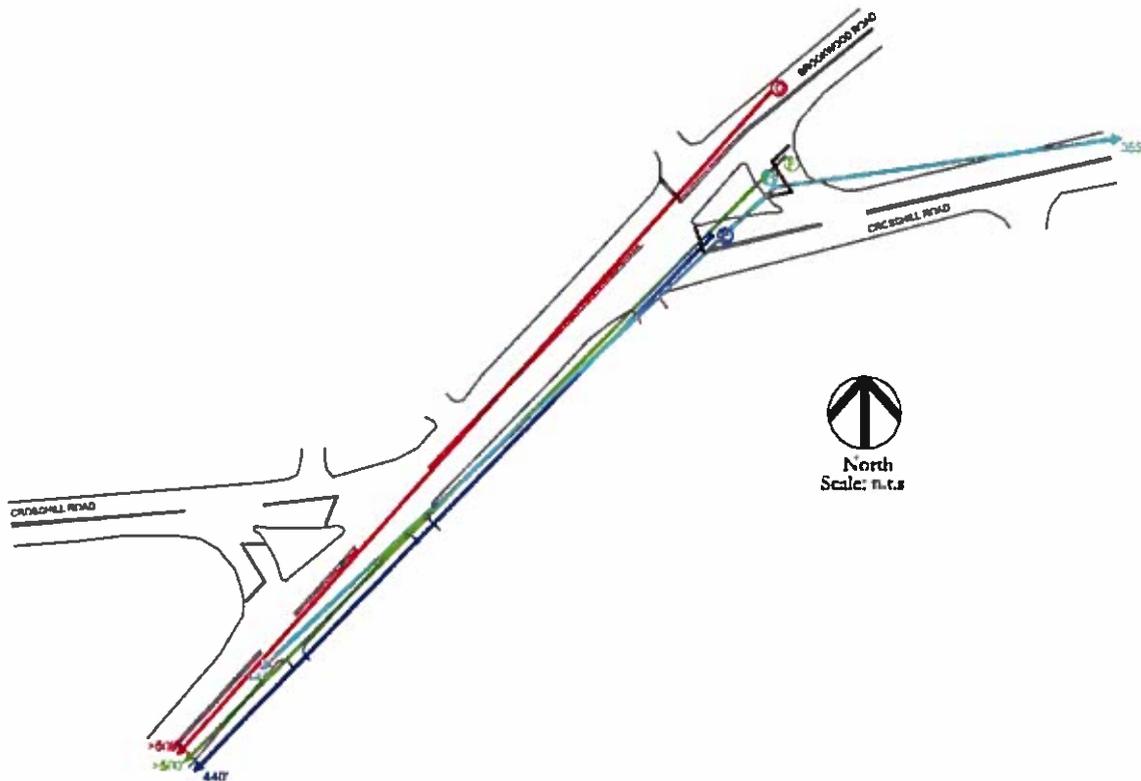


Figure 6. Sight Distance Measurements Crosshill Road (North)

Observations

Observations of traffic flow at the intersection of Brookwood Road at Crosshill Road were performed on Tuesday, May 12 and Wednesday May 13, 2015 by Skipper Consulting, Inc. Observations were conducted from 7:15 to 8:00 a.m., 2:30 to 3:20 p.m., and 4:45 to 5:30 p.m. The findings of the observations are discussed below.

AM Peak Period Observations

- While traffic flow was constant, the eastbound left queue from Crosshill Road onto Brookwood Road caused congestion and delay for the eastbound right and northbound left movements from 7:37 a.m. to 7:53 a.m. This problem persisted 4 other times during the study period.
- Similarly, the westbound left queue from Crosshill Road onto Brookwood Road caused congestion and delay for the westbound right and southbound left movements during the study period. However, the problem was minimal in comparison to the eastbound movement as it only persisted 2 times during the study period.

Afternoon School Peak Period Observations

- The eastbound left queue from Crosshill Road onto Brookwood Road did not cause any congestion or delay during the study period.

- The westbound left queue from Crosshill Road onto Brookwood Road caused congestion and delay for the westbound right and southbound left movements multiple times during the study period. However, no instance where movements were blocked lasted longer than 1 minute.

PM Peak Period Observations

- The eastbound left queue from Crosshill Road onto Brookwood Road caused congestion and delay for the eastbound right and northbound left movements from 4:11 p.m. to 4:30 p.m. This problem persisted 5 other times during the study period lasting less than 1 minute each time.
- Similarly, the westbound left queue from Crosshill Road onto Brookwood Road caused congestion and delay for the westbound right and southbound left movements 6 times during the study period.

Alternative Improvements

Alternative 1 – Install Additional Stop Signs

In order to correct deficiencies shown to exist in intersection capacity, sight distance, and based on observations, three additional stop signs could be installed on Brookwood Road. The locations of the proposed stop signs are shown in Figure 7. Capacity and queue analyses were performed to determine the traffic operation of the proposed alternative. The results of these analyses are shown in Table 2 and are included in Appendix C.

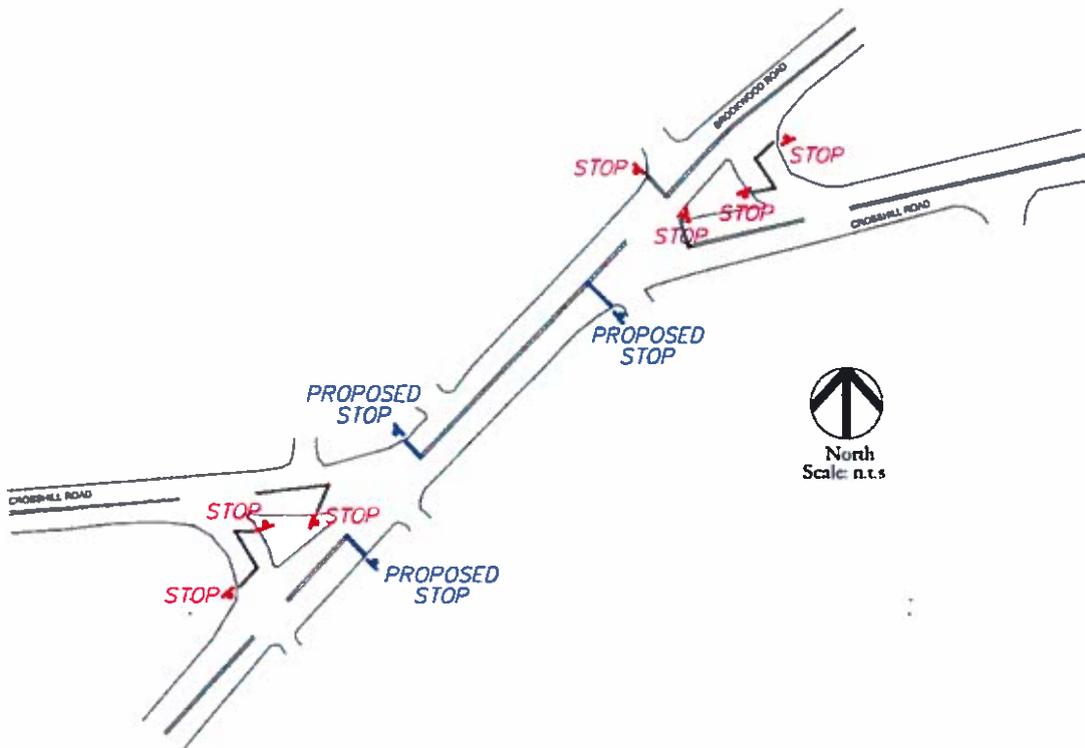


Figure 7. Improvement Alternative 1 (All-Way Stop)

Table 2. Intersection Capacity Analysis and Queue Calculations – Alternative 1

Intersection	Approach	Movement	AM Peak			PM Peak		
			LOS	Delay	Queue	LOS	Delay	Queue
Brookwood Road at Crosshill Road (North)	Crosshill Road Westbound	Left	C	18	120'	B	12	85'
		Right	A	9		A	5	
	Brookwood Road Northbound	Through	D	28	440'	B	12	105'
		Right	D	28		A	8	
	Brookwood Road Southbound	Left	B	14	65'	A	8	60'
		Through	B	12	110'	A	9	70'
Overall intersection			C	20		A	10	
Brookwood Road at Crosshill Road (South)	Crosshill Road Eastbound	Left	C	23	150'	B	11	100'
		Right	B	13		A	7	
	Brookwood Road Northbound	Left	A	9	70'	A	9	55'
		Through	B	12		A	8	
	Brookwood Road Southbound	Through	A	8	105'	A	7	90'
		Right	A	9		A	7	
	Overall Intersection			C	16		A	9

Note: Delay is expressed in average seconds per vehicle

While the analyses show that installation of additional stop signs results in overall improvements in delay and level of service, the queue on Brookwood Road northbound approaching the northern intersection of Crosshill Road is significantly greater than the available stacking room between the two triangles. Therefore, installation of the proposed stop sign on Brookwood Road northbound at the northern intersection of Crosshill Road would not be advisable.

Alternative 2 – Traffic Signalization

A second alternative for correction of capacity and sight distance deficiencies at the intersection of Brookwood Road at Crosshill Road would be the installation of a traffic signal. In order to determine if this would be a viable alternative, a traffic signal warrant analysis was performed for the intersection using the methodology included in the 2009 *Manual on Uniform Traffic Control Devices*, published by the Federal Highway Administration. Approach traffic counts for the intersection are included in Appendix D. The results of the warrant analysis are included in Appendix E. The results of the traffic signal warrant study show that the existing traffic volumes at the intersection of Brookwood Road at Crosshill Road do not meet either the eight hour volume warrants or four hour volume warrant. Therefore, signalization of the intersection is not advised.

Recommended Improvements

Based on the analyses of the alternative improvements, it is recommended that two stop signs be installed at the intersection of Brookwood Road at Crosshill Road. The locations of the proposed stop signs are shown in Figure 8.

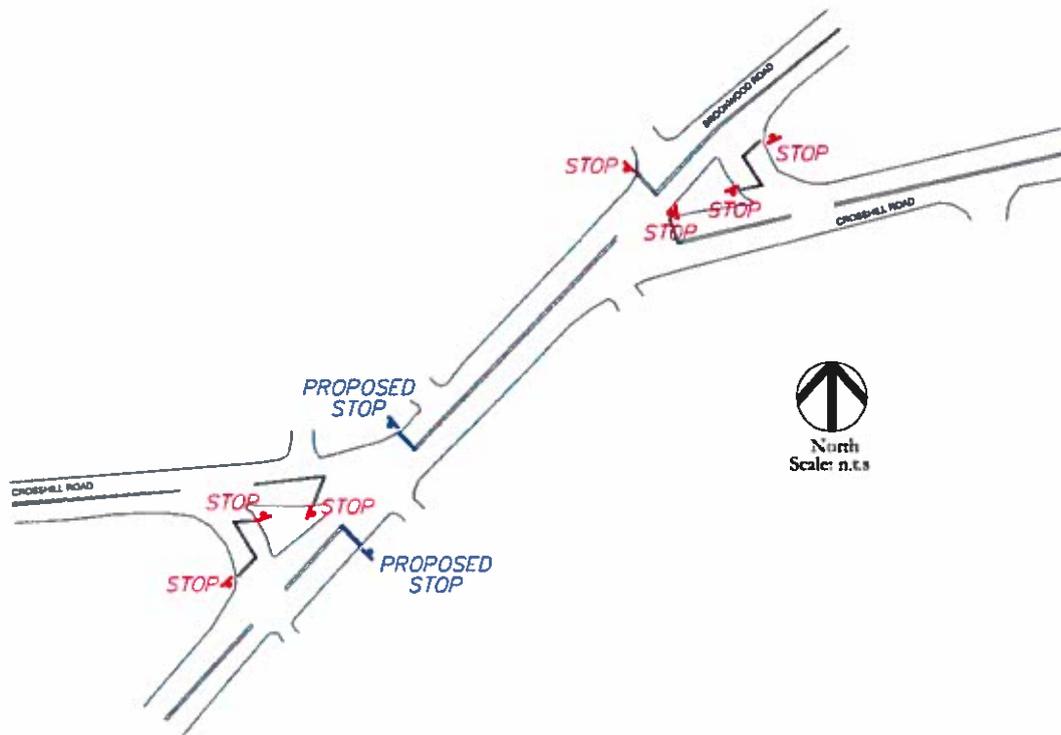


Figure 8. Recommended Improvements

Operational Analysis of Recommended Improvements

Capacity and queue analyses were performed to determine the traffic operation of the recommended improvements. The results of these analyses are shown in Table 3 and are included in Appendix F.

Table 3. Intersection Capacity Analysis and Queue Calculations – Recommended Improvements

Intersection	Approach	Movement	AM Peak			PM Peak		
			LOS	Delay	Queue	LOS	Delay	Queue
Brookwood Road at Crosshill Road (North)	Crosshill Road Westbound	Left	F	58	550'	B	15	105'
		Right	C	23		A	5	
	Brookwood Road Northbound	Through	A	8	15'	A	4	0'
		Right	A	5		A	3	
	Brookwood Road Southbound	Left	F	137	55'	A	10	65'
		Through	F	91	605'	A	10	80'
Overall intersection			E	42		A	8	
Brookwood Road at Crosshill Road (South)	Crosshill Road Eastbound	Left	C	23	245'	B	11	95'
		Right	B	13		A	7	
	Brookwood Road Northbound	Left	A	9	75'	A	9	55'
		Through	B	12		A	8	
	Brookwood Road Southbound	Through	A	8	90'	A	7	85'
		Right	A	8		A	6	
Overall Intersection			C	16		A	9	

Note: Delay is expressed in average seconds per vehicle

Cost Estimates

The cost estimate for implementation of the recommended improvements is as follows:

Two STOP signs on U-channel posts	\$ 600.00
45 linear feet of 2' white stop line	<u>\$ 600.00</u>
Total	\$1,200.00

Funding Sources

The recommended improvements should be installed by City forces.

Appendix A

Existing Intersection Turning Movement Traffic Counts

:

:

TRAFFIC DATA, LLC

1409 Turnham Lane
 Birmingham, AL 35216
 205-824-0125

Mountain Brook, AL

File Name : mountainbrook02
 Site Code : 00000000
 Start Date : 03/11/2015
 Page No : 1

Groups Printed- Unshifted

Start Time	BROOKWOOD RD Southbound		CROSSHILL RD Westbound		BROOKWOOD RD Northbound		Int. Total
	Left	Thru	Left	Right	Thru	Right	
04:00 PM	12	11	22	8	9	27	69
04:15 PM	14	8	27	7	15	37	106
04:30 PM	20	13	29	15	14	44	135
04:45 PM	25	18	35	10	9	51	148
Total	71	48	113	40	47	159	478
05:00 PM	11	10	31	14	17	56	139
05:15 PM	20	10	47	11	11	60	159
05:30 PM	15	9	40	11	16	62	153
05:45 PM	23	12	28	22	11	47	143
Total	69	41	146	58	55	225	594
07:00 AM	17	13	39	13	5	42	129
07:15 AM	19	7	69	41	18	72	226
07:30 AM	44	22	78	49	31	120	344
07:45 AM	50	33	57	22	17	86	267
Total	130	75	243	125	71	322	968
08:00 AM	6	16	39	8	7	24	100
08:15 AM	9	6	38	11	3	19	86
08:30 AM	13	14	38	8	5	13	91
08:45 AM	8	16	21	5	4	18	72
Total	36	52	136	32	19	74	349
Grand Total	308	216	638	255	192	780	2387
Apprch %	58.6	41.4	71.4	28.6	19.8	80.2	
Total %	12.8	9.0	26.7	10.7	8.0	32.7	

Start Time	BROOKWOOD RD Southbound			CROSSHILL RD Westbound			BROOKWOOD RD Northbound			App. Total	Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total		
Peak Hour From 04:00 PM to 05:45 PM - Peak 1 of 1											
Intersection	04:45 PM										
Volume	71	47	118	153	46	199	63	229	282	0	599
Percent	60.2	39.8		76.9	23.1		18.8	81.2		0	159
05:15 Volume	20	10	30	47	11	58	11	60	71		
Peak Factor										0.942	
High Int.	04:45 PM			05:15 PM			05:30 PM			3:45:00 PM	
Volume	25	18	43	47	11	58	16	62	78		
Peak Factor	0.686			0.858			0.904				
Peak Hour From 04:00 PM to 05:45 PM - Peak 1 of 1											
By Approach	04:30 PM			05:00 PM			04:45 PM			04:00 PM	
Volume	76	51	127	146	58	204	53	229	282	0	
Percent	59.8	40.2		71.6	28.4		18.8	81.2			
High Int.	04:45 PM			05:15 PM			05:30 PM				
Volume	25	18	43	47	11	58	16	62	78	-	-
Peak Factor	0.738			0.878			0.904				

TRAFFIC DATA, LLC

1409 Turnham Lane
Birmingham, AL 35216
205-824-0125

File Name : mountainbrook02
Site Code : 00000000
Start Date : 03/11/2015
Page No : 2

Start Time	BROOKWOOD RD Southbound			CROSSHILL RD Westbound			BROOKWOOD RD Northbound			App. Total	Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total		
Peak Hour From 07:00 AM to 08:45 AM - Peak 1 of 1											
Intersection	07:00 AM										
Volume	130	75	205	243	125	368	71	322	393	0	966
Percent	63.4	36.6		66.0	34.0		18.1	81.9			
07:30 Volume	44	22	66	78	49	127	31	120	151	0	344
Peak Factor	0.702										
High Int.	07:45 AM			07:30 AM			07:30 AM				
Volume	50	33	83	78	49	127	31	120	151		
Peak Factor	0.617			0.724			0.651				
Peak Hour From 07:00 AM to 08:45 AM - Peak 1 of 1											
By Approach	07:00 AM			07:00 AM			07:00 AM			07:00 AM	
Volume	130	75	205	243	125	368	71	322	393	0	
Percent	63.4	36.6		66.0	34.0		18.1	81.9			
High Int.	07:45 AM			07:30 AM			07:30 AM				
Volume	50	33	83	78	49	127	31	120	151	-	-
Peak Factor	0.617			0.724			0.651				

TRAFFIC DATA, LLC

1409 Turnham Lane
 Birmingham, AL 35216
 205-824-0125

Mountain Brook, AL

File Name : mountainbrook01
 Site Code : 00000000
 Start Date : 03/11/2015
 Page No : 1

Groups Printed- Unshifted

Start Time	BROOKWOOD RD Southbound		BROOKWOOD RD Northbound		CROSSHILL RD Eastbound		Int. Total
	Thru	Right	Left	Thru	Left	Right	
04:00 PM	12	21	3	16	30	3	85
04:15 PM	10	23	2	15	40	7	97
04:30 PM	16	26	4	21	37	4	108
04:45 PM	20	30	4	13	55	4	126
Total	58	100	13	65	162	18	416
05:00 PM	15	26	1	21	60	7	120
05:15 PM	13	41	1	13	67	4	139
05:30 PM	13	34	4	17	64	5	137
05:45 PM	16	28	0	15	46	2	107
Total	57	129	6	66	227	18	603
07:00 AM	18	33	0	5	41	2	99
07:15 AM	13	64	1	18	72	2	170
07:30 AM	28	67	5	27	131	5	263
07:45 AM	38	51	3	14	99	10	215
Total	97	215	9	64	343	19	747
08:00 AM	27	32	1	7	23	2	92
08:15 AM	17	28	2	5	17	2	71
08:30 AM	28	27	0	5	12	3	75
08:45 AM	18	22	1	3	19	2	65
Total	90	109	4	20	71	9	303
Grand Total	302	553	32	216	803	64	1869
Approch %	35.3	64.7	13.0	87.0	92.6	7.4	
Total %	15.3	28.1	1.6	10.9	40.8	3.3	

Start Time	BROOKWOOD RD Southbound			App. Total	BROOKWOOD RD Northbound			App. Total	CROSSHILL RD Eastbound			Int. Total
	Thru	Right	App. Total		Left	Thru	App. Total		Left	Right	App. Total	
Peak Hour From 04:00 PM to 05:45 PM - Peak 1 of 1												
Intersection	04:45 PM				05:00 PM				05:15 PM			
Volume	81	131	192	0	10	64	74	236	20	256	522	
Percent	31.8	68.2			13.5	68.6		92.2	7.8			
05:15 Volume	13	41	54	0	1	13	14	67	4	71	139	
Peak Factor									0.939			
High Int.	05:15 PM				3:45:00 PM				05:15 PM			
Volume	13	41	54	0	1	21	22	67	4	71		
Peak Factor	0.889							0.841	0.901			
Peak Hour From 04:00 PM to 05:45 PM - Peak 1 of 1												
By Approach	04:45 PM				04:15 PM				04:45 PM			
Volume	81	131	192	0	11	70	81	236	20	256		
Percent	31.8	68.2			13.6	68.4		92.2	7.8			
High Int.	05:15 PM				04:30 PM				05:15 PM			
Volume	13	41	54	-	4	21	25	67	4	71		
Peak Factor	0.889							0.810	0.901			

TRAFFIC DATA, LLC

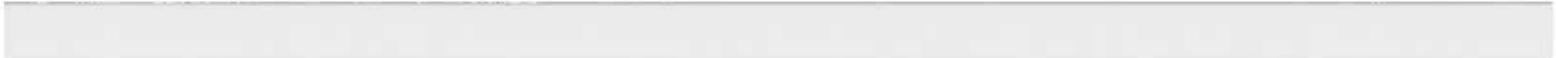
1409 Turnham Lane
Birmingham, AL 35216
205-824-0125

File Name : mountainbrook01
Site Code : 00000000
Start Date : 03/11/2015
Page No : 2

	BROOKWOOD RD Southbound				App. Total	BROOKWOOD RD Northbound			CROSSHILL RD Eastbound			Int. Total
	Start Time	Thru	Right	App. Total		Left	Thru	App. Total	Left	Right	App. Total	
Peak Hour From 07:00 AM to 08:45 AM - Peak 1 of 1												
Intersection	07:00 AM											
Volume	97	215		312	0	9	64	73	343	19	362	747
Percent	31.1	68.9				12.3	87.7		94.8	5.2		
07:30 Volume	28	67		95	0	5	27	32	131	5	136	263
Peak Factor												0.710
High Int.	07:30 AM					07:30 AM			07:30 AM			
Volume	28	67		95	0	5	27	32	131	5	136	
Peak Factor				0.821				0.570			0.665	
Peak Hour From 07:00 AM to 08:45 AM - Peak 1 of 1												
By Approach	07:15 AM				07:00 AM	07:15 AM			07:00 AM			
Volume	106	214		320	0	10	66	76	343	19	362	
Percent	33.1	66.9				13.2	86.8		94.8	5.2		
High Int.	07:30 AM					07:30 AM			07:30 AM			
Volume	28	67		95	-	5	27	32	131	5	136	
Peak Factor				0.842	-			0.594			0.665	

Appendix B

Existing Intersection Capacity and Queue Analysis Worksheets



1: Crosshill Road WB & Brookwood Road Performance by movement

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Delay / Veh (s)	51.5	17.2	7.3	5.0	108.6	65.8	34.4

2: Crosshill Road EB & Brookwood Road Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Delay / Veh (s)	33.2	14.6	5.8	3.5	3.4	3.5	18.0

Total Network Performance

Delay / Veh (s)	55.0
-----------------	------

Intersection: 1: Crosshill Road WB & Brookwood Road

Movement	WB	NB	SB	SB
Directions Served	LR	TR	L	T
Maximum Queue (ft)	507	22	56	503
Average Queue (ft)	204	4	55	246
95th Queue (ft)	396	19	56	478
Link Distance (ft)	2693	1591		2765
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			30	
Storage Blk Time (%)			0.89	0.13
Queuing Penalty (veh)			108	28

Intersection: 2: Crosshill Road EB & Brookwood Road

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	457	32
Average Queue (ft)	226	7
95th Queue (ft)	382	29
Link Distance (ft)	2848	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		30
Storage Blk Time (%)		0.01
Queuing Penalty (veh)		1

Network Summary

Network wide Queuing Penalty: 136

1: Crosshill Road WB & Brookwood Road Performance by movement

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Delay / Veh (s)	14.4	5.0	3.3	3.2	9.0	9.7	7.6

2: Crosshill Road EB & Brookwood Road Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Delay / Veh (s)	12.0	7.4	6.6	1.6	3.5	2.7	6.8

Total Network Performance

Delay / Veh (s)	18.7
-----------------	------

Intersection: 1: Crosshill Road WB & Brookwood Road

Movement	WB	SB	SB
Directions Served	LR	L	T
Maximum Queue (ft)	113	55	99
Average Queue (ft)	63	42	39
95th Queue (ft)	98	64	71
Link Distance (ft)	2693		2765
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		30	
Storage Blk Time (%)		0.11	0.06
Queuing Penalty (veh)		7	6

Intersection: 2: Crosshill Road EB & Brookwood Road

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	113	32
Average Queue (ft)	66	5
95th Queue (ft)	105	24
Link Distance (ft)	2848	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		30
Storage Blk Time (%)		0.00
Queuing Penalty (veh)		0

Network Summary

Network wide Queuing Penalty: 14

Appendix C

Intersection Capacity and Queue Analysis Worksheets Alternative 1 - All-Way Stop

1: Crosshill Road WB & Brookwood Road Performance by movement

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Delay / Veh (s)	17.8	9.0	27.9	27.8	13.9	12.1	20.4

2: Crosshill Road EB & Brookwood Road Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Delay / Veh (s)	23.2	13.1	8.7	11.5	7.8	8.6	15.8

Total Network Performance

Delay / Veh (s)	39.5
-----------------	------

Queuing and Blocking Report
 AM All Way Stop

AM All Way Stop
 6/30/2015

Intersection: 1: Crosshill Road WB & Brookwood Road

Movement	WB	NB	SB	SB
Directions Served	LR	TR	L	T
Maximum Queue (ft)	140	595	56	136
Average Queue (ft)	82	225	52	61
95th Queue (ft)	118	439	64	109
Link Distance (ft)	2693	1591		2765
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			30	
Storage Blk Time (%)			0.26	0.11
Queuing Penalty (veh)			31	24

Intersection: 2: Crosshill Road EB & Brookwood Road

Movement	EB	NB	NB	SB
Directions Served	LR	L	T	TR
Maximum Queue (ft)	309	55	76	138
Average Queue (ft)	149	14	47	68
95th Queue (ft)	237	47	72	107
Link Distance (ft)	2848		3458	1591
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		30		
Storage Blk Time (%)		0.02	0.14	
Queuing Penalty (veh)		2	2	

Network Summary

Network wide Queuing Penalty: 59

1: Crosshill Road WB & Brookwood Road Performance by movement

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Delay / Veh (s)	11.9	5.0	11.5	8.3	7.9	9.2	10.2

2: Crosshill Road EB & Brookwood Road Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Delay / Veh (s)	11.0	7.4	9.0	7.9	7.1	6.8	8.7

Total Network Performance

Delay / Veh (s)	23.0
-----------------	------

Intersection: 1: Crosshill Road WB & Brookwood Road

Movement	WB	NB	SB	SB
Directions Served	LR	TR	L	T
Maximum Queue (ft)	100	114	55	99
Average Queue (ft)	58	66	39	38
95th Queue (ft)	87	104	61	69
Link Distance (ft)	2693	1591		2765
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			30	
Storage Blk Time (%)			0.08	0.05
Queuing Penalty (veh)			6	5

Intersection: 2: Crosshill Road EB & Brookwood Road

Movement	EB	NB	NB	SB
Directions Served	LR	L	T	TR
Maximum Queue (ft)	113	55	55	100
Average Queue (ft)	63	14	35	60
95th Queue (ft)	99	44	54	88
Link Distance (ft)	2848		3458	1591
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		30		
Storage Blk Time (%)		0.01	0.05	
Queuing Penalty (veh)		1	1	

Network Summary

Network wide Queuing Penalty: 12

Appendix D

Existing Intersection Approach Traffic Counts

TRAFFIC DATA, LLC
1409 Turnham Lane, Birmingham, AL 35216
205-824-0125

Location : CROSSHILL RD west of BROOKWOOD RD
City, State : MOUNTAIN BROOK, AL

Date: 3/11/2015
Wednesday

24 Hour Volume															
24 Hour Volume							3/12/2015								
Begin	EB	WB	Combined	Begin	EB	WB	Combined	Begin	EB	WB	Combined	Begin	EB	WB	Combined
11:00 AM	12	60	19	72	31	132		11:00 PM	3	6	0	2	3	8	
11:15 AM	14		15		29			11:15 PM	1		1		2		
11:30 AM	17		26		43			11:30 PM	1		0		1		
11:45 AM	17		12		29			11:45 PM	1		1		2		
12:00 PM	23	77	11	68	34	145		12:00 AM	1	2	1	4	2	6	
12:15 PM	12		12		24			12:15 AM	1		1		2		
12:30 PM	17		25		42			12:30 AM	0		0		0		
12:45 PM	25		20		45			12:45 AM	0		2		2		
1:00 PM	19	85	13	60	32	145		1:00 AM	0	0	0	0	0	0	
1:15 PM	21		12		33			1:15 AM	0		0		0		
1:30 PM	23		26		49			1:30 AM	0		0		0		
1:45 PM	22		9		31			1:45 AM	0		0		0		
2:00 PM	18	90	15	156	33	246		2:00 AM	2	2	0	2	2	4	
2:15 PM	30		19		49			2:15 AM	0		1		1		
2:30 PM	12		80		92			2:30 AM	0		0		0		
2:45 PM	30		42		72			2:45 AM	0		1		1		
3:00 PM	27	172	39	183	66	355		3:00 AM	0	0	0	0	0	0	
3:15 PM	54		39		93			3:15 AM	0		0		0		
3:30 PM	56		79		135			3:30 AM	0		0		0		
3:45 PM	35		26		61			3:45 AM	0		0		0		
4:00 PM	32	165	25	108	57	273		4:00 AM	0	0	1	2	1	2	
4:15 PM	45		23		68			4:15 AM	0		0		0		
4:30 PM	39		28		67			4:30 AM	0		0		0		
4:45 PM	49		32		81			4:45 AM	0		1		1		
5:00 PM	55	219	21	120	76	339		5:00 AM	0	2	3	17	3	19	
5:15 PM	61		38		99			5:15 AM	1		7		8		
5:30 PM	58		37		95			5:30 AM	1		3		4		
5:45 PM	45		24		69			5:45 AM	0		4		4		
6:00 PM	43	138	22	97	65	235		6:00 AM	1	30	3	43	4	73	
6:15 PM	32		28		60			6:15 AM	3		6		9		
6:30 PM	36		16		52			6:30 AM	8		15		23		
6:45 PM	27		31		58			6:45 AM	18		19		37		
7:00 PM	38	106	16	74	54	180		7:00 AM	45	320	33	204	78	524	
7:15 PM	28		29		57			7:15 AM	72		56		128		
7:30 PM	13		16		29			7:30 AM	109		67		176		
7:45 PM	27		13		40			7:45 AM	94		48		142		
8:00 PM	14	62	6	40	20	102		8:00 AM	24	78	32	109	56	187	
8:15 PM	15		16		31			8:15 AM	19		28		47		
8:30 PM	11		8		19			8:30 AM	14		25		39		
8:45 PM	22		10		32			8:45 AM	21		24		45		
9:00 PM	11	31	6	13	17	44		9:00 AM	8	48	19	77	27	125	
9:15 PM	6		4		10			9:15 AM	16		21		37		
9:30 PM	8		2		10			9:30 AM	12		14		26		
9:45 PM	6		1		7			9:45 AM	12		23		35		
10:00 PM	6	13	5	6	11	19		10:00 AM	13	57	15	62	28	119	
10:15 PM	4		0		4			10:15 AM	21		13		34		
10:30 PM	0		0		0			10:30 AM	8		17		25		
10:45 PM	3		1		4			10:45 AM	15		17		32		

24 Hour Volume EB 1763 (53.7%) WB 1519 (46.3%) Combined 3282

Count	12:00 AM - 12:00 PM			12:00 PM - 12:00 AM		
	EB	WB	Combined	EB	WB	Combined
	599	592	1191	1164	927	2091
	50.3 %	49.7 %		55.7 %	44.3 %	
Peak Hour	7:00 AM	7:00 AM	7:00 AM	4:45 PM	2:30 PM	2:45 PM
Volume	320	204	524	223	200	366
Factor	0.73	0.76	0.74	0.91	0.63	0.68

TRAFFIC DATA, LLC
1409 Turnham Lane, Birmingham, AL 35216
205-824-0125

Location: : CROSSHILL RD east of BROOKWOOD RD
 City, State: : MOUNTAIN BROOK, AL

Date: 3/11/2015
 Wednesday

24 Hour Volume													
Begin	EB	WB	Combined	Begin	EB	WB	Combined						
11:00 AM	17	77	25	100	42	177	11:00 PM	3	9	0	3	12	
11:15 AM	20		19		39		11:15 PM	3		0		3	
11:30 AM	22		31		53		11:30 PM	1		2		3	
11:45 AM	18		25		43		11:45 PM	2		1		3	
12:00 PM	32	107	13	100	45	207	12:00 AM	1	3	2	5	3	8
12:15 PM	23		23		46		12:15 AM	1		1		2	
12:30 PM	20		34		54		12:30 AM	1		0		1	
12:45 PM	32		30		62		12:45 AM	0		2		2	
1:00 PM	28	115	22	101	50	216	1:00 AM	0	0	0	0	0	0
1:15 PM	33		25		58		1:15 AM	0		0		0	
1:30 PM	29		17		66		1:30 AM	0		0		0	
1:45 PM	25		17		42		1:45 AM	0		0		0	
2:00 PM	28	117	23	240	51	357	2:00 AM	2	3	0	3	2	6
2:15 PM	33		31		64		2:15 AM	0		1		1	
2:30 PM	19		122		141		2:30 AM	0		0		0	
2:45 PM	37		64		101		2:45 AM	1		2		3	
3:00 PM	76	245	48	252	124	497	3:00 AM	0	0	0	0	0	0
3:15 PM	64		63		127		3:15 AM	0		0		0	
3:30 PM	62		96		158		3:30 AM	0		0		0	
3:45 PM	43		45		88		3:45 AM	0		0		0	
4:00 PM	44	230	17	153	81	383	4:00 AM	0	0	1	3	1	3
4:15 PM	53		34		87		4:15 AM	0		0		0	
4:30 PM	64		41		105		4:30 AM	0		0		0	
4:45 PM	69		41		110		4:45 AM	0		2		2	
5:00 PM	67	291	41	194	108	485	5:00 AM	1	2	3	20	4	22
5:15 PM	78		58		136		5:15 AM	0		8		8	
5:30 PM	72		44		116		5:30 AM	1		4		5	
5:45 PM	74		51		125		5:45 AM	0		5		5	
6:00 PM	46	191	33	142	79	333	6:00 AM	1	36	4	61	5	97
6:15 PM	52		33		85		6:15 AM	6		9		15	
6:30 PM	52		27		79		6:30 AM	8		21		29	
6:45 PM	41		49		90		6:45 AM	21		27		48	
7:00 PM	48	151	28	105	76	256	7:00 AM	55	419	47	341	102	760
7:15 PM	41		33		74		7:15 AM	83		100		183	
7:30 PM	30		22		52		7:30 AM	143		121		264	
7:45 PM	32		22		54		7:45 AM	138		73		211	
8:00 PM	22	97	12	69	34	166	8:00 AM	32	106	49	169	81	275
8:15 PM	25		31		56		8:15 AM	26		47		73	
8:30 PM	17		14		31		8:30 AM	23		45		68	
8:45 PM	33		12		45		8:45 AM	25		28		53	
9:00 PM	19	51	10	26	29	77	9:00 AM	17	73	29	103	46	176
9:15 PM	11		8		19		9:15 AM	21		30		51	
9:30 PM	14		6		20		9:30 AM	17		15		32	
9:45 PM	7		2		9		9:45 AM	18		29		47	
10:00 PM	11	26	5	9	16	35	10:00 AM	13	73	22	96	35	169
10:15 PM	6		1		7		10:15 AM	21		21		42	
10:30 PM	3		0		3		10:30 AM	17		29		46	
10:45 PM	6		3		9		10:45 AM	22		24		46	

24 Hour Volume EB 2422 (51.3%) WB 2295 (48.7%) Combined 4717

	12:00 AM - 12:00 PM			12:00 PM - 12:00 AM		
Count	EB	WB	Combined	EB	WB	Combined
	792	901	1693	1630	1394	3024
Peak Hour	46.8 %	53.2 %		53.9 %	46.1 %	
Volume	7:00 AM	7:15 AM	7:00 AM	5:00 PM	2:30 PM	2:45 PM
Factor	419	343	760	291	297	510
	0.73	0.71	0.72	0.93	0.61	0.81

TRAFFIC DATA, LLC
 1409 Turnham Lane, Birmingham, AL 35216
 205-824-0125

Location: : BROOKWOOD RD south of CROSSHILL RD
 City, State: : MOUNTAIN BROOK, AL
 Speed Limit: : 30 mph

Date: 3/11/2015
 Wednesday

24 Hour Volume													
Begin	NB	SB	Combined		Begin	NB	SB	Combined					
11:00 AM	10	44	8	49	18	93	11:00 PM	1	5	0	2	1	7
11:15 AM	14		11		25		11:15 PM	1		0		1	
11:30 AM	11		13		24		11:30 PM	2		2		4	
11:45 AM	9		17		26		11:45 PM	1		0		1	
12:00 PM	12	46	8	53	20	99	3/12/2015 12:00 AM	1	2	0	1	1	3
12:15 PM	7		12		19		12:15 AM	0		1		1	
12:30 PM	13		14		27		12:30 AM	1		0		1	
12:45 PM	14		19		33		12:45 AM	0		0		0	
1:00 PM	25	83	11	46	36	129	1:00 AM	0	0	0	1	0	1
1:15 PM	17		11		28		1:15 AM	0		0		0	
1:30 PM	19		13		32		1:30 AM	0		0		0	
1:45 PM	22		11		33		1:45 AM	0		1		1	
2:00 PM	16	69	7	42	23	111	2:00 AM	0	0	0	2	0	2
2:15 PM	16		13		29		2:15 AM	0		1		1	
2:30 PM	20		13		33		2:30 AM	0		1		1	
2:45 PM	17		9		26		2:45 AM	0		0		0	
3:00 PM	25	83	33	107	58	190	3:00 AM	0	0	0	0	0	0
3:15 PM	17		29		46		3:15 AM	0		0		0	
3:30 PM	22		29		51		3:30 AM	0		0		0	
3:45 PM	19		16		35		3:45 AM	0		0		0	
4:00 PM	20	76	13	75	33	151	4:00 AM	0	0	0	1	0	1
4:15 PM	17		17		34		4:15 AM	0		1		1	
4:30 PM	21		21		42		4:30 AM	0		0		0	
4:45 PM	18		24		42		4:45 AM	0		0		0	
5:00 PM	23	75	21	71	44	146	5:00 AM	0	2	0	4	0	6
5:15 PM	13		16		29		5:15 AM	1		2		3	
5:30 PM	24		17		41		5:30 AM	1		0		1	
5:45 PM	15		17		32		5:45 AM	0		2		2	
6:00 PM	22	64	19	55	41	119	6:00 AM	1	14	3	24	4	38
6:15 PM	9		14		23		6:15 AM	6		5		11	
6:30 PM	22		11		33		6:30 AM	4		10		14	
6:45 PM	11		11		22		6:45 AM	3		6		9	
7:00 PM	16	46	10	32	26	78	7:00 AM	5	75	20	112	25	187
7:15 PM	13		7		20		7:15 AM	19		16		35	
7:30 PM	10		9		19		7:30 AM	34		30		64	
7:45 PM	7		6		13		7:45 AM	17		46		63	
8:00 PM	10	35	7	16	17	51	8:00 AM	8	25	26	91	34	116
8:15 PM	9		1		10		8:15 AM	7		17		24	
8:30 PM	5		3		8		8:30 AM	6		29		35	
8:45 PM	11		5		16		8:45 AM	4		19		23	
9:00 PM	8	20	7	10	15	30	9:00 AM	15	38	26	79	41	117
9:15 PM	6		2		8		9:15 AM	10		16		26	
9:30 PM	5		1		6		9:30 AM	8		19		27	
9:45 PM	1		0		1		9:45 AM	5		18		23	
10:00 PM	3	9	1	6	4	15	10:00 AM	5	40	12	54	17	94
10:15 PM	1		1		2		10:15 AM	14		13		27	
10:30 PM	1		3		4		10:30 AM	8		14		22	
10:45 PM	4		1		5		10:45 AM	13		15		28	

24 Hour Volume NB 851 (47.7%) SB 933 (52.3%) Combined 1784

Count	12:00 AM - 12:00 PM			12:00 PM - 12:00 AM		
	NB	SB	Combined	NB	SB	Combined
	240	418	658	611	515	1126
	36.5 %	63.5 %		54.3 %	45.7 %	
Peak Hour	7:15 AM	7:30 AM	7:15 AM	1:00 PM	3:00 PM	3:00 PM
Volume	78	119	196	83	107	190
Factor	0.57	0.65	0.77	0.83	0.81	0.82

Appendix E

Traffic Signal Warrant Analysis Worksheet

Brookwood Road at Crosshill Road

Existing Traffic Volumes

Signal Warrants - Summary

Major Street Approaches

Eastbound: Crosshill Road
 Number of Lanes: 1
 85% Speed < 40 MPH.
 Total Approach Volume: 1,763

Westbound: Crosshill Road
 Number of Lanes: 1
 85% Speed < 40 MPH.
 Total Approach Volume: 2,295

Minor Street Approaches

Northbound: Brookwood Road
 Number of Lanes: 1
 Total Approach Volume: 851

Southbound: Brookwood Road
 Number of Lanes: 1
 Total Approach Volume: 933

Warrant Summary (Urban values apply.)

Warrant 1 - Eight Hour Vehicular Volumes	Not Satisfied
Warrant 1A - Minimum Vehicular Volume Not Satisfied	
Required volumes reached for 0 hours, 8 are needed	
Warrant 1B - Interruption of Continuous Traffic Not Satisfied	
Required volumes reached for 0 hours, 8 are needed	
Warrant 1 A&B - Combination of Warrants Not Satisfied	
Required volumes reached for 0 hours, 8 are needed	
Warrant 2 - Four Hour Volumes	Not Satisfied
Number of hours (0) volumes exceed minimum < minimum required (4).	
Warrant 3 - Peak Hour	Not Evaluated
Warrant 3A - Peak Hour Delay Not Evaluated	
Warrant 3B - Peak Hour Volumes Not Evaluated	
Warrant 4 - Pedestrian Volumes	Not Evaluated
Warrant 5 - School Crossing	Not Evaluated
Warrant 6 - Coordinated Signal System	Not Evaluated
Warrant 7 - Crash Experience	Not Evaluated
Warrant 8 - Roadway Network	Not Evaluated
Warrant 9 - Intersection Near a Grade Crossing	Not Evaluated

Appendix F

Intersection Capacity and Queue Analysis Worksheets Recommended Improvements

1: Crosshill Road WB & Brookwood Road Performance by movement

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Delay / Veh (s)	57.7	22.5	7.7	5.4	136.8	90.7	42.0

2: Crosshill Road EB & Brookwood Road Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Delay / Veh (s)	23.4	13.2	8.8	11.7	7.5	7.9	15.9

Total Network Performance

Delay / Veh (s)	60.7
-----------------	------

Intersection: 1: Crosshill Road WB & Brookwood Road

Movement	WB	NB	SB	SB
Directions Served	LR	TR	L	T
Maximum Queue (ft)	874	22	56	608
Average Queue (ft)	226	4	55	311
95th Queue (ft)	552	17	56	605
Link Distance (ft)	2693	1591		2765
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			30	
Storage Blk Time (%)			0.92	0.14
Queuing Penalty (veh)			111	29

Intersection: 2: Crosshill Road EB & Brookwood Road

Movement	EB	NB	NB	SB
Directions Served	LR	L	T	TR
Maximum Queue (ft)	309	55	92	97
Average Queue (ft)	150	14	48	65
95th Queue (ft)	247	47	75	88
Link Distance (ft)	2848		3458	1591
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		30		
Storage Blk Time (%)		0.02	0.15	
Queuing Penalty (veh)		2	2	

Network Summary

Network wide Queuing Penalty: 144

1: Crosshill Road WB & Brookwood Road Performance by movement

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Delay / Veh (s)	14.6	5.0	3.7	3.4	10.4	10.0	8.1

2: Crosshill Road EB & Brookwood Road Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Delay / Veh (s)	11.0	7.4	8.7	7.9	7.2	6.4	8.7

Total Network Performance

Delay / Veh (s)	20.7
-----------------	------

Intersection: 1: Crosshill Road WB & Brookwood Road

Movement	WB	SB	SB
Directions Served	LR	L	T
Maximum Queue (ft)	138	55	118
Average Queue (ft)	66	41	40
95th Queue (ft)	105	64	79
Link Distance (ft)	2693		2765
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		30	
Storage Blk Time (%)		0.12	0.06
Queuing Penalty (veh)		8	6

Intersection: 2: Crosshill Road EB & Brookwood Road

Movement	EB	NB	NB	SB
Directions Served	LR	L	T	TR
Maximum Queue (ft)	109	55	55	100
Average Queue (ft)	63	14	35	56
95th Queue (ft)	96	44	54	86
Link Distance (ft)	2848		3458	1591
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		30		
Storage Blk Time (%)		0.01	0.05	
Queuing Penalty (veh)		1	1	

Network Summary

Network wide Queuing Penalty: 16