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MEETING MINUTES

Project: Campbellton Road @ Boat Rock Road/New Hope Rd, STP-0186-01(038)
P.I. # 731830

Purpose: Initial Concept Team Meeting

Place: GDOT District 7 / Area 3 Conference Room

Meeting Date: Tuesday, June 15, 2010

Prepared By: Jeff Dyer

In Attendance: Antonio Valenzuela – Fulton County
Ernay Robinson – GDOT Project Manager
Larry Bowman – GDOT/OES
Pam Hooks – GDOT / Local Gov. R/W Support
Mike Lobdell – GDOT District 7
Vulonda Pride Foster – GDOT / Utilities
Michael K. Hill – GDOT
Kaycee Mertz – GDOT
Patrick Allen – GDOT/Traffic Safety & Design
Bobby Plunkett – Georgia Power Co.
John Wisenhart – Georgia Power Co.
Arlene Jackson – AT&T
Jeff Dyer - Qk4

The following items were discussed:

Two conceptual alternatives are under consideration for the Campbellton Road / Boat Rock Road / New Hope Road intersections and were presented by Mr. Dyer, along with an overview of the pros and cons of each. Both alternatives would signalize Campbellton Road @ Boat Rock Road and add an eastbound left-turn lane. The two alternatives differ in how they would reconstruct the Boat Rock Road / New Hope Road intersection:

- Both Alternatives would relocate the New Hope Road approach from its existing location, which is 100 feet north of the Boat Rock Road intersection with Campbellton Road to a new location which is approximately 350 feet north of Campbellton Road.



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- Alternative 1 would construct a conventional intersection with all-way stop control, while providing a separate turning roadway for northbound right-turn traffic wanting to use New Hope Road.
- Alternative 2 would construct a single-lane urban roundabout.

Fulton County is holding a second public information meeting on June 21. After that meeting has been held, a preferred alternative will be selected.

Traffic simulation animations based on a VSSIM analysis had been prepared for the existing conditions, and both alternatives, using design year traffic. These animations were shown to the attendees.

There is a sidewalk project along Campbellton Road that is close to being let. That project has been designed by Qk4. There is also a resurfacing project that is supposed to take place in this area.

Georgia Power representatives questioned how this project would be coordinated with the upcoming sidewalk project. They do not want to have to relocate poles twice. They also suggested that enough right-of-way be purchased in order to provide room for pole placement behind sidewalks.

The project schedule was gone over and adjusted, based on the current status of the project. The management let date for this project will be adjusted from February 2013 to March 2014.

Following selection of the preferred alternative, the concept report will be updated accordingly, and then circulated through GDOT for final approval.

Dyer, Jeff

From: Dyer, Jeff
Sent: Tuesday, November 16, 2010 7:53 AM
To: Robinson, Ernay
Cc: Valenzuela, Antonio
Subject: Notes from yesterdays field meeting for Campbellton @ Boat Rock/New Hope - PI#731830

The following items were discussed.

The VISSIM analysis that was included in the previous version of the traffic study has had to be rerun due to incorrect speed profiles. That made VISSIM show the intersections operating worse than predicted by the traffic volumes and other analysis tools. The traffic study will be updated and reissued to include updated queue lengths from the updated VISSIM analysis.

At the request of GDOT, predicted queue lengths from HCS analysis will also be added to the updated traffic study for the signalized intersection of Campbellton Road @ Boat Rock Road.

Updated VISSIM animation files were provided to GDOT.

At GDOT's request the following additional analysis scenarios will be added to the updated traffic study:

1. Same scenario as Alternative 1 (conventional), but with a change of traffic control to provide a free flow for northbound traffic on Boat Rock Road as it approaches relocated New Hope Road so that this traffic can't queue into the signalized intersection at Campbellton Road. Scenario will either be a side-street stop, two-way stop (SB and WB stop control) or both.
2. Analyze a scenario that involves a signal signalized intersection along Campbellton Road where Boat Rock Road and New Hope Road approach into the same intersection, side by side, forming a "K" shaped configuration. There would be an extra signal phase needed to handle this extra intersection leg.
3. Analyze a scenario that involves a single multi-lane roundabout that includes Campbellton, New Hope, and Boat Rock Roads. This concept had been studied previously. GDOT will provide a sketch that shows this previous design.

VISSIM will used as an evaluation tool for the original scenarios included in the original report, and possibly for the modifications of Alternative 1. However, other analysis tools such as SIDRA, HCS, and/or SYNCHRO will be used for the remaining scenarios. VISSIM will not be used as an evaluation tool for the new scenarios.

It has been agreed that the traffic report will be updated and resubmitted for review before the Concept Report is updated. This way, remaining traffic issues can be resolved before the recommended concept is incorporated into the Concept Report.

Jeffrey W. Dyer, P.E., PTOE
Sr. Project Manager

Qk4

Engineering Planning

3169 Holcolmb Bridge Road, Suite 455, Norcross, GA 30071

404.417.3024 (direct) - Fx. 404.329.5901

jdver@qk4.com



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MEETING SUMMARY

Project: Campbellton Road @ Boat Rock Road/New Hope Rd, STP-0186-01(038)
P.I. # 731830

Purpose: Progress / Coordination Meeting

Place: GDOT General Office 25th Floor Conference Room

Meeting Date: Monday, February 7, 2011, 10:00 a.m.

Prepared By: Jeff Dyer

In Attendance: Antonio Valenzuela – Fulton County
Ernay Robinson – GDOT Project Manager
Michael Haithcock – GDOT
Scott Zehngraft – GDOT
Daniel Pass - GDOT
Tony Jones – GDOT
Andy Ballerstedt – Qk4
Jeff Dyer - Qk4

Note that the attendee list may be incomplete. The following items were discussed:

The results of the traffic analysis undertaken after the November 15 field meeting were discussed. The results of these analyses had already been sent to attendees via email.

Based on those results, the “K” intersection concept alternative will not be pursued further due to issues with level of service of the signalized intersection.

A refinement of Alternate 2 (3-legged roundabout at Boat Rock @ New Hope) had been made to add a second southbound lane on Boat Rock to reduce queuing from Campbellton. Although this appeared to improve the situation, there is no evidence that it would improve it enough to alleviate potential of locking the roundabout. For this reason, this alternative has been removed from further consideration.

A single roundabout alternative was developed that combined the Campbellton Road, Boat Rock Road, and New Hope Road approaches at a single roundabout intersection. Level of service analysis revealed that a single lane roundabout design would not handle the expected traffic demands.

Initial analysis revealed that constructing the single roundabout as a multi-lane design would accommodate the expected traffic demands. A concept was displayed assumed multi-lanes on all approaches. It was discussed by



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GDOT that a partial multi-lane roundabout design may be feasible at this intersection and more cost-effective than what was shown.

It was suggested by GDOT that Qk4 hire a subconsultant to prepare a peer review and refine the single roundabout concept at this intersection. As part of the scope of work, both the location and the lane configuration would be refined based on more detailed analysis.

Qk4 will investigate hiring Kittleson & Associates to provide peer review for a single roundabout. If a multilane or partial multi-lane roundabout concept is found to be feasible for this intersection based the peer review, this will likely be the preferred alternative for this project.

If a roundabout is selected as the preferred alternative, it was discussed that this project would be eligible for full federal funding.

If a single roundabout is found not to be feasible, Alternative 1 with the northbound stop sign removed would be the “fallback” preferred alternative.

Once the peer review is completed, the preferred alternative will be selected. At that point Qk4 will revise the Concept Report and submit it for approval.

FILE: P. I. No 731830

DATE: March 3, 2010

FROM: Qk4

TO: Fulton County, Public Works Department

SUBJECT: P.I. 731830, Fulton County, Summary of Comments Received During the Public Comment Period

COMMENT TOTALS:

A total of 31 people attended the February 11, 2010, public information open house (PIOH) meeting held at the Southwest Fulton Arts Center, 915 New Hope Road, SW Atlanta, Georgia. From those attending, 22 comment forms were received at the PIOH. Two comment forms were completed by married couples, so each of their comment forms is counted as two comments. An additional four emailed comments were received during comment period following the PIOH. Two emails were from attendees who submitted a comment card, so their comments are only counted once, therefore, there are a total of 26 comments, summarized as follows:

Total Received	Opposed	In Support	Uncommitted	Conditional
26	0	23	0	3

MAJOR CONCERNS:

Some people that commented expressed a preference for one or more of the alternatives presented:

Concept One – 6

Concept Two – 3

Concept Three – 7

Concepts One and Three - 1

Other concerns are:

- Concerns related to traffic control/lights

OFFICIALS:

Angela Parker, Public Works Director

DISPOSITION OF COMMENTS:

If you have any questions about the comments, please call Matt Houser at (404)329-5900.

Attachments

Summary of Comments
Page 2
March 3, 2010

DISTRIBUTION:

FILE: P. I. No. 731830

DATE: July 14, 2010

FROM: Qk4

TO: Fulton County, Public Works Department

SUBJECT: P.I. 731830, Fulton County, PIOH, June 21, 2010 - Summary of Comments Received During the Public Comment Period

COMMENT TOTALS:

A total of 21 people attended the June 21, 2010, public information open house (PIOH) meeting held at the Atlanta Fulton Public Library - SW Branch, 3665 Cascade Road SW Atlanta, Georgia 30331. From those attending, three comment forms were received at the PIOH. An additional four emailed comments were received during comment period following the PIOH. One email was from an attendee who submitted a comment card, so his comments are only counted once, therefore, there are a total of six comments, summarized as follows:

Total Received	Opposed	In Support	Uncommitted	Conditional
6	0	6	0	0

MAJOR CONCERNS:

None

OFFICIALS:

Angela Parker, Public Works Director

DISPOSITION OF COMMENTS:

If you have any questions about the comments, please call Matt Houser at (404)329-5900.

Attachments

DISTRIBUTION:

Summary of Comments
Page 2
July 7, 2010

DISTRIBUTION:



**Campbellton Road at Boat Rock and New Hope Roads
Second Public Meeting – June 21, 2010
Atlanta-Fulton Public Library**

Comments:

Proposed to Add Roundabout ON Boat Rock @ New Hope, shut down small existing section of current New Hope Rd as stated will add some barrier to prevent Pumping - Turning lanes from Campbellton Rd, A traffic signal will be installed w/ ample warning of approaching lights & turning lane.

I personally think: if the above do occur as stated in the comm meeting, it will be an improvement in appearance and safety to pedestrian & should prevent motor vehicle accidents I would certainly like to see some way of preventing a left turn off of Campbellton WB - directly into Citygo. Make it so they traffic flow must go NB on Boat Rock to access the conv. store. (safety issue) as well as preventing a collision

Submitted By: (Please Print) Drewitt Worth

Complete Address: FCCD #3

Submit comments to:

Campbellton Road at Boat Rock and New Hope Roads Project

Matthew R. Houser, ASLA
Qk4
3169 Holcomb Road, Suite 455
Norcross, GA 30071
Fax: 404.329.5901
Email: mhouser@qk4.com

Antonio Valenzuela
Transportation Planning Administrator
Fulton County
Tel: 404-612-0520
Fax: 404-893-6227
Email: antonio.valenzuela@fultoncountygga.gov

Project MGR - ~~Power~~
Erwan Robinson (present)



**Campbellton Road at Boat Rock and New Hope Roads
 Second Public Meeting – June 21, 2010
 Atlanta-Fulton Public Library**

Comments: w the flow of traffic going SB on Boatrock
turning R onto Campbellton Rd.

Submitted By: (Please Print) Dewitt Worshy

Complete Address: _____

Submit comments to:

Campbellton Road at Boat Rock and New Hope Roads Project

Matthew R. Houser, ASLA
 Qk4
 3169 Holcomb Road, Suite 455
 Norcross, GA 30071
 Fax: 404.329.5901
 Email: mhouser@qk4.com

Antonio Valenzuela
 Transportation Planning Administrator
 Fulton County
 Tel: 404-612-0520
 Fax: 404-893-6227
 Email: antonio.valenzuela@fultoncountyga.gov



**Campbellton Road at Boat Rock and New Hope Roads
 Second Public Meeting – June 21, 2010
 Atlanta-Fulton Public Library**

Absolutely
 Comments: *I Need Supplemental traffic light head to warn eastbound SR 166 traffic*

Prefer Roundabout with one way signage

Submitted By: (Please Print)

Harvey Davis

Complete Address:

*1780 Versailles Dr
 Atlanta, GA 30331*

Submit comments to:

Campbellton Road at Boat Rock and New Hope Roads Project

Matthew R. Houser, ASLA
 Qk4
 3169 Holcomb Road, Suite 455
 Norcross, GA 30071
 Fax: 404.329.5901
 Email: mhouser@qk4.com

Antonio Valenzuela
 Transportation Planning Administrator
 Fulton County
 Tel: 404-612-0520
 Fax: 404-893-6227
 Email: antonio.valenzuela@fultoncountyga.gov



**Campbellton Road at Boat Rock and New Hope Roads
Second Public Meeting – June 21, 2010
Atlanta-Fulton Public Library**

Comments:

Please assure that the closed off New Hope
will not become a dumping ground.
Once the road is closed - a great idea would
be ^{to} add green land / park. Beautify the
end caps to be a source of pride for our neighborhood.

Submitted By: (Please Print) Mary Lee McNamee

Complete Address: 1620 Export Court
Atlanta GA 30331

Submit comments to:

Campbellton Road at Boat Rock and New Hope Roads Project

Matthew R. Houser, ASLA
Qk4
3169 Holcomb Road, Suite 455
Norcross, GA 30071
Fax: 404.329.5901
Email: mhouser@qk4.com

Antonio Valenzuela
Transportation Planning Administrator
Fulton County
Tel: 404-612-0520
Fax: 404-893-6227
Email: antonio.valenzuela@fultoncountyga.gov

Houser, Matt

From: Sherry Finch [sherryfi@bellsouth.net]
Sent: Wednesday, June 23, 2010 11:28 AM
To: sca-steering@googlegroups.com; angela.parker@fultoncountyga.gov;
antonio.valenzular@fultoncountyga.gov; Houser, Matt; erobinson@dot.ga.gov;
richard.coates@fultoncountyga.gov
Subject: Cambellton/Boatrock/New Hope Roads--OPTION #2 is the best choice!

Hi,

I did not get to attend the informational meeting re: the intersection changes proposed for Boat Rock, Campbellton Rd and New Hope Rds last week, but did review the drawings and would like to express my family's preference for the Option #2, providing a roundabout instead of a 4-way stop on Boat Rock Rd where the newly aligned New Hope Rd will join.

We know the roundabout will provide a continuous flow of traffic as opposed to the stop-and-go that results from stop signs, and with the growth of new subdivisions and apartments all along our street (Boat Rock) the number of cars needing to pass that way has grown, and will keep growing, so we strongly urge the use of continuous traffic flow via roundabout as opposed to the bottle-neck that will occur with stop signs there.

We have been keenly interested in the county's traffic and connectivity planning for Sandtown since we moved here 11 years ago, attending most of the informational meetings provided by the county and the Sandtown Community Association; we were excited by the Blueprint Sandtown that the LCI study evolved many years ago, and had hoped that would have been made a reality long before now. The proposal #2 for this intersection seems most compatible with the aesthetics and the efficiencies of good traffic management techniques encompassed by the Blueprint Sandtown plans.

Thank you for taking on this project in our community, we have long desired a better and safer intersection at that location.

Thank you,

Sherry and Ken Finch

Sherry Finch

Direct: 404-788-3652

1181 Boat Rock Rd
Atlanta, Ga 30331

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Version: 8.5.437 / Virus Database: 271.1.1/2956 - Release Date: 06/23/10 11:11:00

Houser, Matt

From: Cheryl Flowers [flowerscc@hotmail.com]
Sent: Wednesday, June 23, 2010 10:53 AM
To: angela.parker@fultoncountyga.gov; antonio.valenzular@fultoncountyga.gov; Houser, Matt; erobinson@dot.ga.gov; richard.coates@fultoncountyga.gov; Sandtown community association
Subject: Cambellton/Boatrock/New Hope Roads

Everyone,

As one who has worked, hoped, and prayed for a new design for the intersection of Campbellton, Boar Rock and New Hope Roads for almost twelve years, I am again hopeful as you are re-visiting this project. For many years, I served as co-chair of the zoning committee for the Sandtown Community Association. I, as well as those who have participated with the planning of Campbellton Road over the years, overwhelmingly support the ROUND-ABOUT as the first option.

In 1997, when the Georgia DOT first announced plans to widen Campbellton Road, many of us sought options which would enhance Campbellton Road (state road 166). We worked collaboratively with the Ben Hill community to our east, and the Campbellton Road Coalition was formed.

As we took this undertaking seriously, we applied for, and was granted the funds to conduct an LCI study. The G-DOT, Fulton County government, national traffic planners, such as Ian Lockwood and Walter Kulash, and approximately 3,000 Sandtown residents, participated in this process. The process yielded a design, not only for the above intersection, but for all of Campbellton Road, from I-285 to the Douglass County line.

In the October 29, 2000 Atlanta Journal-Constitution, an article entitled "A roundabout Solution", stated that traffic engineers across Georgia espoused the roundabout as a viable solution to traffic management. In fact, the G-DOT has since installed a roundabout on State road 166, approximately thirteen miles west of Sandtown, in Douglas County. From a small neighborhood intersection, to grand twenty lane boulevards in Europe, the roundabout appears to be an efficient, as well as aesthetically beautiful option.

I ask very seriously, that you consider the wishes of the community who have spoken so passionately regarding this matter, and proceed with the installation of the roundabout in the heart of our community.

If you wish to contact me, I may be reached at 404-344-2781 or 404-401-8163.

Regards,
Cheryl Flowers

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Houser, Matt

From: Valenzuela, Antonio [Antonio.Valenzuela@fultoncountyga.gov]
Sent: Wednesday, June 23, 2010 9:15 AM
To: Dyer, Jeff
Cc: Houser, Matt; Morgan, LaNiece
Subject: FW: T244 - Campbellton Road at Boat Rock Road and New Hope Road Intersection Improvements

Please keep this email as one more support for the roundabout.

Thank you,

Antonio M. Valenzuela
Transportation Planning Administrator
Public Works Dept., Transportation Planning
Tel: (404) 612-0520
Fax: (404) 730-6325
antonio.valenzuela@fultoncountyga.gov

From: Davis, John A [mailto:John.A.Davis@delta.com]
Sent: Wednesday, June 23, 2010 7:44 AM
To: Parker, Angela; Valenzuela, Antonio; 'emcclinton@dot.ga.gov'; Coates, Richard; 'erobinson@dot.ga.gov'
Cc: 'Davis, Debbie S.'; 'Cheryl Flowers'
Subject: T244 - Campbellton Road at Boat Rock Road and New Hope Road Intersection Improvements

All:

I have been a longstanding Sandtown resident for over 10 years and sending this email in support of the proposed changes for the intersection of Campbellton Road, Boat Rock and New Hope. Specifically, I support the project for a roundabout at this intersection.

I reside in Enon Pines and I live within view through the trees of this intersection. My home is on Enon Mill which is about 500 feet from this part of Campbellton Road. My reasoning for supporting the roundabout is as follows:

- The Blueprint Sandtown was a master plan for the community that was funded from an LCI grant. Part of the plan included traffic calming of Campbellton Road. We have long been a supporter of roundabouts as a measure of calming the traffic on Campbellton Road.
- I have participated in several community studies and feel that a light alternative at this intersection is not the best tool for long term growth of our community. This part of Campbellton is residential and continual movement of traffic minimizes environmental pollution and noise during a 24 hour period.
- The State DOT although initially hesitant and reluctant to support the community have found benefits in other areas of the state and concluded the Sandtown community could benefit from this solution as well.
- aesthetically a roundabout gives a community uniqueness and a separate distinction from other areas. And Sandtown has desired this type of charm and character for close to 20 years.
- A roundabout would create a safer area by reducing traffic speeding and signaling a need to exercise greater caution. And this is needed given the proximity of an elementary and middle school close by.

I want to thank all of you who have worked hard on this project and urge your

favorable decision on the implementation of the roundabout.

If you wish to talk with me further, please feel free to call me at 678-637-0804.

Thanks!

John A. Davis, Esq.

Blueprint Sandtown summarized the history of the Sandtown Community's creation of a land use master plan for the Sandtown Community Village that would impact the traffic flow of Campbellton Road. The land use master plan for the community includes an analysis of educational needs, development of a live/work/play village that would incorporate elements of a walkable residential development, parks and traffic calming of Campbellton Road.

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Houser, Matt

From: Smith, Vance [vsmith@dot.ga.gov]
Sent: Tuesday, June 22, 2010 10:08 PM
To: 'harveydavis@bellsouth.net'; 'angela.parker@fultoncountyga.gov'; Robinson, Ernay; McClinton, Emory
Cc: Houser, Matt; 'antonio.valenzuela@fultoncountyga.gov'; 'Richard.Coates@fultoncountyga.gov'
Subject: Re: T244 - Campbellton Road at Boat Rock Road and New Hope Road Intersection Improvements

Mr. Davis,

Thanks for your comments and we appreciate the partnership, which improves transportation for all our citizens. Again thanks,

Vance

From: Harvey Davis <harveydavis@bellsouth.net>
To: Angela Parker <angela.parker@fultoncountyga.gov>; Robinson, Ernay; McClinton, Emory; Smith, Vance
Cc: mhouser@qk4.com <mhouser@qk4.com>; antonio.valenzuela@fultoncountyga.gov <antonio.valenzuela@fultoncountyga.gov>; Richard Coates <Richard.Coates@fultoncountyga.gov>
Sent: Tue Jun 22 21:07:52 2010
Subject: RE: T244 - Campbellton Road at Boat Rock Road and New Hope Road Intersection Improvements

Angela Parker

Director of Fulton County Public Works

141 Pryor St., Suite 6001
Atlanta, GA 30303

June 22, 2010

Ms. Parker,

I am very pleased to see the continued collaborative partnership between Fulton County and GDOT to solve the longstanding intersection upgrade needs at SR166/Boat Rock and New Hope. While either solution would have an enormous impact on our life safety needs, I strongly prefer the **roundabout solution** for efficiency, throughput and aesthetics. It is also consistent on a smaller scale with Blueprint Sandtown's planning.

Some ten years ago now, the community as part of the Sandtown LCI and Blueprint Sandtown endorsed the following land use objectives:

- Better school options (new middle and high schools) **ACHIEVED**
- Walkable community **IN PROGRESS** (Sandtown Pedestrian Network)
- Recreation facilities (**IN PROGRESS** revitalization of Sandtown Park and Gym),
- Shopping opportunities (Camp Creek and Campbellton and **MORE TO COME**)
- Reduced neighborhood truck traffic. (A roundabout at Boat Rock and New Hope **WILL ACHIEVE** this on the truck restricted arterial roads)
- Standards for the manner in which buildings and roads should be designed. (**ACHIEVED - THE SANDTOWN OVERLAY DISTRICT**)

This roundabout implementation would be one of the final key components of proven world class design, that I am encouraged to see GDOT embraces statewide - as evidenced in numerous successful projects including the one at SR166 and SR5. We will also need a supplemental traffic light for eastbound traffic coming around the curve as there is on Camp Creek near Welcome All.

Thank you all, for your teams continued efforts and commitment to making this key safety improvement a reality, for the Sandtown Community and those who travel through it.

Harvey Davis

1780 Versailles Drive SW
Atlanta, GA 30331

(678) 390-0097

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Department of Public Works
141 Pryor Street S. W., Suite 6001
Atlanta, Georgia 30303
Telephone: 404-612-8102
Fax: 404-730-6325

Angela Parker
Director

April 26, 2011

Brent A. Story, P.E.
Georgia Department of Transportation
One Georgia Center
600 West Peachtree Street, NW
Atlanta, Georgia 30308

RE: Lighting required for roundabout intersection project
GDOT Project STP00-0186-01(038) P. I. No. 73180 Fulton County
SR 166/Campbellton Road at Boat Rock Road and New Hope Road

Dear Mr. Story:

The above-referenced project is now in the Concept stage according the Georgia Department of Transportation (GDOT) Plan Development Process. For this project, roundabout lighting is both a necessary design component and requirement. The warranting conditions for lighting, based on the illuminating Engineering Society of North America (IESNA) and American Association of State Highway and Transportation Officials (AASHTO) guidelines would be met.

At this time, the GDOT is requesting a written commitment from the County. Fulton County is willing to share in the costs of the lighting by funding the Energy, Operation and Maintenance of the installed Lighting system along county roads. The GDOT's responsibility shall be the design and construction costs, including all materials.

Sincerely yours,



Angela Parker

Cc: Scott A. MacLean



KITTELSON & ASSOCIATES, INC.

TRANSPORTATION ENGINEERING / PLANNING

225 E Robinson Street, Suite 450, Orlando, FL 32801 P 407.540.0555 F 407.540.0550

MEMORANDUM

Date: March 3, 2011 **Project #:** 11614

To: Jeffrey W. Dyer, QK4
3169 Holcolmb Bridge Road, Suite 455
Norcross, Georgia 30071

From: Justin Bansen and Alek Pochowski

Project: Campbellton Road/Boat Rock Road/New Hope Road Roundabout

Subject: Roundabout Operational Evaluation

Kittelison & Associates, Inc. (KAI) performed a traffic operations analysis to identify expected performance for a proposed roundabout at the intersections of Campbellton Road (SR154/166)/Boat Rock Road and Boat Rock Road/New Hope Road in Fulton County, Georgia. KAI performed the analysis using provided opening year 2014 and design year 2034 traffic volumes. The purpose of the analysis is to identify the roundabout lane numbers and arrangements that would be required to provide adequate operational performance through the 2034 design year. Figure 1 displays the existing intersection. The proposed roundabout would combine the intersections of Campbellton Road (SR154/166)/Boat Rock Road and Boat Rock Road/New Hope Road, as shown in a conceptual roundabout design provided by QK4 in Figure 2.

The proposed roundabout intersections have been evaluated using two operational analysis procedures – the operational model from *NCHRP Report 572 – Roundabouts in the United States* (Reference 1) and the SIDRA Intersection analysis software. The capacity data from NCHRP Report 572 represents the only model available that is based upon U.S. specific roundabout performance data, and it is the basis for the revised roundabout operational procedure in the forthcoming *2010 Highway Capacity Manual*. The NCHRP Report 572 analysis was performed using the Georgia Department of Transportation Roundabout Analysis Tool. SIDRA Intersection is an Australian analysis tool that predicts capacity based upon Australian experience. The analysis in this report uses an adjustment factor (called an environmental factor) of 1.2, to better replicate predicted capacities in the U.S., as recommended by the developers of SIDRA.

The results of both models are provided to offer an expected range of potential performance. The NCHRP Report 572 model may be conservative for future conditions; the SIDRA model may be more optimistic than what can be expected in the United States. Therefore, the expected operations are likely to fall within the ranges reported in this memorandum. For planning purposes, a volume-to-capacity (v/c) ratio of 0.85 or less is targeted for each approach leg. However, higher v/c ratios may be acceptable for future conditions depending upon the corresponding delay and queue prediction.



Figure 1. Existing Campbellton Road (SR154/166)/Boat Rock Road and Boat Rock Road /New Hope Road Intersections

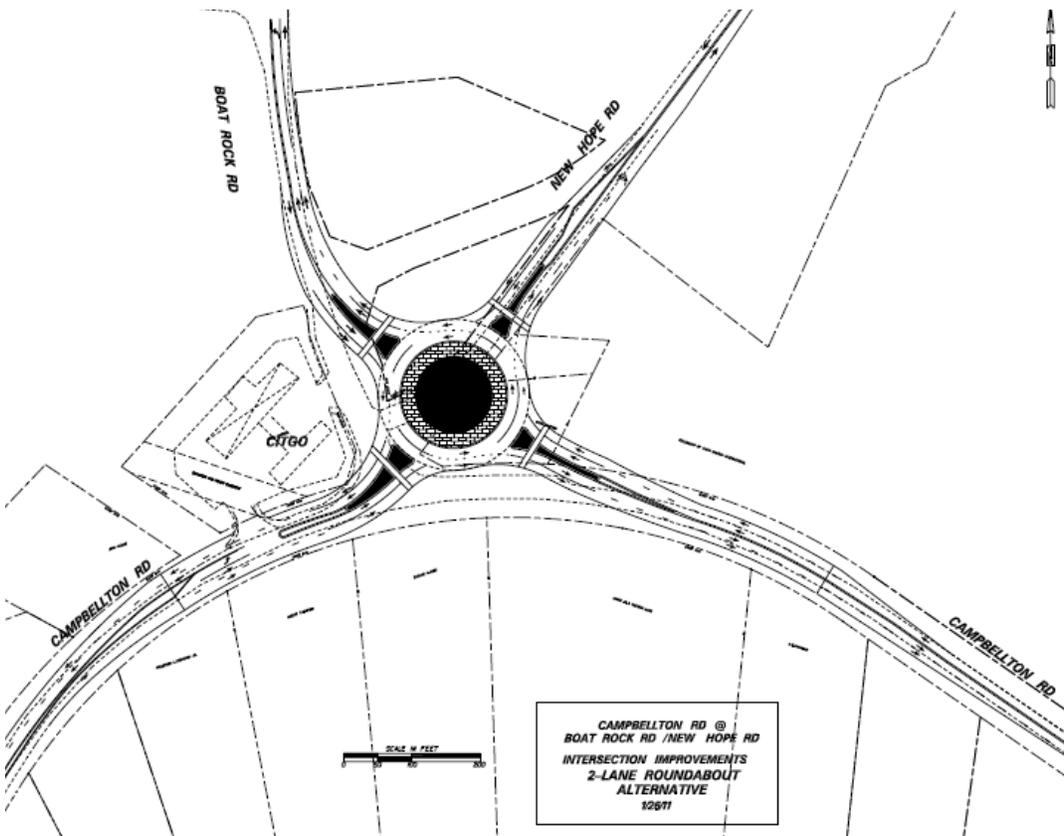


Figure 2. Conceptual Roundabout (Source: QK4)

OPENING YEAR 2014 ROUNDABOUT OPERATIONS

KAI performed an initial evaluation of a single-lane roundabout configuration for the forecast year 2014 traffic volumes. The analysis identified that a single-lane roundabout is expected to provide acceptable operations for the opening year 2014; however, the eastbound Campbellton Road approach will require an additional right-turn bypass lane to be provided as illustrated in Figure 3. Results of the operational analysis are provided in Tables 1 and 2.

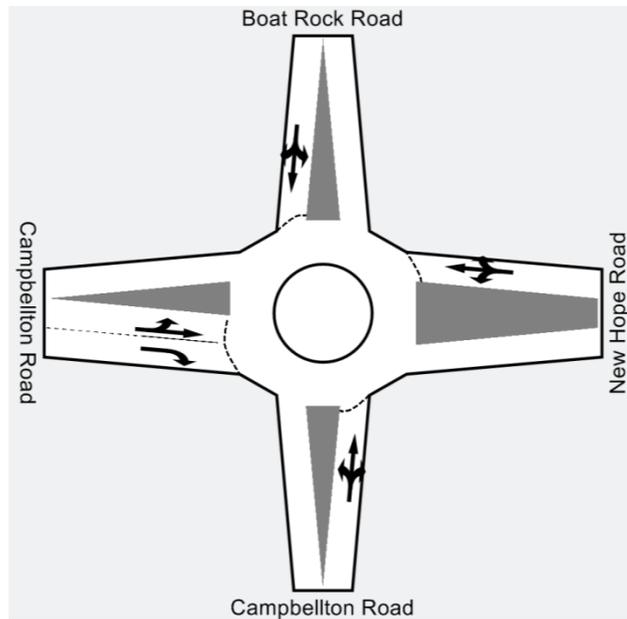


Figure 3. 2014 Roundabout Configuration

Table 1. Year 2014 Weekday A.M Peak Period Roundabout Operations

Approach	Southbound (Boat Rock Road)	Westbound (New Hope Road)	Northbound (Campbellton Road)	Eastbound (Campbellton Road)
NCHRP 572 Operational Model				
V/C ratio	0.61	0.31	0.85	0.62
Control Delay, sec/pcu	14.9	9.1	25.6	9.6
95th % Queue (ft)	106	33	264	120
SIDRA Intersection				
V/C ratio	0.58	0.30	0.77	0.51
Control Delay, sec/pcu	15.5	12.2	20.0	8.9
95th % Queue (ft)	149	56	292	120

Table 2. Year 2014 Weekday P.M Peak Period Roundabout Operations

Approach	Southbound (Boat Rock Road)	Westbound (New Hope Road)	Northbound (Campbellton Road)	Eastbound (Campbellton Road)
NCHRP 572 Operational Model				
V/C ratio	0.42	0.47	0.87	0.36
Control Delay, sec/pcu	11.0	13.8	23.3	6.1
95th % Queue (ft)	53	64	296	43
SIDRA Intersection				
V/C ratio	0.39	0.46	0.75	0.28
Control Delay, sec/pcu	12.3	17.3	14.4	9.4
95th % Queue (ft)	77	103	279	51

As summarized in Table 1 and Table 2, the northbound entry is close to the target threshold v/c ratio of 0.85 in the weekday a.m. and p.m. peak period based upon the NCHRP Report 572 operational model. The results of the Sidra Version 4 analysis show the single-lane roundabout configuration (shown in Figure 3) to operate acceptably under year 2014 traffic conditions with a maximum v/c ratio of 0.77 on the south approach.

YEAR 2034 ROUNDABOUT OPERATIONS

For the forecast year 2034 traffic conditions, KAI identified that a single-lane roundabout will not provide acceptable operations. A partial multilane configuration was evaluated that included two lanes entering, circulating, and exiting along Campbellton Road. Single-lane entries and exits were maintained on Boat Rock Road and New Hope Road as illustrated in Figure 4. Table 3 and Table 4 summarize the results of the analysis.

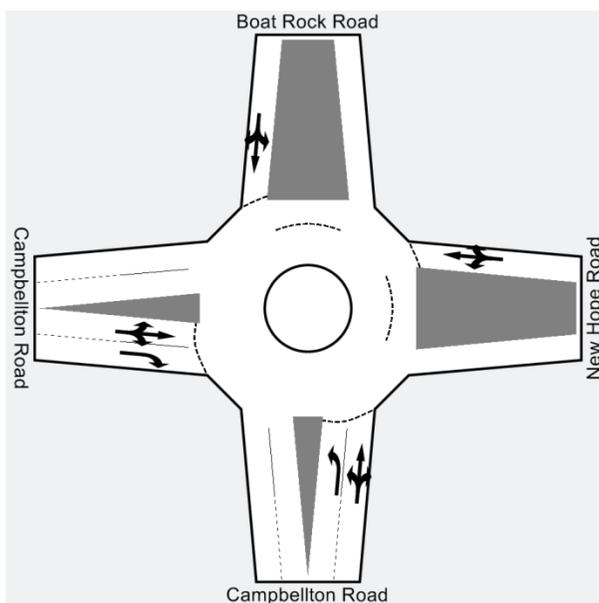


Figure 4 Year 2034 Roundabout Configuration

Table 3. Year 2034 Weekday A.M Peak Period Roundabout Operations

Approach	Southbound (Boat Rock Road)	Westbound (New Hope Road)	Northbound (Campbellton Road)	Eastbound (Campbellton Road)
NCHRP 572 Operational Model				
V/C ratio	0.91	0.47	0.73	0.94
Control Delay, sec/pcu	37.2	10.9	21.5	33.8
95th % Queue (ft)	306	63	166	385
SIDRA Intersection				
V/C ratio	0.94	0.47	0.50	0.72
Control Delay, sec/pcu	27.0	11.7	15.7	11.8
95th % Queue (ft)	394	78	132	268

Table 4. Year 2034 Weekday P.M Peak Period Roundabout Operations

Approach	Southbound (Boat Rock Road)	Westbound (New Hope Road)	Northbound (Campbellton Road)	Eastbound (Campbellton Road)
NCHRP 572 Operational Model				
V/C ratio	0.75	0.87	0.88	0.62
Control Delay, sec/pcu	25.9	43.8	27.7	12.5
95th % Queue (ft)	169	229	298	117
SIDRA Intersection				
V/C ratio	0.78	0.82	0.60	0.41
Control Delay, sec/pcu	21.1	23.3	13.1	9.8
95th % Queue (ft)	200	195	165	85

The NCHRP Report 572 operational model predicts that the eastbound Campbellton Road entry will operate with a v/c ratio of 0.94 during the weekday a.m. peak hour. However, the results of the Sidra Intersection analysis show the same eastbound entry to operate with a v/c ratio of 0.72 during the weekday a.m. peak period. Similarly, the NCHRP Report 572 operational model predicts that the north leg (southbound Boat Rock Road) entry will operate with a v/c ratio of 0.91 during the weekday a.m. peak hour. However, the results of the Sidra Intersection analysis show the north leg of the roundabout to operate with a v/c ratio of 0.94 during the weekday a.m. peak period. In both cases, the actual performance is expected to fall within the identified range.

Alternative Eastbound Entry Configuration

For the forecast year 2034 traffic conditions, KAI evaluated an alternative configuration for the eastbound entry. The eastbound Campbellton Road entry was reconfigured to operate with a single shared left/through lane entering the roundabout and with a continuous right-turn bypass lane as illustrated in Figure 5. Table 5 summarizes the results of the analysis in comparison to the configuration illustrated in Figure 4.

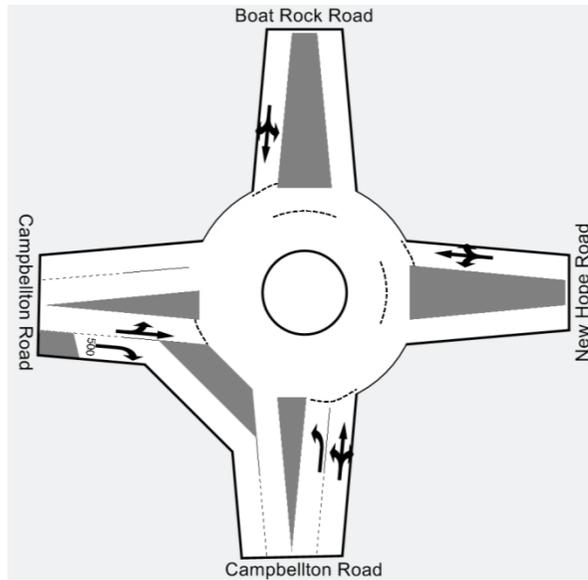


Figure 5 Year 2034 Roundabout Configuration with Continuous bypass on Eastbound Approach

Table 5. Year 2034 Weekday Eastbound Approach – Comparison of Alternatives

	2034 AM		2034 PM	
	Dual EB Right Turns (Figure 4)	Single EB Entry Lane w/ Continuous Right-Turn Bypass (Figure 5) ¹	Dual EB Right Turns (Figure 4)	Single EB Entry Lane w/ Continuous Right-Turn Bypass (Figure 5) ¹
NCHRP 572 Operational Model				
V/C ratio	0.94	0.70	0.62	0.41
Control Delay, sec/pcu	33.8	14.6	12.5	7.9
95th % Queue (ft)	385	155	117	54
SIDRA Intersection				
V/C ratio	0.72	0.62	0.41	0.37
Control Delay, sec/pcu	11.8	12.3	9.8	12.5
95th % Queue (ft)	268	178	85	69

¹Results reported reflect the left-through lane entering the roundabout. SIDRA Intersection estimates the v/c ratio for the continuous bypass lane to be 0.77 in the a.m. peak hour and 0.41 in the p.m. peak hour.

The configuration shown in Figure 5 was found to provide improved capacity for the eastbound approach during both peak periods. For the a.m. peak hour, SIDRA Intersection results indicate that either lane configuration option will provide adequate operations. However, the NCHRP 572 model suggests that the configuration with dual eastbound rights (Left/Through/Right Lane and Right-turn Only Lane) will operate near capacity during the 2034 a.m. peak hour. In the 2034 p.m. peak hour, both lane configuration options are estimated to operate acceptably.

While the use of a continuous right-turn bypass provides a slight advantage in terms of capacity, there are other geometric considerations to be taken into account as part of the lane configuration determination. Given that Campbellton Road is a two-lane roadway upstream and downstream of the intersection, the continuous right-turn bypass lane will need to be added on the eastbound entry and

then terminated on the southbound exit. This will require vehicles on the continuous bypass lane to merge with vehicles exiting the roundabout to transition back to a single lane. In order to avoid a capacity constraint on the southbound exit, the continuous bypass lane needs to be carried far enough downstream to allow adequate distance for merging with vehicles exiting the roundabout.

Another consideration is the ultimate cross-section along Campbellton Road. If Campbellton Road is eventually widened to four-lanes, the use of the configuration shown in Figure 5 (with a continuous right-turn bypass lane) would interrupt lane continuity for the two primary lanes traveling eastbound along Campbellton Road and would essentially result in a “drop” lane on the eastbound approach that may violate driver expectancy. With the dual-right turn configuration on the eastbound approach, as shown in Figure 4, the two basic through lanes would be maintained along Campbellton Road which better maintains lane continuity and avoids unnecessary lane changes upstream of the roundabout.

The use of a continuous bypass is less desirable for pedestrians due to the additional conflict points and the fact that vehicles traveling on the bypass are moving free-flow. In addition the continuous bypass lane may also create additional challenges for serving residential access on the south side of Campbellton Road in the vicinity of the intersection.

Based upon the considerations identified above, either configuration shown in Figure 4 or 5 is expected to provide adequate operations, with the use of a continuous bypass lane providing a slightly higher eastbound approach capacity. The configuration selected should consider the ultimate cross-section along Campbellton Road as well other geometric issues such as driveway access and pedestrians.

Alternative Southbound Entry Configuration

For the forecast year 2034 traffic conditions, the analysis results from both NCHRP Report 572 and SIDRA intersection showed that the southbound Boat Rock Road entry would be operating close to capacity during the 2034 a.m. peak hour. Although the results show acceptable delay, queues of 300 to 400 feet were estimated for a single-lane entry. KAI evaluated the results of providing an additional yield controlled right-turn only lane. This configuration is illustrated in Figure 6. Table 6 summarizes the results of the analysis in comparison to the configuration shown in Figure 4.

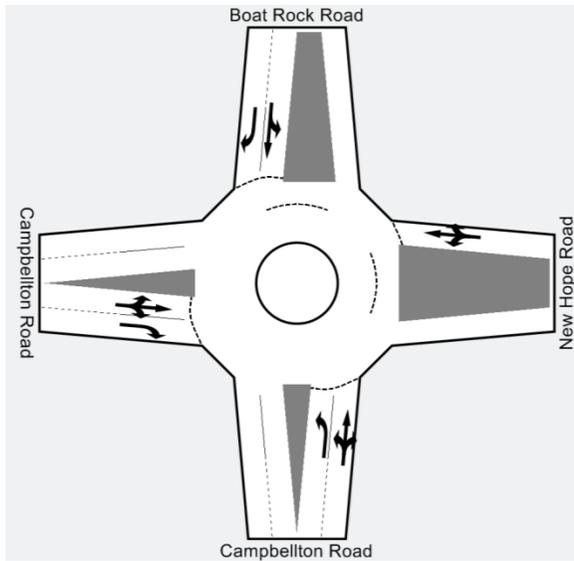


Figure 6 Year 2034 Roundabout Configuration with Continuous bypass on Eastbound Approach

Table 6. Year 2034 Weekday Southbound Approach – Comparison of Alternatives

	2034 AM		2034 PM	
	Single-Lane SB Entry (Figure 4)	One SB Entry Lane plus Right-Turn Only Lane (Figure 5)	Single-Lane SB Entry (Figure 4)	One SB Entry Lane plus Right-Turn Only Lane (Figure 5)
NCHRP 572 Operational Model				
V/C ratio	0.91	0.45	0.75	0.43
Control Delay, sec/pcu	37.2	9.4	25.9	12.5
95th % Queue (ft)	306	61	169	56
SIDRA Intersection				
V/C ratio	0.94	0.39	0.78	0.35
Control Delay, sec/pcu	27.0	10.2	21.1	11.0
95th % Queue (ft)	394	65	200	59

Based upon the results in Table 6, the addition of a second lane on the southbound approach is expected to significantly improve operational performance for the 2034 design year. In order to maintain reasonable queues on this minor street approach for the 2034 horizon year, consideration could be given to designing a second southbound entry lane. However, we recommend that the construction of the second southbound lane be deferred until the actual traffic conditions dictate the need for additional capacity on this approach, which is expected to be near or after the 2034 design year.

SENSITIVITY/DESIGN-LIFE ANALYSIS

KAI performed a sensitivity analysis to review the how long a single-lane roundabout (as illustrated in Figure 3) might be expected to provide acceptable operations. In some situations, a smaller opening year configuration will provide acceptable operations for 10 years or longer, in which case consideration may be given to phasing in construction of a more complex multilane roundabout configuration. The intent of this analysis was to review whether the ultimate configuration (shown in Figure 4) should be constructed for opening day, or whether a phased implementation should be considered for the study intersection.

For the single-lane configuration (shown if Figure 3), the results of the sensitivity/design-life analysis show that the northbound entry will have approximately two years of design life beyond the 2014 opening year. To mitigate, a second northbound entry lane is required. One option would be to provide an exclusive northbound left-turn lane and a shared through/right-turn lane. This would also require the construction of a second lane on the portion of the circulatory roadway adjacent to the east leg (westbound entry). This configuration is expected to last approximately seven years. A second option would be to use the configuration shown in Figure 4, which provides a left-turn only lane and a shared left-turn/through/right-turn lane and requires a second circulating lane adjacent to the east leg (westbound entry) and north leg (southbound entry). This configuration is anticipated to provide acceptable operations on the northbound entry through the 2034 design year.

For the eastbound entry, the configuration shown in Figure 3 is anticipated to have a life of approximately eight years. At that point the entry configuration would need to be changed to a shared left-turn/through/right-turn lane and an exclusive right-turn only lane. This would also require the construction of a second exit lane on the southbound exit as shown in Figure 4.

Based upon the results of the analysis, the single-lane configuration is not anticipated to provide sufficient design-life to justify a phased implementation. The south leg and portions of the circulatory roadway would require expansion to two lanes by approximately 2016. Additional changes to the eastbound entry and southbound exit would be required prior to 2022. Therefore, the configuration identified in Figure 4 is recommended for opening year construction. The configuration shown in Figure 6 is recommended for design purposes to also allow for expansion of the southbound approach to two lanes in the future, if needed.

RECOMMENDATIONS

Based on the results of the analysis, a partial multilane roundabout is estimated to provide acceptable vehicle operations through the design year 2034. KAI recommends the proposed roundabout be designed for the multilane configuration shown in Figure 6. The configuration shown in Figure 4 is recommended for construction in the 2014 opening year. The opening year configuration is the same as the ultimate configuration with the exception of one right-turn only lane on the southbound Boat Rock Road approach. This additional southbound right-turn only lane is not anticipated to be needed until near the design year 2034 (or later).

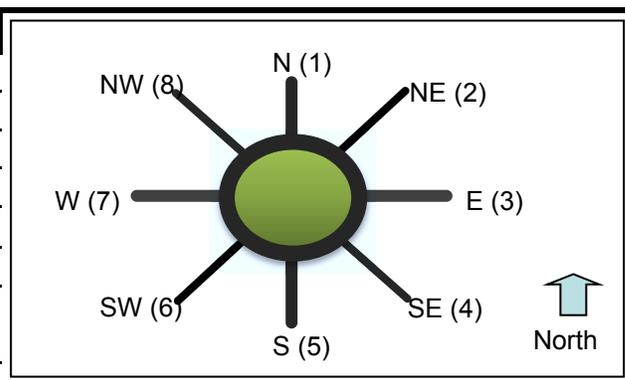
Consideration could also be given to an alternative configuration that would use a continuous right-turn bypass lane in lieu of dual right-turns on the eastbound approach. This configuration is shown in Figure 5. The continuous bypass lane is expected to provide higher capacity for the design year; however, it may offer disadvantages in terms of lane continuity, pedestrians, and driveway connections. Further review of these key issues should be undertaken as part of the design process if the County is interested in exploring this alternative configuration.

REFERENCES

1. Rodegerdts, L., M Blogg, E. Wemple, E. Myers, M. Kyte, M. Dixon, G. List, A. Flannery, R. Troutbeck, W. Brilon, N. Wu, B. Persaud, C. Lyon, D. Harkey, D. Carter. *Roundabouts in the United States*. National Cooperative Highway Research Program Report 572. Transportation Research Board, National Academies of Science, Washington, D.C., 2007.

Appendix A
2014 AM & PM
(See Figure 3)

General & Site Information	
Analyst:	ALP
Agency/Company:	Kittelson & Associates, Inc.
Date:	2/17/2011
Project Name or PI#:	11614
Year, Peak Hour:	2014 AM
County/District:	Fulton
Intersection:	Campellton Road (SR 154/166)/Boat Rock



Volumes		Entry Legs (FROM)							
		N (1)	NE (2)	E (3)	SE (4)	S (5)	SW (6)	W (7)	NW (8)
Exit Legs (TO)	N (1), vph			16		58		122	
	NE (2), vph								
	E (3), vph	68				80		167	
	SE (4), vph								
	S (5), vph	85		48					
	SW (6), vph								
	W (7), vph	168		95		416			
	NW (8), vph								
Output	Total Vehicles	321	0	159	0	554	0	288	0

Volume Characteristics	N	NE	E	SE	S	SW	W	NW
% Cars	96%	100%	98%	100%	94%	100%	94%	100%
% SU/ Bus	0%	0%	0%	0%	0%	0%	0%	0%
% Trucks/ Combin.	4%	0%	2%	0%	6%	0%	6%	0%
% Bicycle	0%	0%	0%	0%	0%	0%	0%	0%
PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
F _{HV}	0.962	1.000	0.980	1.000	0.943	1.000	0.943	1.000

Entry/Conflicting Flows	N	NE	E	SE	S	SW	W	NW
Flow to Leg # N (1), pcu/h	0	0	18	0	67	0	140	0
NE (2), pcu/h	0	0	0	0	0	0	0	0
E (3), pcu/h	77	0	0	0	92	0	192	0
SE (4), pcu/h	0	0	0	0	0	0	0	0
S (5), pcu/h	96	0	53	0	0	0	0	0
SW (6), pcu/h	0	0	0	0	0	0	0	0
W (7), pcu/h	190	0	105	0	479	0	0	0
NW (8), pcu/h	0	0	0	0	0	0	0	0
Entry flow, pcu/h	363	0	176	0	638	0	332	0
Conflicting flow, pcu/h	637	0	687	0	409	0	226	0

Results: Approach Measures of Effectiveness								
NCHRP-572 Model	N	NE	E	SE	S	SW	W	NW
Entry Capacity, pcu/h	597	NA	569	NA	751	NA	901	NA
V/C ratio	0.61		0.31		0.85		0.37	
Control Delay, sec/pcu	14.9		9.1		25.6		6.3	
LOS	B		A		D		A	
95th % Queue (ft)	106		33		264		45	
Notes:								
<p>Unit Legend:</p> <p>vph = vehicles per hour</p> <p>PHF = peak hour factor</p> <p>F_{HV} = heavy vehicle factor</p> <p>pcu = passenger car unit</p>								
Bypass Lane Merge Point Analysis (if applicable)								
Bypass Characteristics	Bypass #1	Bypass #2	Bypass #3	Bypass #4	Bypass #5	Bypass #6		
Select Entry Leg from Bypass (FROM)	W (7)							
Select Exit Leg for Bypass (TO)	S (5)							
<i>Volumes</i>								
Right Turn Volume removed from Entry Leg	527							
<i>Volume Characteristics (for entry leg)</i>								
PHF	0.92							
F _{HV}	0.94							
NOTE: Volume Characteristics for Exit Leg are already taken into account								
<i>Entry/Conflicting Flows</i>								
Entry Flow	607							
Conflicting Flow	149							
Bypass Lane Results (NCHRP-572 Model)								
Entry Capacity at bypass mergepoint, pcu/hr	973							
V/C ratio	0.62							
Control Delay, sec/pcu	9.6							
LOS	A							
95th % Queue (ft)	120							