FINAL PROJECT – CEE 463/CEE 663
GASOLINE/SERVICE STATION AT VIRGINIA/9TH

Summary of Key Dates

Date Project Assigned: September 7th, 2006
Project Report Due: December 5th, 2006
Group Presentation: 4:00 p.m., December 5th, 2006

Project Objectives

Working on a project provides the students with the opportunities of applying their knowledge and skills learned in class in dealing with real-world transportation issues. The primary objectives of this project include the following:

- Familiarize the students with the process of conducting traffic impact studies
- Apply the analysis procedures and software tools to conduct operational analyses for highway intersections and arterial streets
- Enhance the students with skills of preparing technical reports following standard formats and specifications.
- Enhance the students with skills and confidence on making public presentations

Project Description

A gasoline/service station with a convenience market is proposed at the southwest corner of N. Virginia Street/9th Avenue intersection in Reno, Nevada. The station will have 20 fueling positions. The existing motel (about 200 rooms) will be demolished to provide space for the new development. Figure 1 is the site vicinity map. Two site access driveways will be constructed, one is to the north on 9th Avenue, and the other is to the east on N. Virginia Street (right-in-right-out only). Construction of the station is planned to begin in 2008 and will be completed in 2010.

Project Scope

The City of Reno has requested a formal traffic impact study regarding the proposed development. The study should address the operational issues at the following intersections plus the site driveways:

- Virginia Street/8th Street/I-80 WB
- Virginia Street/9th Street
- 8th Street/Center Street
- 8th Street/Sierra Street
- Sierra Street/9th Street
- Center Street/9th Street
Traffic operations during weekday p.m. peak hour should be studied. In addition to the operations at each study intersections, the City of Reno also has concerns on the arterial operations along Virginia Street, where signal coordination and queuing issues need to be addressed. As a general guideline, the City requires all the intersections operating at \textbf{LOS D} or better after the proposed development. Site access driveways should be free from queuing resulted from adjacent signalized intersections. If the project involves installation of new traffic signals, the addition of the new traffic signals should not have a significant impact on the arterial operations (e.g., no queue spillback should occur between adjacent traffic signals).

\begin{figure}
\centering
\includegraphics[width=\textwidth]{Site_Vicinity_Map}
\caption{Site Vicinity Map}
\end{figure}

\textbf{Project Requirements}

A final project report must be prepared according to the specific requirements as specified at the end of this document. For students who registered at the 463 level, a group report is acceptable; however, the contributions by each individual members of the group must be clearly documented in the final report. For students who registered at the 663 level, an individual report must be submitted, although you can still work with other
members in your group on certain tasks. Any assumptions made in the analyses must be clearly described and justified.

At a minimum, the project report should include the following items:

- Title page, listing the name of the project, date, the team members who prepared the report, and any contact information.
- Executive summary, including major findings and recommendations resulted from the project.
- LOS analyses for the study intersections as defined in the project scope.
- Tables and Figures that contain important information and data related to the project.
- Appendices which would support your analyses results.

*Please keep in mind that any figures, tables, and appendices included in the report must be adequately referred in the main document.*

**Project Grading**

The entire project will be graded at 100%, which will count for 25% (30% for graduate students) toward your final grade. Specific breakdowns are shown below:

<table>
<thead>
<tr>
<th>Item</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neatness</td>
<td>10%</td>
</tr>
<tr>
<td>Organization and Writing</td>
<td>20%</td>
</tr>
<tr>
<td>Technical Contents</td>
<td>40%</td>
</tr>
<tr>
<td><em>Presentation</em></td>
<td>30%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>100%</td>
</tr>
</tbody>
</table>

*Note: The presentation will be judged by a panel of about 5 – 7 transportation professionals from both government agencies and private consulting firms.*

**Project Schedule**

The following is a recommended schedule to ensure the project to be completed in time and with good quality.

<table>
<thead>
<tr>
<th>Tasks</th>
<th>Completion Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Collection (Geometry, Signal timing, Traffic Volume, Trip Generation, Trip Distribution)</td>
<td>Tuesday, November 7th</td>
</tr>
<tr>
<td>LOS and Arterial Analyses (TRAFFIX network, Synchro, LOS Results)</td>
<td></td>
</tr>
</tbody>
</table>
Project Report Specifications

The final report should be prepared following similar formats and specifications as described in the guidelines of the Transportation Research Board for paper submission. See detailed descriptions on the following pages.
Guidelines on Paper Submission to Transportation Research Board

Manuscript Page Setup
- Margins: 25.4 mm (1 in.) top, 25.4 mm (1 in.) left; adjust settings for bottom and right margins so that the text area is not more than 165.1 mm by 228.6 mm (6.5 in. by 9 in.).
- Font (typeface): Times New Roman, 12 points.
- Numbering: Insert page numbers at upper right of each page.
- Text: 1.5 or double space
- Paragraphs: Indent first line 12.7 mm (0.5 in.); do not use an extra line space between paragraphs; do not indent first line after a subhead.
- Subheads: All subheads should be flush with the left margin, with one line space above.

FIRST-LEVEL SUBHEAD
(all capitals, boldface, on separate line)

SECOND-LEVEL SUBHEAD
(initial capitals, boldface, on separate line)

THIRD-LEVEL SUBHEAD
(initial capitals, italic, on separate line)

FOURTH-LEVEL SUBHEAD (initial capitals, boldface, on same line as text, with extra letter space between the subhead and text)*

FIFTH-LEVEL SUBHEAD (initial capitals, italic, on same line as text, with extra letter space between the subhead and text)*

Bulleted and numbered lists: Indent first line 12.7 mm (0.5 in.); do not indent for text runovers.

Table titles and figure captions:
TABLE 5 Effects of All Factors
(In insert title above the table; "Table" is all capitals; title is initial capitals; all type is boldface; extra space but no punctuation after number; no punctuation at end of title.)

FIGURE 3 Example of results.
(In insert caption below the figure; "Figure" is all capitals; caption is sentence case; all type is boldface; extra space but no punctuation after number; period at end of caption.)

References
The reference list should contain only references that are cited in the text, numbered in the order in which they are first cited.
Denote a reference at the appropriate place in the text with an italicized Arabic numeral in parentheses, e.g., (2). Do not denote text references with superscripts.
Do not cite as a reference personal communications, telephone conversations, or similar material that would not be available to readers electronically or in printed form in a library or from the originating agency. Instead, cite the unpublished work in the text and enclose the author’s name along with the term "unpublished data" in parentheses.
Do not repeat a reference in the list, and do not use ibid., idem, op. cit., or loc. cit. If a reference is cited more than once in the text, repeat the number first assigned to the reference.
Use the following content guidelines and samples in preparing reference lists:
Printed sources. Be sure that references to printed sources are complete. Include names of corporate or personal authors or editors, or both; title of article, chapter, book, or report; publisher or issuing agency; volume and issue or report number; page numbers; location of publisher; and year of publication.

TRB Publications

Book
Periodical


Government Report


Tables and Figures
All tables and figures should be inserted (embedded) in the text. Each table and figure should be given a unique title, and should be referred in the text. A table or a figure should appear no more than 1 page after it is first referred.

Tables
Tables should supplement, not duplicate, the text.
- All tabular material should be single spaced using a font (typeface) no smaller than 10 points. *Use the same font for all tables*.
- Place titles flush left to align with the left margin of the table and highlight by using boldface. Note that the word "TABLE" should be in all-capital letters; use initial capitals for the remaining words in the title.
- **Do not submit a table with more than one part.** Each part should be a single, separate table with an appropriate table number and title.
- Give each column in the table a head. [In some cases, the first (stub) column may have no head.] Place abbreviated measurement terms in parentheses under the column head. All heads should be aligned in flush left format.
- Use lowercase italic superscript letters for footnotes.

Figures
Use the following guidelines:
- Photographs should be high-resolution scans (at least 300 dpi at a size of 4in. x 5in.).
- Give each figure a caption. Place a figure caption single-spaced below each figure. If a figure contains several parts (a, b, c, etc.), cite each part in the caption and label each corresponding part on the figure using the same size type as that in the rest of the figure.
- Number figures consecutively in the order first cited in text, using Arabic numerals. Reference must be made to each figure by number at the appropriate place in the text.