

2007 Section Activities Report

Colorado – Wyoming Section

Institute of Transportation Engineers

April 2008





**Institute of Transportation Engineers
Colorado/Wyoming Section
2007 Annual Report**

Officers:

Current Officers and Committee Chairs:

President	Joe Henderson
Vice President	Craig Faessler
Secretary/Treasurer	Ben Waldman
Technical Chair	Scott Thomas
Membership Chair	Melissa Rosas
Legislative Coordinator	Gene Putman
Student Chapter Coordinator	Scot Lewis

Others:

Past President	Bill Hange
Continuing Education	Karl Packer
Newsletter Editor	Greg MacKinnon
Scholarship & Career Guidance	Scot Lewis
Awards	Dave Hattan
Website	Edward Stafford
Activities	Eric Boivin
Golf	John Seyer
Section Scribe	Curtis D. Rowe
Activities Report Coordinator	Chris Sheffer
Vendor Show Coordinator	Will Johnson

Membership:

Number	Membership Grade	Section Annual Dues Rate
<u>1</u>	Honorary	<u>\$ 12</u>
<u>60</u>	Fellow	<u>\$ 12</u>
<u> </u>	Fellow Life	<u>\$ 0</u>
<u> </u>	Fellow Retired	<u>\$ 12</u>
<u> </u>	Member 10	<u>\$</u>
<u>302</u>	Member	<u>\$ 12</u>
<u> </u>	Member Life	<u>\$ 0</u>
<u> </u>	Member Retired	<u>\$ 12</u>
<u> </u>	Associate 10	<u>\$</u>
<u> </u>	Associate	<u>\$</u>
<u> </u>	Associate Life	<u>\$</u>
<u> </u>	Associate Retired	<u>\$</u>
<u>2</u>	Institute Affiliate	<u>\$ 12</u>
<u> </u>	Institute Affiliate Retired	<u>\$</u>
<u>35</u>	Student Member	<u>\$ 0</u>
<u>13</u>	Esteemed Colleague	<u>\$ 0</u>

Section Affiliates [List Each Type]:

<u>155</u>	Local Area Affiliate	<u>\$ 12</u>
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Institute of Transportation Engineers
Colorado/Wyoming Section
2007 Annual Report

Financial:

Does your section have a Federal Employer Identification Number?

☒ Yes ☐ No

If yes, what is the number? 93-0995361

Balance of Funds on hand at the Beginning of the Reporting Period: \$20,264.37

Income for the Reporting Period:

Membership Dues \$ 4,129.00

Gross Income from Meetings \$22,920.19

Investment Income \$ 364.91

Advertising Income \$ 4,175.00

Other Principal Sources of Income (please list below):

Activities:

Golf Tournaments \$20,155.00

Ski Train \$ 3,769.25

Continuing Education \$17,060.85

Total Income: \$72,574.20

Expenditures for the Reporting Period:

Newsletter Printing/Postage \$ 75.00

Meetings \$18,400.88

Special Projects / Charitable Donations \$ 1,500.00

Awards / Scholarships \$ 2,700.00

Other Expenditures:

Activities

Golf Tournaments \$18,273.10

Ski Train \$ 3,182.00

Happy Hours \$ 263.95

Administrative Expenses \$ 2,010.09

Continuing Education \$14,842.93

2009 District 6 Meeting \$ 1,165.43

Technical Committee \$ 586.43

Total Expenditures: (\$62,999.81)

Net Income (Expense) \$ 9,574.43

Balance of Funds on hand at the End of the Reporting Period: \$29,838.76

Was there a change in the Section Bylaws during this reporting period? (If yes, please attach a copy of the new bylaws.)

☐ Yes ☒ No



**Institute of Transportation Engineers
Colorado/Wyoming Section
2007 Annual Report**

Technical Activities:

List Projects underway by title and, if available, provide expected date of completion:

A roundabout research study was initiated in 2007 by the Technical Committee with a goal to evaluate the safety at roundabouts across Colorado and create a predictive model for estimating the number of accidents given certain geometric characteristics. Another study effort will include comparing the crash frequency of roundabouts to traffic signals (a separate research effort is underway at the Colorado Department of Transportation to develop a signalized intersection safety crash prediction model).

List Projects by title which were completed during this reporting period and, if available, attach a copy of the report:

A previously initiated study of [Trip Generation for Coffee Houses with Drive-Through and Sit-Down Facilities](#) was completed last year. This paper was presented and awarded Best Paper at the Intermountain ITE Conference. In addition, it was included in the 2007 ITE District 6 Annual Compendium of papers. A copy of this paper is included in the appendix of this report.

Colorado / Wyoming Section started a monthly **Technical Interest Column** in the newsletter. This column has included short papers on [Roundabouts in the US](#) and [Ethernet Based Communications for the Transportation Industry](#). A copy of the ethernet communications article is attached to this report as an example.

The Section is continuing a trip generation study at a mixed-use development in the City of Denver. Before counts and data were obtained and the study will be completed when the site is fully occupied.

Scott Thomas is the Chair of the Technical Committee.

Legislative Activities:

The Colorado-Wyoming Legislative Committee is responsible for monitoring transportation-related policy throughout Colorado and Wyoming and reporting on matters relevant to the Section. The Committee posts a regular Legislative Update in the Section Newsletter. An example of the legislative update is contained in the April 2007 Edition of Conveyances (see attached).

The Committee may serve as a clearinghouse for technical information, helping to connect transportation decision-makers with the expertise of the Section membership on any given subject.

Gene Putman is the Chair of the Legislative Committee.



**Institute of Transportation Engineers
Colorado/Wyoming Section
2007 Annual Report**

Meetings Held During this Reporting Period:

Regular Luncheon/Seminars:

Date: 1/26/07 Location: Belmar Center, Lakewood, CO
Purpose: Annual Vendor's Show Attendance: 204

Date: 3/2/07 Location: Hilton Garden Inn, Colorado Springs, CO
Purpose: Update on US24 EA Attendance: 40

Date: 5/11/07 Location: RTD Mariposa Facility, Denver, CO
Purpose: Tour of RTD Maintenance Facility and update on FasTracks and Union Station Re-development Attendance: 66

Date: 9/28/07 Location: Embassy Suites Tech Center, Denver, CO
Purpose: Annual business meeting and swearing in officers. Presentation on Phased Record of Decision for I-25 Valley Highway EIS Attendance: 54

Date: 11/2/07 Location: Hilton Hotel, Ft. Collins, CO
Purpose: North I25 EIS Update Attendance: 59

Date: 12/14/07 Location: Marriott City Center, Denver, CO
Purpose: Annual Holiday Luncheon and Food Drive. Celebrated Section's 35th Anniversary by recognizing all Past Presidents and gave away commemorative gift. Presentation on Integrating Land Use & Transportation – Blueprint Denver Attendance: 105

Continuing Education Workshops:

Date: 4/4/07 Type: Training by Ourston Roundabout Engineering
Topic: Rodel Software Training Attendance: 18

Date: 7/17/07 Type: Webcast
Topic: Traffic Signal Change Intervals Attendance: 6

Date: 6/19/07 Type: Webcast
Topic: Signal Warrants by the Numbers Attendance: 7

Date: 10/2-3/07 Type: Software Training by PTV America
Topic: Introductory VISSIM Attendance: 12

Date: 10/4/07 Type: Software Training by PTV America
Topic: Advanced VISSIM I (Signalized Control) Attendance: 14

Date: 10/23/07 Type: Webcast
Topic: Flashing Yellow Arrow for Permissive Left Turns Attendance: 13



**Institute of Transportation Engineers
Colorado/Wyoming Section
2007 Annual Report**

Date: 11/28/07 **Type:** Webcast

Topic: National Unified Goal for Traffic Incident Management

Attendance: 8

Joint/Special Meetings:

Date: 4/13/07 **Location:** Sheraton West Hotel, Lakewood, CO

Purpose: Annual Transportation Symposium - Joint Symposium with Women's Transportation Seminar (WTS) and the Rocky Mountain Chapter of the Intelligent Transportation Society (ITSRM)

Attendance: 143

Date: 8/17/07 **Location:** Fossil Trace Golf Club, Golden, CO

Purpose: Announcement of Colorado / Wyoming Section Officer Election Results and Annual Golf Outing

Attendance: 128

Student Chapter Activities:

The University of Wyoming is an active student chapter in the Colorado/Wyoming Section with Rhonda Young serving as the faculty advisor. Student discounts are given to all students attending Section activities, regardless of their college affiliation. In July, thanks to the financial aid of the Section, four members of the UW student chapter attended the ITE District 6 Annual Meeting in Portland Oregon. Students are currently working on a variety of projects to raise funds to attend the District 6 meeting in Anaheim. Some of these include travel surveys along I-80 and a case study of the Clark Street viaduct in Laramie. The Section awarded \$2,700 in scholarships to college students in 2007.

Scot Lewis is the coordinator of scholarships, career guidance and student chapter activities.

Awards Presented During this Reporting Period:

Award Name: **Transportation Professional of the Year Award**

Recipient's Name: John La Sala, City and County of Denver

Purpose of Award: The Transportation Professional of the Year Award recognizes notable professionalism and achievement in terms of technical contributions, project implementation success, and/or service to the Colorado/Wyoming Section during the previous calendar year.

Form of the Award: Plaque and recognition at the May luncheon meeting.

Award Name: **Lifetime Achievement Award**

Recipient's Name: Alex Ariniello, LSC Transportation Consultants

Purpose of Award: The Lifetime Achievement Award recognizes continued, significant service to the transportation profession and the Colorado/Wyoming Section.

Form of the Award: Plaque and recognition at the December luncheon meeting.



Activities Summary



Introduction:

Last year, the Colorado/Wyoming Section celebrated its 35th Anniversary! Locally, Colorado and Wyoming have continued to keep a fast pace in the area of transportation. The fossil fuel industry continues to provide Wyoming with its share of business and growth. While last year saw the completion of T-REX, major Design-Build projects have continued to provide Transportation professionals with steady sources of work. Projects such as COSMIX, in the Colorado Springs area, are examples of this. In the Denver area, the Regional Transportation District (RTD) of metropolitan Denver is well underway on the study and design phases of FAS-TRACKS' 119 additional miles of transit. This has also

initiated the planning of related Transit Oriented Development around the numerous proposed Light Rail stations. As a result, the Colorado/Wyoming region has provided a wealth of opportunities for transportation professionals. The Colorado/Wyoming Section of ITE has also benefited from this trend as new voices and direction have spurred additional technical programs, innovative website design and an increase in general participation.

Officers/Membership:

The Colorado/Wyoming Section has been effective in attracting a group of diversified professionals to the Executive Committee, which consists of 17 members from the public and private sectors. Executive Committee (EC) meetings are advertised in the Section newsletter and are often attended by Section members who generate lively discussions and new ideas. This liveliness has sparked creative ideas for meeting topics, training, and career guidance.

In the last year, membership of the Colorado/Wyoming Section has grown by 11 members for a total of 568 members and affiliates. By creating additional opportunities to network through joint events with Women's Transportation Seminar (WTS) and the Rocky Mountain Chapter of the Intelligent Transportation Society (ITSRM), training sessions, and outreach to student groups, we expect our membership to continue to grow.

Finances:

The financial status of the Colorado/Wyoming Section is very solid. Our finances are actively tracked and managed by the Secretary/Treasurer. To keep members informed, monthly and year-to-date budget summaries are published in each newsletter. Our fund-raising abilities over the years have generated significant income for the Section which allows the Section to support several charities, award scholarships, and fund many technical and educational opportunities for our members.



Institute of Transportation Engineers
Colorado/Wyoming Section
2007 Annual Report

Section Meetings:

The Section meets approximately every six weeks at luncheon meetings, except from June through August. The meetings typically include time for networking and a technical presentation. A joint meeting, the Spring Transportation Symposium, is held in April of each year with the Women's Transportation Seminar (WTS) and the Rocky Mountain Chapter of the Intelligent Transportation Society (ITSRM). In 2007, the 5th Annual Symposium featured sessions on New Energy, Smart Growth and Construction Management. **The 2007 Spring Symposium raised approximately \$4800 that was split between the three organizations to fund scholarships for college students.**



Each January, the Section invites local traffic signal and signing vendors to a luncheon meeting. Vendors set up booths allowing an open house feel with plenty of interaction. This is a great opportunity for the Section to connect with vendors and learn about the latest traffic hardware technology. The attendance at this meeting was 204.

Additionally, this year the Section partnered with WTS, ITSRM, American Planning Association (APA), and Conference of Minority Transportation Officials (COMTO) to host a Colorado Gubernatorial Candidates Forum approximately six weeks prior to the November election.

Newsletter/Website:

The Colorado Wyoming Section published eight issues of our *Conveyances* newsletter over the reporting period. The newsletter is published every six weeks, 10 days prior to each Section luncheon. Since there are no luncheons from June through August, no newsletters are published during the summer months. The newsletters are published in an electronic format and are made available to the membership through the Section website. There is an average of 1,500 downloads per month of the newsletter.

The newsletter content includes the president's message, scribe's report, treasurer's report, committee reports, announcements that interest Section members, a monthly newsletter contest (entitled "Puzzle Maniac") that nets the winner a \$25 gift certificate, and employment announcements. The newsletter also includes a feature article called *Kurmudgeon's Korner*, which has been submitted by a single Section member since September 2002. With a familiar and sometimes humorous style, the article's author shares his views on current local and national issues.

In 2007 the Section made two significant additions to the newsletter. First, a Member Profile section was added that provides interviews with selected members about significant career moments and accomplishments and, on a more personal note, hobbies and interests. Second, the addition of the *Technical Interest Column* has provided a means of featuring short papers and articles on relevant technical issues. Some of these include [Roundabouts in the US](#) and



**Institute of Transportation Engineers
Colorado/Wyoming Section
2007 Annual Report**

Ethernet Based Communications for the Transportation Industry.

The Section website, <http://www.cowwite.org/>, has been updated in recent years, and is now more accessible than ever. The website, which averages 30 unique visits to the site each day, also won a District 6 award in 2005. Edward Stafford has been the webmaster since inception and was awarded the Section's Transportation Professional of the Year award for his website efforts, as well as his many other professional achievements. The website allows members to register for luncheons, training sessions, golf tournaments and any other special event as well as pay electronically through PayPal.

Legislative Activities:

Legislative activities are actively monitored by the committee chaired by Gene Putman. Recent updates have apprised Section members on budgeting challenges in Colorado and Wyoming. In Colorado, the membership was informed of the RTD's potential to privatize Fas-Tracks projects as well as HB 1229 which would increase fines for unchained trucks. A feasibility study for high-speed rail between Wyoming and Albuquerque was also up for vote in Wyoming. The committee has the potential to serve as a clearinghouse for technical information, helping to connect transportation decision-makers with the expertise of the Section membership on any subject. In 2008, this Section will include a separate page on the website that includes a monthly summary of relevant legislative activities.

Technical Activities:

In the past year, the Section has been very active in technical activities involving papers, presentations, regular and joint meetings, and continuing education programs. Numerous papers were published at ITE conferences accompanied by follow-up presentations including [Trip Generation for Coffee Houses with Drive-Through and Sit-Down Facilities](#). This paper was presented and awarded Best Paper at the Intermountain ITE Conference. In addition, it was included in the 2007 ITE District 6 Annual Compendium of papers. A copy of the paper is attached to this report.

The section is continuing a trip generation study at a mixed-use development in the City of Denver. Before counts and data were obtained and the study will be completed when the site is fully occupied.

Continuing Education Activities:

With the popularity of webcasts by ITE and other organizations, seven continuing education seminars were conducted in 2007. With the help of these sessions, local members gained knowledge on signal warrants, signal clearance intervals, flashing yellow indications, traffic incident management, Rodel roundabout analysis software, and VISSIM simulation software. The Continuing Education Committee is headed up by Karl Packer, who has been very active in increasing the quantity and quality of our educational programs.



**Institute of Transportation Engineers
Colorado/Wyoming Section
2007 Annual Report**

Student Chapter Activities and Scholarships:

The University of Wyoming is an active student chapter in the Colorado/Wyoming Section with Rhonda Young serving as the faculty advisor. Student discounts are given to all students attending Section activities, regardless of their college affiliation. In July, thanks to the financial aid of the Section, four members of the UW student chapter attended the ITE District 6 Annual Meeting in Portland Oregon. Students are currently working on a variety of projects to raise funds to attend the District 6 meeting in Anaheim. Some of these include travel surveys along I-80 and a case study of the Clark Street viaduct in Laramie. The Section awarded \$2,700 in scholarships to college students in 2007.



Social Activities:

Nearly 130 golfers participated in the Section's golf tournament at Fossil Trace Golf Club in September. The Golf Committee continues to look for new and affordable locations both north and south of Denver in response to member comments. The golf tournaments continue to provide an opportunity for ITE members to interact and socialize while enjoying some friendly competition.

Additionally, Colorado is fortunate to have the only Ski Train in the USA. By keeping dozens of engineers off the road, and hence out of their emission-producing devices, the Ski Train has become our desired mode of travel for our annual snow outing. In 2007, attendees delighted in skiing, snowboarding, snowmobiling, shopping and plenty of other social opportunities. The Annual Ski Train outing grows in popularity each year.

Awards:

The Colorado-Wyoming Section presents two awards annually – the Lifetime Achievement and the Transportation Professional of the Year. The award is presented at a section meeting, and the recipients spouse and family are encouraged to attend. Each recipient receives a suitably engraved plaque as well as the best wishes and heartfelt thanks of the section.

The Lifetime Achievement Award is presented each year in December and honors an individual, who for an extended period of time, has contributed in an outstanding manner to the advancement of the transportation engineering profession. This year's recipient – Alex Ariniello – was recognized for his service as Section President of the Colorado / Wyoming Section and his tireless efforts promoting roundabouts.

The Transportation Professional of the Year Award is presented in May and recognizes notable professionalism and achievement by a Section member during the previous calendar year. The 2007 recipient was John La Sala who was recognized for his efforts on behalf of the Section's Technical Committee and innovative work as a transportation engineer for the City and County of Denver.



ATTACHMENTS

Attachment 1 – Trip Generation for Coffee Houses with Drive-Through Facilities

Attachment 2 – Ethernet-Based Communications for the Transportation Industry

Attachment 3 – April 2007 Issue of Colorado / Wyoming *Conveyances* Newsletter

TRIP GENERATION OF COFFEE SHOPS WITH COMBINATION DRIVE-THROUGH AND SIT-DOWN FACILITIES

By the Technical Committee of the Colorado-Wyoming Section of ITE¹

Abstract. A recent trend in the development of coffee shops incorporates a drive-through facility in conjunction with the traditional sit-down coffee house. A new quandary enfolds when transportation and traffic professionals plan new stores and search for the proper category of trip generation estimates to fit this type of development. Should one use “Fast-Food Restaurant with Drive-Through Window”, a category which contains a sufficient sample of data necessary for reliability? Or, should an engineer use “Coffee/Bread/Sandwich Shop”, which appears as a subcategory of Fast-Food Restaurant with Drive-Through Window, and for which only one study has been performed?

Many people, ranging from engineers and planners to politicians and the general public, rely upon trip generation data and their resulting traffic impact studies. This diverse group of personalities, each with its own unique perspective, would benefit from more reliable estimates resulting from further data collection pertaining specifically to the new breed of coffee shop with drive-through facility.

The purpose of this study entails collection of new data on the trip generation characteristics of coffee shops with a combination drive-through and sit-down facilities. Furthermore, this study ties together two recent data collection efforts. This paper will compare and analyze subtle differences in the results, differentiating between realistic trends versus mere anomalies. The measured trip generation rates for coffee houses with drive-through facilities are presented for use by the Transportation Professional. In conjunction with this study, data was recently submitted to ITE for inclusion in a future edition of *Trip Generation*².

BACKGROUND

In March of 2006, Krager and Associates³ completed a study of six Starbucks coffee houses located along the Front Range urban areas of Colorado. All six sites included a combination of drive-through and sit-down facilities. At that time, the Technical Committee of the Colorado/Wyoming Section of ITE (COWY ITE) received multiple inquiries concerning a need for trip generation data of coffee shops with drive-through facilities. Evidencing the broad need for data, requests originated from professionals in both the private and public sectors. Following completion of their study, Krager and Associates

¹ John C. La Sala, PE, PTOE, City and County of Denver; Karl P. Packer, PE, PTOE, LSC Transportation Consultants; William A. Hange, PE, PTOE, City of Loveland; Sean Kellar, PE, City of Loveland; Joseph Cordts, PE, City and County of Denver; Kathleen Krager, PE, PTOE, Krager and Associates; Jessica L. Slaton, PE, PTOE, Carter and Burgess; David R. Woolfall, PE, PTOE, Carter and Burgess; Bill Andrews, City of Greeley; Curtis D. Rowe, PE, PTOE, Kimley-Horn; Pepper Whittlef, PE, City of Pueblo

² *Trip Generation*, 7th Edition. Institute of Transportation Engineers, 2003.

³ Krager and Associates, Inc., Starbucks Coffee House, Study of Trip Generation Rates, Colorado Stores with both Walk-in and Drive-Through Facilities. March 2006.

generously shared their study with the Technical Committee of CO/WY ITE, who built upon the data collection efforts by Krager.

In addition to the study by Krager, the Fall 2005 edition of INCITER, the newsletter of the North Central Section of ITE, contains an article by Mike Spack and Brian Bergquist⁴ which summarizes trip generation rates for eight coffee shops in metropolitan Minneapolis-St. Paul, Minnesota. The study by the North Central Section counted four sites each of shops with and without drive-through windows. All eight sites contained sit-down facilities. As shown below in Table 1, for shops with drive-through windows, the trip generation rates per 1,000 square feet of gross floor area correlated well between the two studies.

Study	AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total
INCITE, Minnesota, 2005	65	66	131	18	17	35
Krager, Colorado, 2006	59	59	118	18	20	38

Table 1: From Previous Studies, Peak Hour Trip Generation Rates per 1,000 SF GFA for Coffee Shops with Combination Drive-Through and Sit-Down Facilities. Peak hours reference peak hour of adjacent street traffic.

TRIP GENERATION MANUAL

Updates to the ITE *Trip Generation*⁵ manual occur on a cycle of approximately every five years, with the most recent revision (7th edition) in 2003. When faced with a need for data on coffee shops, a transportation professional would currently find limited information. Within the category of Fast-Food Restaurant without Drive-Through Window (Land Use # 933), one specialized land use contains two studies for Coffee Shop. Under the category of Fast-Food Restaurant with Drive-Through Window (Land Use # 934), one specialized and very broad category of Coffee/Bread/Sandwich Shop is based upon only one study. Under land use category # 935 (Fast Food Restaurant with Drive-Through Window and No Indoor Seating), there exists a specialized listing of Coffee/Esspresso Stand which also contains only one study.

When attempting to analyze a combination drive-through/sit-down coffee shop, one could possibly choose between the following categories from *Trip Generation*: Coffee/Bread/Sandwich Shop or Fast-Food Restaurant with Drive-Through Window. The first category contains only one study, presumably conducted at a combination coffee/bread/sandwich shop. Therefore, utilization of this specialized land use for a drive-through/sit-down coffee shop would be conducted with caution. Perhaps, the closest land-use category would be Fast-Food Restaurant with Drive-Through Window (Land Use # 934). However, since coffee shops typically generate more morning trips than fast food restaurants, the selection of Land Use # 934 could produce skewed results in a traffic study. Krager⁶ notes that inaccurate estimates have contributed to operational or circulation problems when a site is built. Also, questionable data has occasionally caused

⁴ Spack, Mike and Bergquist, Brian, Coffee Shop Trip Generation Study. INCITER, Volume 22, Number 4, Fall 2005.

⁵ Ibid, *Trip Generation*, 7th Edition.

⁶ Ibid, Krager and Associates, Inc.

delays in access permitting where jurisdictions require more refined data. Table 2 summarizes the data available from *Trip Generation* for similar land uses.

ITE Land Use	Daily Trips (# Studies)	AM Peak Trips	PM Peak Trips
Fast-Food Restaurant without Drive-Through Window	716 (1)	44 (2)	26 (4)
Coffee Shop	No data	73 (2)	29 (2)
Fast-Food Restaurant with Drive-Through Window	496 (21)	53 (59)	35 (110)
Coffee/Bread/Sandwich Shop	No data	183 (1)	39 (1)

Table 2: Similar land uses from ITE *Trip Generation* manual, 7th edition, showing total trips generated per 1,000 SF GFA. Number of studies are shown in parentheses.

METHODOLOGY

Because of the rapidly growing trend of combination drive-through/sit-down coffee shops, it was decided to specifically focus our study on this land use. Also, since both the Krager and INCITE studies counted land uses of this type, a more suitable frame of reference was available. Since the Technical Committee was given access to the data from the Krager study and since both parties were interested in expanding upon this study, it was agreed to use similar methodology. Measurement of additional sites would provide a validity test of the privately performed study.

All traffic entering and exiting the sites were measured during weekdays (Tuesday, Wednesday or Thursday). At a minimum, all sites were counted during the morning peak period between 7:00 and 9:00 am. Evening peak counts were collected between the hours of 4:00 and 6:00 pm. Since the peak hour of adjacent street traffic typically occurs during those hours, unless a 24-hour count of the access driveways was conducted, it was assumed that the one hour peak obtained corresponded with the peak hour of adjacent street traffic. If a 24-hour count of the site accesses was obtained, then morning and evening peak hours of the generator could be determined. The Krager study obtained counts through video taping all accesses and drive-through lanes. With the exception of one site at which a 24-hour tube count was conducted, the Technical Committee manually counted all vehicles entering and exiting the site, also differentiating between sit-down and drive-through trips. As a result, both studies reported percentage of drive-through trips in addition to entering and exiting trips.

Since the Krager study restricted their analysis to only the Starbucks brand of coffee shop, the Technical Committee hoped to diversify the array of brands. However, within the category of combination drive-through/sit-down facilities, no other brand was found along the Front Range of Colorado. Perhaps, more diverse branding exists in other regions, but other than one count taken in Chicago, Illinois, we did not have the resources readily available to scout for shops outside of our region.

DISCUSSION OF DATA AND FUTURE NEEDS

Tables 3 and 4 summarize the trip generation data for the twelve shops included in this study. Table 3 shows the location and characteristics for each site, while Table 4 summarizes the trip generation data. In Table 3, the final column differentiates between stores located in-line with other facilities such as a strip-mall configuration, versus free-standing (stand-alone) coffee shops. It should be noted that traffic was properly differentiated in all cases with counts consisting solely of trips to and from the subject site. As seen from Table 3, only site # 9 is located outside of Colorado. All counts were conducted in either urban areas outside the central business district (non-CBD), or in suburban areas. For this study, no counts were taken at stores located in rural areas. Counts from six sites were taken from the Krager study while six more sites were counted by the COWY ITE Technical Committee.

Tables 3 and 4 also represent the data which was submitted to ITE for a future edition of *Trip Generation*. The averages shown at the bottom of Table 4 are weighted average trip generation rates, calculated as specified by ITE in the *Trip Generation Handbook, 2nd Edition*.⁷ The handbook states that the standard deviation should be less than or equal to 110 percent of the weighted average rate. Per 1,000 square feet of gross floor area, weighted average rates equal 113 total AM peak trips with a standard deviation of 23 percent, and 35 total PM peak trips with a standard deviation of 33 percent. Additionally, for the two sites where 24-hour counts were conducted (sites number 1 and 10), AM and PM peak hours of the generator were submitted along with the 24-hour counts. Since valid data was available for only two sites, it is probably not considered reliable for the purposes of trip generation estimates. When less than six data points exist, the *Trip Generation Handbook* recommends usage of data with caution.

#	Street(s) or Address	City (Colorado unless noted otherwise)	Square Footage	In-line (IL) or Free Standing (FS)
1	Kipling/Florida	Lakewood	2,000	FS
2	Parker/Peoria	Aurora	1,916	FS
3	Leetsdale/Holly	Denver	1,798	FS
4	4465 Centennial Blvd.	Colorado Springs	2,616	FS
5	Pearl/84th	Thornton	1,517	IL
6	Monaco/Evans	Denver	1,465	IL
7	Wildcat/Fairview	Highlands Ranch	1,750	IL
8	Sheridan/24th	Edgewater	1,520	IL
9	7101 S. Stony Island	Chicago, IL.	2,500	FS
10	Federal/44th	Denver	1,197	FS
11	1510 W. Eisenhower Blvd.	Loveland	2,646	FS
12	4320 9 th St.	Greeley	1,500	IL

Table 3: Sites included in this study.

⁷ *Trip Generation Handbook, 2nd Edition*. Institute of Transportation Engineers, 2004.

Site #	Square Footage	Trip Generation Rate per 1,000 SF GFA							
		AM Peak Hour of Adjacent Street				PM Peak Hour of Adjacent Street			
		Enter	Exit	Total	% DT	Enter	Exit	Total	% DT
1	2,000	60	58	118	28	23	23	46	
2	1,916	63	56	120	28				
3	1,798	73	81	154	26				
4	2,616	44	49	92	44	16	20	37	51
5	1,517	40	42	81	81	11	13	24	73
6	1,465	81	76	158	61	18	25	43	64
7	1,750	77	70	147	66	17	17	34	50
8	1,520	73	73	146	63	18	18	36	54
9	2,500	33	28	60	46	14	14	28	51
10	1,197	50	67	117		22	14	36	
11	2,646	37	36	73	73				
12	1,500	83	81	164	62				
Average	1,869 SF	56.81	56.63	113.44	50.8%	17.30	18.13	35.43	55.5%

Table 4: Peak Hour Trip Generation Rates per 1,000 SF. Peak hours reference peak hour of adjacent street traffic. All data rounded off to the nearest integer. Blank cells designate an uncounted value.

Table 5 pools together all referenced data in order to provide one convenient reference. It compares the data of this study with that of the previous studies of the identical land use of combination sit-down/drive-through coffee shops. It also shows the data for similar land uses from the most recent edition of *Trip Generation*.

Source of Data (Year reported)	Average Square Footage	Land Use	AM Peak Trips (# studies)	PM Peak Trips (# studies)
ITE <i>Trip Generation</i> (2003)		Fast-Food Restaurant without Drive-Through Window	44 (2)	26 (4)
ITE <i>Trip Generation</i>		Coffee Shop	73 (2)	29 (2)
ITE <i>Trip Generation</i>		Fast-Food Restaurant with Drive-Through Window	53 (59)	35 (110)
ITE <i>Trip Generation</i>		Coffee/Bread/Sandwich Shop	183 (1)	39 (1)
INCITE, Minnesota (2005)	1,675	Coffee Shop with Sit-Down and Drive-Through Facilities	131 (4)	35 (4)
Krager, Colorado (2006)	1,885		118 (6)	38 (6)
CO/WY ITE Technical Committee (2007)	1,852		109 (6)	33 (6)

Table 5: Data comparison of Peak Hour Trip Generation Rates per 1,000 SF. All values rounded off to the nearest integer.

Table 5 clearly shows the close correlation between counts conducted at the identical land use of Coffee Shop with Sit-Down and Drive-Through Facilities. It also can be clearly seen that the existing data from *Trip Generation* differs substantially from the studies conducted solely for Coffee Shop with Sit-Down and Drive-Through Facilities. Although the independent variable is identified as square footage of gross floor area (GFA), perhaps the presence of a store rather than its size more accurately determines trip generation characteristics. Table 6 shows what happens when the factor of square footage is removed from the trip generation values.

Source of Data (Year reported)	Per store, AM Peak Trips	Per store, PM Peak Trips
INCITE, Minnesota (2005)	219	57
Krager, Colorado (2006)	223	72
CO/WY ITE Technical Committee (2007)	201	57

Table 6: Data comparison of Peak Hour Trip Generation rates Per Store. All values rounded off to the nearest integer.

During the AM peak, there is little difference in variation of total trips from the average of three studies: 6.5% for trips per 1,000 square feet, versus 6.1% for trips per store. During the PM peak, the variation is clearly higher for trips per store. The statistical significance of this difference has not been analyzed. However, this bit of study shows that trip generation rates per store show no more correlation than rates per 1,000 square feet of GFA. Also, when using 1,000 square feet of GFA as the independent variable, the standard deviations of the AM and PM peak weighted average trip generation rates were well within the ITE's recommended tolerance limit of 110 percent.

If further study is conducted on an in-depth basis, perhaps the question of the most appropriate independent variable could be clearly determined. Further speculation suggested that the number of drive-through windows could have more correlation. However, at the time of this study, no sites were identified which had more than one window while also having sit-down facilities. One site was identified with two drive-up windows, but without accommodation for sit-down patrons. If a future trend leads to development of a significant quantity of sit-down shops with multiple windows, then number of drive-up windows could be analyzed as a potential independent variable.

One element not studied in this effort was the percentage of pass-by trips. As evidenced by the tables presented in this report, coffee shops tend to attract a high percentage of morning peak hour trips. Since the nature of coffee shop patrons is such that they stop for coffee en route to work, it is likely that a large number of trips could be pass-by. Table 5.26 of the *Trip Generation Handbook, 2nd Edition*⁸ depicts data for only three espresso stands (drive-through window with no indoor seating) and shows an average pass-by percentage of 89%. Table 5.24 of the same publication shows pass-by percentages measured for 18 fast-food restaurants with drive-through window, with an average of 50%. Although one could speculate that the pass-by percentage for coffee shops with drive-through/sit-down facilities is likely at least as high as that of fast-food restaurants with

⁸Ibid, *Trip Generation Handbook*, 2nd Edition.

drive-through, future study of pass-by trips at coffee shops is needed in order to identify the appropriate percentage. Data needs for pass-by trips exist for all varieties of coffee shops with sit-down and/or drive-through facilities.

Another aspect of facilities with drive-through facilities which interests transportation professionals is queuing. Although queuing was not measured as a part of this study, it could be another area of future research. To a degree, queuing can tend to be self-regulating if drivers sense that spillback onto the street is occurring. In that case a driver may instead park in the lot and become a walk-in patron. Other times, the driver may visit a different facility rather than risk waiting in a long queue. However, in cases where a site is inadequately designed, spillback onto the street can occur, thus hindering traffic flow. In order to address this matter, it is suggested that the design incorporate sufficient parking in order to handle potential overflow situations.

CONCLUSIONS

- The need exists for trip generation data at all types of coffee shops, involving all combinations of drive-through and/or sit-down facilities.
- The study presented in this report focuses specifically upon coffee shops with a combination of both sit-down and drive-through facilities.
- Data was reported per 1,000 square feet of gross floor area (GFA), although further study is needed in order to determine the most suitable independent variable. At this time, square footage of GFA was determined to be the most likely candidate.
- Data from this study compares closely with that of two other studies of the same land use. Using 1,000 square feet of GFA as the independent variable, AM peak hour total trips between the three studies vary by no more than 6.5% from the average. PM peak hour trips also vary by no more than 6.5% from the average.
- Percentage of drive-through trips for both morning and evening peak periods are relatively consistent: 51% during the AM peak, with 56% during the PM peak hour.
- Further study is needed in order to determine the percentage of pass-by trips at coffee shops of all types of drive-through/sit-down combinations. Additionally, more study could be conducted in order to measure queuing at these facilities.
- **This study resulted in data submission to ITE for a future edition of Trip Generation. The data submitted to ITE is shown in Table 4. Traffic counts from twelve sites were submitted with an average square footage of 1,869. Trip generation rates were reported as an average per 1,000 square feet of GFA for both the AM and PM weekday peak hours of adjacent street traffic. Rounding off to the nearest integer, for the morning peak hour, the average trip generation rate of twelve sites is 113 total trips with 50% entering and 50% exiting trips and a standard deviation of 23 percent. For the evening peak hour, the average rate of eight sites is 35 total trips with 49% entering and 51% exiting trips and a standard deviation of 33 percent.**

ETHERNET-BASED COMMUNICATIONS FOR THE TRANSPORTATION INDUSTRY

By Scott G. Thomas, PE, PTOE, Apex Design

Telecommunications networks are ubiquitous in today's world, connecting computers, MP3 players, Personal Digital Assistants (PDAs), phones and televisions. Almost every person depends on networks in some way for data, video and voice telecommunications. Networking has become so commonplace in our everyday lives that we hardly ever contemplate the behind-the-scenes technology involved when we open our Outlook e-mail or access www.cowyite.org to download the monthly newsletter. The use of networks has become an important element of transportation systems with the interconnection of field devices and the active management provided by traffic management centers. This paper gives a brief look at Ethernet communications and its application to the transportation industry.

What is Ethernet?

Ethernet is a family of technology and software standards used to communicate over local area networks (LAN) and wide area networks (WAN). Ethernet is an electrical connection between devices that makes use of rapidly changing voltages (between 0 and 5 volts) to indicate 1's and 0's that are commonly used in the binary system. Using these fluctuating voltages, a stream of data passes along information between devices. For example, the transmission of traffic signal timing information between the signal and the central signal system. Ethernet can travel over copper, fiber, or through the air as radio waves.

How does Ethernet Work?

Devices connected via Ethernet communicate in short messages called packets, which are variably-sized chunks of information (formatted as frames defined by Ethernet standards). Data is transmitted in between a source and its destination and then reassembled upon arrival. Each source and destination device within the network has an Internet Protocol (IP) address. The term "protocol" refers to a set of rules that govern communications. Think of it as a language. The devices must "speak" the same language in order to communicate. The purpose of the IP address is similar to your home address; it is unique for each device within the network to ensure data gets to where it is going. Note that the data packets contain both the source and destination IP addresses to ensure data is passed to and from the intended devices.

IP addresses are organized in the form AAA.BBB.CCC.DDD. For example, to visit the ITE website you can either type in www.ite.org or type in the IP address 216.12.138.80, the address of the computer that serves the website. Of course, the name of the website is easier to remember than the IP address, so names

have become the popular method. The “AAA” and “BBB” denotes the “Class A” and “Class B” portions of the IP address that indicate the network and subnetwork, respectively. The second half of the IP address, the “CCC” and “DDD” portions of the IP address, denote the “Class C” portion of the IP address and identifies the node and device addresses, respectively.

Packets are broadcast on the local area network and all connected devices will “hear” the transmission, but devices will only accept packets that contain their IP address as the destination. The destination device (which could be a traffic signal) acknowledges the receipt of the data from the source (which could be the traffic signal system) by sending a packet back to the source IP address.

A simple analogy to help understand this process is the US Postal Service. Let’s say you were working on a large traffic study and were mailing out sections of the report as they are completed. The recipient would receive the report sections and combine them into the whole report based on the sequence of the section numbers. The report sections arrive only to the intended recipient because you used the correct mailing address, and the recipient knew you sent them because you included your return address. The recipient would use your return address to send you a postcard to let you know that he received the document.

How did Ethernet evolve in the transportation industry?

The Ethernet standard has grown to include many new technologies as computer networking evolved. In the past, the transmission of data between devices was limited by the length of the cable (because the electrical signal attenuates over distance) and the speed in which the data can be transmitted. The advent of fiber optic cabling, coupled with new high-powered, high-speed routers and switches along with better optical transmission systems, allows data to be transmitted at greater speeds over much longer distances. Now distances are measured in miles instead of feet. Also, wireless technologies allow for high-speed Ethernet-based data transmission without the need for expensive underground infrastructure. These advancements in technology lend themselves to our profession where traffic networks span across a region or the state and are often considerable distances from the local “traffic shop”. Furthermore, today’s transportation systems are nothing more than computers (much like that sitting on your desk at work), which can all be interconnected with an Ethernet-based LAN.

This situation has forged new relationships between the transportation and information technology (IT) departments. Computers are already integrated into our daily work and we rely upon IT personnel to handle our computer problems. Plus, since Ethernet-based devices use IP addresses, which are regulated by your agency’s IT personnel, transportation and IT departments need to coordinate to maintain the LAN and other system functions.

Why Ethernet?

There are several reasons transportation professionals are looking to Ethernet-based local area networks to connect to traffic field devices such as:

- Bandwidth efficiency;
- Standardization and resource sharing; and,
- Reduce reliance on telecommunications service providers.

Note that the driving factor in each case is to seek cost efficiencies over existing communications.

Bandwidth Efficiency Many agencies have been installing fiber optic cabling, which is an expensive, finite resource. Fiber strands can quickly be used up with transceivers dedicated to each individual device type. For example, each analog CCTV camera typically requires a single, dedicated strand of fiber while traffic signals and other field devices require additional fibers. By using an Ethernet LAN, all communications becomes digital allowing each field device to use less bandwidth and allows all device types to utilize the same transport thus freeing up fiber capacity, delaying the need to install more fiber.

Standardization and Resource Sharing Standardization is another advantage of using Ethernet-based local area networks and internet protocol. Other departments within agencies, such as school districts and police, may already have infrastructure in place that may support the requirements of the transportation department (and vice versa). The cost savings of “piggybacking” onto an existing network can be tremendous. Resource sharing opportunities are not limited to single agencies. The Metrowide Fiber Network is an example of multiple agency resource sharing.

Use of internet protocol opens the existing internet infrastructure as another potential communications path especially for remote traffic devices. For example, IP-based equipment can allow for the remote configuration of devices through your web browser. Remote access can also include Ethernet-based intersection detection. Intersection “snap shots” can also be viewed over through your web browser and even over the internet.

Reduce Reliance on Telecommunications Service Providers Many agencies find that leased-lines and phone drops are convenient methods to connect remote devices and, in some cases, agencies have all communications provided by a third-party. The cost for this service can sometimes represent a significant portion of the annual budget of some agencies. Of course, there is a trade off to consider between the cost of the service and the cost to support in-house talent and materials to maintain an agency-owned communications infrastructure. As mentioned above existing infrastructure already owned by the agency or use of

wireless LAN may present opportunities to reduce an agencies reliance on telecommunications service providers.

What is the future of Ethernet?

There are several agencies in Colorado that are already deploying Ethernet-based communication solutions and many more are planning deployments in the near future. Agencies such as Aurora, Boulder, Englewood, Littleton, and Loveland are already using Ethernet technology to connect with traffic devices.

As for the future of the technology, there are two major advances being made.

First, a new IEEE standard, 802.3af, provides for the standardization of electrical power over Ethernet. Power over Ethernet (PoE) allows you to power devices using Ethernet cabling either at end-span (Ethernet switch with embedded PoE technology) or mid-span (specialized patch panel devices). Sometimes this eliminates the need for a specific power drop for devices connect by the LAN.

The other major technological innovation is the increased speed. Current reports indicate that the industry is migrating towards 100 Gigabits per second (Gbps) instead of 40 Gbps. The fastest current speed is 10 Gbps. To give you a perspective, the first Ethernet application moved data at 2.94 Megabits per second (Mbps).

Applications in our industry are growing rapidly as more and more products are being hardened for use in outdoor environments that can withstand the temperature ranges in Colorado. Also, other communications companies are seeing the shift and making their equipment Ethernet-compatible. For example, Spread Spectrum radio manufacturers are making hybrid Ethernet-to-wireless solutions.

As more and more Ethernet-based products become available in the traffic industry and our comfort level with the new technology increases, the future for this form of communication looks promising.



Conveyances

INSTITUTE OF TRANSPORTATION ENGINEERS
The Official Newsletter of the ITE Colorado/Wyoming Section

April 2007
Issue # 7

Colorado/Wyoming Section Members:



Welcome to spring and a big thank you to our committee people. Special thanks to the committee which included Nate Larson, John La Sala, and Greg MacKinnon for helping put together a great ITE/WTS/RMITS Transportation Symposium.

Several people commented that the morning speakers were excellent and information about their energy concern were extremely interesting.

Concern for energy and dependence on foreign oil is something many of us have experienced since the early 1970's. There are many things we can do in our jobs every day to save fuel. From optimum intersection and roadway design to signal timing, signal systems, signal maintenance and ITS, we can save significant energy costs and delay for our customers using our transportation system. Signal timing projects have one of the highest cost-benefit ratios when it comes to transportation projects. Saving fuel is at the heart of this cost-benefit equation on these projects.

Please plan on attending the May 11th tour and luncheon in Denver. The day starts at RTD's Mariposa maintenance facility at 7th Avenue/Mariposa and the luncheon will be held across the street in the AGC Training Building (details are provided in this newsletter).

We plan on doing a summer newsletter so I will not be saying good bye until then. Thanks again to all the committee people who have helped me and made this year so rewarding for all of us. There are a number of new folks stepping up and offering to volunteer their time which is also great to see.

Thank you to those who responded to the Member Survey. Results of the survey are summarized in this newsletter. And, Scott Burger is the winner of the \$50 drawing. Congratulations!

Please join me in congratulating John La Sala as he has been selected as our ITE Transportation Professional of the Year. John has worked very hard leading the technical committee to produce technical papers for the past few years. He has also represented the Section very well in publishing and presenting these papers.

Please feel free to contact me in person, by email (hangeb@ci.loveland.co.us) or by phone (970-962-2528) or contact any of the Committee Chairs/Co-Chairs as we welcome your suggestions and your help.

See You Soon and Drive Safely,

Bill Hange
President
Colorado-Wyoming Section ITE

Upcoming Events

Luncheon

May 11, 2007

AGC Training Center,
Denver
Page 12

Other Events

June Motorcycle Ride
Colorado Rockies Game
Page 2

Inside this issue:

March Highlights	2
Committee Reports	2
Treasurer's Report	6
Kurmudgeon's Korner	8
History Column	9
Section Election	10
Luncheon Dates	12
Special Notices	18
Job Opportunities	21

5th Annual Transportation Symposium Highlights

By Curtis Rowe, Section Scribe

The 5th Annual Spring Transportation Symposium presented by the ITE Colorado/Wyoming Section and the WTS Colorado Chapter in conjunction with ITSRM (ITS Rocky Mountain Chapter) was held on Friday, April 13, 2007 at the Sheraton Denver West in Lakewood, CO. This symposium included two morning sessions and a luncheon. All proceeds from the event went to fund scholarships for ITE, WTS, and ITSRM.

The first session included a panel discussion of Transportation in the New Energy Future. The second session included three breakout sessions: *How Smart is Smart Growth: A Study of TOD*; *Construction Management: From Plans to Pavement*; and *Combating Colorado Congestion with the Four T's*.

The luncheon meeting began with CO/WY ITE Section President Bill Hange thanking and recognizing sponsors of the event. Mr. Hange then made a few announcements. These included the winner of the newsletter contest, Ms. Anna Bunce, the next ITE Executive Committee Meeting on April 19, 2007, and the golf tournament set for August 17, 2007. Immediately following were WTS and ITS Rocky Mountain announcements. Next, the luncheon speaker, Ms. Carla Perez, Senior Transportation Policy Advisor was introduced. Her presentation detailed a discussion of Transporting Colorado into the New Energy Future.

The next Section meeting is set for Downtown Denver on Friday, May 11, 2007.

The Colorado/Wyoming Section contact is Bill Hange at the City of Loveland, 970-962-2528; hangeb@ci.loveland.co.us. Also, please visit our Section's website at www.cowyite.org.



Vehicle Infrastructure Integration (VII) Suitcase Demonstration at Transportation Symposium

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Golf Committee

by John Seyer, Co-Chair

This year's CO/WY Section ITE Golf Tournament will be held on Friday, August 17th at Fossil Trace Golf Club in Golden, Colorado. Information and the registration form can be found on our Section's website at www.cowyite.org or on Page 17 of this newsletter.

With only one tournament this year, we expect to fill up the 144-player field quickly, so sign up early.

Your sponsorship of the tournament is also invited. Sponsorship information can be found on www.cowyite.org and on pages 15 and 16 of this newsletter.

Activities Committee

by Eric Boivin, Chair

We are looking to pick a Saturday in June for a motorcycle ride. If you are interested, drop me a line at ericboivin@alltrafficdata.net or give me a call at (303) 216-2439.

We are also trying to get a group together to go see a Rockies game. Currently, the plan is to go immediately after the next Executive Committee meeting on June 6th.

Let's go see a Rockies game on June 6th. Call Eric Boivin for details.

Continuing Education Committee

by Ben Waldman, Chair

It has been a few months since we have offered a webcast, so we are planning on offering the following two webcasts this summer:

- Traffic Signal Change Intervals: Tuesday, June 12, 2007 12:00 PM to 1:30 PM
- Signal Warrants by the Numbers: Tuesday, June 19, 2007 12:00 PM to 1:30 PM

Details about the cost and location for these webcast will be sent out via e-mail in late May.

The PTOE, TOPS, TSOS and PTP exams will be held in the Denver area on October, 20th, 2007. The location has not yet been determined, but it will be somewhere between Denver and Colorado Springs. Further details will be available as we receive them.

The following publications are available via the ITE Bookstore to help you prepare for these tests:

- PTOE Refresher Course Web Recordings
- PTOE, TOPS and TSOS Refresher Course Books
- PTOE, TOPS, TSOS Power Point Presentations with Instructor notes

We are considering purchasing the PTOE Power Point presentation and offering a refresher course to ITE members prior to the exam (most likely in late September or early October). We are currently looking for a couple volunteers to present this material. If you are interested, please contact Ben Waldman by e-mail at ben@lscdenver.com.

In addition, we are currently examining the possibility of offering a VISSIM training course with instructors from the software manufacturer (PTV America) in early October, 2007. PTV America already has plans to offer a two day introductory VISSIM course on October 2 and 3 and we are examining the possibility of having them offer a more advanced training course either as an add-on to their introductory course or as a separate course on October 4, 2007. The cost for the two day introductory course will be between about \$700 and the cost for the one day advance course will be about \$300. This is about half the cost you would normally pay for these courses and does not require travel or lodging. We must guarantee at least 10 participants so please contact Ben Waldman by email at ben@lscdenver.com if you are interested in signing up for either of these courses. Further details will be available as we receive them.



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Membership Committee

by Jim Hanson, Chair

Please continue to keep me informed if you have recently changed jobs, joined ITE, or joined the Colorado-Wyoming Section. The best way to update your peers regarding these changes and to ensure you will receive Section correspondence is to e-mail me a quick note (jhanson@pbsj.com). I will update the database and include the information in the following newsletter.

**PTV America
VISSIM training
may be
available for
about half the
price.**

Legislative Committee

by Lyle DeVries, Chair

Colorado Legislature

The current congressional session will adjourn May 9, with a number of items of relevance to the transportation industry making their way through Colorado's Legislative Branch. They include:

- Primary Seat Belt Law – Oft-proposed in recent years, Senate Bill 07-151 would tighten regulation and enforcement of seat belt laws.
- State Revenue Projections – State economists have been busy developing 5-year projections of state revenues. The projections are available at http://www.state.co.us/gov_dir/govnr_dir/ospb/economics/cep/2007/cep2007-03.pdf
- Land Use – Transportation and land use are well-acquainted with each other, and several land use issues are before the Legislature. Among them is HB 07-1246, which would allow local governments to make their Master Plans enforceable rather than advisory only.
- RTD – Senate Bill 251, newly introduced in mid-April, would cap RTD's privatization at 55 percent of its bus service. RTD has indicated that the bill would increase annual costs and threaten future expansion plans.

Sources: *Denver Post*; *Statehouse Report*, Colorado Municipal League

Technical Committee

by John La Sala, Chair

The Technical Committee has continued work on completing the paper on Coffee Shops with Drive-Through and Sit-down Facilities in order to prepare for presentation at the Inter-mountain Section Annual Meeting and for a poster session at the District 6 Annual Meeting.

In reference to the mixed-use project, the committee is waiting for several months after build-out of the remaining land uses before "after" counts will be measured. It is hoped that the resulting data will provide a reasonable comparison of mixed versus singular land use on the same site.

If you are interested in working with this Committee, please contact me at (720) 913-4534 or at john.lasala@ci.denver.co.us.

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Proclamation National Transportation Week – “One Nation on the Move”

With the theme of “One Nation on the Move,” May 13-19, 2007 marks the observance of the seventy-fifth annual National Transportation Week.

In 1962, then President John F. Kennedy designated this special week in the U.S. to recognize and celebrate the accomplishments of transportation professionals who keep America moving and share with the public the achievements and challenges facing the transportation industry. National Transportation Week cuts across modes, the public and private sectors and regions of the country.

This week focuses on raising public awareness of the importance of transportation, the benefits it brings to each and every person, as well as the future opportunities and challenges we face. Whether someone operates a car or rides on a bus, plane or train, every person in America is served by transportation.

The Colorado-Wyoming Section does hereby proclaim May 13-19 as National Transportation Week. We urge reflection on how transportation positively impacts today's society.

**The Technical
Committee will
present the
paper on Coffee
Shops with
Drive-Thru and
Sit-down
Facilities.**

Awards Committee

by Dave Hattan, Chair

Transportation Professional of the Year Award for 2006

John C. La Sala, P.E., PTOE

John La Sala has been selected to receive the Transportation Professional of the Year Award for 2006 based on his hard work and diligence on behalf of ITE, the City and County of Denver, and the profession. At Denver, John was recently promoted to Senior Engineer, Capital Projects Management after working five years in the traffic signal section of Traffic Engineering Services. Prior to employment with Denver, he worked for LSC Transportation Consultants.

In 2006, as an employee at Denver, among other projects, he was active in the 4-car LRT study and led the effort to re-time 90+ signals. The signal re-timing project was bounded by Colfax on the north, I-25 on the south, Logan Street on the east, and Kalamath Street on the west. It encompassed re-timings of Speer Boulevard, Broadway, Lincoln Street, Santa Fe Drive, Kalamath Street, and 6th and 8th Avenues.

He is a registered Professional Traffic Operations Engineer. A few of the accomplishments for which John is being recognized include:

- He has been the Chair of the Technical Committee since 2002. He was part of the Left-Turn Phasing sub-committee in its publication and presentation for the 2006 ITE District 6 Annual Meeting. The Technical Committee is currently examining a need to update the *ITE Trip Generation Manual* trip generation measurement at drive-up coffee shops with sit-down facilities.
- As the Activities Chair in 2001-02, he organized the first two annual ski outings.
- He also is serving as Hotel Arrangements Chair for the 2009 District 6 Annual Meeting in Denver.
- In 2006 and 2007, he was a member of the WTS committee that organized the Spring Symposium by arranging for speakers for some of the technical sessions and helping out where needed to make this one day, annual, cooperative event a success.



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- He presented a paper on traffic signalization challenges related to a proposal to run 4-car LRT consists through downtown Denver at the 2006 ITE International Technical Conference in San Antonio. At the 2004 ITE District 6 Annual Meeting in Sacramento, he presented a paper on the 2002 re-timing of 218 signals in the Denver CBD.

Please come to the May 11th Section meeting and help recognize John for his outstanding achievements.

**John La Sala
will be
recognized as
the
Transportation
Professional of
the Year for
2006.**

Treasurer's Report

by Craig Faessler,
Section Secretary/Treasurer

Account Balances as of April 20, 2007

	Amount Mar. 23	Amount Apr. 20	Difference
Checking	\$7,989.18	\$6,761.45	-\$1,227.73
Savings	\$4,373.17	\$4,380.26	\$7.09
Scholarship Fund	\$5,000.00	\$4,996.79	-\$3.21
Certificate of Deposit	\$10,000.00	\$10,000.00	\$0.00
Total	\$27,362.35	\$26,138.50	-\$1,223.85

Cash Flow Summary March 24, 2007 through April 20, 2007

Category	Amount	Note
Dues	\$12.00	
Interest	\$9.88	March
Luncheon Payments	\$598.68	March Luncheon
Total Income	\$620.56	

Category	Amount	Note
Bank Charge	\$2.00	
Administrative	\$6.00	Scholarship Fund Check Charge
Luncheon Meetings	\$1,133.24	March Luncheon
Newsletter Contest	\$25.00	March Contest
Spring Symposium	\$61.17	
Activities	\$117.60	Section Happy Hour
Technical Committee	\$499.40	Traffic Counts & Lunch Meeting
Total Expenses	\$1,844.41	

Overall Total - \$1,223.85

Budget Summary

	Approved Budget		Budget as of 4/20/07	
	Income	Expenses	Income	Expenses
Executive Committee				
Administrative		\$850.00		\$164.52
Bank Charges		\$45.00		\$19.00
Business Card Ads	\$3,150.00		\$2,925.00	
Dues-ITE Payment	\$4,000.00		\$1,274.40	
Dues-Misc.	\$50.00		\$99.00	
EC Meetings		\$700.00		\$443.17
Employment Ads	\$250.00		\$300.00	
Interest	\$50.00		\$41.59	
Lunch Meetings	\$11,812.50	\$11,250.00	\$6,707.15	\$10,480.50
Newsletter Contest		\$150.00		\$50.00
Spring Symposium	\$9,500.00	\$9,500.00		\$61.17
Vendor Show	\$8,000.00	\$8,000.00	\$11,707.41	\$9,888.39
Activities				
Charity		\$1,000.00		\$1,000.00
Happy Hour		\$500.00		\$234.00
Ski Train	\$5,600.00	\$5,624.00	\$3,119.25	\$3,182.00
Awards		\$275.00		\$60.24
Continuing Education	\$2,500.00	\$2,500.00	\$3,340.44	\$2,157.13
Golf				
2006 Fall Tournament	\$10,000.00	\$11,500.00	\$9,475.05	\$9,321.53
2007 Tournament	\$16,000.00	\$14,000.00		\$250.00
Scholarship		\$2,000.00		\$500.00
Student Chapter		\$1,500.00	\$682.00	
Technical Committee		\$500.00		\$514.37
Total	\$70,912.50	\$69,894.00	\$39,671.29	\$38,326.02

Section Member Survey

By Bill Hange, Section President

Thank you to those members who responded to the Section Member Survey. One of the goals I presented for this year was completion of a customer survey in order to check the pulse of the membership. Feedback is important to find out how members feel about the Section's work and activities. Plus this is an opportunity to collect information and suggestions for future course corrections. Throughout the year some of you have contacted me personally with ideas and suggestions outside of the survey. For example, one member suggested the Section consider preparing for the Section's 35th Anniversary next year.

Results of the survey were reviewed by the executive committee at the April Executive Committee (EC) Meeting. This review reinforced that our Section is on track in most areas. It also revealed some new ideas that may work in the future.

Scott Burger submitted one of the surveys and was the drawing winner of \$50. If you were one of the people that submitted a survey you had a 1 in 8 chance of winning! These were great odds for using a short 5 minutes of time necessary to fill out the form and provide important feedback.

The survey gave insights and showed that the Colorado-Wyoming Section is providing: important, well-read information in the newsletter; professional contacts; job opportunities; good training opportunities; and well-liked social activities. Most respondents read most if not all of the newsletter and some skimmed the articles in every issue. The ½-day seminars and web-casts were favorites of most regarding the training opportunities provided. The PTOE course and standard tests were important to a few respondents. Some members asked for more opportunities for socializing, perhaps a coffee time before the luncheon meetings. Panel discussions and technical tours were also suggested as important Section activities. Finally, it was suggested that all activities offer discounts to members vs. non-members.

At the April EC Meeting, it was noted that we were already responding directly to the suggestions. The May 11th Luncheon meeting, our final meeting before the summer break, will feature a technical tour. The PTOE test and advanced review are planned for September-October this fall.

Again, thank you to those of you who responded to the Member Survey and/or provided feedback throughout the year. Feel free to contact me or other section EC members with and suggestions for improvements.



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💧	♁	★	☼	⌘	15
13	14	20	13	?	

Newsletter Contest

by Greg MacKinnon,
Newsletter Editor

Ms. Anna Bunce was the first to solve the logic problem in March's newsletter. She earned herself a \$25 gift certificate to Lowe's.

For this issue's contest, we have a problem requiring math skills. A \$25.00 gift card to the establishment of the winner's choice will be awarded to the first person who can determine value that is missing from the matrix above. The sum of each other row and column is shown — each symbol represents one number.

Please e-mail Greg MacKinnon at gmackinnon@drcog.org with the missing value. The winner will be required to attend the next luncheon meeting to receive the prize.

**Newsletter
Contest
answers will be
published in the
next newsletter.**

Kurmudgeon's Korner #35

By Ron Hensen, Short Elliott Hendrickson, Inc.
rhensen@sehinc.com



Well, based upon the lack of response to my "straw questions" I continue to either preach to the choir or raise issues of little consequence. Even some superficial response would be a significant help to my currently unstable psyche. March had great news in the arrival of

our 12th grandchild, who was delivered early because her mother has been diagnosed with leukemia! Baby is fine, but her mom is enduring four months of chemo-therapy. We surely would appreciate your thoughts and prayers in the coming months.

In the meantime, I have continued my obsession with recent technical literature. Several issues related to public agency litigation have been the focus of some recent publications. One issue relates to whether roadway safety study documentations can be introduced in civil litigations against a public agency. Clear back in 1973, the USDOT regulations to qualify for Federal Aid funds was modified to require that each state be required to collect extensive data on vehicular crashes (regulation #152). That requirement led to plaintiff attorneys being able to introduce these required studies as evidence, indicating a history of safety problems not being addressed by the public agencies. In response, Congress, in 1987 (and revised in SAFETEA—LU), decided that such required safety studies would no longer be allowable and subject to discovery in civil litigation matters. That led to a significant drop in civil litigation claims against public agencies. However, most recently, the counter-argument has been raised and remains unresolved — can a public agency use this information to show evidence of a formal process for identifying safety issues and establishing a prioritized method of correcting them. It would seem to be a double-edged sword.

Colorado Local Technical Assistance Program (LTAP) spring news letter (http://ltap.colorado.edu/newsletter/Newsletter_Spring07.pdf) describes a recent change in the Public Utilities Commission (PUC) regulations (April 2006) regarding the division of responsibility between railroads and local agencies with regard to crossings. Specific questions should be directed to Pam Fischhaber (another one of those voices from my past) who is the Chief of Rail and Transit Safety at the PUC.

In one of my previous columns I commented

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on the immediate value of installing cable median barriers on freeway sections. The Missouri DOT has some very dramatic evidence (probably not available for litigation) that shows that, as the result of their installing 170 miles of this barrier, their cross-median fatalities dropped from 24/yr to 2/yr!

Are you ready for signalized roundabouts? Just when it appears that the roundabout is the answer to intersection safety, a recent ADA-related study on blind pedestrian access, discussed in NCHRP #3-62, notes that signalization of particularly the exiting traffic is the only way that the blind can negotiate thru these intersections. Their difficulty arises from not being able to distinguish between the sounds of circling versus exiting traffic. Such signalization is common in larger diameter roundabouts in England, but as this report notes, the geometry of the roundabouts being built (per the FHWA recommended practice) do not allow for signalization.

Finally, getting back to senior citizen drivers and my favorite topic of left turn signalization, a November 2006 study report from the Insurance Institute for Highway Safety on the accident patterns of the elderly identifies the most serious problem as intersection negotiation — particularly gap acceptance. It notes that the numbers of senior drivers is expanding rapidly. It then concludes that protected left-turn phasing and roundabouts are the most effective ways to reduce the number of seniors involved in accidents. I can't help but make a plea for more protected left turn phasing.

The Missouri DOT has installed 170 miles of cable median barrier and reduced their cross median fatalities by a factor of 12.

COWYTE Section History

By Bob Kochevar

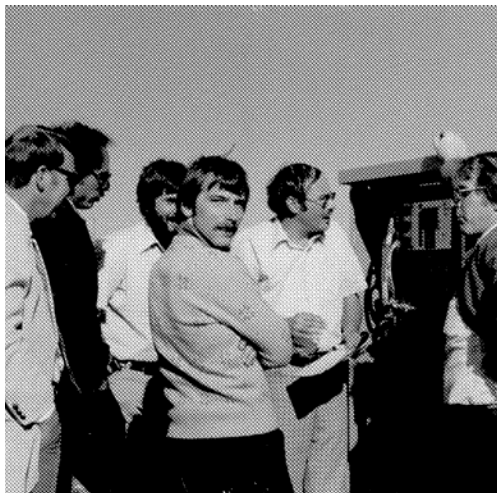
I was asked by Bill Hange to prepare a personal historical perspective on the Colorado Wyoming Section ITE. So, after reviewing some of my old files and photos, I could only reasonably piece together fragments since I became a member of this Section in 1974-75. Some of you will remember, most will probably not—so, take what you can use and discard the rest:

- Luncheon at the Tally Ho, NW corner of Wadsworth and Alameda, in Lakewood, Harry Skinner, FHWA as Section President, presiding over a group of 25-30 members.
- Ed Cleary, George Allen, George Mayfield, from the City and County of Denver; Bill Tucker, Al Pepper, George Pugh, and Betty Davey from CDOT as regular attendees at all ITE events.
- (Nearly) Annual trips to Cheyenne Mountain – NORAD facility to observe the national security considerations and standards developed to prevent ICBM attacks.
- Meetings in Cheyenne, WY, with presentations on I-80 safety and snow fence control by University of Wyoming Civil Engineering professor, Dr. Gene Wilson; and rural highway design challenges by George Dale, head of Wyoming Dept of Highways.
- Graduate Civil Engineering classes at night at University of Colorado at Denver (UCD) in the Denver Tramway building; Traffic Engineering Technology classes at Red Rocks Community College.
- One of the first Section golf tournaments was held at Welshire Golf Course in Denver (1978?) and a picnic was scheduled to follow immediately afterwards at Washington Park at the boathouse – both were washed out by a severe afternoon thunderstorm.
- Many years of annual treks to the Estes Park followed for the annual meeting and golf outing. We gathered there among the elk, and sometimes snow and sleet, after spending the night sleeping in our cars with many pounds of potato salad, beer, and other condiments, protecting the pig as it roasted overnight courtesy of the Nelson brothers.
- The construction of the I-70 Straight Creek Tunnel (later to become the Eisenhower Tunnel and the Johnson bore) nearly eliminating the exciting trip over Loveland Pass for winter travel: (“Is

there guardrail under that pile of snow?”)

- Annual journeys every May to Jackson Hole, WY, to the Intermountain Section meeting; renting the Presidential Suite at the Wort Hotel for \$75 a night — before the hotel burned down; making presentations and attending meeting sessions in the morning, and playing golf at Jackson Hole Golf and Tennis Club below the majestic Tetons until dark. (One of our longtime members got tired of the 500 mile drive from Denver, so he bought his own airplane. Now he rides his motorcycle.)
- Finally, below, you will see a photo from 1977 showing a group of Traffic Engineers from Aurora, (Hal Ruth), Littleton, (Barry-can't remember his last name), Boulder, (John Merritt), Arvada (Jim O'Grady), CDOT District 6, (Lou Lipp), and again, Arvada, (Fred Lantz). Lou Lipp is demonstrating the on-street master signal system on Santa Fe Drive – very, very high tech for it's time.

To all of you who have been part of this organization for many years, and for those who are no longer with us, I say “Thanks” for these memories and for all that I've learned from your transportation knowledge. To all of you in the “younger generation”, let's continue to work together in our chosen field as we endeavor to improve our transportation systems utilizing our collective skills within our strong Colorado-Wyoming Section.



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**Bob Kochevar
became a
member of the
Section in
1974-75**

Secretary/Treasurer for the 2007-2008

by Will Johnson, Past President

The Colorado-Wyoming Section Executive Committee has accepted two nominations for the position of Secretary/Treasurer for the 2007-2008 year, which begins in August.

The nominees have provided the following summaries. Voting is now open, please use the paper ballot provided on the following page or vote on-line at www.cowyite.org/vote. The voting deadline is June 8, 2007, at 5 PM.

Secretary/Treasurer Nominee: Ben Waldman



Ben Waldman has been a member of ITE since 1996 and is running for Secretary/Treasurer for the Colorado/Wyoming Section of ITE. Ben has been active in the Colorado/Wyoming section of ITE since his return to the Denver Metropolitan area in January, 2000 and has watched his co-

workers, Alex Ariniello and Will Johnson, go through the ranks as secretary/treasurer, vice president and president of the section. This has given him the opportunity to see the work and dedication that it takes to be successful at these positions. Ben has been the chairman of the Continuing Education Committee for the past two years and under his guidance the role of this committee has expanded significantly with webcast being offered almost monthly and more comprehensive training opportunities offered a couple times a year. In addition, Ben regularly attends the sections executive committee meetings and often gives input. He has also been active in the ITE District 6 Annual Meetings where he presented a paper in 2006 which won an award for best paper by a young professional and he is scheduled to present a paper in 2007.

Ben is a graduate of the University of Texas at Austin with a bachelor's degree in Civil Engineering, and is also a graduate of the University of Texas at Arlington with a master's degree in Civil Engineering with a transportation emphasis. He has over 11 years of transportation planning and engineering experience including over seven years with the Denver office of LSC Transportation Consultants Inc. where he is currently an Associate. With LSC he works on transportation planning projects, traffic signal designs and round-about designs. He is a registered professional engineer and certified Professional Traffic Operations Engineer.

Secretary/Treasurer Nominee: Jim Hanson



Jim Hanson, P.E. is running for Secretary/Treasurer for the Colorado/Wyoming Section of ITE. Jim has been a member of ITE since 1998 and is currently the Membership Committee Chair for the section. Prior to living and working in Colorado, Jim was an officer in the California

Central Coast Section of ITE and has experience in the roles of Secretary, Treasurer, Vice-President, and President for that section. Last year, Jim prepared a paper on prioritizing traffic signal installations that was presented at the District 6 conference in Honolulu. Jim believes his participation in ITE as a member, officer, and presenter has played a significant role in his professional development. Jim is running for Secretary/Treasurer to further his professional development and also to give back to ITE in the hopes that others will continue to find ITE membership and participation is an important component of their professional careers. Jim is excited about participating in the Colorado/Wyoming section and looks forward to contributing to the success of the 2009 District 6 meeting in Denver.

Jim is currently a Project Manager for PBS&J. He has worked for PBS&J for two years and works on a variety of projects for the Colorado Department of Transportation as well as other public agencies around Colorado. Prior to working for PBS&J, Jim was a traffic engineer for the City of Colorado Springs for two years, and before that he was the Principal Transportation Engineer for the City of San Luis Obispo, California. Jim has a bachelor's degree from the University of California, San Diego and two master's degrees from Cal Poly, San Luis Obispo.

**Be sure to
submit your
vote by
June 8, 2007 at
5 PM**



TO: SEH Inc.
Colorado Center, Tower One
Suite 6000
2000 South Colorado Boulevard
Denver, CO 80222-7938
Attn: Will Johnson

Fold ↓

OFFICIAL ELECTION BALLOT
for ITE Colorado/Wyoming Section Officers for
2007/2008

Please place a mark by the candidate of your choice, then either Z-fold, as indicated, and mail this convenient mailer (postage is not provided), fax the form to (720) 540-6801, or vote on-line at www.cowyite.org/vote by June 8, 2007, at 5 PM. Winners will be announced June 15, 2007 in a special edition of the *Conveyances* newsletter.

Remember to add postage and seal the open edges with tape if you mail this form!

PRESIDENT

Joe Henderson, P.E. _____ or

Write-in Candidate _____

VICE-PRESIDENT

Craig Faessler, P.E. _____ or

Write-in Candidate _____

SECRETARY/TREASURER

Jim Hanson, P.E. _____

Ben Waldman, P.E. _____ or

Write-in Candidate _____

VOTER VERIFICATION (Required to verify member eligibility to vote)

Voter ID Number _____ (To be supplied in the e-mail election announcement)

Signature _____

Fold ↓

MAY LUNCHEON

What: Colorado-Wyoming Section ITE Luncheon Meeting

When: Friday, May 11, 2007

Where: RTD Mariposa Facility
7th Avenue/Mariposa Street

Time: 10:30 a.m. - Tour of the RTD Mariposa Communication Center (control center for all light rail vehicles)
11:30 a.m. - Registration at AGC
12:00 p.m. - Lunch at AGC

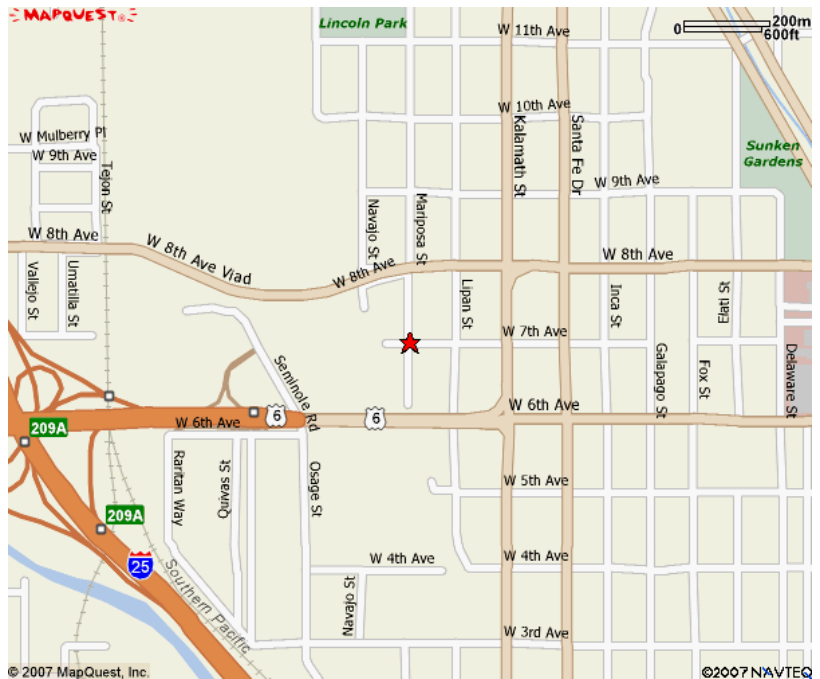
Program: FasTracks and Union Station Update

Speakers: Jerry Nery from RTD

Cost: \$25.00 for Members and \$30.00 for non-members

Menu: The luncheon will be a buffet served by Famous Dave's Bar-B-Que.

There will be a selection of meats and sides topped off by a cookie. We will have a variety of beverages to choose from including beer, soda, and iced tea to top off the barbeque.



AGC/C Training Center
[RTD Mariposa Facility across the street]

DIRECTIONS

- I-25 to Sixth Avenue
- Sixth Avenue East to Santa Fe
- Santa Fe North to 7th Avenue
- West on 7th Avenue 3 blocks to Mariposa Street
- South on Mariposa Street and immediately left into gated parking lot
- Look for green awning above the entrance

ITE Colorado/Wyoming Section 2006-2007 Meetings and Deadlines

Executive Committee Meeting	Newsletter Articles Due	Luncheon Reservations Due	Luncheon Date	Location	Business Items
04/19/07	04/20/07	05/07/07	05/11/07	Denver Metro	Professional of the Year Award, District /International Speeches
06/06/07	06/08/07	n/a	n/a	n/a	Final EC meeting for the season Special Edition of <i>Conveyances</i>

Letter to the Editor

SUSTAINABLE ENERGY (Hence Transportation)

by John La Sala, PE, PTOE

At the recent Spring Transportation Symposium, we heard a very interesting panel discussion, titled "Transportation in the New Energy Future". This panel peaked our interests because the future of energy has a strong impact upon the future of transportation and our role as planners. Nadine Lee of RTD should be commended for her fine effort in organizing this topic of discussion. As an alumnus of the Colorado School of Mines who took a few graduate level courses in Mineral Economics, I do have some strong opinions and thoughts on this subject. However, my time at Mines did not totally color my outlook all the same shade, so you may be surprised by the outcome of this article. If you were intrigued by the energy panel discussion, then read on.

Back when I started my undergraduate study at Mines, the energy boom of the early 1980's was in full swing. Oil prices were very high as was inflation. In the media, we heard predictions that oil and other energy commodities were becoming scarce and the days of cheap oil were gone for good. By 1983, oil and other mineral commodity prices had dropped like a rock. Once again, energy commodities became relatively cheap and generally stayed that way until the past few years.

The first speaker at our recent Symposium panel on energy represented the Association for the Study of Peak Oil and Gas (ASPO). Their theory of peaking oil production is based upon the Hubbert curve which was created in the 1950's. Back during the oil crisis of the early 1980's, groups similar to ASPO predicted that oil would soon run out.

ASPO bases their prediction model mostly upon *proven* reserves of conventional energy resources such as oil and gas. I will briefly explain the three classifications of mineral reserves: *proven*, *probable*, and *possible*. Each one of these classifications has to meet certain criteria because it is not good for anyone's wallet or anyone's planning to make foolish predictions. In brief, proven reserves must be known to exist with little doubt, while probable are likely to exist, and possible reserves have a probability of somewhat less than 50 percent of existing. Usually, when a company determines their reserves, they apply a factor to each classification which can vary somewhat depending upon their methodology. For example, an estimator of reserves might use 100% times proven, 60%

times probable, and 25% times possible. This makes perfectly logical financial sense which I can relate to as an engineer.

At the Symposium, we heard from George Wayne (El Paso Western Pipeline Group) that there is a dwindling presence of easy to tap conventional oil reserves in the United States, while overseas oil is in much better supply. Also, we heard that the USA is the world's most abundant producer of coal, and 250 years of *proven* reserves exist of this commodity. If one adds *probable* and *possible* coal reserves, then we are practically up to our ears in the black. What about usage of coal in vehicles? With technology advances in coal liquification, coal could power motor vehicles in the future. Whether or not that is desirable, I will discuss later in this article. (I told you that this write-up may surprise you.)

So far, the only energy commodities which I have discussed have been fossil fuels. Next, I'll talk about some of their advantages followed by some of their disadvantages. In sum total, fossil fuels are still relatively abundant, especially when we consider coal and "unconventional" fossil resources such as tar sands and oil shale. Yes, eventually, technology will be developed to feasibly utilize oil shale. Since our infrastructure is currently set up for fossil fuels, they are convenient to use.

Comments or issues expressed or discussed in letters to the editor do not reflect the opinions of the Section or the Executive Committee.

Since there is a cloud for every silver lining, I will next list some of the disadvantages. Because of political instability in many oil-rich nations, the availability of oil imports cannot always be considered reliable. But, as previously mentioned, the supply of domestic coal is vast, especially in the Rocky Mountain states. And now, the kicker: as many of us already know, the main problem with coal and other fossil fuels is their significant impact upon our environment. During the extraction phase, impacts can occur to the landscape and air quality. During the utilization process, impacts to air quality can be very significant. One of the byproducts created during utilization is carbon dioxide (CO₂), which has been linked to global warming in numerous studies.

Whether or not you believe that global warming is real, there is a large and growing contingent of scientific research that supports this theory. In fact, the support is much larger than that for the theory of Peak Oil. The United Nations (U.N.) plans for future needs in humanitarian aid and estimates global-

(Continued on page 14)

(Continued from President's Message on page 13)

scale political likelihoods. The U.N. tends to buy the global warming theory, but uses predictors of fossil fuel supply and price other than that of ASPO. In an article published by Reuters from early this year, I read that the U.N. uses an estimated 2020 oil price approximately equivalent to that of the current price adjusted for inflation (i.e., \$60/bbl which should then be factored up to 2020 costs).

At the Spring Transportation Symposium, Terry Penney from the National Renewable Energy Laboratory had some interesting ideas. He spoke about a projected increase in the usage of electric vehicles which charge at night. This results in the movement of the polluting source from the roads to power plants. This evolution in technology should please the NIMBY folks. But, let's look at the energy/pollution picture since that is the focus of this discussion. Some energy will be saved because of net efficiency gain through economies of scale resulting from the differential in centralizing energy production. However, undoubtedly it will be necessary to produce significantly more energy at the power plants themselves, thus negatively impacting the inhabitants located in the vicinity of a generation plant. Currently, most power plants are fired by natural gas or coal. In Colorado, a voter referendum has catalyzed Xcel Energy to accelerate their wind farm production. Because the production of wind energy does not create harmful byproducts, it is a much cleaner source of energy than fossil fuels.

This brings this article to an important point. Non-polluting energies are the key to a *sustainable* energy future which the Earth can support. In addition to wind, solar energy falls into this category of clean, renewable energy. Depending upon future technology development, hydrogen could become a viable and low-polluting source. It will be these types of development in technology which save our planet. Also, if technology advancement enfolds in significantly reducing pollution from fossil fuels, then they could become more sustainable. Currently, it seems quite possible that for a significant period of time, energy from wind and the sun will far outweigh fossil fuels in the category of Earth-friendliness. However, one cannot fully predict the evolution of new technologies in any field, whether that field is transportation, energy, or anything else.

So, in light of this synopsis, what is our best path? I have one closing thought on the matter of energy, and this involves government regulation. Regulation is often used to encourage desired outcomes while discouraging undesired behavior. A regulation strategy for a *sustainable* future should strongly con-



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sider taxation of carbon emissions from power plants. As a means of seeking compliance with the Kyoto Protocol for greenhouse gas reduction, this strategy is currently employed in some European countries who directly tax the energy utility. Through taxation of emissions, industry will be provided incentive to discover more efficient means of reducing pollutants, whether through use of a higher percentage of alternative fuels as is actively unfolding in the state of Colorado, or through solving the riddle to harness fossil fuels in a cleanly manner.

What does all of this mean for transportation? Since a primary source of transportation funding is derived from the gasoline tax, what happens as we move away from consumption of gasoline? Unless new tax sources are utilized in a changing energy environment, it is obvious that our tax revenues for transportation will continue to diminish. Does this mean that we should push for continued reliance on fossil fuels to power motor vehicles? Because of the dire need to reduce carbon emissions in order to protect our planet, it is this author's opinion that we should instead push for creation of new types of funding mechanisms. Tolling provides a direct charge upon users of the transportation system. However, because it seems impractical to toll every mile driven, this may only provide a partial solution. Perhaps, energy consumption of all types should be taxed a small fee to provide for transportation funding? Since we are already seeing the impacts of higher fuel efficiency upon tax revenue, a revision in the funding mechanism is in dire need. And, remember that reduced fuel consumption benefits our planet which benefits us and future generations. Therefore, the need for new types of funding seems imperative.

April 23, 2007



2007 ITE Golf Tournament Sponsorship Request

Planning is now underway for the 2007 ITE Colorado/Wyoming Section's annual golf tournament. The tournament will be held **August 17th at Golden's award winning Fossil Trace Golf Club** with a 7:30 AM shotgun start. [Click here](#) for information on registration for the tournament, and to access the sign up sheet. The Golf Committee anticipates that the tournament will have maximum attendance since only one tournament is planned this year at a premier local course.

Contributions from tournament sponsors are used to offset expenses and provide prizes and beverages for participants. Last year firm contributions ranged from \$200-\$400, but any amount or (appropriate) gift item is appreciated. In recognition of your contribution, your company's name will be displayed at the tee boxes and recognized at the tournament luncheon as well as in the ITE newsletter.

For our 2007 tournament, Fossil Trace will be equipped with brand new golf carts with GPS to add to the tournament experience. Tournament entry will include green fees, carts, range balls, and tee gifts. Tournament sponsors will have the opportunity to advertise during the tournament on Fossil Trace's GPS system (contact Adam Finch at 303-277-8751 or afinch@cityofgolden.net for more information).

[Click here](#) for a Tournament Sponsorship Form. Please return the Tournament Sponsorship Form with your check to identify the amount of your sponsorship. We would appreciate receiving your check by July 6, 2007. Please make the check payable to: **I.T.E. Colorado/Wyoming Section** and send it to:

**Craig Faessler
City of Littleton
2255 W. Berry Avenue
Littleton, CO 80165
Ph. (303) 795-3863**

For additional information on registration, please contact Craig Faessler at cfaessler@littletongov.org or Joe Hart at jhart@deainc.com.

Thank you for your continued support in making the annual ITE Golf Tournament a great success!

2007 ITE GOLF TOURNAMENT

Sponsorship Form



Golf Tournament Sponsorship*	\$ _____
Non-monetary Contributions (please list below) _____ _____ _____	

*Please make all checks payable to: ITE Colorado/Wyoming Section

Name: _____

Company: _____

Address: _____

Return to: Craig Faessler
City of Littleton
2255 W. Berry Avenue
Littleton, CO 80165

Please return by July 6, 2007

2007 ITE Colo/Wyo Section Golf Tournament

DATE: Friday, August 17, 2007
TIME: 6:00–7:00 AM Registration
 7:30 AM Shotgun Start
COST: \$120 (includes)
 Greens Fee, Range Balls
 Golf Cart, Lunch and Prizes

COURSE: Fossil Trace Golf Club

FORMAT: Four Person Scramble

1. Companies reserving blocks of players may only reserve one foursome of unidentified players.
2. Please provide the name, firm, telephone, email address, and handicap of each player signing up.
3. If handicap is not known, average score per 18 hole round is acceptable. Please be honest. We promise not to divulge to others.
4. The tournament is limited to the first 144 paid players. With only one ITE tournament this year we expect it to fill up quickly, so sign up early.



Please Note:

**PAYMENT FOR EACH MEMBER
 OF A GROUP MUST BE
 RECEIVED BEFORE THAT
 GROUP WILL BE ENTERED IN
 THE TOURNAMENT!**

****Payment Information****

Make all checks payable to:
ITE Colorado/Wyoming Section

Return the ENTRY FORM
 with \$120 per player NO LATER
 THAN Friday, July 6, 2007

SEND TO: Craig Faessler
 City of Littleton
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 Littleton, CO 80155

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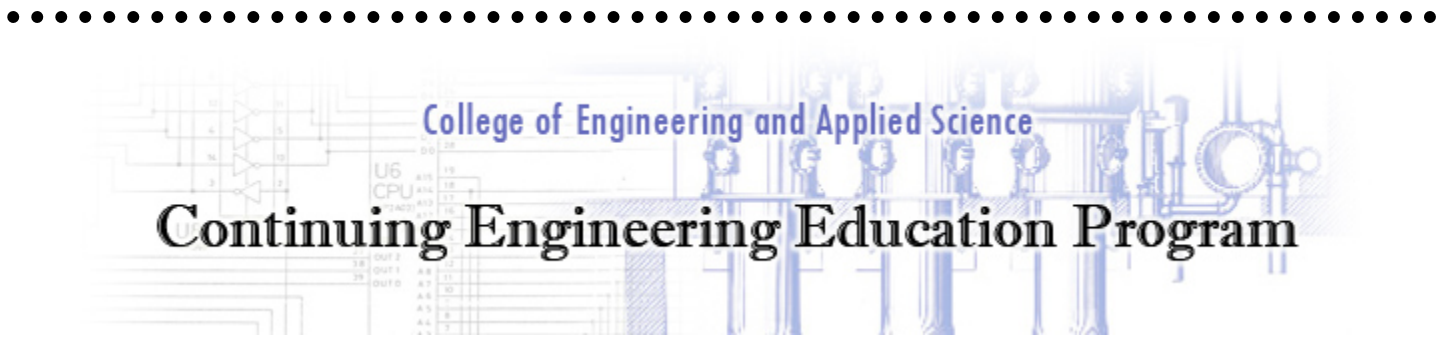
YOUR SINGLE, TWOSOME OR THREESOME AND WE'LL FILL OUT YOUR FOURSOME

DETACH HERE

NAME	FIRM	TELEPHONE	EMAIL ADDRESS	HANDICAP

Questions about the tournament or sponsorships?

Contact: Joe Hart (jhart@deainc.com) or Jon Blake (jblake@deainc.com) at 720-946-0969



College of Engineering and Applied Science

Continuing Engineering Education Program

Website: www.cudenver.edu/engineer/cont

Call 303-556-4907

Or Toll Free 1-877-859-7304

Fall Semester

July - December 2007

F.E. and P.E. Refresher Courses

Professional Development/Non-Credit

FE and PE Examination Refresher Course: Review of Undergraduate Mathematics for Engineers and Scientists

Course Description

NCES 8090. This course is a review of undergraduate university mathematics taught in the engineering and science curriculum. The course will start with a review of algebra, geometry, and trigonometry required for calculus. Next, differential and integral calculus will be studied, followed by vector algebra, vector calculus, complex variables, and linear algebra. The course finishes with an examination of ordinary differential equations. The emphasis will be on working problems in each of these topics rather than a review of theory. The goal is to review the applications of mathematics in engineering and physical sciences.

Dates: Tuesday and Thursday evenings, July 17, 19 and July 24, 26, 2007

Times: 6:00 p.m. to 9:00 p.m.

Location: Auraria campus in Downtown Denver

Cost: \$325 includes instructor notes. Registrations received July 10, 2007 or later are assessed a Registration Late Fee of \$35. Course cost plus fee is \$360.

CEUs: The course carries 1.2 Continuing Education Units (CEUs). Students who attend at least three of the four sessions earn a passing grade and are awarded a *Certificate of Completion*. (No academic degree credit(s) are earned, only CEUs.)

Fundamentals of Engineering (FE) Examination Refresher Course

Course Description

NCES 8030. Designed for those who need an advanced review before taking the National Fundamentals of Engineering (FE) Examination, this course offers 44-hours of intense instruction. Aimed at covering the morning session of the exam and the general section in the afternoon, each of the eleven sessions deals with a different examination subject area. Additionally, a different instructor drawn from the University faculty and private industries conducts each session.

Dates: Saturdays, July 28 - October 13, 2007

Times: 8:30 a.m. to 12:30 p.m.

Location: Auraria campus in Downtown Denver

Cost: \$525; review course only. Students are responsible for the purchase of the text. Registrations received July 21, 2007 or later are assessed a Registration Late Fee of \$35. Course cost plus late fee is \$560.

CEUs: The course carries 4.4 Continuing Education Units (CEUs). Students who attend at least nine of the eleven sessions earn a passing grade and are awarded a *Certificate of Completion*. (No academic degree credit(s) are earned, only CEUs.)



College of Engineering and Applied Science

Continuing Engineering Education Program

Professional Engineer's Examination Refresher Course for Civil Engineering

Course Description

NCES 8040. Designed for those who need an advanced review before taking the National Principles and Practice of Engineering Examination for civil engineering, this course offers 40-hours of intense instruction. Aimed at covering the morning session of the exam and the general section in the afternoon, each of the ten sessions deals with a different examination subject area. Additionally, a different instructor drawn from the University faculty and private industries conducts each session.

Dates: Saturdays, August 4 - October 13, 2007

Times: 8:30 a.m. to 12:30 p.m.

Location: Auraria campus in Downtown Denver

Cost: \$525; review course only. Students are responsible for the purchase of the texts. Registrations received July 28, 2007 or later are assessed a Registration Late Fee of \$35. Class cost plus fee is \$560.

CEUs: The course carries 4.0 Continuing Education Units (CEUs). Students who attend at least eight of the ten sessions earn a passing grade and are awarded a *Certificate of Completion*. (No academic degree credit(s) are earned, only CEUs.)

Professional Engineer's Examination Refresher Course for Civil Engineering: Boot Camp

Course Description

NCES 8020. This intense 40-hour course is a review of subject matter related to the National Principles and Practice of Engineering Examination for civil engineering. Boot Camp is fast-paced and focused on problem-solving with sample test questions from Michael Lindeburg's *Practice Problems for the Civil Engineering PE Exam*. This course is designed for students who have already begun a thorough review of civil engineering fundamentals and need an accelerated practice session. A different instructor drawn from University faculty and industry conducts each topic.

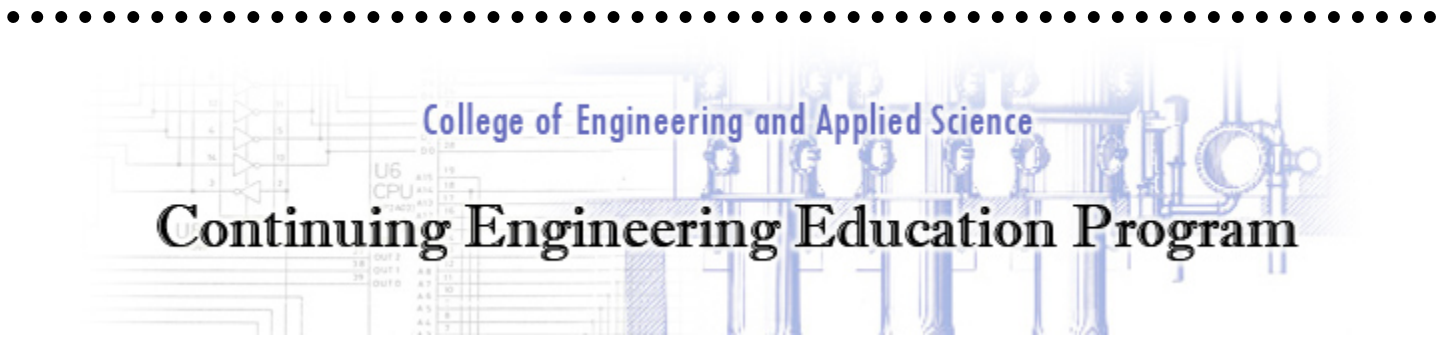
Dates: Thursdays, Fridays, and Saturdays: September 27, 28, 29 and October 4, 5, 6, 2007.

Times: Thursday sessions are scheduled from 1:00 p.m. to 5:00 p.m., and Friday and Saturday sessions are scheduled from 8:00 a.m. to 5:00 p.m.

Location: Auraria campus in Downtown Denver

Cost: \$525; review course only. Students are responsible for the purchase of the texts. Registrations received September 20, 2007 or later are assessed a Registration Late Fee of \$35. Course cost plus late fee is \$560.

CEUs: The course carries 4.0 Continuing Education Units (CEUs). Students who attend at least eight of the ten sessions earn a passing grade and are awarded a *Certificate of Completion*. (No academic degree credit(s) are earned, only CEUs.)



College of Engineering and Applied Science

Continuing Engineering Education Program

Civil Engineering/Transportation

Professional Development/Non-Credit

Explicit Consideration of Safety in Highway Design

Course Description

NCES 8291. This hands-on, six-week course offers a methodological foundation and an analytical framework for the explicit consideration of safety in geometric design of highways. It provides a practical approach to solving a complex problem of road safety by integrating elements of geometric design, traffic operations, statistics, and risk analysis. Students taking the course gain a comprehensive understanding of the relationships between road safety and geometric design, safety performance of various roads and junctions, principles of diagnostics and pattern recognition, benefit cost analysis, and optimization strategies. Throughout the course, numerous real life case histories illustrate the application of the introduced concepts.

Course Details

Dates: Tuesday evenings, October 9 - November 13, 2007

Times: 6:00 p.m. - 9:00 p.m.

Location: Auraria Campus in Downtown Denver

Cost: \$550 includes instructor notes. Registrations received October 2, 2006 or later are assessed A Registration Late Fee of \$35. Course cost plus fee is \$585.

CEUs: The course carries 1.8 Continuing Education Units (CEUs). Students who attend five or more of the six sessions earn a passing grade and are awarded a *Certificate of Completion*. (No academic degree credit(s) are earned, only CEUs.)



JOB ANNOUNCEMENT

Job Title: Director of Transportation Department
Annual Salary Range: \$83,924 - \$120,851

Applications will be accepted until May 16, 2007.

Boulder County is a progressive community that encompasses over 740 square miles, is home to nearly 300,000 residents, supports an annual budget of \$280 million, and includes some of the most diverse, natural landscapes and smart-growth development along the Front Range. Our County's leaders and employees have long held a commitment to being stewards of our land, environment and community. From visionary open space, land use and sustainability policies to forward-thinking public service programs, our county government helps foster a vibrant, healthy and active community. As individuals and an organization, we value and respect diversity, striving for a high quality of life for all employees and residents. Our policies and practices reflect our dedication to providing the very best in public service.

Position Description

The Boulder County Commissioners are hiring a **Director of Transportation** to lead the County's transportation engineering and maintenance functions, as well as the planning and development of multi-modal transportation system programs. The Department includes Planning, Engineering, Road Maintenance and County Wide Fleet Maintenance divisions. The Transportation Department is comprised of 95 FTE employees, and administers an annual budget of \$17 million. The Director is responsible for planning, directing and evaluating the activities of the divisions, including alternative transportation functions, through division managers; providing leadership in planning and developing multi-modal transportation system to increase the mobility options of the traveling public; developing and implementing the department's operating policies and procedures under the County's vision of public service, sustainability and collaboration; directing and coordinating division planning in compliance with County goals and objectives; representing the County in matters relating to transportation; performing related duties as required.

Qualifications

The ideal candidate will hold a Bachelor's degree in Public Administration, Civil Engineering, Planning or related field with a minimum of five years of professional transportation management experience, or any equivalent combination of education and experience.

Commitment to public service with an extensive knowledge of management principles and theories, and the proven ability to effectively motivate and reward employees is required. The ability to work effectively with other internal County departments, agencies, citizen groups and the public is expected.

Job offer is contingent on passing a thorough background investigation.

Application Process

A cover letter stating interest in this position, a resume and a County application must be completed. Apply to Boulder County Human Resources, P.O. Box 471, Boulder, CO 80306; at the Courthouse East Wing at 2025 14th Street, Boulder, by fax 303-441-3494 or apply on line at www.co.boulder.co.us. All new employees and rehires will be required to provide documentary proof of their eligibility for employment. Job line 303-441-4555 extension: 98035.

Deaf and hard of hearing assistance, call Relay Colorado 1-800-659-2656.

Boulder County is a public employer; therefore all applications are public information.

Boulder County is an Equal Opportunity/Affirmative Action Employer

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MESA COUNTY

General Employment ♦ Position Announcement

POSITION: Transportation Planner II
DEPARTMENT: Regional Transportation Planning Office
HOURS: Monday – Friday, 8:00 a.m. – 5:00 p.m.
HIRING RANGE: \$3,671.56 to \$4,222.29/month
CLOSES: 5:00 p.m., Friday, May 11, 2007

JOB SUMMARY:

This position provides professional services in transportation planning including traffic engineering expertise, review of applications for road access permits, administration of the Transportation Impact Fee (TIF) program, and preparation of long-range transportation planning.

ESSENTIAL JOB FUNCTIONS:

Under general direction and in coordination with the Mesa County Planning and Economic Development Department and the Mesa County Public Works Department, provides transportation planning and traffic engineering expertise for safe and efficient development of the Mesa County transportation system.

Reviews and advises land use applicants on proper access planning, roadway development and transportation related permit processes. Presents traffic, access and safety recommendations to the Mesa County Planning Commission and the Board of County Commissioners in the development approval process.

Administers the Mesa County Road Access Policy including the review of applications for and issuance of the *Notice of Intent to Issue a Road Access Permit* (NOI).

Administers the Transportation Impact Fee (TIF) program. This position calculates Transportation Impact Fees, maintains a database of fee collections, makes recommendations for amendments to the Impact Fee regulation and updates the TIF fee schedule on an annual basis as provided for in the TIF regulation.

Assists in the preparation of long-range transportation plans for the Grand Valley Metropolitan Planning Organization (MPO) and the Grand Junction/Mesa County Transportation Planning Region (TPR).

Works as part of the RTPO team to properly service our customers.

Performs other duties as assigned.

REQUIRED EDUCATION/EXPERIENCE:

Education and Experience:

Bachelor's degree from a four-year college or university in planning, engineering or related field and five (5) years of progressively responsible related experience; OR

Any combination of education, training and experience which provides the required knowledge, skills and abilities required for the job.

Licenses and Certifications:

Valid Colorado Driver's License

TO APPLY:

Submit completed Mesa County Application with cover letter/resume to Mesa County Human Resources, P.O. Box 20,000-5021, Grand Junction, CO 81502-5021. **Applications must be received by 5:00 p.m., Friday, May 11, 2007.** FULL job postings and applications available at 544 Rood Avenue or online at www.mesacounty.us/hr/employmentopportunities.aspx. EOE/ADA

2006—2007
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