

**UNIVERSITY OF WYOMING ITE STUDENT CHAPTER  
DISTRICT 6 STUDENT DATA INITIATIVE  
ABSTRACT AND DATA**

**Trip Generation and Queuing Data for Coffee Shops with Drive-Through Service**

**I. Data Collection Abstract**

There has been a recent rise in the construction of coffee shops with traditional sit-down services as well as attached drive-through facilities. A few trip generation studies on this type of facility have recently been completed but more are needed to provide statistical confidence in the data. In addition, queuing information at the drive thru facility would be beneficial. This data initiative application obtained trip generation and queue data for three coffee shop locations with attached drive-through services located in northern Front Range region in Colorado. The students worked with ITE members in the Colorado-Wyoming Section to determine the location of these facilities and to help with obtaining site permission for data collection. Data came from both manual observation periods of as well as data from automatic traffic counter equipment.

**Project Management**

The project team consists of the following persons:

| <i>Team Member and Title</i>  | <i>Team Responsibilities</i>                   | <i>Address and Phone Number</i>   | <i>E-Mail Address</i>  |
|---|--|---|--|
| Michelle Edwards<br>University of Wyoming ITE Student Chapter President   | Student Project Manager (Graduating Dec. 2008) | University of Wyoming<br>Dept. of Civil and Architectural Engineering<br>1000 E University Ave., Dept 3295<br>Laramie, WY 82070<br>(307) 766-2390 | <a href="mailto:MEdwards@uwyo.edu">MEdwards@uwyo.edu</a>               |
| Rhonda Young<br>University of Wyoming ITE Student Chapter Faculty Advisor | Project Advisor                                | University of Wyoming<br>Dept. of Civil and Architectural Engineering<br>1000 E University Ave., Dept 3295<br>Laramie, WY 82070<br>(307) 766-2184 | <a href="mailto:rkyoung@uwyo.edu">rkyoung@uwyo.edu</a>                 |
| Bill Hange<br>Traffic Engineer,<br>City of Loveland                       | Mentor   | City of Loveland<br>Traffic Engineering & Operations<br>105 W 5th Street<br>Loveland, CO 80537<br>(970) 962-2528                                  | <a href="mailto:HangeB@ci.loveland.co.us">HangeB@ci.loveland.co.us</a> |
| Derek Schuler<br>Traffic Engineer,<br>City of Loveland                    | Mentor   | City of Loveland<br>Traffic Engineering & Operations<br>105 W 5th Street<br>Loveland, CO 80537<br>(970) 962-2647                                  | <a href="mailto:schuld@ci.loveland.co.us">schuld@ci.loveland.co.us</a> |

**Agreement to Hold Harmless and Copyright Transfer:**

Agreement to Hold Harmless

The University of Wyoming Institute of Transportation Engineers Student Chapter holds harmless and indemnifies ITE District 6 from any and all liability associated with the conduct and completion of this proposal, data collection and associated activity.

Copyright Transfer

The University of Wyoming Institute of Transportation Engineers Student Chapter agrees to complete a copyright transfer document that will allow ITE to publish the data obtained in this effort.

# Location Data

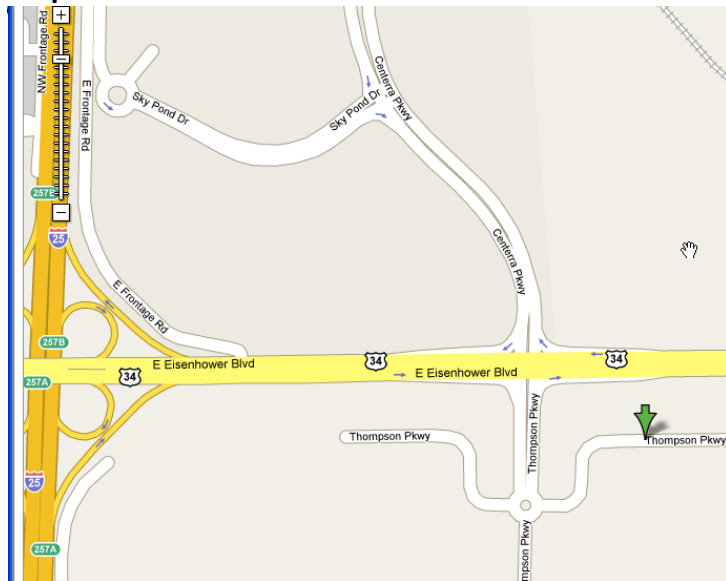
- **Johnstown**
- **Loveland**
- **Longmont**

# Johnstown Location

## Address:

Hwy. 34 & County Rd. 5, Johnstown  
4910 Thompson Pkwy  
Johnstown, CO 80534

## Map:



## Description of Area:

The Johnstown coffee shop is located in a rapidly developing area best described as urban, non-CBD. It is a standalone location between other food shops. Major development is occurring along Highway 34. Thompson Parkway is a new street that currently does not extend to the east so most of the traffic along this roadway is destined for the food shops in this area. The coffee shop is highly visible to traffic traveling along Highway 34 to the north of the site.

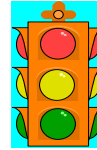
## Coffee Shop Details:

Stand alone coffee shop with one drive up window that has 2,500 square feet of gross floor area. The site has 26 parking spots including 2 handicap spots. There are two driveway entrances to the property off of Thompson Parkway that are exclusive to the coffee shop.

## Adjacent Roadway Traffic Volumes:

This area is newly developed so traffic counts along Thompson Parkway are not available. Attached are AM and PM turning movements for the Highway 34 and Thompson Parkway/Centerra Parkway, a major intersection northwest of the coffee shop. Visitors to the coffee shop would be coming from through this intersection to access the site.

## TURN STUDY SUMMARY FOR VEHICULAR TRAFFIC



**Location** Centerra and US34  
**Date** 5/31/2007  
**Peak (AM/PM)** AM  
**Weather** Sunny  
**Completed by** Leslie and Jon

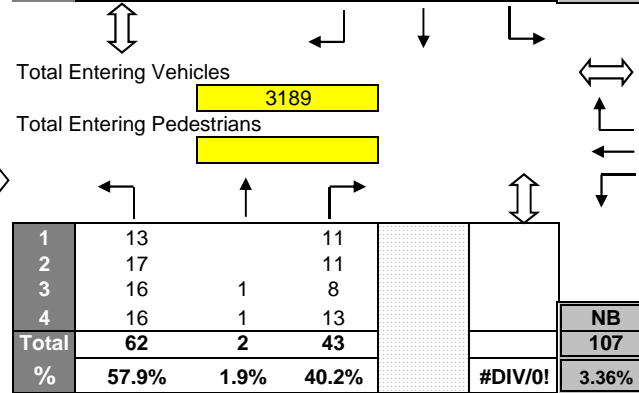


| Centerra Pkwy |         |  |       |      |       |
|---------------|---------|--|-------|------|-------|
| 1             |         |  | 4     |      | 2     |
| 2             |         |  | 7     |      |       |
| 3             |         |  | 9     |      | 2     |
| 4             |         |  | 8     | 1    | 1     |
| Total         |         |  | 28    | 1    | 5     |
| %             | #DIV/0! |  | 82.4% | 2.9% | 14.7% |

**Day of Week** Thur  
**Time Start:** 7:15  
**Time Finish:** 8:15  
**Duration** 1:00

|      |
|------|
| Thur |
| 7:15 |
| 8:15 |
| 1:00 |

| Eisenhower Blvd |     |     |     |       |         |
|-----------------|-----|-----|-----|-------|---------|
| 1               | 2   | 3   | 4   | Total | %       |
| 25              | 17  | 36  | 39  | 117   | 7.4%    |
| 302             | 389 | 361 | 297 | 1349  | 85.1%   |
| 29              | 33  | 31  | 26  | 119   | 7.5%    |
|                 |     |     |     |       | #DIV/0! |
|                 |     |     |     | EB    | 1585    |
|                 |     |     |     |       | 49.70%  |



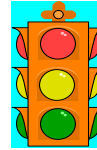
| 1   | 2   | 3   | 4   | Total | %       |
|-----|-----|-----|-----|-------|---------|
|     |     |     |     |       | #DIV/0! |
| 2   | 3   | 7   | 10  | 22    | 1.5%    |
| 372 | 252 | 455 | 324 | 1403  | 95.9%   |
| 9   | 13  | 10  | 6   | 38    | 2.6%    |
|     |     |     |     | WB    | 1463    |
|     |     |     |     |       | 45.88%  |

A train went by around 7:30, Eastbound traffic backed up into the intersection.

### TOTAL ENTERING VEHICLES / PEDS. BY 15 MIN. GROUPS

| Time Interval | 1   | 2   | 3   | 4   |
|---------------|-----|-----|-----|-----|
| VEHS.         | 769 | 742 | 936 | 742 |
| PEDS.         |     |     |     |     |
| VEH / HR      | 769 | 742 | 936 | 742 |

## TURN STUDY SUMMARY FOR VEHICULAR TRAFFIC



**Location**  
Centerra and Eisenhower  
**Date**  
5/24/2007  
**Peak (AM/PM)**  
PM  
**Weather**  
Sunny  
**Completed by**  
Leslie



**Day of Week**  
Thur  
**Time Start:**  
16:30  
**Time Finish:**  
17:30  
**Duration**  
1:00

| Eisenhower Blvd |     |     |     |       |             |               |
|-----------------|-----|-----|-----|-------|-------------|---------------|
| 1               | 2   | 3   | 4   | Total | %           |               |
| 114             | 113 | 146 | 122 | 495   | 23.1%       |               |
| 386             | 395 | 416 | 419 | 1616  | 75.5%       |               |
| 6               | 9   | 6   | 8   | 29    | 1.4%        |               |
|                 |     |     |     |       | #DIV/0!     |               |
| <b>EB</b>       |     |     |     |       | <b>2140</b> | <b>48.59%</b> |

| Centerra Pkwy |                |  |              |             |              |
|---------------|----------------|--|--------------|-------------|--------------|
| 1             |                |  | 86           |             | 41           |
| 2             |                |  | 123          | 1           | 24           |
| 3             |                |  | 100          | 1           | 30           |
| 4             |                |  | 119          | 1           | 28           |
| <b>Total</b>  |                |  | <b>428</b>   | <b>3</b>    | <b>123</b>   |
| <b>%</b>      | <b>#DIV/0!</b> |  | <b>77.3%</b> | <b>0.5%</b> | <b>22.2%</b> |
| <b>SB</b>     |                |  |              |             | <b>554</b>   |

|                            |              |             |              |                |              |
|----------------------------|--------------|-------------|--------------|----------------|--------------|
| Total Entering Vehicles    |              |             |              |                |              |
| 4404                       |              |             |              |                |              |
| Total Entering Pedestrians |              |             |              |                |              |
| #DIV/0!                    |              |             |              |                |              |
| 1                          | 22           | 1           | 5            |                |              |
| 2                          | 22           | 3           | 3            |                |              |
| 3                          | 20           |             |              |                |              |
| 4                          | 26           | 4           | 4            |                |              |
| <b>Total</b>               | <b>90</b>    | <b>8</b>    | <b>12</b>    |                |              |
| <b>%</b>                   | <b>81.8%</b> | <b>7.3%</b> | <b>10.9%</b> | <b>#DIV/0!</b> | <b>2.50%</b> |
| <b>NB</b>                  |              |             |              |                | <b>110</b>   |

| 1         | 2   | 3   | 4   | Total | %           |               |
|-----------|-----|-----|-----|-------|-------------|---------------|
|           |     |     |     |       | #DIV/0!     |               |
| 25        | 23  | 42  | 36  | 126   | 7.9%        |               |
| 333       | 339 | 416 | 370 | 1458  | 91.1%       |               |
| 4         | 7   | 4   | 1   | 16    | 1.0%        |               |
| <b>WB</b> |     |     |     |       | <b>1600</b> | <b>36.33%</b> |

### TOTAL ENTERING VEHICLES / PEDS. BY 15 MIN. GROUPS

| Time Interval   | 1    | 2    | 3    | 4    |
|-----------------|------|------|------|------|
| <b>VEHS.</b>    | 1023 | 1062 | 1181 | 1138 |
| <b>PEDS.</b>    |      |      |      |      |
| <b>VEH / HR</b> | 1023 | 1062 | 1181 | 1138 |

# Loveland Location

## Address:

Hwy 34 & Taft--Loveland  
1510 W Eisenhower Blvd  
Loveland, CO 805373116

## Map:



## Description of Area:

The Loveland coffee shop is located in a mature, highly developed area within the City of Loveland's CBD. It is a stand alone location between other food shops with only one driveway entrance, which is off Highway 34 (Eisenhower Boulevard). Hwy 34 is a major east-west roadway through the City of Loveland and connecting it to the Interstate. Taft Boulevard is one block to the east of the coffee shop and is a major north-south roadway that connects Loveland to other Front Range communities.

## Coffee Shop Details:

The site is a stand alone coffee shop with one drive up window that has 2,600 square feet of gross floor area. The site includes 24 parking spots including 2 handicap spots. There is one driveway entrance off of Highway 34 that is exclusive to the coffee shop. Highway 34 at this location is a four-lane, undivided highway. There is a short (~2 car) left turn lane available to cars turning left from Highway 34 into the coffee shop.

## Adjacent Roadway Traffic Volumes:

Recent traffic counts for Highway 34 near the coffee shop show an ADT of 31,350 in 2004 and an ADT of 31,500 in 2006.

# Longmont Location

## Address:

17th and Hover- Longmont  
2318 17th Avenue  
Longmont, CO 80501

## Map:



## Description of Area:

The Longmont coffee shop is located in a developed area outside of Longmont's CBD. The area is mostly office parks, stand alone developments, and residential units. The coffee shop is visible from the major street of 17<sup>th</sup> Avenue, but accessed from an adjacent side street (Cook Court).

## Coffee Shop Details:

The coffee shop is the end unit in a new strip development that is currently about 50% vacant. A dry cleaners and a exercise equipment shop are the other existing businesses in the development, which shares a large parking lot. The coffee shop has one drive up window and has 1,800 square feet of gross floor area. There is one driveway entrance off Cook Court that serves this development. 17<sup>th</sup> Avenue at this location is a four-lane, undivided highway.

# ITE Trip Generation Data Forms

- **Johnstown**
- **Loveland**
- **Longmont**

# Trip Generation Data Form (Part 1)

|   |                           |                               |   |                  |                   |
|---|---------------------------|-------------------------------|---|------------------|-------------------|
| Land Use/Building Type: <u>Coffee Shop with Drive Through Service</u> |                           |                               | ITE Land Use Code:  |                  |                   |
| Source: <u>University of Wyoming ITE Student Chapter</u>              |                           |                               | Source No. (ITE use only):                                |                  |                   |
| Name of Development: <u>Starbucks - Thompson Parkway</u>              |                           |                               | Day of the Week: <u>Tuesday</u>                           |                  |                   |
| City: <u>Johnstown</u>  | State/Province: <u>CO</u> | Zip/Postal Code: <u>80534</u> | Day: <u>April</u>   | Month: <u>15</u> | Year: <u>2008</u> |
| Country: <u>USA</u>   |                           |                               | Metropolitan Area: <u>Northern Front Range / Loveland</u> |                  |                   |

1. For fast-food land use, please specify if hamburger- or nonhamburger-based.

|   |                          |                                     |             |   |                                     |  |   |                          |                          |   |                                     |                          |
|---|--------------------------|-------------------------------------|-------------|---|-------------------------------------|--|---|--------------------------|--------------------------|---|-------------------------------------|--------------------------|
| Location Within Area:<br><input type="checkbox"/> (1) CBD <input type="checkbox"/> (3) Suburban (Non-CBD) <input type="checkbox"/> (5) Rural<br><input checked="" type="checkbox"/> (2) Urban (Non-CBD) <input type="checkbox"/> (4) Suburban CBD <input type="checkbox"/> (6) Freeway Interchange Area (Rural)<br><input type="checkbox"/> (7) Not Given |                          |                                     |             |   |                                     | Detailed Description of Development: <sup>3</sup><br><u>Stand alone coffee shop just east of I-25 interchange located on Thompson Parkway but adjacent to and visible from highway 34 (Eisenhower Boulevard). Located south of a new mall / lifestyle center. Two driveways access the property.</u> |   |                          |                          |   |                                     |                          |
| Independent Variable: (include data for as many as possible) <sup>2</sup>   |                          |                                     |             |   |                                     | Actual      Estimated                      Actual      Estimated   |   |                          |                          |   |                                     |                          |
| _____ (1) Employees (#)   | <input type="checkbox"/> | <input type="checkbox"/>            | <u>26</u>   | (10) Parking Spaces (#)                                     | <input checked="" type="checkbox"/> | <input type="checkbox"/>   | _____ (11) Occupied Beds (#)                  | <input type="checkbox"/> | <input type="checkbox"/> | _____ (12) Seats (#)  | <input type="checkbox"/>            | <input type="checkbox"/> |
| _____ (2) Persons (#)   | <input type="checkbox"/> | <input type="checkbox"/>            | _____       | (13) Servicing Positions/Vehicle Fueling Positions _____    | <input checked="" type="checkbox"/> | <input type="checkbox"/>   | _____ (14) Shopping Center % Out-parcels/pads | <input type="checkbox"/> | <input type="checkbox"/> | _____ (15) A.M. Peak Hour Volume of Adjacent Street Traffic | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| _____ (3) Units (#)   | <input type="checkbox"/> | <input type="checkbox"/>            | _____       | _____ (16) P.M. Peak Hour Volume of Adjacent Street Traffic | <input checked="" type="checkbox"/> | <input type="checkbox"/>   | _____ (17) Other _____                        | <input type="checkbox"/> | <input type="checkbox"/> | _____ (18) Other _____                                      | <input type="checkbox"/>            | <input type="checkbox"/> |
| <u>2500</u> (4) Occupied Units (#)  | <input type="checkbox"/> | <input type="checkbox"/>            | <u>1</u>    | _____ (17) Other _____                                      | <input type="checkbox"/>            | <input type="checkbox"/>   | _____ (18) Other _____                        | <input type="checkbox"/> | <input type="checkbox"/> | _____ (18) Other _____                                      | <input type="checkbox"/>            | <input type="checkbox"/> |
| <u>2500</u> (5) Gross Floor Area (gross sq. ft.)  | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____       | _____ (18) Other _____                                      | <input type="checkbox"/>            | <input type="checkbox"/>   | _____ (18) Other _____                        | <input type="checkbox"/> | <input type="checkbox"/> | _____ (18) Other _____                                      | <input type="checkbox"/>            | <input type="checkbox"/> |
| (% of development occupied <u>100</u> )   |                          |                                     |             |   |                                     |  |   |                          |                          |   |                                     |                          |
| _____ (6) Net Rentable Area (sq. ft.)   | <input type="checkbox"/> | <input type="checkbox"/>            | <u>2860</u> |   |                                     |  |   |                          |                          |   |                                     |                          |
| _____ (7) Gross Leasable Area (sq. ft.)   | <input type="checkbox"/> | <input type="checkbox"/>            | <u>3351</u> |   |                                     |  |   |                          |                          |   |                                     |                          |
| _____ (8) Occupied Gross Leasable Area (sq. ft.)  | <input type="checkbox"/> | <input type="checkbox"/>            | _____       |   |                                     |  |   |                          |                          |   |                                     |                          |
| _____ (9) Acres   | <input type="checkbox"/> | <input type="checkbox"/>            | _____       |   |                                     |  |   |                          |                          |   |                                     |                          |

2. Definitions for several independent variables can be found in the Trip Generation Handbook Glossary.

3. Please provide all pertinent information that helps to describe the subject project. If necessary, attach a detailed report.

|   |  |  |  |   |  |  |  |
|---|--|--|--|---|--|--|--|
| Other Data:<br>Vehicle Occupancy (#)<br>_____ A.M. _____ P.M. _____ 24-hour %<br>Percent by Transit:<br>_____ A.M. % _____ P.M. % _____ 24-hour %<br>Percent by Carpool/Vanpool:<br>_____ A.M. % _____ P.M. % _____ 24-hour %<br><br>Employees by Shift:<br>First Shift: Start Time _____ End Time _____ Employees (#) _____<br>Second Shift: Start Time _____ End Time _____ Employees (#) _____<br>Third Shift: Start Time _____ End Time _____ Employees (#) _____<br><br>Parking Cost on Site: Hourly _____ Daily _____ |  |  |  | Transportation Demand Management (TDM) Information:<br>At the time of this study, was there a TDM program (that may have impacted the trip generation characteristics of this site) underway?<br><input checked="" type="checkbox"/> No<br><input type="checkbox"/> Yes (If yes, please check appropriate box/boxes, describe the nature of the TDM program(s) and provide a source for any studies that may help quantify this impact. Attach additional sheets if necessary)<br><br><input type="checkbox"/> (1) Transit Service <input type="checkbox"/> (5) Employer Support Measures <input type="checkbox"/> (9) Tolls and Congestion Pricing<br><input type="checkbox"/> (2) Carpool Programs <input type="checkbox"/> (6) Preferential HOV Treatments <input type="checkbox"/> (10) Variable Work Hours/Compressed Work Weeks<br><input type="checkbox"/> (3) Vanpool Programs <input type="checkbox"/> (7) Transit and Ridesharing Incentives <input type="checkbox"/> (11) Telecommuting<br><input type="checkbox"/> (4) Bicycle/Pedestrian Facilities and Site Improvements <input type="checkbox"/> (8) Parking Supply and Pricing Management <input type="checkbox"/> (12) Other _____ |  |  |  |
|---|--|--|--|---|--|--|--|

Please Complete Form on Other Side

**ite** Institute of Transportation Engineers  
**Trip Generation Data Form (Part 2)**

**Summary of Driveway Volumes**

(All = All Vehicles Counted, Including Trucks; Trucks = Heavy Duty Trucks and Buses)

|  | Average Weekday (M-F) |        |      |        |       |        | Saturday |        |      |        |       |        | Sunday |        |      |        |       |        |  |
|--|-----------------------|--------|------|--------|-------|--------|----------|--------|------|--------|-------|--------|--------|--------|------|--------|-------|--------|--|
|  | Enter                 |        | Exit |        | Total |        | Enter    |        | Exit |        | Total |        | Enter  |        | Exit |        | Total |        |  |
|  | All                   | Trucks | All  | Trucks | All   | Trucks | All      | Trucks | All  | Trucks | All   | Trucks | All    | Trucks | All  | Trucks | All   | Trucks |  |
| 24-Hour Volume   |                       |        |      |        |       |        |          |        |      |        |       |        |        |        |      |        |       |        |  |
| A.M. Peak Hour of Adjacent <sup>1</sup> Street Traffic (7 - 9)<br>Time (ex.: 7:15 - 8:15): |                       |        |      |        | 2860  | N/A    |          |        |      |        |       |        |        |        |      |        |       |        |  |
| P.M. Peak Hour of Adjacent <sup>1</sup> Street Traffic (4 - 6)<br>Time:                    |                       |        |      |        | 3351  | N/A    |          |        |      |        |       |        |        |        |      |        |       |        |  |
| A.M. Peak Hour Generator <sup>2</sup><br>Time:   | 66                    | 1      | 67   | 1      | 133   | 2      |          |        |      |        |       |        |        |        |      |        |       |        |  |
| P.M. Peak Hour Generator <sup>2</sup><br>Time:   |                       |        |      |        |       |        |          |        |      |        |       |        |        |        |      |        |       |        |  |
| Peak Hour Generator <sup>3</sup><br>Time (Weekend):  |                       |        |      |        |       |        |          |        |      |        |       |        |        |        |      |        |       |        |  |

- Highest hourly volume between 7 AM and 9 AM (4 PM and 6 PM).
  - Highest hourly volume during the AM or PM period.
  - Highest hourly volume during the entire day.
- Please refer to the *Trip Generation User's Guide* for full definition of the terms.

**Hourly Driveway Volumes- Average Weekday (M-F)**

| A.M. Period | Enter |        | Exit |        | Total |        | Mid-Day Period | Enter |        | Exit |        | Total |        | P.M. Period | Enter |        | Exit |        | Total |        |
|-------------|-------|--------|------|--------|-------|--------|----------------|-------|--------|------|--------|-------|--------|-------------|-------|--------|------|--------|-------|--------|
|             | All   | Trucks | All  | Trucks | All   | Trucks |                | All   | Trucks | All  | Trucks | All   | Trucks |             | All   | Trucks | All  | Trucks | All   | Trucks |
| 6:00-7:00   |       |        |      |        |       |        | 11:00-12:00    | 10    | 0      | 10   | 0      | 20    | 0      | 3:00-4:00   |       |        |      |        |       |        |
| 6:15-7:15   |       |        |      |        |       |        | 11:15-12:15    | 7     | 0      | 7    | 0      | 14    | 0      | 3:15-4:15   |       |        |      |        |       |        |
| 6:30-7:30   |       |        |      |        |       |        | 11:30-12:30    | 17    | 0      | 16   | 0      | 35    | 0      | 3:30-4:30   |       |        |      |        |       |        |
| 6:45-7:45   |       |        |      |        |       |        | 11:45-12:45    | 13    | 0      | 14   | 0      | 27    | 0      | 3:45-4:45   |       |        |      |        |       |        |
| 7:00-8:00   |       |        |      |        |       |        | 12:00-1:00     | 13    | 0      | 15   | 0      | 28    | 0      | 4:00-5:00   |       |        |      |        |       |        |
| 7:15-8:15   | 59    | 0      | 59   | 0      | 118   | 0      | 12:15-1:15     |       |        |      |        |       |        | 4:15-5:15   |       |        |      |        |       |        |
| 7:30-8:30   | 61    | 0      | 60   | 0      | 121   | 0      | 12:30-1:30     |       |        |      |        |       |        | 4:30-5:30   |       |        |      |        |       |        |
| 7:45-8:45   | 66    | 1      | 67   | 1      | 133   | 2      | 12:45-1:45     |       |        |      |        |       |        | 4:45-5:45   |       |        |      |        |       |        |
| 8:00-9:00   | 62    | 1      | 62   | 1      | 124   | 2      | 1:00-2:00      |       |        |      |        |       |        | 5:00-6:00   |       |        |      |        |       |        |

Check if Part 3 and/or additional information is attached.

Survey conducted by: Name: ITE Student Chapter - Rhonda Young Faculty Advisor  
 Organization: University of Wyoming  
 Address: 1000 E University Avenue, Dept 3295  
 City/State/Zip: Laramie WY 82071  
 Telephone #: 307-766-2184 Fax #: 307-766-2221 E-mail: Rkyoung@uwyo.edu

Please return to:

Institute of Transportation Engineers  
 Technical Projects Division  
 1099 14th Street, NW, Suite 300 West  
 Washington, DC 20005-3438 USA  
 Telephone: +1 202-289-0222  
 FAX: +1 202-289-7722  
 ITE on the Web: www.ite.org

## Trip Generation Data Form (Part 1)

|   |   |  |
|---|---|--|
| Land Use/Building Type: <u>Coffee Shop with Drive Through Service</u>         | ITE Land Use Code:  |  |
| Source: <u>University of Wyoming ITE Student Chapter</u>                      | Source No. (ITE use only):                                |  |
| Name of Development: <u>Starbucks - Hwy 34 Taft</u>                           | Day of the Week: <u>Tuesday</u>                           |  |
| City: <u>Loveland</u> State/Province: <u>CO</u> Zip/Postal Code: <u>80537</u> | Day: <u>April</u> Month: <u>15</u> Year: <u>2008</u>      |  |
| Country: <u>USA</u>   | Metropolitan Area: <u>Northern Front Range / Loveland</u> |  |

1. For fast-food land use, please specify if hamburger- or nonhamburger-based.

|   |   |   |   |  |                          |  |  |                                     |                          |  |
|---|---|---|---|--|--------------------------|--|--|-------------------------------------|--------------------------|--|
| Location Within Area:   |   |   |   | Detailed Description of Development: <sup>3</sup>  |                          |  |  |                                     |                          |  |
| <input checked="" type="checkbox"/> (1) CBD                               | <input type="checkbox"/> (3) Suburban (Non-CBD) | <input type="checkbox"/> (5) Rural                            |   | Stand alone coffee shop with drive through facility located in CBD of Loveland. One driveway access this property off of Highway 34. |                          |  |  |                                     |                          |  |
| <input type="checkbox"/> (2) Urban (Non-CBD)                              | <input type="checkbox"/> (4) Suburban CBD       | <input type="checkbox"/> (6) Freeway Interchange Area (Rural) |   |  |                          |  |  |                                     |                          |  |
|   |   | <input type="checkbox"/> (7) Not Given                        |   |  |                          |  |  |                                     |                          |  |
| Independent Variable: (include data for as many as possible) <sup>2</sup> | Actual  | Estimated   |   |  |                          |  |  | Actual                              | Estimated                |  |
| _____ (1) Employees (#)   | <input type="checkbox"/>                        | <input type="checkbox"/>                                      | <u>24</u> (10) Parking Spaces (#)                                 |  |                          |  |  | <input checked="" type="checkbox"/> | <input type="checkbox"/> |  |
| _____ (2) Persons (#)   | <input type="checkbox"/>                        | <input type="checkbox"/>                                      | _____ (11) Occupied Beds (#)                                      |  |                          |  |  | <input type="checkbox"/>            | <input type="checkbox"/> |  |
| _____ (3) Units (#)   | <input type="checkbox"/>                        | <input type="checkbox"/>                                      | _____ (12) Seats (#)  |  |                          |  |  | <input type="checkbox"/>            | <input type="checkbox"/> |  |
| _____ (4) Occupied Units (#)  | <input type="checkbox"/>                        | <input type="checkbox"/>                                      | <u>1</u> (13) Servicing Positions/Vehicle Fueling Positions _____ | <input checked="" type="checkbox"/>  | <input type="checkbox"/> |  |  |                                     |                          |  |
| <u>26000</u> (5) Gross Floor Area (gross sq. ft.)                         | <input checked="" type="checkbox"/>             | <input type="checkbox"/>                                      | _____ (14) Shopping Center % Out-parcels/pads                     | <input type="checkbox"/>   | <input type="checkbox"/> |  |  |                                     |                          |  |
| (% of development occupied <u>100</u> )                                   |   |   | _____ (15) A.M. Peak Hour Volume of Adjacent Street Traffic       | <input type="checkbox"/>   | <input type="checkbox"/> |  |  |                                     |                          |  |
| _____ (6) Net Rentable Area (sq. ft.)                                     | <input type="checkbox"/>                        | <input type="checkbox"/>                                      | _____ (16) P.M. Peak Hour Volume of Adjacent Street Traffic       | <input type="checkbox"/>   | <input type="checkbox"/> |  |  |                                     |                          |  |
| _____ (7) Gross Leasable Area (sq. ft.)                                   | <input type="checkbox"/>                        | <input type="checkbox"/>                                      | <u>31500</u> (17) Other <u>Adjacent Street MOT</u>                | <input checked="" type="checkbox"/>  | <input type="checkbox"/> |  |  |                                     |                          |  |
| _____ (8) Occupied Gross Leasable Area (sq. ft.)                          | <input type="checkbox"/>                        | <input type="checkbox"/>                                      | _____ (18) Other _____  | <input type="checkbox"/>   | <input type="checkbox"/> |  |  |                                     |                          |  |
| <u>2.660</u> (9) Acres  | <input checked="" type="checkbox"/>             | <input type="checkbox"/>                                      |   |  |                          |  |  |                                     |                          |  |

2. Definitions for several independent variables can be found in the Trip Generation Handbook Glossary.

3. Please provide all pertinent information that helps to describe the subject project. If necessary, attach a detailed report.

|   |  |   |  |
|---|--|---|--|
| Other Data:   |  | Transportation Demand Management (TDM) Information:   |  |
| Vehicle Occupancy (#)   |  | At the time of this study, was there a TDM program (that may have impacted the trip generation characteristics of this site) underway?  |  |
| _____ A.M. _____ P.M. _____ 24-hour %                             |  | <input checked="" type="checkbox"/> No  |  |
| Percent by Transit:   |  | <input type="checkbox"/> Yes (If yes, please check appropriate box/boxes, describe the nature of the TDM program(s) and provide a source for any studies that may help quantify this impact. Attach additional sheets if necessary)   |  |
| _____ A.M. % _____ P.M. % _____ 24-hour %                         |  |   |  |
| Percent by Carpool/Vanpool:                                       |  |   |  |
| _____ A.M. % _____ P.M. % _____ 24-hour %                         |  |   |  |
| Employees by Shift:   |  | <input type="checkbox"/> (1) Transit Service<br><input type="checkbox"/> (2) Carpool Programs<br><input type="checkbox"/> (3) Vanpool Programs<br><input type="checkbox"/> (4) Bicycle/Pedestrian Facilities and Site Improvements<br><input type="checkbox"/> (5) Employer Support Measures<br><input type="checkbox"/> (6) Preferential HOV Treatments<br><input type="checkbox"/> (7) Transit and Ridesharing Incentives<br><input type="checkbox"/> (8) Parking Supply and Pricing Management<br><input type="checkbox"/> (9) Tolls and Congestion Pricing<br><input type="checkbox"/> (10) Variable Work Hours/Compressed Work Weeks<br><input type="checkbox"/> (11) Telecommuting<br><input type="checkbox"/> (12) Other _____ |  |
| First Shift: Start Time _____ End Time _____ Employees (#) _____  |  |   |  |
| Second Shift: Start Time _____ End Time _____ Employees (#) _____ |  |   |  |
| Third Shift: Start Time _____ End Time _____ Employees (#) _____  |  |   |  |
| Parking Cost on Site: Hourly _____ Daily _____                    |  |   |  |

Please Complete Form on Other Side

**ite** Institute of Transportation Engineers  
**Trip Generation Data Form (Part 2)**

**Summary of Driveway Volumes**

(All = All Vehicles Counted, Including Trucks; Trucks = Heavy Duty Trucks and Buses)

|  | Average Weekday (M-F) |        |      |        |       |        | Saturday |        |      |        |       |        | Sunday |        |      |        |       |        |
|--|-----------------------|--------|------|--------|-------|--------|----------|--------|------|--------|-------|--------|--------|--------|------|--------|-------|--------|
|  | Enter                 |        | Exit |        | Total |        | Enter    |        | Exit |        | Total |        | Enter  |        | Exit |        | Total |        |
|  | All                   | Trucks | All  | Trucks | All   | Trucks | All      | Trucks | All  | Trucks | All   | Trucks | All    | Trucks | All  | Trucks | All   | Trucks |
| 24-Hour Volume   |                       |        |      |        |       |        |          |        |      |        |       |        |        |        |      |        |       |        |
| A.M. Peak Hour of Adjacent <sup>1</sup> Street Traffic (7 - 9)<br>Time (ex.: 7:15 - 8:15): |                       |        |      |        |       |        |          |        |      |        |       |        |        |        |      |        |       |        |
| P.M. Peak Hour of Adjacent <sup>1</sup> Street Traffic (4 - 6)<br>Time:                    |                       |        |      |        |       |        |          |        |      |        |       |        |        |        |      |        |       |        |
| A.M. Peak Hour Generator <sup>2</sup><br>Time:   |                       |        |      |        |       |        |          |        |      |        |       |        |        |        |      |        |       |        |
| P.M. Peak Hour Generator <sup>2</sup><br>Time:   |                       |        |      |        |       |        |          |        |      |        |       |        |        |        |      |        |       |        |
| Peak Hour Generator <sup>3</sup><br>Time (Weekend):  |                       |        |      |        |       |        |          |        |      |        |       |        |        |        |      |        |       |        |

- Highest hourly volume between 7 AM and 9 AM (4 PM and 6 PM).
  - Highest hourly volume during the AM or PM period.
  - Highest hourly volume during the entire day.
- Please refer to the *Trip Generation User's Guide* for full definition of the terms.

**Hourly Driveway Volumes- Average Weekday (M-F)**

| A.M. Period | Enter |        | Exit |        | Total |        | Mid-Day Period | Enter |        | Exit |        | Total |        | P.M. Period | Enter |        | Exit |        | Total |        |
|-------------|-------|--------|------|--------|-------|--------|----------------|-------|--------|------|--------|-------|--------|-------------|-------|--------|------|--------|-------|--------|
|             | All   | Trucks | All  | Trucks | All   | Trucks |                | All   | Trucks | All  | Trucks | All   | Trucks |             | All   | Trucks | All  | Trucks | All   | Trucks |
| 6:00-7:00   |       |        |      |        |       |        | 11:00-12:00    | 45    | 1      | 47   | 0      | 92    | 1      | 3:00-4:00   |       |        |      |        |       |        |
| 6:15-7:15   |       |        |      |        |       |        | 11:15-12:15    | 29    | 1      | 28   | 1      | 57    | 2      | 3:15-4:15   |       |        |      |        |       |        |
| 6:30-7:30   |       |        |      |        |       |        | 11:30-12:30    | 36    | 1      | 37   | 1      | 73    | 2      | 3:30-4:30   |       |        |      |        |       |        |
| 6:45-7:45   |       |        |      |        |       |        | 11:45-12:45    |       |        |      |        |       |        | 3:45-4:45   |       |        |      |        |       |        |
| 7:00-8:00   | 102   | 0      | 104  | 0      | 206   | 0      | 12:00-1:00     |       |        |      |        |       |        | 4:00-5:00   |       |        |      |        |       |        |
| 7:15-8:15   | 97    | 0      | 98   | 0      | 195   | 0      | 12:15-1:15     |       |        |      |        |       |        | 4:15-5:15   |       |        |      |        |       |        |
| 7:30-8:30   | 94    | 0      | 93   | 0      | 187   | 0      | 12:30-1:30     |       |        |      |        |       |        | 4:30-5:30   |       |        |      |        |       |        |
| 7:45-8:45   | 93    | 0      | 92   | 0      | 185   | 0      | 12:45-1:45     |       |        |      |        |       |        | 4:45-5:45   |       |        |      |        |       |        |
| 8:00-9:00   | 95    | 0      | 96   | 0      | 192   | 0      | 1:00-2:00      |       |        |      |        |       |        | 5:00-6:00   |       |        |      |        |       |        |

Check if Part 3 and/or additional information is attached.

Survey conducted by: Name: ITE Student Chapter - Rhonda Young Faculty Advisor  
 Organization: University of Wyoming  
 Address: 1000 E University Avenue Dept 3295  
 City/State/Zip: Laramie WY 82071  
 Telephone #: 307-766-2184 Fax #: 307-766-2321 E-mail: Rkyoung@uwyo.edu

Please return to:

Institute of Transportation Engineers  
 Technical Projects Division  
 1099 14th Street, NW, Suite 300 West  
 Washington, DC 20005-3438 USA  
 Telephone: +1 202-289-0222  
 FAX: +1 202-289-7722  
 ITE on the Web: www.ite.org

# Trip Generation Data Form (Part 1)

|  |                           |                               |  |                  |                   |
|--|---------------------------|-------------------------------|--|------------------|-------------------|
| Land Use/Building Type: <u>Coffee Shop with Drive Through Facility</u> |                           |                               | ITE Land Use Code:                               |                  |                   |
| Source: <u>University of Wyoming ITE Student Chapter</u>               |                           |                               | Source No. (ITE use only):                       |                  |                   |
| Name of Development: <u>Starbucks - 17th &amp; Hoover</u>              |                           |                               | Day of the Week: <u>Tuesday</u>                  |                  |                   |
| City: <u>Longmont</u>  | State/Province: <u>CO</u> | Zip/Postal Code: <u>80501</u> | Day: <u>April</u>                                | Month: <u>15</u> | Year: <u>2008</u> |
| Country: <u>USA</u>  |                           |                               | Metropolitan Area: <u>Front Range / Longmont</u> |                  |                   |

1. For fast-food land use, please specify if hamburger- or nonhamburger-based.

|  |                          |                                     |   |  |                          |
|--|--------------------------|-------------------------------------|---|--|--------------------------|
| <b>Location Within Area:</b><br><input type="checkbox"/> (1) CBD <input type="checkbox"/> (3) Suburban (Non-CBD) <input type="checkbox"/> (5) Rural<br><input checked="" type="checkbox"/> (2) Urban (Non-CBD) <input type="checkbox"/> (4) Suburban CBD <input type="checkbox"/> (6) Freeway Interchange Area (Rural)<br><input type="checkbox"/> (7) Not Given |                          |                                     |   | <b>Detailed Description of Development:</b> <sup>3</sup><br><u>Located on the end unit of a strip mall development that is 50% occupied. Location is adjacent to 17th street (arterial) but accessed from a side street (Cook Court)</u> |                          |
| <b>Independent Variable: (include data for as many as possible)</b> <sup>2</sup>   |                          | Actual                              | Estimated   |  |                          |
| _____ (1) Employees (#)  | <input type="checkbox"/> | <input type="checkbox"/>            | _____ (10) Parking Spaces (#)                                     | <input type="checkbox"/>   | <input type="checkbox"/> |
| _____ (2) Persons (#)  | <input type="checkbox"/> | <input type="checkbox"/>            | _____ (11) Occupied Beds (#)                                      | <input type="checkbox"/>   | <input type="checkbox"/> |
| _____ (3) Units (#)  | <input type="checkbox"/> | <input type="checkbox"/>            | _____ (12) Seats (#)  | <input type="checkbox"/>   | <input type="checkbox"/> |
| _____ (4) Occupied Units (#)   | <input type="checkbox"/> | <input type="checkbox"/>            | <u>1</u> (13) Servicing Positions/Vehicle Fueling Positions _____ | <input checked="" type="checkbox"/>  | <input type="checkbox"/> |
| <u>1800</u> (5) Gross Floor Area (gross sq. ft.)   | <input type="checkbox"/> | <input checked="" type="checkbox"/> | _____ (14) Shopping Center % Out-parcels/pads                     | <input type="checkbox"/>   | <input type="checkbox"/> |
| (% of development occupied <u>100</u> )  |                          |                                     | _____ (15) A.M. Peak Hour Volume of Adjacent Street Traffic       | <input type="checkbox"/>   | <input type="checkbox"/> |
| _____ (6) Net Rentable Area (sq. ft.)  | <input type="checkbox"/> | <input type="checkbox"/>            | _____ (16) P.M. Peak Hour Volume of Adjacent Street Traffic       | <input type="checkbox"/>   | <input type="checkbox"/> |
| _____ (7) Gross Leasable Area (sq. ft.)  | <input type="checkbox"/> | <input type="checkbox"/>            | _____ (17) Other _____  | <input type="checkbox"/>   | <input type="checkbox"/> |
| _____ (8) Occupied Gross Leasable Area (sq. ft.)   | <input type="checkbox"/> | <input type="checkbox"/>            | _____ (18) Other _____  | <input type="checkbox"/>   | <input type="checkbox"/> |
| _____ (9) Acres  | <input type="checkbox"/> | <input type="checkbox"/>            |   |  |                          |

2. Definitions for several independent variables can be found in the Trip Generation Handbook Glossary.

3. Please provide all pertinent information that helps to describe the subject project. If necessary, attach a detailed report.

|  |  |  |  |
|--|--|--|--|
| <b>Other Data:</b><br>Vehicle Occupancy (#)<br>_____ A.M. _____ P.M. _____ 24-hour %<br>Percent by Transit:<br>_____ A.M. % _____ P.M. % _____ 24-hour %<br>Percent by Carpool/Vanpool:<br>_____ A.M. % _____ P.M. % _____ 24-hour %<br><br>Employees by Shift:<br>First Shift: Start Time _____ End Time _____ Employees (#) _____<br>Second Shift: Start Time _____ End Time _____ Employees (#) _____<br>Third Shift: Start Time _____ End Time _____ Employees (#) _____<br><br>Parking Cost on Site: Hourly _____ Daily _____ |  | <b>Transportation Demand Management (TDM) Information:</b><br>At the time of this study, was there a TDM program (that may have impacted the trip generation characteristics of this site) underway?<br><input checked="" type="checkbox"/> No<br><input type="checkbox"/> Yes (If yes, please check appropriate box/boxes, describe the nature of the TDM program(s) and provide a source for any studies that may help quantify this impact. Attach additional sheets if necessary)<br><br><input type="checkbox"/> (1) Transit Service <input type="checkbox"/> (5) Employer Support Measures <input type="checkbox"/> (9) Tolls and Congestion Pricing<br><input type="checkbox"/> (2) Carpool Programs <input type="checkbox"/> (6) Preferential HOV Treatments <input type="checkbox"/> (10) Variable Work Hours/Compressed Work Weeks<br><input type="checkbox"/> (3) Vanpool Programs <input type="checkbox"/> (7) Transit and Ridesharing Incentives <input type="checkbox"/> (11) Telecommuting<br><input type="checkbox"/> (4) Bicycle/Pedestrian Facilities and Site Improvements <input type="checkbox"/> (8) Parking Supply and Pricing Management <input type="checkbox"/> (12) Other _____ |  |
|--|--|--|--|

Please Complete Form on Other Side

**ite** Institute of Transportation Engineers  
**Trip Generation Data Form (Part 2)**

Summary of Driveway Volumes

(All = All Vehicles Counted, Including Trucks; Trucks = Heavy Duty Trucks and Buses)

|   | Average Weekday (M-F) |        |      |        |       |        | Saturday |        |      |        |       |        | Sunday |        |      |        |       |        |
|---|-----------------------|--------|------|--------|-------|--------|----------|--------|------|--------|-------|--------|--------|--------|------|--------|-------|--------|
|   | Enter                 |        | Exit |        | Total |        | Enter    |        | Exit |        | Total |        | Enter  |        | Exit |        | Total |        |
|   | All                   | Trucks | All  | Trucks | All   | Trucks | All      | Trucks | All  | Trucks | All   | Trucks | All    | Trucks | All  | Trucks | All   | Trucks |
| 24-Hour Volume  |                       |        |      |        |       |        |          |        |      |        |       |        |        |        |      |        |       |        |
| A.M. Peak Hour of Adjacent <sup>1</sup><br>Street Traffic (7 - 9)<br>Time (ex.: 7:15 - 8:15): |                       |        |      |        |       |        |          |        |      |        |       |        |        |        |      |        |       |        |
| P.M. Peak Hour of Adjacent <sup>1</sup><br>Street Traffic (4 - 6)<br>Time:                    |                       |        |      |        |       |        |          |        |      |        |       |        |        |        |      |        |       |        |
| A.M. Peak Hour Generator <sup>2</sup><br>Time:  |                       |        |      |        |       |        |          |        |      |        |       |        |        |        |      |        |       |        |
| P.M. Peak Hour Generator <sup>2</sup><br>Time:  |                       |        |      |        |       |        |          |        |      |        |       |        |        |        |      |        |       |        |
| Peak Hour Generator <sup>3</sup><br>Time (Weekend):   |                       |        |      |        |       |        |          |        |      |        |       |        |        |        |      |        |       |        |

- Highest hourly volume between 7 AM and 9 AM (4 PM and 6 PM).
  - Highest hourly volume during the AM or PM period.
  - Highest hourly volume during the entire day.
- Please refer to the *Trip Generation User's Guide* for full definition of the terms.

Hourly Driveway Volumes- Average Weekday (M-F)

| A.M. Period | Enter |        | Exit |        | Total |        | Mid-Day Period | Enter |        | Exit |        | Total |        | P.M. Period | Enter |        | Exit |        | Total |        |
|-------------|-------|--------|------|--------|-------|--------|----------------|-------|--------|------|--------|-------|--------|-------------|-------|--------|------|--------|-------|--------|
|             | All   | Trucks | All  | Trucks | All   | Trucks |                | All   | Trucks | All  | Trucks | All   | Trucks |             | All   | Trucks | All  | Trucks | All   | Trucks |
| 6:00-7:00   |       |        |      |        |       |        | 11:00-12:00    | 25    | 0      | 23   | 0      | 48    | 0      | 3:00-4:00   |       |        |      |        |       |        |
| 6:15-7:15   |       |        |      |        |       |        | 11:15-12:15    | 24    | 0      | 24   | 0      | 48    | 0      | 3:15-4:15   |       |        |      |        |       |        |
| 6:30-7:30   |       |        |      |        |       |        | 11:30-12:30    | 24    | 0      | 23   | 0      | 47    | 0      | 3:30-4:30   |       |        |      |        |       |        |
| 6:45-7:45   |       |        |      |        |       |        | 11:45-12:45    | 29    | 0      | 30   | 0      | 59    | 0      | 3:45-4:45   |       |        |      |        |       |        |
| 7:00-8:00   |       |        |      |        |       |        | 12:00-1:00     | 33    | 0      | 34   | 0      | 67    | 0      | 4:00-5:00   |       |        |      |        |       |        |
| 7:15-8:15   | 82    | 0      | 83   | 0      | 165   | 0      | 12:15-1:15     |       |        |      |        |       |        | 4:15-5:15   |       |        |      |        |       |        |
| 7:30-8:30   | 83    | 0      | 81   | 0      | 164   | 0      | 12:30-1:30     |       |        |      |        |       |        | 4:30-5:30   |       |        |      |        |       |        |
| 7:45-8:45   | 74    | 0      | 76   | 0      | 150   | 0      | 12:45-1:45     |       |        |      |        |       |        | 4:45-5:45   |       |        |      |        |       |        |
| 8:00-9:00   | 77    | 0      | 77   | 0      | 154   | 0      | 1:00-2:00      |       |        |      |        |       |        | 5:00-6:00   |       |        |      |        |       |        |

Check if Part 3 and/or additional information is attached.

Survey conducted by: Name: ITE Student Chapter - Rhonda Young Faculty Advisor  
 Organization: University of Wyoming  
 Address: 1000 E University Avenue, Dept 3295  
 City/State/Zip: Laramie WY 82070  
 Telephone #: 307-766-2184 Fax #: 307-766-2221 E-mail: Rkyoung@uwyo.edu

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 ITE on the Web: www.ite.org

# Drive-up Window Queuing Data

- **ITE Queuing Forms**
    - Johnstown
    - Loveland
    - Longmont
  - **Detailed Queuing Data**
    - Johnstown AM Peak Period
    - Johnstown Mid day Period
    - Loveland AM Peak Period
    - Loveland Mid day Period
    - Longmont AM Peak Period
    - Longmont Mid day Period
-



# Queuing Demand Survey Form

Institute of Transportation Engineers

(fill in all highlighted cells - \* are required data)

Land Use Code\* 934/935

Name of Site Starbucks - Thompson Parkway

Brief Description of Site

Stand alone coffee shop with sit down and drive through facilities

Transit\* None

Area\* CND

TMP\* None

City Johnstown

State CO Country USA

Parking Price\* \$ -

Daily Rate 0 Hourly Rate

Site Size\* 2,500

Units\* Gross floor area Occupancy\* 100 Land Use

Site Size

Units Occupancy

Site Size

Units Occupancy

Site Size

Units Occupancy

Number of Parking Spaces Provided at Site 26

Available Queue Space (behind order location) 12

### Highest Observed Queuing Demand for the following hours of the day (hour beginning)\*

| Date     | 4/15/2008 |  |  |  |  |  |  |
|----------|-----------|--|--|--|--|--|--|
| Day      | Tuesday   |  |  |  |  |  |  |
| 12 Mid   |           |  |  |  |  |  |  |
| 1:00 AM  |           |  |  |  |  |  |  |
| 2:00 AM  |           |  |  |  |  |  |  |
| 3:00 AM  |           |  |  |  |  |  |  |
| 4:00 AM  |           |  |  |  |  |  |  |
| 5:00 AM  |           |  |  |  |  |  |  |
| 6:00 AM  |           |  |  |  |  |  |  |
| 7:00 AM  | 4         |  |  |  |  |  |  |
| 8:00 AM  | 4         |  |  |  |  |  |  |
| 9:00 AM  |           |  |  |  |  |  |  |
| 10:00 AM |           |  |  |  |  |  |  |
| 11:00 AM | 1         |  |  |  |  |  |  |
| 12 Noon  | 1         |  |  |  |  |  |  |
| 1:00 PM  |           |  |  |  |  |  |  |
| 2:00 PM  |           |  |  |  |  |  |  |
| 3:00 PM  |           |  |  |  |  |  |  |
| 4:00 PM  |           |  |  |  |  |  |  |
| 5:00 PM  |           |  |  |  |  |  |  |
| 6:00 PM  |           |  |  |  |  |  |  |
| 7:00 PM  |           |  |  |  |  |  |  |
| 8:00 PM  |           |  |  |  |  |  |  |
| 9:00 PM  |           |  |  |  |  |  |  |
| 10:00 PM |           |  |  |  |  |  |  |
| 11:00 PM |           |  |  |  |  |  |  |

Person R. Young

Organization Univ. of Wyoming ITE Student Chapter

Phone 307-766-2184

Fax 307-766-2221

Email rkyoung@uwyo.edu

Notes Form was modified for queuing data for a drive up window at a coffee shop with sit down and drive up facilities

Enter data on the web at www.ite.org

Comments to: ite\_staff@ite.org

IF not entered on web site, please mail to:

Institute of Transportation Engineers, 1099 14th Street, NW Suite 300 West; Washington, DC 20005-3438



# Queuing Demand Survey Form

Institute of Transportation Engineers

(fill in all highlighted cells - \* are required data)

Land Use Code\*

Name of Site

**Brief Description of Site**

Transit\*

Area\*

TMP\*

City

State  Country

Parking Price\* \$

Daily Rate  Hourly Rate

Site Size\*

Units\*

Occupancy\*

Land Use

Site Size

Units

Occupancy

Site Size

Units

Occupancy

Site Size

Units

Occupancy

Number of Parking Spaces Provided at Site

Available Queue Space (behind order location)

**Highest Observed Queuing Demand for the following hours of the day (hour beginning)\***

| Date     | 4/15/2008 |  |  |  |  |  |
|----------|-----------|--|--|--|--|--|
| Day      | Tuesday   |  |  |  |  |  |
| 12 Mid   |           |  |  |  |  |  |
| 1:00 AM  |           |  |  |  |  |  |
| 2:00 AM  |           |  |  |  |  |  |
| 3:00 AM  |           |  |  |  |  |  |
| 4:00 AM  |           |  |  |  |  |  |
| 5:00 AM  |           |  |  |  |  |  |
| 6:00 AM  |           |  |  |  |  |  |
| 7:00 AM  | 5         |  |  |  |  |  |
| 8:00 AM  | 7         |  |  |  |  |  |
| 9:00 AM  |           |  |  |  |  |  |
| 10:00 AM |           |  |  |  |  |  |
| 11:00 AM | 3         |  |  |  |  |  |
| 12 Noon  |           |  |  |  |  |  |
| 1:00 PM  |           |  |  |  |  |  |
| 2:00 PM  |           |  |  |  |  |  |
| 3:00 PM  |           |  |  |  |  |  |
| 4:00 PM  |           |  |  |  |  |  |
| 5:00 PM  |           |  |  |  |  |  |
| 6:00 PM  |           |  |  |  |  |  |
| 7:00 PM  |           |  |  |  |  |  |
| 8:00 PM  |           |  |  |  |  |  |
| 9:00 PM  |           |  |  |  |  |  |
| 10:00 PM |           |  |  |  |  |  |
| 11:00 PM |           |  |  |  |  |  |

Person

Organization

Phone

Fax

Email

Notes

Enter data on the web at [www.ite.org](http://www.ite.org)

Comments to: [ite\\_staff@ite.org](mailto:ite_staff@ite.org)

IF not entered on web site, please mail to:

Institute of Transportation Engineers, 1099 14th Street, NW Suite 300 West; Washington, DC 20005-3438



# Queuing Demand Survey Form

Institute of Transportation Engineers

(fill in all highlighted cells - \* are required data)

Land Use Code\*

Name of Site

**Brief Description of Site**

Transit\*

Area\*

TMP\*

City

State  Country

Parking Price\* \$

Daily Rate  Hourly Rate

Site Size\*

Units\*

Occupancy\*

Land Use

Site Size

Units

Occupancy

Site Size

Units

Occupancy

Site Size

Units

Occupancy

Number of Parking Spaces Provided at Site

Available Queue Space (behind order location)

**Highest Observed Queuing Demand for the following hours of the day (hour beginning)\***

| Date     | 4/15/2008 |  |  |  |  |  |
|----------|-----------|--|--|--|--|--|
| Day      | Tuesday   |  |  |  |  |  |
| 12 Mid   |           |  |  |  |  |  |
| 1:00 AM  |           |  |  |  |  |  |
| 2:00 AM  |           |  |  |  |  |  |
| 3:00 AM  |           |  |  |  |  |  |
| 4:00 AM  |           |  |  |  |  |  |
| 5:00 AM  |           |  |  |  |  |  |
| 6:00 AM  |           |  |  |  |  |  |
| 7:00 AM  | 3         |  |  |  |  |  |
| 8:00 AM  | 4         |  |  |  |  |  |
| 9:00 AM  |           |  |  |  |  |  |
| 10:00 AM |           |  |  |  |  |  |
| 11:00 AM | 2         |  |  |  |  |  |
| 12 Noon  | 2         |  |  |  |  |  |
| 1:00 PM  |           |  |  |  |  |  |
| 2:00 PM  |           |  |  |  |  |  |
| 3:00 PM  |           |  |  |  |  |  |
| 4:00 PM  |           |  |  |  |  |  |
| 5:00 PM  |           |  |  |  |  |  |
| 6:00 PM  |           |  |  |  |  |  |
| 7:00 PM  |           |  |  |  |  |  |
| 8:00 PM  |           |  |  |  |  |  |
| 9:00 PM  |           |  |  |  |  |  |
| 10:00 PM |           |  |  |  |  |  |
| 11:00 PM |           |  |  |  |  |  |

Person

Organization

Phone

Fax

Email

Notes

Enter data on the web at [www.ite.org](http://www.ite.org)

Comments to: [ite\\_staff@ite.org](mailto:ite_staff@ite.org)

IF not entered on web site, please mail to:

Institute of Transportation Engineers, 1099 14th Street, NW Suite 300 West; Washington, DC 20005-3438

## AM Peak Period Queuing Data

Location: Hwy. 34 & County Rd. 5, Johnstown

Date: 4/15/08 Time Period: 7 AM-9 AM

Observer(s) Jenna Buddemeyer, Alan Moore, Cheng Zhong

Conditions: sunny

Description of Time Points: right next to order sign, and then the end of the drive-thru (trashcan)

| Veh. # | Entering the Queue |                 |              | Order Time  |                 | Departure Time |                 | Queue Time | Service time |
|--------|--------------------|-----------------|--------------|-------------|-----------------|----------------|-----------------|------------|--------------|
|        | Actual Time        | Stop Watch Time | Queue Length | Actual Time | Stop Watch Time | Actual Time    | Stop Watch Time |            |              |
| 1      |                    | 7:00:00         | 1            | 7:00 AM     | 7:00:00         | 7:03:10 AM     | 7:03:10         | 0:00:00    | 0:03:10      |
| 2      |                    | 7:01:45         | 1            | 7:01:45 AM  | 7:01:45         | 7:04:10 AM     | 7:04:10         | 0:00:00    | 0:02:25      |
| 3      |                    | 7:03:53         | 1            | 7:03:53 AM  | 7:03:53         | 7:05:15 AM     | 7:05:15         | 0:00:00    | 0:01:22      |
| 4      | 7:03:53 AM         | 7:03:53         | 2            | 7:04:23 AM  | 7:04:23         | 7:07:00 AM     | 7:07:00         | 0:00:30    | 0:02:37      |
| 5      | 7:04:20 AM         | 7:04:20         | 3            | 7:04:45 AM  | 7:04:45         | 7:09:10 AM     | 7:09:10         | 0:00:25    | 0:04:25      |
| 6      |                    | 7:11:33         | 1            | 7:11:33 AM  | 7:11:33         | 7:13:10 AM     | 7:13:10         | 0:00:00    | 0:01:37      |
| 7      |                    | 7:12:09         | 1            | 7:12:09 AM  | 7:12:09         | 7:14:00 AM     | 7:14:00         | 0:00:00    | 0:01:51      |
| 8      |                    | 7:12:33         | 1            | 7:12:33 AM  | 7:12:33         | 7:14:40 AM     | 7:14:40         | 0:00:00    | 0:02:07      |
| 9      |                    | 7:14:08         | 1            | 7:14:08 AM  | 7:14:08         | 7:17:35 AM     | 7:17:35         | 0:00:00    | 0:03:27      |
| 10     |                    | 7:15:29         | 1            | 7:15:29 AM  | 7:15:29         | 7:18:08 AM     | 7:18:08         | 0:00:00    | 0:02:39      |
| 11     | 7:15:30 AM         | 7:15:30         | 2            | 7:16:08 AM  | 7:16:08         | 7:19:06 AM     | 7:19:06         | 0:00:38    | 0:02:58      |
| 12     | 7:16:31 AM         | 7:16:31         | 3            | 7:16:42 AM  | 7:16:42         | 7:20:02 AM     | 7:20:02         | 0:00:11    | 0:03:20      |
| 13     |                    | 7:18:59         | 1            | 7:18:59 AM  | 7:18:59         | 7:20:39 AM     | 7:20:39         | 0:00:00    | 0:01:40      |
| 14     |                    | 7:23:23         | 1            | 7:23:23 AM  | 7:23:23         | 7:25:03 AM     | 7:25:03         | 0:00:00    | 0:01:40      |
| 15     |                    | 7:24:45         | 1            | 7:24:45 AM  | 7:24:45         | 7:27:13 AM     | 7:27:13         | 0:00:00    | 0:02:28      |
| 16     |                    | 7:25:50         | 1            | 7:25:50 AM  | 7:25:50         | 7:28:17 AM     | 7:28:17         | 0:00:00    | 0:02:27      |
| 17     |                    | 7:30:38         | 1            | 7:30:38 AM  | 7:30:38         | 7:33:00 AM     | 7:33:00         | 0:00:00    | 0:02:22      |
| 18     |                    | 7:31:01         | 1            | 7:31:01 AM  | 7:31:01         | 7:34:52 AM     | 7:34:52         | 0:00:00    | 0:03:51      |
| 19     |                    | 7:32:04         | 1            | 7:32:04 AM  | 7:32:04         | 7:36:29 AM     | 7:36:29         | 0:00:00    | 0:04:25      |
| 20     | 7:32:10 AM         | 7:32:10         | 2            | 7:32:35 AM  | 7:32:35         | 7:37:19 AM     | 7:37:19         | 0:00:25    | 0:04:44      |
| 21     |                    | 7:34:10         | 1            | 7:34:10 AM  | 7:34:10         | 7:37:15 AM     | 7:37:15         | 0:00:00    | 0:03:05      |
| 22     |                    | 7:34:43         | 1            | 7:34:43 AM  | 7:34:43         | 7:39:02 AM     | 7:39:02         | 0:00:00    | 0:04:19      |
| 23     |                    | 7:35:30         | 1            | 7:35:30 AM  | 7:35:30         | 7:41:06 AM     | 7:41:06         | 0:00:00    | 0:05:36      |
| 24     |                    | 7:39:05         | 1            | 7:39:05 AM  | 7:39:05         | 7:42:17 AM     | 7:42:17         | 0:00:00    | 0:03:12      |
| 25     | 7:39:12 AM         | 7:39:12         | 2            | 7:40:04 AM  | 7:40:04         | 7:43:30 AM     | 7:43:30         | 0:00:52    | 0:03:26      |
| 26     | 7:39:18 AM         | 7:39:18         | 3            | 7:40:34 AM  | 7:40:34         | 7:44:35 AM     | 7:44:35         | 0:01:16    | 0:04:01      |
| 27     | 7:40:35 AM         | 7:40:35         | 4            | 7:41:30 AM  | 7:41:30         | 7:45:35 AM     | 7:45:35         | 0:00:55    | 0:04:05      |
| 28     |                    | 7:42:04         | 1            | 7:42:04 AM  | 7:42:04         | 7:46:16 AM     | 7:46:16         | 0:00:00    | 0:04:12      |
| 29     | 7:42:04 AM         | 7:42:04         | 2            | 7:42:43 AM  | 7:42:43         | 7:47:57 AM     | 7:47:57         | 0:00:39    | 0:05:14      |
| 30     |                    | 7:44:06         | 1            | 7:44:06 AM  | 7:44:06         | 7:49:09 AM     | 7:49:09         | 0:00:00    | 0:05:03      |
| 31     |                    | 7:46:00         | 1            | 7:46:00 AM  | 7:46:00         | 7:50:25 AM     | 7:50:25         | 0:00:00    | 0:04:25      |
| 32     |                    | 7:47:26         | 1            | 7:47:26 AM  | 7:47:26         | 7:51:06 AM     | 7:51:06         | 0:00:00    | 0:03:40      |
| 33     | 7:47:56 AM         | 7:47:56         | 2            | 7:48:21 AM  | 7:48:21         | 7:53:44 AM     | 7:53:44         | 0:00:25    | 0:05:23      |
| 34     |                    | 7:50:10         | 1            | 7:50:10 AM  | 7:50:10         | 7:54:32 AM     | 7:54:32         | 0:00:00    | 0:04:22      |

|    |            |         |   |            |         |            |         |         |         |
|----|------------|---------|---|------------|---------|------------|---------|---------|---------|
| 35 | 7:50:36 AM | 7:50:36 | 2 | 7:51:50 AM | 7:51:50 | 7:55:12 AM | 7:55:12 | 0:01:14 | 0:03:22 |
| 36 |            | 7:52:07 | 1 | 7:52:07 AM | 7:52:07 | 7:56:46 AM | 7:56:46 | 0:00:00 | 0:04:39 |
| 37 |            | 7:54:10 | 1 | 7:54:10 AM | 7:54:10 | 7:58:13 AM | 7:58:13 | 0:00:00 | 0:04:03 |
| 38 | 7:54:11 AM | 7:54:11 | 2 | 7:55:30 AM | 7:55:30 | 7:59:28 AM | 7:59:28 | 0:01:19 | 0:03:58 |
| 39 | 7:54:40 AM | 7:54:40 | 3 | 7:55:45 AM | 7:55:45 | 8:00:58 AM | 8:00:58 | 0:01:05 | 0:05:13 |
| 40 | 7:55:07 AM | 7:55:07 | 4 | 7:56:06 AM | 7:56:06 | 8:01:58 AM | 8:01:58 | 0:00:59 | 0:05:52 |
| 41 |            | 7:57:28 | 1 | 7:57:28 AM | 7:57:28 | 8:03:13 AM | 8:03:13 | 0:00:00 | 0:05:45 |
| 42 |            | 7:58:08 | 1 | 7:58:08 AM | 7:58:08 | 8:03:55 AM | 8:03:55 | 0:00:00 | 0:05:47 |
| 43 |            | 8:02:55 | 1 | 8:02:55 AM | 8:02:55 | 8:09:27 AM | 8:09:27 | 0:00:00 | 0:06:32 |
| 44 | 8:02:58 AM | 8:02:58 | 2 | 8:03:38 AM | 8:03:38 | 8:11:03 AM | 8:11:03 | 0:00:40 | 0:07:25 |
| 45 | 8:03:15 AM | 8:03:15 | 3 | 8:04:27 AM | 8:04:27 | 8:12:17 AM | 8:12:17 | 0:01:12 | 0:07:50 |
| 46 | 8:03:15 AM | 8:03:15 | 4 | 8:04:50 AM | 8:04:50 | 8:13:26 AM | 8:13:26 | 0:01:35 | 0:08:36 |
| 47 |            | 8:06:55 | 1 | 8:06:55 AM | 8:06:55 | 8:14:23 AM | 8:14:23 | 0:00:00 | 0:07:28 |
| 48 |            | 8:07:45 | 1 | 8:07:45 AM | 8:07:45 | 8:17:02 AM | 8:17:02 | 0:00:00 | 0:09:17 |
| 49 |            | 8:11:30 | 1 | 8:11:30 AM | 8:11:30 | 8:18:28 AM | 8:18:28 | 0:00:00 | 0:06:58 |
| 50 | 8:11:58 AM | 8:11:58 | 2 | 8:12:30 AM | 8:12:30 | 8:20:33 AM | 8:20:33 | 0:00:32 | 0:08:03 |
| 51 | 8:12:11 AM | 8:12:11 | 3 | 8:12:57 AM | 8:12:57 | 8:21:40 AM | 8:21:40 | 0:00:46 | 0:08:43 |
| 52 | 8:12:14 AM | 8:12:14 | 4 | 8:13:42 AM | 8:13:42 | 8:22:40 AM | 8:22:40 | 0:01:28 | 0:08:58 |
| 53 |            | 8:16:14 | 1 | 8:16:14 AM | 8:16:14 | 8:24:29 AM | 8:24:29 | 0:00:00 | 0:08:15 |
| 54 | 8:17:01 AM | 8:17:01 | 2 | 8:17:20 AM | 8:17:20 | 8:25:40 AM | 8:25:40 | 0:00:19 | 0:08:20 |
| 55 |            | 8:18:43 | 1 | 8:18:43 AM | 8:18:43 | 8:26:24 AM | 8:26:24 | 0:00:00 | 0:07:41 |
| 56 | 8:19:01 AM | 8:19:01 | 2 | 8:20:53 AM | 8:20:53 | 8:27:55 AM | 8:27:55 | 0:01:52 | 0:07:02 |
| 57 |            | 8:22:53 | 1 | 8:22:53 AM | 8:22:53 | 8:29:20 AM | 8:29:20 | 0:00:00 | 0:06:27 |
| 58 | 8:23:46 AM | 8:23:46 | 2 | 8:24:25 AM | 8:24:25 | 8:30:59 AM | 8:30:59 | 0:00:39 | 0:06:34 |
| 59 | 8:23:50 AM | 8:23:50 | 3 | 8:24:45 AM | 8:24:45 | 8:31:38 AM | 8:31:38 | 0:00:55 | 0:06:53 |
| 60 | 8:23:50 AM | 8:23:50 | 4 | 8:26:05 AM | 8:26:05 | 8:32:12 AM | 8:32:12 | 0:02:15 | 0:06:07 |
| 61 |            | 8:29:13 | 1 | 8:29:13 AM | 8:29:13 | 8:33:28 AM | 8:33:28 | 0:00:00 | 0:04:15 |
| 62 | 8:29:48 AM | 8:29:48 | 2 | 8:30:17 AM | 8:30:17 | 8:33:40 AM | 8:33:40 | 0:00:29 | 0:03:23 |
| 63 |            | 8:30:47 | 1 | 8:30:47 AM | 8:30:47 | 8:34:51 AM | 8:34:51 | 0:00:00 | 0:04:04 |
| 64 |            | 8:32:10 | 1 | 8:32:10 AM | 8:32:10 | 8:35:17 AM | 8:35:17 | 0:00:00 | 0:03:07 |
| 65 |            | 8:33:05 | 1 | 8:33:05 AM | 8:33:05 | 8:35:55 AM | 8:35:55 | 0:00:00 | 0:02:50 |
| 66 |            | 8:33:45 | 1 | 8:33:45 AM | 8:33:45 | 8:36:34 AM | 8:36:34 | 0:00:00 | 0:02:49 |
| 67 | 8:33:50 AM | 8:33:50 | 2 | 8:34:20 AM | 8:34:20 | 8:37:32 AM | 8:37:32 | 0:00:30 | 0:03:12 |
| 68 |            | 8:35:54 | 1 | 8:35:54 AM | 8:35:54 | 8:39:35 AM | 8:39:35 | 0:00:00 | 0:03:41 |
| 69 |            | 8:36:27 | 1 | 8:36:27 AM | 8:36:27 | 8:40:34 AM | 8:40:34 | 0:00:00 | 0:04:07 |
| 70 |            | 8:38:20 | 1 | 8:38:20 AM | 8:38:20 | 8:42:11 AM | 8:42:11 | 0:00:00 | 0:03:51 |
| 71 | 8:38:47 AM | 8:38:47 | 2 | 8:39:00 AM | 8:39:00 | 8:43:26 AM | 8:43:26 | 0:00:13 | 0:04:26 |
| 72 |            | 8:39:20 | 1 | 8:39:20 AM | 8:39:20 | 8:44:03 AM | 8:44:03 | 0:00:00 | 0:04:43 |
| 73 | 8:39:40 AM | 8:39:40 | 2 | 8:40:33 AM | 8:40:33 | 8:45:06 AM | 8:45:06 | 0:00:53 | 0:04:33 |
| 74 | 8:39:40 AM | 8:39:40 | 3 | 8:41:01 AM | 8:41:01 | 8:46:33 AM | 8:46:33 | 0:01:21 | 0:05:32 |
| 75 |            | 8:41:45 | 1 | 8:41:45 AM | 8:41:45 | 8:47:25 AM | 8:47:25 | 0:00:00 | 0:05:40 |
| 76 | 8:42:00 AM | 8:42:00 | 2 | 8:42:35 AM | 8:42:35 | 8:48:13 AM | 8:48:13 | 0:00:35 | 0:05:38 |
| 77 |            | 8:44:05 | 1 | 8:44:05 AM | 8:44:05 | 8:48:49 AM | 8:48:49 | 0:00:00 | 0:04:44 |
| 78 |            | 8:47:25 | 1 | 8:47:25 AM | 8:47:25 | 8:49:49 AM | 8:49:49 | 0:00:00 | 0:02:24 |
| 79 |            | 8:47:53 | 1 | 8:47:53 AM | 8:47:53 | 8:53:09 AM | 8:53:09 | 0:00:00 | 0:05:16 |
| 80 |            | 8:50:00 | 1 | 8:50:00 AM | 8:50:00 | 8:54:40 AM | 8:54:40 | 0:00:00 | 0:04:40 |
| 81 | 8:50:10 AM | 8:50:10 | 2 | 8:50:35 AM | 8:50:35 | 8:55:17 AM | 8:55:17 | 0:00:25 | 0:04:42 |
| 82 |            | 8:51:28 | 1 | 8:51:28 AM | 8:51:28 | 8:56:13 AM | 8:56:13 | 0:00:00 | 0:04:45 |

|    |  |         |   |            |         |            |         |          |         |       |
|----|--|---------|---|------------|---------|------------|---------|----------|---------|-------|
| 83 |  | 8:53:13 | 1 | 8:53:13 AM | 8:53:13 | 8:56:56 AM | 8:56:56 | 0:00:00  | 0:03:43 |       |
| 84 |  | 8:57:36 | 1 | 8:57:36 AM | 8:57:36 | 9:01:04 AM | 9:01:04 | 0:00:00  | 0:03:28 |       |
| 85 |  | 8:58:06 | 1 | 8:58:06 AM | 8:58:06 | 9:04:54 AM | 9:04:54 | 0:00:00  | 0:06:48 |       |
|    |  |         |   |            |         |            |         | AVERAGE= | 00:19   | 04:41 |
|    |  |         |   |            |         |            |         | MEDIAN=  | 00:00   | 04:25 |
|    |  |         |   |            |         |            |         | MINIMUM= | 00:00   | 01:22 |
|    |  |         |   |            |         |            |         | MAXIMUM= | 02:15   | 09:17 |

# MidDay Queuing Data

Location: Hwy. 34 & County Rd. 5, Johnstown

Date: 4/15/08 Time Period: 11 AM-1 PM

Observer(s): Jenna Buddemeyer, Alan Moore, Cheng Zhong

Conditions: sunny

Description of Time Points: right next to order sign, and then the end of the drive-thru (trashcan)

| Veh. # | Entering the Queue |              | Order Time  |                 | Departure Time |                 | Queue Time | Service time |
|--------|--------------------|--------------|-------------|-----------------|----------------|-----------------|------------|--------------|
|        | Stop Watch Time    | Queue Length | Actual Time | Stop Watch Time | Actual Time    | Stop Watch Time |            |              |
| 1      | 11:01:42           | 1            | 11:01:42 AM | 11:01:42        | 11:03:55 AM    | 11:03:55        | 00:00      | 0:02:13      |
| 2      | 11:02:23           | 1            | 11:02:23 AM | 11:02:23        | 11:06:44 AM    | 11:06:44        | 00:00      | 0:04:21      |
| 3      | 11:03:56           | 1            | 11:03:56 AM | 11:03:56        | 11:07:42 AM    | 11:07:42        | 00:00      | 0:03:46      |
| 4      | 11:04:58           | 1            | 11:04:58 AM | 11:04:58        | 11:09:21 AM    | 11:09:21        | 00:00      | 0:04:23      |
| 5      | 11:06:58           | 1            | 11:06:58 AM | 11:06:58        | 11:10:23 AM    | 11:10:23        | 00:00      | 0:03:25      |
| 6      | 11:09:03           | 1            | 11:09:03 AM | 11:09:03        | 11:11:59 AM    | 11:11:59        | 00:00      | 0:02:56      |
| 7      | 11:12:35           | 1            | 11:12:35 AM | 11:12:35        | 11:17:56 AM    | 11:17:56        | 00:00      | 0:05:21      |
| 8      | 11:14:27           | 1            | 11:14:27 AM | 11:14:27        | 11:19:12 AM    | 11:19:12        | 00:00      | 0:04:45      |
| 9      | 11:15:45           | 1            | 11:15:45 AM | 11:15:45        | 11:21:50 AM    | 11:21:50        | 00:00      | 0:06:05      |
| 10     | 11:19:55           | 1            | 11:19:55 AM | 11:19:55        | 11:22:37 AM    | 11:22:37        | 00:00      | 0:02:42      |
| 11     | 11:24:15           | 1            | 11:24:15 AM | 11:24:15        | 11:26:25 AM    | 11:26:25        | 00:00      | 0:02:10      |
| 12     | 11:44:13           | 1            | 11:44:13 AM | 11:44:13        | 11:47:30 AM    | 11:47:30        | 00:00      | 0:03:17      |
| 13     | 11:48:08           | 1            | 11:48:08 AM | 11:48:08        | 11:52:04 AM    | 11:52:04        | 00:00      | 0:03:56      |
| 14     | 11:51:26           | 1            | 11:51:26 AM | 11:51:26        | 11:55:00 AM    | 11:55:00        | 00:00      | 0:03:34      |
| 15     | 11:52:26           | 1            | 11:52:26 AM | 11:52:26        | 11:56:36 AM    | 11:56:36        | 00:00      | 0:04:10      |
| 16     | 11:55:53           | 1            | 11:55:53 AM | 11:55:53        | 11:58:33 AM    | 11:58:33        | 00:00      | 0:02:40      |
| 17     | 11:56:33           | 1            | 11:56:33 AM | 11:56:33        | 12:01:02 AM    | 0:01:02         | 00:00      | 0:04:29      |
| 18     | 11:57:30           | 1            | 11:57:30 AM | 11:57:30        | 12:01:55 AM    | 0:01:55         | 00:00      | 0:04:25      |
| 19     | 11:58:27           | 1            | 11:58:27 AM | 11:58:27        | 12:02:26 AM    | 0:02:26         | 00:00      | 0:03:59      |
| 20     | 12:13:23           | 1            | 12:13:23 PM | 12:13:23        | 12:15:41 PM    | 12:15:41        | 00:00      | 0:02:18      |
| 21     | 12:14:57           | 1            | 12:14:57 PM | 12:14:57        | 12:16:38 PM    | 12:16:38        | 00:00      | 0:01:41      |
| 22     | 12:18:04           | 1            | 12:18:04 PM | 12:18:04        | 12:22:28 PM    | 12:22:28        | 00:00      | 0:04:24      |
| 23     | 12:24:45           | 1            | 12:24:45 PM | 12:24:45        | 12:27:12 PM    | 12:27:12        | 00:00      | 0:02:27      |
| 24     | 12:28:11           | 1            | 12:28:11 PM | 12:28:11        | 12:29:51 PM    | 12:29:51        | 00:00      | 0:01:40      |
| 25     | 12:31:58           | 1            | 12:31:58 PM | 12:31:58        | 12:34:47 PM    | 12:34:47        | 00:00      | 0:02:49      |
| 26     | 12:34:04           | 1            | 12:34:04 PM | 12:34:04        | 12:37:02 PM    | 12:37:02        | 00:00      | 0:02:58      |
| 27     | 12:38:07           | 1            | 12:38:07 PM | 12:38:07        | 12:41:10 PM    | 12:41:10        | 00:00      | 0:03:03      |
| 28     | 12:43:06           | 1            | 12:43:06 PM | 12:43:06        | 12:48:32 PM    | 12:48:32        | 00:00      | 0:05:26      |
| 29     | 12:45:52           | 1            | 12:45:52 PM | 12:45:52        | 12:50:41 PM    | 12:50:41        | 00:00      | 0:04:49      |
| 30     | 12:50:34           | 1            | 12:50:34 PM | 12:50:34        | 12:52:09 PM    | 12:52:09        | 00:00      | 0:01:35      |
| 31     | 12:54:24           | 1            | 12:54:24 PM | 12:54:24        | 12:59:56 PM    | 12:59:56        | 00:00      | 0:05:32      |
| 32     | 12:56:53           | 1            | 12:56:53 PM | 12:56:53        | 1:01:00 PM     | 13:01:00        | 00:00      | 0:04:07      |
| 33     | 12:59:47           | 1            | 12:59:47    | 12:59:47        | 1:02:10 PM     | 13:02:10        | 00:00      | 0:02:23      |
|        |                    |              |             |                 |                |                 | average    | 03:34        |
|        |                    |              |             |                 |                |                 | median=    | 03:34        |
|        |                    |              |             |                 |                |                 | min=       | 01:35        |
|        |                    |              |             |                 |                |                 | max=       | 06:05        |

## AM Peak Period Queuing Data

Location: Hwy. 34 & Taft, Loveland

Date: 04/15/2008

Time Period: 7:00 AM - 9:00 AM

Observer(s): R. Young, M. Edwards, Q. Dai

Conditions: Sunny

Description of Time Points: Entering the Queue time point was as soon as they entered the drive up window line. Ordering time started when they approached the order window.

Departure was when they came around the edge of the building

**Stopwatch time started at 6:57 AM**

| Veh. # | Entering the Queue |              | Order Time      | Departure Time  | Time in Queue | Service Time |
|--------|--------------------|--------------|-----------------|-----------------|---------------|--------------|
|        | Stop Watch Time    | Queue Length | Stop Watch Time | Stop Watch Time |               |              |
| 1      | 0:00:57            | 4            | 0:04:30         | 0:08:26         | 0:03:33       | 0:03:56      |
| 2      | 0:03:33            | 4            | 0:05:08         | 0:08:59         | 0:01:35       | 0:03:51      |
| 3      | 0:04:16            | 4            | 0:05:38         | 0:10:49         | 0:01:22       | 0:05:11      |
| 4      | 0:05:13            | 3            | 0:07:36         | 0:12:06         | 0:02:23       | 0:04:30      |
| 5      | 0:07:19            | 2            | 0:08:35         | 0:13:40         | 0:01:16       | 0:05:05      |
| 6      | 0:10:06            | 1            | 0:10:06         | 0:14:14         | 0:00:00       | 0:04:08      |
| 7      | 0:11:00            | 1            | 0:11:00         | 0:16:38         | 0:00:00       | 0:05:38      |
| 8      | 0:12:15            | 1            | 0:12:15         | 0:17:33         | 0:00:00       | 0:05:18      |
| 9      | 0:14:15            | 1            | 0:14:15         | 0:18:16         | 0:00:00       | 0:04:01      |
| 10     | 0:14:40            | 2            | 0:15:29         | 0:18:56         | 0:00:49       | 0:03:27      |
| 11     | 0:14:48            | 3            | 0:16:45         | 0:20:06         | 0:01:57       | 0:03:21      |
| 12     | 0:14:59            | 4            | 0:17:23         | 0:21:55         | 0:02:24       | 0:04:32      |
| 13     | 0:15:00            | 5            | 0:17:58         | 0:22:29         | 0:02:58       | 0:04:31      |
| 14     | 0:15:43            | 5            | 0:18:42         | 0:22:52         | 0:02:59       | 0:04:10      |
| 15     | 0:17:15            | 5            | 0:19:16         | 0:25:03         | 0:02:01       | 0:05:47      |
| 16     | 0:17:24            | 5            | 0:20:22         | 0:25:54         | 0:02:58       | 0:05:32      |
| 17     | 0:18:42            | 4            | 0:22:07         | 0:26:12         | 0:03:25       | 0:04:05      |
| 18     | 0:20:07            | 4            | 0:22:38         | 0:26:31         | 0:02:31       | 0:03:53      |
| 19     | 0:20:40            | 4            | 0:23:05         | 0:27:26         | 0:02:25       | 0:04:21      |
| 20     | 0:23:11            | 2            | 0:25:02         | 0:27:44         | 0:01:51       | 0:02:42      |
| 21     | 0:23:30            | 3            | 0:26:12         | 0:29:07         | 0:02:42       | 0:02:55      |
| 22     | 0:23:38            | 4            | 0:26:30         | 0:30:16         | 0:02:52       | 0:03:46      |
| 23     | 0:24:53            | 5            | 0:27:15         | 0:31:14         | 0:02:22       | 0:03:59      |
| 24     | 0:26:05            | 4            | 0:28:08         | 0:32:47         | 0:02:03       | 0:04:39      |
| 25     | 0:28:21            | 2            | 0:28:57         | 0:33:55         | 0:00:36       | 0:04:58      |
| 26     | 0:28:30            | 3            | 0:29:50         | 0:34:30         | 0:01:20       | 0:04:40      |
| 27     | 0:28:43            | 4            | 0:30:24         | 0:35:11         | 0:01:41       | 0:04:47      |
| 28     | 0:28:09            | 4            | 0:31:27         | 0:36:44         | 0:03:18       | 0:05:17      |
| 29     | 0:28:10            | 5            | 0:32:56         | 0:37:49         | 0:04:46       | 0:04:53      |

|    |         |   |         |         |         |         |
|----|---------|---|---------|---------|---------|---------|
| 30 | 0:31:46 | 4 | 0:34:40 | 0:39:37 | 0:02:54 | 0:04:57 |
| 31 | 0:35:09 | 4 | 0:39:40 | 0:42:59 | 0:04:31 | 0:03:19 |
| 32 | 0:35:59 | 4 | 0:40:04 | 0:44:31 | 0:04:05 | 0:04:27 |
| 33 | 0:37:55 | 5 | 0:40:41 | 0:45:13 | 0:02:46 | 0:04:32 |
| 34 | 0:38:53 | 5 | 0:41:16 | 0:45:58 | 0:02:23 | 0:04:42 |
| 35 | 0:39:55 | 4 | 0:41:52 | 0:49:58 | 0:01:57 | 0:08:06 |
| 36 | 0:40:22 | 5 | 0:44:12 | 0:50:40 | 0:03:50 | 0:06:28 |
| 37 | 0:42:09 | 3 | 0:44:38 | 0:51:30 | 0:02:29 | 0:06:52 |
| 38 | 0:42:37 | 4 | 0:45:59 | 0:52:04 | 0:03:22 | 0:06:05 |
| 39 | 0:43:55 | 5 | 0:46:32 | 0:52:44 | 0:02:37 | 0:06:12 |
| 40 | 0:44:19 | 5 | 0:50:02 | 0:53:36 | 0:05:43 | 0:03:34 |
| 41 | 0:46:06 | 4 | 0:50:42 | 0:53:53 | 0:04:36 | 0:03:11 |
| 42 | 0:46:16 | 5 | 0:51:30 | 0:54:24 | 0:05:14 | 0:02:54 |
| 43 | 0:46:58 | 5 | 0:52:00 | 0:55:52 | 0:05:02 | 0:03:52 |
| 44 | 0:51:15 | 4 | 0:52:39 | 0:56:25 | 0:01:24 | 0:03:46 |
| 45 | 0:51:40 | 5 | 0:53:00 | 0:57:05 | 0:01:20 | 0:04:05 |
| 46 | 0:51:50 | 5 | 0:54:05 | 0:57:39 | 0:02:15 | 0:03:34 |
| 47 | 0:53:05 | 3 | 0:54:38 | 0:58:03 | 0:01:33 | 0:03:25 |
| 48 | 0:53:50 | 4 | 0:55:46 | 0:58:30 | 0:01:56 | 0:02:44 |
| 49 | 0:53:55 | 5 | 0:56:15 | 0:58:58 | 0:02:20 | 0:02:43 |
| 50 | 0:55:31 | 4 | 0:57:03 | 1:00:08 | 0:01:32 | 0:03:05 |
| 51 | 0:56:05 | 4 | 0:57:37 | 1:01:29 | 0:01:32 | 0:03:52 |
| 52 | 0:56:04 | 3 | 0:58:20 | 1:01:58 | 0:02:16 | 0:03:38 |
| 53 | 0:58:33 | 2 | 0:58:54 | 1:03:20 | 0:00:21 | 0:04:26 |
| 54 | 0:58:40 | 3 | 1:00:15 | 1:04:01 | 0:01:35 | 0:03:46 |
| 55 | 0:58:59 | 3 | 1:00:37 | 1:04:34 | 0:01:38 | 0:03:57 |
| 56 | 0:59:15 | 4 | 1:01:57 | 1:05:29 | 0:02:42 | 0:03:32 |
| 57 | 1:00:09 | 5 | 1:02:36 | 1:06:20 | 0:02:27 | 0:03:44 |
| 58 | 1:01:20 | 4 | 1:03:20 | 1:07:15 | 0:02:00 | 0:03:55 |
| 59 | 1:01:25 | 5 | 1:03:57 | 1:08:04 | 0:02:32 | 0:04:07 |
| 60 | 1:05:39 | 1 | 1:05:39 | 1:11:30 | 0:00:00 | 0:05:51 |
| 61 | 1:08:05 | 2 | 1:08:27 | 1:12:01 | 0:00:22 | 0:03:34 |
| 62 | 1:08:49 | 2 | 1:09:14 | 1:12:38 | 0:00:25 | 0:03:24 |
| 63 | 1:09:50 | 1 | 1:09:50 | 1:13:15 | 0:00:00 | 0:03:25 |
| 64 | 1:09:58 | 2 | 1:10:24 | 1:14:15 | 0:00:26 | 0:03:51 |
| 65 | 1:10:30 | 2 | 1:11:39 | 1:17:23 | 0:01:09 | 0:05:44 |
| 66 | 1:10:44 | 3 | 1:12:15 | 1:20:41 | 0:01:31 | 0:08:26 |
| 67 | 1:11:35 | 3 | 1:12:50 | 1:21:14 | 0:01:15 | 0:08:24 |
| 68 | 1:12:04 | 3 | 1:14:17 | 1:21:32 | 0:02:13 | 0:07:15 |
| 69 | 1:13:35 | 3 | 1:14:07 | 1:21:32 | 0:00:32 | 0:07:25 |
| 70 | 1:13:35 | 3 | 1:14:32 | 1:21:50 | 0:00:57 | 0:07:18 |
| 71 | 1:14:29 | 2 | 1:17:20 | 1:22:41 | 0:02:51 | 0:05:21 |
| 72 | 1:17:35 | 4 | 1:21:52 | 1:26:28 | 0:04:17 | 0:04:36 |
| 73 | 1:18:02 | 5 | 1:22:42 | 1:26:52 | 0:04:40 | 0:04:10 |
| 74 | 1:20:05 | 6 | 1:23:06 | 1:28:40 | 0:03:01 | 0:05:34 |
| 75 | 1:21:31 | 5 | 1:23:48 | 1:30:11 | 0:02:17 | 0:06:23 |
| 76 | 1:23:40 | 2 | 1:24:42 | 1:30:40 | 0:01:02 | 0:05:58 |

|     |         |   |         |         |         |         |
|-----|---------|---|---------|---------|---------|---------|
| 77  | 1:25:05 | 2 | 1:26:30 | 1:31:23 | 0:01:25 | 0:04:53 |
| 78  | 1:27:17 | 1 | 1:27:17 | 1:31:53 | 0:00:00 | 0:04:36 |
| 79  | 1:28:43 | 1 | 1:28:43 | 1:32:14 | 0:00:00 | 0:03:31 |
| 80  | 1:28:43 | 2 | 1:28:49 | 1:36:14 | 0:00:06 | 0:07:25 |
| 81  | 1:31:11 |   | 1:31:41 | 1:37:41 | 0:00:30 | 0:06:00 |
| 82  | 1:29:37 | 5 | 1:32:05 | 1:38:09 | 0:02:28 | 0:06:04 |
| 83  | 1:30:46 | 5 | 1:32:28 | 1:38:57 | 0:01:42 | 0:06:29 |
| 84  | 1:30:58 | 6 | 1:35:01 | 1:39:28 | 0:04:03 | 0:04:27 |
| 85  | 1:31:34 | 6 | 1:36:15 | 1:39:50 | 0:04:41 | 0:03:35 |
| 86  | 1:33:27 | 5 | 1:36:39 | 1:41:24 | 0:03:12 | 0:04:45 |
| 87  | 1:33:35 | 5 | 1:37:38 | 1:43:03 | 0:04:03 | 0:05:25 |
| 88  | 1:33:48 | 6 | 1:38:11 | 1:43:29 | 0:04:23 | 0:05:18 |
| 89  | 1:35:58 | 7 | 1:39:27 | 1:44:44 | 0:03:29 | 0:05:17 |
| 90  | 1:36:33 | 7 | 1:39:58 | 1:45:05 | 0:03:25 | 0:05:07 |
| 91  | 1:38:52 | 4 | 1:41:55 | 1:45:43 | 0:03:03 | 0:03:48 |
| 92  | 1:40:07 | 3 | 1:43:09 | 1:46:27 | 0:03:02 | 0:03:18 |
| 93  | 1:42:10 | 3 | 1:43:42 | 1:46:57 | 0:01:32 | 0:03:15 |
| 94  | 1:43:20 | 4 | 1:45:12 | 1:47:58 | 0:01:52 | 0:02:46 |
| 95  | 1:44:21 | 3 | 1:46:05 | 1:48:24 | 0:01:44 | 0:02:19 |
| 96  | 1:44:36 | 4 | 1:47:50 | 1:49:27 | 0:03:14 | 0:01:37 |
| 97  | 1:46:59 | 2 | 1:49:05 | 1:50:33 | 0:02:06 | 0:01:28 |
| 98  | 1:48:16 | 2 | 1:49:35 | 1:51:20 | 0:01:19 | 0:01:45 |
| 99  | 1:48:49 | 3 | 1:49:51 | 1:51:38 | 0:01:02 | 0:01:47 |
| 100 | 1:49:29 | 2 | 1:50:04 | 1:52:38 | 0:00:35 | 0:02:34 |
| 101 | 1:50:02 | 2 | 1:50:34 | 1:53:08 | 0:00:32 | 0:02:34 |
| 102 | 1:51:02 | 1 | 1:51:02 | 1:54:26 | 0:00:00 | 0:03:24 |
| 103 | 1:53:10 | 1 | 1:53:10 | 1:55:30 | 0:00:00 | 0:02:20 |
| 104 | 1:53:18 | 2 | 1:53:50 | 1:56:33 | 0:00:32 | 0:02:43 |
| 105 | 1:53:40 | 2 | 1:54:34 | 1:58:12 | 0:00:54 | 0:03:38 |
| 106 | 1:55:06 | 2 | 1:55:06 | 1:57:58 | 0:00:00 | 0:02:52 |
| 107 | 1:55:13 | 2 | 1:55:56 | 2:00:29 | 0:00:43 | 0:04:33 |
| 108 | 1:58:04 | 1 | 1:58:04 | 2:01:18 | 0:00:00 | 0:03:14 |
| 109 | 1:58:19 | 2 | 1:58:42 | 2:02:06 | 0:00:23 | 0:03:24 |

|                  |            |            |
|------------------|------------|------------|
| <b>Average</b>   | 0:02:02    | 0:04:23    |
| <b>Median</b>    | 0:01:57    | 0:04:07    |
| <b>Min</b>       | 0:00:00    | 0:01:28    |
| <b>Max</b>       | 0:05:43    | 0:08:26    |
| <b>Std. Dev.</b> | 0.00097704 | 0.00099903 |

## Midday Peak Period Queuing Data

Location: Hwy. 34 & Taft, Loveland

Date: 04/15/2008

Time Period: 11:00AM-1:00PM

Observer(s): R. Young, M. Edwards, Q. Dai

Conditions: Sunny

Description of Time Points: Entering the Queue time point was as soon as they entered the drive up window line. Ordering time started when they approached the order window.

Departure was when they came around the edge of the building

**Stopwatch time started at 10:55 AM**

| Veh. # | Entering the Queue |              | Order Time      | Departure Time  | Time in Queue | Service Time |
|--------|--------------------|--------------|-----------------|-----------------|---------------|--------------|
|        | Stop Watch Time    | Queue Length | Stop Watch Time | Stop Watch Time |               |              |
| 1      | 0:03:26            | 1            | 0:03:26         | 0:05:43         | 0:00:00       | 0:02:17      |
| 2      | 0:05:29            | 1            | 0:05:29         | 0:06:52         | 0:00:00       | 0:01:23      |
| 3      | 0:06:42            | 1            | 0:06:42         | 0:10:04         | 0:00:00       | 0:03:22      |
| 4      | 0:09:28            | 1            | 0:09:28         | 0:11:42         | 0:00:00       | 0:02:14      |
| 5      | 0:10:00            | 1            | 0:10:00         | 0:12:25         | 0:00:00       | 0:02:25      |
| 6      | 0:10:14            | 2            | 0:10:28         | 0:13:35         | 0:00:14       | 0:03:07      |
| 7      | 0:10:24            | 2            | 0:10:57         | 0:14:47         | 0:00:33       | 0:03:50      |
| 8      | 0:11:14            | 2            | 0:11:54         | 0:15:30         | 0:00:40       | 0:03:36      |
| 9      | 0:11:37            | 3            | 0:11:48         | 0:16:39         | 0:00:11       | 0:04:51      |
| 10     | 0:11:33            | 3            | 0:13:37         | 0:17:19         | 0:02:04       | 0:03:42      |
| 11     | 0:11:35            | 3            | 0:15:02         | 0:18:55         | 0:03:27       | 0:03:53      |
| 12     | 0:16:45            | 1            | 0:16:45         | 0:19:36         | 0:00:00       | 0:02:51      |
| 13     | 0:18:35            | 1            | 0:18:35         | 0:21:21         | 0:00:00       | 0:02:46      |
| 14     | 0:18:52            | 2            | 0:19:14         | 0:21:59         | 0:00:22       | 0:02:45      |
| 15     | 0:21:19            | 1            | 0:21:19         | 0:23:17         | 0:00:00       | 0:01:58      |
| 16     | 0:28:20            | 1            | 0:28:20         | 0:32:28         | 0:00:00       | 0:04:08      |
| 17     | 0:29:09            | 2            | 0:29:54         | 0:34:57         | 0:00:45       | 0:05:03      |
| 18     | 0:30:15            | 2            | 0:31:01         | 0:35:39         | 0:00:46       | 0:04:38      |
| 19     | 0:31:05            | 2            | 0:31:42         | 0:36:24         | 0:00:37       | 0:04:42      |
| 20     | 0:32:06            | 2            | 0:32:17         | 0:37:03         | 0:00:11       | 0:04:46      |
| 21     | 0:33:19            | 1            | 0:33:19         | 0:37:27         | 0:00:00       | 0:04:08      |
| 22     | 0:44:24            | 1            | 0:44:24         | 0:46:25         | 0:00:00       | 0:02:01      |
| 23     | 0:46:30            | 1            | 0:46:30         | 0:49:36         | 0:00:00       | 0:03:06      |
| 24     | 0:46:43            | 2            | 0:47:03         | 0:51:05         | 0:00:20       | 0:04:02      |
| 25     | 0:50:51            | 2            | 0:51:10         | 0:52:40         | 0:00:19       | 0:01:30      |
| 26     | 0:51:38            | 2            | 0:52:00         | 0:54:59         | 0:00:22       | 0:02:59      |
| 27     | 0:52:08            | 2            | 0:52:48         | 0:57:38         | 0:00:40       | 0:04:50      |
| 28     | 0:56:25            | 1            | 0:56:25         | 0:58:19         | 0:00:00       | 0:01:54      |
| 29     | 1:03:14            | 1            | 1:03:14         | 1:05:11         | 0:00:00       | 0:01:57      |

|                  |         |   |         |         |          |            |
|------------------|---------|---|---------|---------|----------|------------|
| 30               | 1:08:28 | 2 | 1:09:15 | 1:11:09 | 0:00:47  | 0:01:54    |
| 31               | 1:13:55 | 1 | 1:13:55 | 1:15:54 | 0:00:00  | 0:01:59    |
| 32               | 1:14:30 | 1 | 1:14:55 | 1:16:46 | 0:00:25  | 0:01:51    |
| 33               | 1:15:01 | 1 | 1:15:01 | 1:17:53 | 0:00:00  | 0:02:52    |
| 34               | 1:16:53 | 1 | 1:16:53 | 1:20:31 | 0:00:00  | 0:03:38    |
| 35               | 1:22:12 | 1 | 1:22:12 | 1:25:00 | 0:00:00  | 0:02:48    |
| 36               | 1:22:35 | 2 | 1:22:51 | 1:26:00 | 0:00:16  | 0:03:09    |
| 37               | 1:25:40 | 1 | 1:25:40 | 1:27:45 | 0:00:00  | 0:02:05    |
| 38               | 1:31:15 | 1 | 1:31:15 | 1:32:54 | 0:00:00  | 0:01:39    |
| 39               | 1:31:44 | 2 | 1:32:08 | 1:33:43 | 0:00:24  | 0:01:35    |
| 40               | 1:33:11 | 1 | 1:33:11 | 1:35:32 | 0:00:00  | 0:02:21    |
| 41               | 1:34:30 | 1 | 1:34:30 | 1:36:16 | 0:00:00  | 0:01:46    |
| 42               | 1:38:02 | 1 | 1:38:02 | 1:41:00 | 0:00:00  | 0:02:58    |
| 43               | 1:40:24 | 1 | 1:40:24 | 1:42:34 | 0:00:00  | 0:02:10    |
| <b>Average</b>   |         |   |         |         | 0:00:19  | 0:02:58    |
| <b>Median</b>    |         |   |         |         | 0:00:00  | 0:02:51    |
| <b>Min</b>       |         |   |         |         | 0:00:00  | 0:01:23    |
| <b>Max</b>       |         |   |         |         | 0:03:27  | 0:05:03    |
| <b>Std. Dev.</b> |         |   |         |         | 0.000433 | 0.00074146 |

## AM Peak Period Queuing Data

Location: 17th and Hover, Longmont

Date: 4/15/08

Time Period: 7:00 am - 9:00 am

Observer(s): Scott Koch, William Winkler, Zeb Coulter

Conditions: Clear and Sunny

Description of Time Points: Arriving vehicle stops at the order menu or enters the ordering queue. Departing vehicle first seen from front patio

**Stopwatch Time began at 7:10 am**

| Veh. # | Entering the Queue |              | Order Time      | Departure Time  | Time in Queue | Service Time |
|--------|--------------------|--------------|-----------------|-----------------|---------------|--------------|
|        | Stop Watch Time    | Queue Length | Stop Watch Time | Stop Watch Time |               |              |
| 1      | 0:04:30            | 1            | 0:04:30         | 0:09:26         | 0:00:00       | 0:04:56      |
| 2      | 0:05:00            | 1            | 0:05:00         | 0:10:37         | 0:00:00       | 0:05:37      |
| 3      | 0:07:35            | 1            | 0:07:35         | 0:11:27         | 0:00:00       | 0:03:52      |
| 4      | 0:08:24            | 1            | 0:08:24         | 0:11:59         | 0:00:00       | 0:03:35      |
| 5      | 0:10:25            | 1            | 0:10:25         | 0:14:43         | 0:00:00       | 0:04:18      |
| 6      | 0:10:25            | 2            | 0:10:58         | 0:15:28         | 0:00:33       | 0:04:30      |
| 7      | 0:10:50            | 3            | 0:11:28         | 0:15:45         | 0:00:38       | 0:04:17      |
| 8      | 0:12:02            | 2            | 0:12:02         | 0:16:14         | 0:00:00       | 0:04:12      |
| 9      | 0:15:38            | 1            | 0:15:38         | 0:17:47         | 0:00:00       | 0:02:09      |
| 10     | 0:15:45            | 2            | 0:16:05         | 0:18:24         | 0:00:20       | 0:02:19      |
| 11     | 0:16:50            | 1            | 0:16:50         | 0:19:31         | 0:00:00       | 0:02:41      |
| 12     | 0:17:55            | 1            | 0:17:55         | 0:20:58         | 0:00:00       | 0:03:03      |
| 13     | 0:19:15            | 1            | 0:19:15         | 0:21:32         | 0:00:00       | 0:02:17      |
| 14     | 0:19:27            | 2            | 0:19:54         | 0:22:10         | 0:00:27       | 0:02:16      |
| 15     | 0:19:27            | 3            | 0:20:32         | 0:23:03         | 0:01:05       | 0:02:31      |
| 16     | 0:19:37            | 3            | 0:21:03         | 0:23:46         | 0:01:26       | 0:02:43      |
| 17     | 0:20:36            | 2            | 0:21:43         | 0:24:59         | 0:01:07       | 0:03:16      |
| 18     | 0:23:37            | 1            | 0:23:37         | 0:26:10         | 0:00:00       | 0:02:33      |
| 19     | 0:23:42            | 2            | 0:24:05         | 0:26:23         | 0:00:23       | 0:02:18      |
| 20     | 0:24:11            | 2            | 0:24:27         | 0:27:12         | 0:00:16       | 0:02:45      |
| 21     | 0:24:32            | 2            | 0:24:48         | 0:28:15         | 0:00:16       | 0:03:27      |
| 22     | 0:24:56            | 2            | 0:25:20         | 0:29:11         | 0:00:24       | 0:03:51      |
| 23     | 0:25:07            | 3            | 0:25:50         | 0:32:07         | 0:00:43       | 0:06:17      |
| 24     | 0:26:16            | 2            | 0:26:27         | 0:34:08         | 0:00:11       | 0:07:41      |
| 25     | 0:27:06            | 2            | 0:27:06         | 0:35:07         | 0:00:00       | 0:08:01      |
| 26     | 0:27:43            | 1            | 0:28:03         | 0:35:56         | 0:00:20       | 0:07:53      |
| 27     | 0:29:17            | 1            | 0:29:17         | 0:37:54         | 0:00:00       | 0:08:37      |
| 28     | 0:29:51            | 2            | 0:29:51         | 0:38:28         | 0:00:00       | 0:08:37      |
| 29     | 0:32:29            | 1            | 0:32:29         | 0:38:48         | 0:00:00       | 0:06:19      |
| 30     | 0:33:43            | 1            | 0:34:20         | 0:39:50         | 0:00:37       | 0:05:30      |
| 31     | 0:33:45            | 2            | 0:35:18         | 0:40:11         | 0:01:33       | 0:04:53      |

|    |         |   |         |         |         |         |
|----|---------|---|---------|---------|---------|---------|
| 32 | 0:33:55 | 3 | 0:36:05 | 0:41:47 | 0:02:10 | 0:05:42 |
| 33 | 0:34:30 | 2 | 0:38:15 | 0:42:19 | 0:03:45 | 0:04:04 |
| 34 | 0:36:34 | 2 | 0:38:52 | 0:43:30 | 0:02:18 | 0:04:38 |
| 35 | 0:37:44 | 2 | 0:39:45 | 0:44:29 | 0:02:01 | 0:04:44 |
| 36 | 0:37:54 | 3 | 0:40:20 | 0:44:54 | 0:02:26 | 0:04:34 |
| 37 | 0:39:30 | 2 | 0:40:45 | 0:45:46 | 0:01:15 | 0:05:01 |
| 38 | 0:40:36 | 2 | 0:41:57 | 0:46:28 | 0:01:21 | 0:04:31 |
| 39 | 0:44:54 | 1 | 0:44:54 | 0:47:22 | 0:00:00 | 0:02:28 |
| 40 | 0:45:05 | 2 | 0:45:25 | 0:48:15 | 0:00:20 | 0:02:50 |
| 41 | 0:46:40 | 1 | 0:46:40 | 0:49:16 | 0:00:00 | 0:02:36 |
| 42 | 0:49:20 | 1 | 0:49:20 | 0:51:20 | 0:00:00 | 0:02:00 |
| 43 | 0:51:55 | 1 | 0:51:55 | 0:54:55 | 0:00:00 | 0:03:00 |
| 44 | 0:52:52 | 1 | 0:52:52 | 0:56:44 | 0:00:00 | 0:03:52 |
| 45 | 0:53:12 | 2 | 0:53:26 | 0:57:38 | 0:00:14 | 0:04:12 |
| 46 | 0:53:30 | 2 | 0:53:55 | 0:58:49 | 0:00:25 | 0:04:54 |
| 47 | 0:55:20 | 1 | 0:55:20 | 0:59:27 | 0:00:00 | 0:04:07 |
| 48 | 0:55:22 | 2 | 0:55:58 | 1:00:34 | 0:00:36 | 0:04:36 |
| 49 | 0:56:08 | 3 | 0:56:42 | 1:00:57 | 0:00:34 | 0:04:15 |
| 50 | 0:56:48 | 2 | 0:57:16 | 1:01:36 | 0:00:28 | 0:04:20 |
| 51 | 0:57:00 | 3 | 0:58:01 | 1:01:51 | 0:01:01 | 0:03:50 |
| 52 | 0:57:48 | 2 | 0:59:04 | 1:02:33 | 0:01:16 | 0:03:29 |
| 53 | 0:58:01 | 2 | 0:59:35 | 1:03:00 | 0:01:34 | 0:03:25 |
| 54 | 1:04:30 | 1 | 1:05:08 | 1:06:47 | 0:00:38 | 0:01:39 |
| 55 | 1:04:37 | 2 | 1:05:05 | 1:07:50 | 0:00:28 | 0:02:45 |
| 56 | 1:04:43 | 3 | 1:05:39 | 1:08:30 | 0:00:56 | 0:02:51 |
| 57 | 1:04:50 | 3 | 1:06:10 | 1:09:09 | 0:01:20 | 0:02:59 |
| 58 | 1:05:10 | 3 | 1:06:46 | 1:10:57 | 0:01:36 | 0:04:11 |
| 59 | 1:05:55 | 2 | 1:07:11 | 1:12:14 | 0:01:16 | 0:05:03 |
| 60 | 1:08:24 | 1 | 1:08:24 | 1:12:34 | 0:00:00 | 0:04:10 |
| 61 | 1:10:28 | 1 | 1:10:28 | 1:14:36 | 0:00:00 | 0:04:08 |
| 62 | 1:10:33 | 2 | 1:11:00 | 1:15:13 | 0:00:27 | 0:04:13 |
| 63 | 1:13:42 | 1 | 1:13:42 | 1:17:24 | 0:00:00 | 0:03:42 |
| 64 | 1:13:46 | 2 | 1:14:08 | 1:18:17 | 0:00:22 | 0:04:09 |
| 65 | 1:15:30 | 1 | 1:15:30 | 1:21:56 | 0:00:00 | 0:06:26 |
| 66 | 1:15:35 | 2 | 1:16:55 | 1:22:39 | 0:01:20 | 0:05:44 |
| 67 | 1:15:43 | 3 | 1:17:19 | 1:23:40 | 0:01:36 | 0:06:21 |
| 68 | 1:17:18 | 3 | 1:18:03 | 1:25:05 | 0:00:45 | 0:07:02 |
| 69 | 1:17:25 | 4 | 1:18:35 | 1:25:49 | 0:01:10 | 0:07:14 |
| 70 | 1:18:13 | 3 | 1:19:15 | 1:26:26 | 0:01:02 | 0:07:11 |
| 71 | 1:18:57 | 2 | 1:22:08 | 1:26:52 | 0:03:11 | 0:04:44 |
| 72 | 1:19:05 | 3 | 1:22:45 | 1:28:22 | 0:03:40 | 0:05:37 |
| 73 | 1:19:10 | 3 | 1:23:53 | 1:29:10 | 0:04:43 | 0:05:17 |
| 74 | 1:24:20 | 2 | 1:25:15 | 1:29:56 | 0:00:55 | 0:04:41 |
| 75 | 1:24:55 | 2 | 1:26:00 | 1:30:15 | 0:01:05 | 0:04:15 |
| 76 | 1:27:00 | 1 | 1:27:00 | 1:31:14 | 0:00:00 | 0:04:14 |
| 77 | 1:27:50 | 2 | 1:28:25 | 1:33:20 | 0:00:35 | 0:04:55 |
| 78 | 1:29:23 | 1 | 1:29:23 | 1:34:14 | 0:00:00 | 0:04:51 |

|     |         |   |         |         |                  |         |         |
|-----|---------|---|---------|---------|------------------|---------|---------|
| 79  | 1:30:33 | 1 | 1:30:33 | 1:34:55 | 0:00:00          | 0:04:22 |         |
| 80  | 1:32:42 | 1 | 1:32:42 | 1:37:25 | 0:00:00          | 0:04:43 |         |
| 81  | 1:33:45 | 1 | 1:35:03 | 1:39:17 | 0:01:18          | 0:04:14 |         |
| 82  | 1:34:43 | 1 | 1:35:50 | 1:40:01 | 0:01:07          | 0:04:11 |         |
| 83  | 1:34:50 | 2 | 1:36:26 | 1:41:07 | 0:01:36          | 0:04:41 |         |
| 84  | 1:34:52 | 3 | 1:36:55 | 1:42:52 | 0:02:03          | 0:05:57 |         |
| 85  | 1:35:15 | 4 | 1:38:25 | 1:43:59 | 0:03:10          | 0:05:34 |         |
| 86  | 1:37:08 | 2 | 1:39:15 | 1:44:44 | 0:02:07          | 0:05:29 |         |
| 87  | 1:37:12 | 3 | 1:39:45 | 1:45:17 | 0:02:33          | 0:05:32 |         |
| 88  | 1:37:20 | 3 | 1:40:15 | 1:46:13 | 0:02:55          | 0:05:58 |         |
| 89  | 1:37:55 | 2 | 1:41:25 | 1:46:48 | 0:03:30          | 0:05:23 |         |
| 90  | 1:41:40 | 2 | 1:43:05 | 1:47:14 | 0:01:25          | 0:04:09 |         |
| 91  | 1:42:50 | 3 | 1:44:20 | 1:48:17 | 0:01:30          | 0:03:57 |         |
| 92  | 1:43:23 | 2 | 1:45:10 | 1:48:50 | 0:01:47          | 0:03:40 |         |
| 93  | 1:43:57 | 2 | 1:45:45 | 1:50:00 | 0:01:48          | 0:04:15 |         |
| 94  | 1:45:50 | 2 | 1:47:05 | 1:50:58 | 0:01:15          | 0:03:53 |         |
| 95  | 1:48:35 | 1 | 1:48:35 | 1:51:50 | 0:00:00          | 0:03:15 |         |
| 96  | 1:48:45 | 2 | 1:49:07 | 1:54:51 | 0:00:22          | 0:05:44 |         |
| 97  | 1:48:55 | 3 | 1:50:05 | 1:55:37 | 0:01:10          | 0:05:32 |         |
| 98  | 1:49:40 | 2 | 1:51:05 | 1:56:22 | 0:01:25          | 0:05:17 |         |
| 99  | 1:50:40 | 1 | 1:51:28 | 1:56:44 | 0:00:48          | 0:05:16 |         |
| 100 | 1:51:00 | 1 | 1:51:57 | 1:57:56 | 0:00:57          | 0:05:59 |         |
| 101 | 1:52:20 | 1 | 1:52:45 | 1:58:36 | 0:00:25          | 0:05:51 |         |
| 102 | 1:55:40 | 1 | 1:55:40 | 1:59:09 | 0:00:00          | 0:03:29 |         |
| 103 | 1:58:17 | 1 | 1:58:17 | 2:00:54 | 0:00:00          | 0:02:37 |         |
| 104 | 1:58:25 | 2 | 1:59:00 | 2:02:05 | 0:00:35          | 0:03:05 |         |
| 105 | 2:00:07 | 1 | 2:00:07 | 2:03:22 | 0:00:00          | 0:03:15 |         |
| 106 | 2:04:15 | 1 | 2:04:15 | 2:07:03 | 0:00:00          | 0:02:48 |         |
| 107 | 2:04:50 | 1 | 2:04:50 | 2:10:43 | 0:00:00          | 0:05:53 |         |
| 108 | 2:04:53 | 2 | 2:05:35 | 2:11:09 | 0:00:42          | 0:05:34 |         |
|     |         |   |         |         | <b>Average</b>   | 0:00:52 | 0:04:28 |
|     |         |   |         |         | <b>Median</b>    | 0:00:35 | 0:04:15 |
|     |         |   |         |         | <b>Min</b>       | 0:00:00 | 0:01:39 |
|     |         |   |         |         | <b>Max</b>       | 0:04:43 | 0:08:37 |
|     |         |   |         |         | <b>Std. Dev.</b> | 0:00:59 | 0:01:29 |

## Midday Peak Period Queuing Data

Location: 17th and Hover, Longmont

Date: April 15th, 2008 Time Period: 11:00 AM to 1:00 PM

Observer(s): William Winkler, Scott Koch, Zeb Coulter

Conditions: Sunny and Warm

Description of Time Points: Arriving vehicle stops at the order menu or enters the ordering queue. Departing vehicle first seen from front patio

Stop Watch Time Began at 10:58 AM

| Veh. # | Entering the Queue |              | Order Time      | Departure Time  | Time in Queue | Service Time |
|--------|--------------------|--------------|-----------------|-----------------|---------------|--------------|
|        | Stop Watch Time    | Queue Length | Stop Watch Time | Stop Watch Time |               |              |
| 1      | 0:01:18            | 1            | 0:01:18         | 0:05:45         | 0:00:00       | 0:04:27      |
| 2      | 0:01:44            | 1            | 0:01:44         | 0:06:35         | 0:00:00       | 0:04:51      |
| 3      | 0:13:34            | 1            | 0:13:34         | 0:17:11         | 0:00:00       | 0:03:37      |
| 4      | 0:19:13            | 1            | 0:19:13         | 0:21:40         | 0:00:00       | 0:02:27      |
| 5      | 0:19:20            | 2            | 0:19:20         | 0:25:17         | 0:00:00       | 0:05:57      |
| 6      | 0:20:54            | 1            | 0:20:54         | 0:26:02         | 0:00:00       | 0:05:08      |
| 7      | 0:24:41            | 1            | 0:24:41         | 0:27:40         | 0:00:00       | 0:02:59      |
| 8      | 0:26:45            | 1            | 0:26:45         | 0:28:55         | 0:00:00       | 0:02:10      |
| 9      | 0:27:58            | 1            | 0:27:58         | 0:30:00         | 0:00:00       | 0:02:02      |
| 10     | 0:29:51            | 1            | 0:29:51         | 0:33:15         | 0:00:00       | 0:03:24      |
| 11     | 0:40:52            | 1            | 0:40:52         | 0:42:55         | 0:00:00       | 0:02:03      |
| 12     | 0:41:18            | 2            | 0:41:18         | 0:44:55         | 0:00:00       | 0:03:37      |
| 13     | 0:42:03            | 2            | 0:42:03         | 0:46:00         | 0:00:00       | 0:03:57      |
| 14     | 0:47:18            | 1            | 0:47:18         | 0:52:05         | 0:00:00       | 0:04:47      |
| 15     | 0:51:21            | 1            | 0:51:21         | 0:53:10         | 0:00:00       | 0:01:49      |
| 16     | 0:55:55            | 1            | 0:55:55         | 0:57:50         | 0:00:00       | 0:01:55      |
| 17     | 1:00:47            | 1            | 1:00:47         | 1:02:42         | 0:00:00       | 0:01:55      |
| 18     | 1:09:12            | 1            | 1:09:12         | 1:13:05         | 0:00:00       | 0:03:53      |
| 19     | 1:10:43            | 1            | 1:10:43         | 1:13:57         | 0:00:00       | 0:03:14      |
| 20     | 1:11:40            | 2            | 1:11:40         | 1:15:36         | 0:00:00       | 0:03:56      |
| 21     | 1:15:19            | 1            | 1:15:19         | 1:17:03         | 0:00:00       | 0:01:44      |
| 22     | 1:16:44            | 1            | 1:16:44         | 1:18:55         | 0:00:00       | 0:02:11      |
| 23     | 1:16:49            | 2            | 1:17:45         | 1:21:10         | 0:00:56       | 0:03:25      |
| 24     | 1:17:54            | 2            | 1:17:54         | 1:23:10         | 0:00:00       | 0:05:16      |
| 25     | 1:21:56            | 1            | 1:21:56         | 1:25:42         | 0:00:00       | 0:03:46      |
| 26     | 1:27:03            | 1            | 1:27:03         | 1:30:25         | 0:00:00       | 0:03:22      |
| 27     | 1:27:05            | 2            | 1:28:43         | 1:32:55         | 0:01:38       | 0:04:12      |
| 28     | 1:31:44            | 1            | 1:31:44         | 1:36:25         | 0:00:00       | 0:04:41      |
| 29     | 1:32:35            | 1            | 1:32:35         | 1:39:00         | 0:00:00       | 0:06:25      |
| 30     | 1:33:32            | 1            | 1:33:32         | 1:40:18         | 0:00:00       | 0:06:46      |
| 31     | 1:39:19            | 1            | 1:39:19         | 1:43:20         | 0:00:00       | 0:04:01      |
| 32     | 1:41:04            | 1            | 1:41:04         | 1:45:00         | 0:00:00       | 0:03:56      |
| 33     | 1:49:44            | 1            | 1:49:44         | 1:53:03         | 0:00:00       | 0:03:19      |

|                  |         |   |         |         |         |         |
|------------------|---------|---|---------|---------|---------|---------|
| 34               | 1:55:30 | 1 | 1:55:30 | 1:58:20 | 0:00:00 | 0:02:50 |
| 35               | 1:57:13 | 1 | 1:57:13 | 1:59:35 | 0:00:00 | 0:02:22 |
| 36               | 1:57:30 | 2 | 1:58:10 | 2:00:15 | 0:00:40 | 0:02:05 |
| 37               | 2:00:41 | 1 | 2:00:41 | 2:05:42 | 0:00:00 | 0:05:01 |
| 38               | 2:01:39 | 1 | 2:01:39 | 2:07:00 | 0:00:00 | 0:05:21 |
| <b>Average</b>   |         |   |         |         | 0:00:05 | 0:03:39 |
| <b>Median</b>    |         |   |         |         | 0:00:00 | 0:03:37 |
| <b>Min</b>       |         |   |         |         | 0:00:00 | 0:01:44 |
| <b>Max</b>       |         |   |         |         | 0:01:38 | 0:06:46 |
| <b>Std. Dev.</b> |         |   |         |         | 0:00:19 | 0:01:21 |

# Vehicle Count Data

- Johnstown AM Peak Period
  - Johnstown Mid day Period
  - Loveland AM Peak Period
  - Loveland Mid day Period
  - Longmont AM Peak Period
  - Longmont Mid day Period
-

## AM Peak Period Vehicle Count Data

Location: Hwy. 34 & County Rd. 5, Johnstown

Date: 4/15/08

Observer(s): Jenna Buddemeyer, Alan Moore, Cheng Zhong

Conditions: sunny, warm

| Time      | Entering<br>(West<br>Driveway) | Entering<br>(East<br>Driveway) | Combined | Exiting<br>(West<br>Driveway) | Exiting<br>(East<br>Driveway) | Combined | Total |
|-----------|--------------------------------|--------------------------------|----------|-------------------------------|-------------------------------|----------|-------|
| 7:15-7:30 | 8                              | 2                              | 10       | 9                             | 1                             | 10       | 20    |
| 7:30-7:45 | 7                              | 4                              | 11       | 12                            | 0                             | 12       | 23    |
| 7:45-8:00 | 12                             | 6                              | 18       | 16                            | 2                             | 18       | 36    |
| 8:00-8:15 | 18                             | 2                              | 20       | 18                            | 1                             | 19       | 39    |
| 8:15-8:30 | 9                              | 3                              | 12       | 10                            | 1                             | 11       | 23    |
| 8:30-8:45 | 12                             | 4                              | 16       | 19                            | 0                             | 19       | 35    |
| 8:45-9:00 | 8                              | 6                              | 14       | 12                            | 1                             | 13       | 27    |
| 9:00-9:15 | 10                             | 2                              | 12       | 11                            | 0                             | 11       | 23    |

| Peak Hour | Volume | PHF  |
|-----------|--------|------|
| 7:45-8:45 | 66     | 0.83 |

## Midday Vehicle Count Data

Location: Hwy. 34 & County Rd. 5, Johnstown

Date: 4/15/08

Observer(s): Jenna Buddemeyer, Alan Moore, Cheng Zhong

Conditions: sunny, warm

| Time             | Entering<br>(West<br>Driveway) | Entering<br>(East<br>Driveway) | Combined | Exiting<br>(West<br>Driveway) | Exiting<br>(East<br>Driveway) | Combined | Total |
|------------------|--------------------------------|--------------------------------|----------|-------------------------------|-------------------------------|----------|-------|
| 11:00 - 11:15 AM | 2                              | 3                              | 5        | 4                             | 0                             | 4        | 9     |
| 11:15 - 11:30 AM | 0                              | 0                              | 0        | 1                             | 0                             | 1        | 1     |
| 11:30 - 11:45 AM | 4                              | 0                              | 4        | 3                             | 1                             | 4        | 8     |
| 11:45 - 12:00    | 0                              | 1                              | 1        | 1                             | 0                             | 1        | 2     |
| 12:00 - 12:15 PM | 2                              | 0                              | 2        | 1                             | 0                             | 1        | 3     |
| 12:15 - 12:30 PM | 8                              | 2                              | 10       | 10                            | 0                             | 10       | 20    |
| 12:30-12:45 PM   | 0                              | 0                              | 0        | 1                             | 1                             | 2        | 2     |
| 12:45-1:00 PM    | 0                              | 1                              | 1        | 1                             | 1                             | 2        | 3     |

| Peak Hour   | Volume | PHF   |
|-------------|--------|-------|
| 11:30-12:30 | 17     | 0.425 |

## AM Peak Period Vehicle Count Data

Location: \_\_ Hwy 34 & Taft, Loveland \_\_\_\_\_

Date: \_\_ 4/15/2008 \_\_ AM Peak Period \_\_\_\_\_

Observer(s): \_\_ R. Young, M. Edwards, Q. Dai

Conditions: \_\_ Sunny, Warm, Dry

| Time      | Arriving Volume | Exiting Volume | Total |
|-----------|-----------------|----------------|-------|
| 7:00-7:15 | 29              | 30             | 59    |
| 7:15-7:30 | 26              | 27             | 53    |
| 7:30-7:45 | 28              | 28             | 56    |
| 7:45-8:00 | 19              | 19             | 38    |
| 8:00-8:15 | 24              | 24             | 48    |
| 8:15-8:30 | 23              | 22             | 45    |
| 8:30-8:45 | 27              | 27             | 54    |
| 8:45-9:00 | 21              | 23             | 44    |

| Peak Hour | Volume | PHF  |
|-----------|--------|------|
| 7:00-8:00 | 102    | 0.88 |

## MidDay Vehicle Count Data

Location: \_\_Hwy 34 & Taft, Loveland\_\_\_\_\_

Date: \_\_4/15/2008\_\_ Mid dayPeak Period \_\_\_\_\_

Observer(s): \_\_\_R. Young, M. Edwards, Q. Dai

Conditions: \_\_\_Sunny, Warm, Dry

| Time             | Arriving Volume | Exiting Volume | Total |
|------------------|-----------------|----------------|-------|
| 11:00 - 11:15 AM | 22              | 23             | 45    |
| 11:15 - 11:30 AM | 7               | 9              | 16    |
| 11:30 - 11:45 AM | 8               | 8              | 16    |
| 11:45 - 12:00    | 8               | 7              | 15    |
| 12:00 - 12:15 PM | 6               | 4              | 10    |
| 12:15 - 12:30 PM | 14              | 18             | 32    |

| Peak Hour   | Volume | PHF  |
|-------------|--------|------|
| 11:00-12:00 | 45     | 0.51 |

## AM Peak Period Vehicle Count Data

Location: \_\_17th and Hover, Longmont\_\_\_\_\_

Date: \_\_4/15/2008\_\_AM Peak Period\_\_\_\_\_

Observer(s): \_\_ Scott Koch, William Winkler, Zebulun Couter

Conditions: \_\_ Sunny, Warm, Dry

| Time      | Arriving Volume * | Exiting Volume | Total |
|-----------|-------------------|----------------|-------|
| 7:15-7:30 | 22                | 24             | 46    |
| 7:30-7:45 | 25                | 23             | 48    |
| 7:45-8:00 | 15                | 17             | 32    |
| 8:00-8:15 | 20                | 19             | 39    |
| 8:15-8:30 | 23                | 22             | 45    |
| 8:30-8:45 | 16                | 18             | 34    |
| 8:45-9:00 | 18                | 18             | 36    |
| 9:00-9:15 | 25                | 26             | 51    |

| Peak Hour | Volume | PHF  |
|-----------|--------|------|
| 7:15-8:15 | 82     | 0.82 |
| 8:15-9:15 | 82     | 0.82 |

\*Arriving count includes only those vehicles going to the coffee shop (both sit down and driveup customers). This had to be manually observed since other businesses were located in the same development

## MidDay Vehicle Count Data

Location: \_\_17th and Hover, Longmont\_\_\_\_\_

Date: \_\_4/15/2008\_\_ Mid day Period\_\_\_\_\_

Observer(s): \_\_\_\_\_ Scott Koch, William Winkler, Zebulun Couter

Conditions: \_\_\_\_\_ Sunny, Warm, Dry

| Time             | Arriving Volume * | Exiting Volume | Total |
|------------------|-------------------|----------------|-------|
| 11:00 - 11:15 AM | 6                 | 5              | 11    |
| 11:15 - 11:30 AM | 9                 | 8              | 17    |
| 11:30 - 11:45 AM | 6                 | 5              | 11    |
| 11:45 - 12:00    | 4                 | 5              | 9     |
| 12:00 - 12:15 PM | 5                 | 6              | 11    |
| 12:15 - 12:30 PM | 9                 | 7              | 16    |
| 12:30 - 12:45 PM | 10                | 12             | 22    |
| 12:45 - 1:00 PM  | 9                 | 9              | 18    |

| Peak Hour  | Volume | PHF  |
|------------|--------|------|
| 12:00-1:00 | 33     | 0.83 |

\*Arriving count includes only those vehicles going to the coffee shop (both sit down and driveup customers). This had to be manually observed since other businesses were located in the same development

# Miscellaneous Data

- **Nearside vs. Farside Arrival Data from Adjacent Street**
    - **Loveland AM Peak Period**
    - **Loveland Mid day Period**
  
  - **Arrival Percentage Sit down vs. Drive thru**
    - **Longmont AM Peak Period**
    - **Longmont Mid day Period**
-

Location: Hwy 34 & Taft

Date: 4/15/2008 Time Period: 7-9 AM

Observer(s): R. Young, M. Edwards, Q. Dai

Conditions: Sunny, dry

Vehicles from the East represent turns from the farside lanes, Vehicles from the West represent turns from the nearside lanes.

Summary from 7:00 to 9:00 AM

|                             |       | Sum | Percent |
|-----------------------------|-------|-----|---------|
| Vehicles Arriving From East | Total | 98  | 49.7%   |
| Vehicles Arriving From West | Total | 99  | 50.3%   |
| Observed Left Turn Queue    |       |     |         |
| 1 Car                       | Total | 76  | 87.4%   |
| 2 Cars                      | Total | 10  | 11.5%   |
| 3 Cars                      | Total | 1   | 1.1%    |
| 4+ Cars                     | Total | 0   |         |

15 Minute Time Period From: 7:00 To: 7:15 AM

|                             |       |    |
|-----------------------------|-------|----|
| Vehicles Arriving From East | Total | 13 |
| Vehicles Arriving From West | Total | 16 |
| Observed Left Turn Queue    |       |    |
| 1 Car                       | Total | 10 |
| 2 Cars                      | Total | 2  |
| 3 Cars                      | Total |    |
| 4+ Cars                     | Total |    |

15 Minute Time Period From: 7:15 To: 7:30 AM

|                             |       |    |
|-----------------------------|-------|----|
| Vehicles Arriving From East | Total | 14 |
| Vehicles Arriving From West | Total | 12 |
| Observed Left Turn Queue    |       |    |
| 1 Car                       | Total | 11 |
| 2 Cars                      | Total | 1  |
| 3 Cars                      | Total |    |
| 4+ Cars                     | Total |    |

15 Minute Time Period From: 7:30 To: 7:45 AM

|                             |       |    |
|-----------------------------|-------|----|
| Vehicles Arriving From East | Total | 11 |
| Vehicles Arriving From West | Total | 17 |
| Observed Left Turn Queue    |       |    |
| 1 Car                       | Total | 7  |
| 2 Cars                      | Total | 2  |
| 3 Cars                      | Total |    |
| 4+ Cars                     | Total |    |

15 Minute Time Period From: 7:45 To: 8:00 AM

|                             |       |    |
|-----------------------------|-------|----|
| Vehicles Arriving From East | Total | 8  |
| Vehicles Arriving From West | Total | 11 |

|                          |       |   |
|--------------------------|-------|---|
| Observed Left Turn Queue |       |   |
| 1 Car                    | Total | 6 |
| 2 Cars                   | Total | 2 |
| 3 Cars                   | Total |   |
| 4+ Cars                  | Total |   |

15 Minute Time Period From: 8:00 To: 8:15 AM

|                             |       |    |
|-----------------------------|-------|----|
| Vehicles Arriving From East | Total | 16 |
| Vehicles Arriving From West | Total | 8  |
| Observed Left Turn Queue    |       |    |
| 1 Car                       | Total | 10 |
| 2 Cars                      | Total | 1  |
| 3 Cars                      | Total | 1  |
| 4+ Cars                     | Total |    |

15 Minute Time Period From: 8:15 To: 8:30

|                             |       |    |
|-----------------------------|-------|----|
| Vehicles Arriving From East | Total | 9  |
| Vehicles Arriving From West | Total | 14 |
| Observed Left Turn Queue    |       |    |
| 1 Car                       | Total | 7  |
| 2 Cars                      | Total | 1  |
| 3 Cars                      | Total |    |
| 4+ Cars                     | Total |    |

15 Minute Time Period From: 8:30 To: 8:45

|                             |       |    |
|-----------------------------|-------|----|
| Vehicles Arriving From East | Total | 14 |
| Vehicles Arriving From West | Total | 13 |
| Observed Left Turn Queue    |       |    |
| 1 Car                       | Total | 12 |
| 2 Cars                      | Total | 1  |
| 3 Cars                      | Total |    |
| 4+ Cars                     | Total |    |

15 Minute Time Period From: 8:45 To: 9:00 AM

|                             |       |    |
|-----------------------------|-------|----|
| Vehicles Arriving From East | Total | 13 |
| Vehicles Arriving From West | Total | 8  |
| Observed Left Turn Queue    |       |    |
| 1 Car                       | Total | 13 |
| 2 Cars                      | Total |    |
| 3 Cars                      | Total |    |
| 4+ Cars                     | Total |    |

Location: Hwy 34 & Taft

Date: 4/15/2008

Time Period: 11 AM -12:30 PM

Observer(s): R. Young, M. Edwards, Q. Dai

Conditions: Sunny, dry

Vehicles from the East represent turns from the farside lanes, Vehicles from the West represent turns from the nearside lanes.

Summary from 11:00 AM to 12:30 PM

|                             |       | Sum | Percent |
|-----------------------------|-------|-----|---------|
| Vehicles Arriving From East | Total | 41  | 63.1%   |
| Vehicles Arriving From West | Total | 24  | 36.9%   |
| Observed Left Turn Queue    |       |     |         |
| 1 Car                       | Total | 34  | 91.9%   |
| 2 Cars                      | Total | 3   | 8.1%    |
| 3 Cars                      | Total | 0   | 0.0%    |
| 4+ Cars                     | Total | 0   |         |

15 Minute Time Period From: 11:00 To: 11:15 AM

|                             |       |    |
|-----------------------------|-------|----|
| Vehicles Arriving From East | Total | 12 |
| Vehicles Arriving From West | Total | 10 |
| Observed Left Turn Queue    |       |    |
| 1 Car                       | Total | 8  |
| 2 Cars                      | Total | 2  |
| 3 Cars                      | Total |    |
| 4+ Cars                     | Total |    |

15 Minute Time Period From: 11:15 To: 11:30 AM

|                             |       |   |
|-----------------------------|-------|---|
| Vehicles Arriving From East | Total | 4 |
| Vehicles Arriving From West | Total | 3 |
| Observed Left Turn Queue    |       |   |
| 1 Car                       | Total | 4 |
| 2 Cars                      | Total |   |
| 3 Cars                      | Total |   |
| 4+ Cars                     | Total |   |

15 Minute Time Period From: 11:30 To: 11:45 AM

|                             |       |   |
|-----------------------------|-------|---|
| Vehicles Arriving From East | Total | 4 |
| Vehicles Arriving From West | Total | 4 |
| Observed Left Turn Queue    |       |   |
| 1 Car                       | Total | 4 |
| 2 Cars                      | Total |   |
| 3 Cars                      | Total |   |
| 4+ Cars                     | Total |   |

15 Minute Time Period From: 11:45 To: 12:00

|                             |       |   |
|-----------------------------|-------|---|
| Vehicles Arriving From East | Total | 5 |
| Vehicles Arriving From West | Total | 3 |

|                          |       |   |
|--------------------------|-------|---|
| Observed Left Turn Queue |       |   |
| 1 Car                    | Total | 5 |
| 2 Cars                   | Total |   |
| 3 Cars                   | Total |   |
| 4+ Cars                  | Total |   |

15 Minute Time Period From: 12:00 To: 12:15 PM

|                             |       |   |
|-----------------------------|-------|---|
| Vehicles Arriving From East | Total | 5 |
| Vehicles Arriving From West | Total | 1 |
| Observed Left Turn Queue    |       |   |
| 1 Car                       | Total | 5 |
| 2 Cars                      | Total |   |
| 3 Cars                      | Total |   |
| 4+ Cars                     | Total |   |

15 Minute Time Period From: 12:15 To: 12:30

|                             |       |    |
|-----------------------------|-------|----|
| Vehicles Arriving From East | Total | 11 |
| Vehicles Arriving From West | Total | 3  |
| Observed Left Turn Queue    |       |    |
| 1 Car                       | Total | 8  |
| 2 Cars                      | Total | 1  |
| 3 Cars                      | Total |    |
| 4+ Cars                     | Total |    |

## AM Peak Period Vehicle Desitnation Data

Location: \_17th and Hover\_\_\_\_\_

Date: \_\_4/15/2008\_\_\_\_\_ Time Period: \_7:15 AM -9:15 AM\_\_\_\_\_

Observer(s): \_\_\_S. Koch, W. Winkler, Z. Coulter\_\_\_\_\_

Conditions: \_\_\_Sunny, dry\_\_\_\_\_

Summary from 7:15:00 AM to 9:15 AM

|                              |       | Sum | Percent |
|------------------------------|-------|-----|---------|
| Vehicles Through Drive-Thru  | Total | 85  | 70.2%   |
| Vehicles Parking (Starbucks) | Total | 36  | 29.8%   |

15 Minute Time Period From: \_\_\_7:15\_\_\_\_\_ To: \_\_\_7:30 AM\_\_\_\_\_

|                              |       |    |
|------------------------------|-------|----|
| Vehicles Through Drive-Thru  | Total | 15 |
| Vehicles Parking (Starbucks) | Total | 7  |
| Vehicles Parking (Other)     | Total | 2  |

15 Minute Time Period From: \_\_\_7:30\_\_\_\_\_ To: \_\_\_7:45 AM\_\_\_\_\_

|                              |       |    |
|------------------------------|-------|----|
| Vehicles Through Drive-Thru  | Total | 17 |
| Vehicles Parking (Starbucks) | Total | 8  |
| Vehicles Parking (Other)     | Total | 2  |

15 Minute Time Period From: \_\_\_7:45\_\_\_\_\_ To: \_\_\_8:00 AM\_\_\_\_\_

|                              |       |   |
|------------------------------|-------|---|
| Vehicles Through Drive-Thru  | Total | 9 |
| Vehicles Parking (Starbucks) | Total | 6 |
| Vehicles Parking (Other)     | Total | 2 |

15 Minute Time Period From: \_\_\_8:00\_\_\_\_\_ To: \_\_\_8:15 AM\_\_\_\_\_

|                              |       |    |
|------------------------------|-------|----|
| Vehicles Through Drive-Thru  | Total | 17 |
| Vehicles Parking (Starbucks) | Total | 3  |
| Vehicles Parking (Other)     | Total | 1  |

15 Minute Time Period From: \_\_\_8:15\_\_\_\_\_ To: \_\_\_8:30 AM\_\_\_\_\_

|                              |       |    |
|------------------------------|-------|----|
| Vehicles Through Drive-Thru  | Total | 15 |
| Vehicles Parking (Starbucks) | Total | 8  |
| Vehicles Parking (Other)     | Total | 2  |

15 Minute Time Period From: \_\_\_8:30\_\_\_\_\_ To: \_\_\_8:45 AM\_\_\_\_\_

|                              |       |    |
|------------------------------|-------|----|
| Vehicles Through Drive-Thru  | Total | 12 |
| Vehicles Parking (Starbucks) | Total | 4  |
| Vehicles Parking (Other)     | Total | 3  |

15 Minute Time Period From: \_\_\_8:45\_\_\_\_\_ To: \_\_\_9:00 AM\_\_\_\_\_

|                              |       |    |
|------------------------------|-------|----|
| Vehicles Through Drive-Thru  | Total | 13 |
| Vehicles Parking (Starbucks) | Total | 5  |
| Vehicles Parking (Other)     | Total | 1  |

15 Minute Time Period From: \_\_\_9:00\_\_\_\_\_ To: \_\_\_9:15 AM\_\_\_\_\_

|                              |       |    |
|------------------------------|-------|----|
| Vehicles Through Drive-Thru  | Total | 8  |
| Vehicles Parking (Starbucks) | Total | 17 |
| Vehicles Parking (Other)     | Total | 6  |

## Midday Vehicle Desitnation Data

Location: \_17th and Hover\_\_\_\_\_

Date: \_4/15/2008\_\_\_\_\_

Time Period: \_11 AM -1:00 PM\_\_\_\_\_

Observer(s): \_\_\_S. Koch, W. Winkler, Z. Coulter\_\_\_\_\_

Conditions: \_\_\_Sunny, dry\_\_\_\_\_

### Summary from 11:00 AM to 1:00 PM

|                              |       | Sum | Percent |
|------------------------------|-------|-----|---------|
| Vehicles Through Drive-Thru  | Total | 25  | 64.1%   |
| Vehicles Parking (Starbucks) | Total | 14  | 35.9%   |

15 Minute Time Period From: \_\_\_11:00\_\_\_\_\_ To: \_\_\_11:15 AM\_\_\_\_\_

|                              |       |   |
|------------------------------|-------|---|
| Vehicles Through Drive-Thru  | Total | 2 |
| Vehicles Parking (Starbucks) | Total | 4 |
| Vehicles Parking (Other)     | Total | 1 |

15 Minute Time Period From: \_\_\_11:15\_\_\_\_\_ To: \_\_\_11:30 AM\_\_\_\_\_

|                              |       |   |
|------------------------------|-------|---|
| Vehicles Through Drive-Thru  | Total | 7 |
| Vehicles Parking (Starbucks) | Total | 2 |
| Vehicles Parking (Other)     | Total | 2 |

15 Minute Time Period From: \_\_\_11:30\_\_\_\_\_ To: \_\_\_11:45 AM\_\_\_\_\_

|                              |       |   |
|------------------------------|-------|---|
| Vehicles Through Drive-Thru  | Total | 3 |
| Vehicles Parking (Starbucks) | Total | 3 |
| Vehicles Parking (Other)     | Total | 4 |

15 Minute Time Period From: \_\_\_11:45\_\_\_\_\_ To: \_\_\_12:00\_\_\_\_\_

|                              |       |   |
|------------------------------|-------|---|
| Vehicles Through Drive-Thru  | Total | 4 |
| Vehicles Parking (Starbucks) | Total | 0 |
| Vehicles Parking (Other)     | Total | 3 |

15 Minute Time Period From: \_\_\_12:00\_\_\_\_\_ To: \_\_\_12:15 PM\_\_\_\_\_

|                              |       |   |
|------------------------------|-------|---|
| Vehicles Through Drive-Thru  | Total | 4 |
| Vehicles Parking (Starbucks) | Total | 1 |
| Vehicles Parking (Other)     | Total | 0 |

15 Minute Time Period From: \_\_\_12:15\_\_\_\_\_ To: \_\_\_12:30 PM\_\_\_\_\_

|                              |       |   |
|------------------------------|-------|---|
| Vehicles Through Drive-Thru  | Total | 5 |
| Vehicles Parking (Starbucks) | Total | 4 |
| Vehicles Parking (Other)     | Total | 1 |

15 Minute Time Period From: \_\_\_12:30\_\_\_\_\_ To: \_\_\_12:45 PM\_\_\_\_\_

|                              |       |   |
|------------------------------|-------|---|
| Vehicles Through Drive-Thru  | Total | 7 |
| Vehicles Parking (Starbucks) | Total | 3 |
| Vehicles Parking (Other)     | Total | 2 |

15 Minute Time Period From: \_\_\_12:45\_\_\_\_\_ To: \_\_\_1:00 PM\_\_\_\_\_

|                              |       |   |
|------------------------------|-------|---|
| Vehicles Through Drive-Thru  | Total | 6 |
| Vehicles Parking (Starbucks) | Total | 3 |
| Vehicles Parking (Other)     | Total | 1 |