POTABLE WATER AND ROADWAY REPORT

FOR

RUBY RANCH

AUGUST 31, 2018

Prepared for:

WILLOW BROOK METRO DISTRICT

Prepared by:

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Scope

This Analysis Report was prepared for the Ruby Ranch residents and commissioned by the Willow Brook Metropolitan District. The purpose of the report is to evaluate certain aspects of the potable water system and the roadway network.

For the water system, the specific scope of this report includes a comparison of continuing along the current plan of replacing small sections of the water system annually versus completing the system in a single year.

For the roadway system, the specific scope of this report includes comparing different road surfaces and treatments versus maintaining the current conditions and processes.

This report consists of information gathered from many different sources. Many pages of historical plans, reports and other data were reviewed. Many different people provided valuable information. This report attempts to compile and organize all the data received. Much of the data could not be independently verified or corroborated; therefore, it should be expected that there exist errors and/or omissions. Please report any incorrect information that is observed. The report will continue to be updated and will serve as a repository for additional information as it becomes available.

General Information

Location

Ruby Ranch is located in Section 2, Township 5 South, Range 78 West of the 6th Principle Meridian, Summit County, State of Colorado. Located approximately one mile north of the Interstate 70 and Colorado State Highway 9 intersection, the Willow Brook Metropolitan (WBMD) serves the original 54 platted residential lots. The residents of the 700-acre development participate in the Ruby Ranch Owner's Association (RROA) and give direction to the WBMD.

Residents

Through the evaluation of existing data and discussions with individuals from WBMD and RROA, an accounting of the status of the residents has been developed.

- Current number of Homes: 50
- Number of Vacant Lots available for development: 7
- Number of Full-Time Resident Homes: 17
- Number of Part-Time Resident Homes: 24
- Number of Rental Properties: 9

Definitions:

Full-Time Resident Home: Listed as Owner's Primary Residence. Registered to vote in Summit County.

Part-Time Resident Home: Listed as Second Home or Investment. Occupied less than full-time.

Rental Property: Occupied less than full-time. Sometimes occupied by people other than Owner.

These definitions and designations are not exact and do not constitute any "final" findings, nor are they intended to "label" any properties. The designations are provided for information and analysis only.

Potable Water Assessment

Potable Water System

Potable water for RROA is provided by the WBMD. Water is distributed through a private system with water from several on-site wells. No Town of Silverthorne water is used; although a connection point exists in the event of an emergency.

We understand that the current potable water system is capable of providing for the current and future demands.

The current system is not designed or intended for firefighting uses.

Existing Water Infrastructure

The Ruby Ranch water system consists of wells, pumps, storage tanks, waterlines, meters, valves and fittings. It is understood that the system was installed in 1979 and an inferior product was utilized. That product has reached it's expected lifespan and replacements are underway.

Meters: There are currently 49 active water meters. The horse barn has an unmetered service. Two (2) residents of Ruby Ranch are not connected to the WBMD system.

Wells and Pump Stations:

Well 1	Pump 1	On S. Ruby Road near southern end
Well 2	Pump 2	On S. Ruby Road near Ruby Road
Well 3	Pump 3	On Pearl Road near Pearl Lane
	Booster Pump	On Emerald Road at northern end

Storage:

Storage Tank	Capacity (gal)	HWL	Name	Notes
1	50,000	9,231	Garnet Road Storage Tank	
2	13,000	9,366	Upper Emerald Road Storage Tank	2 x 6,500-gal tanks
3	40,000		Emerald Road @ Booster Pumps	2 x 20,000-gal tanks

We understand that the existing well, pump and tank network is sufficient, and no further evaluation is necessary at this time.

Ditch Water is used to irrigate the pastures and fields throughout the development. It is believed that infiltration of ditch water contributes to the aquifer that the wells draw from.

The Town of Silverthorne has a 250,000-gal tank located north of the horse barn off Ruby Road. A 12" DIP waterline feeds into and out of the tank. An emergency cross-connection to the RROA system exists north of the tank.

Proposed Water Infrastructure

The WBMD owns and maintains all the water infrastructure. WBMD is in the midst of a waterline replacement program that targets short runs of pipe to replace each year. There is an annual budget of $140,000 for this replacement program. The program, in its current form, has 7-years remaining until complete replacement is anticipated. Due to inflation and volatile material costs, current estimates show that the $140,000 limit will need to be exceeded to complete the phases as previously planned.

The new water pipes being installed have an expected lifespan of 50 – 75 years.

Each year there are additional costs for maintenance, emergency repairs and general improvements.

Those costs are as follows:

YEAR	IMPROVEMENTS	MAINTENANCE	REPAIRS	TOTALS
2014	$3,720	$21,796	$596	$26,112
2015	$4,442	$21,809	$11,784	$38,035
2016	$2,875	$22,080	$29,976	$54,931
2017	$5,566	$22,812	$7,242	$35,620
2018	$3,965	$24,000	$16,990	$44,955
TOTALS	**$20,568**	**$112,497**	**$66,588**	**$199,653**

As you can see from the costs listed above, the unplanned repairs have the most variability and are difficult to budget for.

This study attempts to compare the current replacement system to a program where the waterline is replaced in 1 or 2 phases instead of 7. Completing the water improvements quickly has several benefits to consider:

- **Reduced overall costs** – While the initial cost will be greater, the ultimate costs for construction will be less due to re-mobilization fees from the Contractor, no escalation of costs due to annual increases. Better competitive pricing due to larger scale of project.
- **Reduced repair costs** – Since the system will be new, repair costs should be minimal.
- **Reduced Construction Traffic** – Although the construction traffic will be greater for a season, the waterline will then be complete, and no substantial waterline construction should be necessary for years to come.

Cost Models and Evaluations

Conceptual plans, material quantities and phasing plans were evaluated. The project and cost models were discussed with several contractors in the Summit County area. Each contractor indicated that they are currently extremely busy and that material costs are volatile due to inflation and changing tariffs.

The summary of costs associated with continuing current phased approach.

- Estimate Range - **$1,800,000 to $2,500,000 (Average = $2,195,985)**
- Includes costs from two (2) local contractors as well as an Engineer's Opinion of Probable Costs (EOPC)
- See cost models (A3) included in appendix.
- All phased models Include an annual escalation (6%-7%) to account for rising labor and material costs.
- Each model showed that each annual phase (as currently designated) would likely exceed the $140,000 budget. This would require the WBMD to either construct less of the system each year or increase the funding.

Costs associated with single phase.

- Estimate Range = **$1,300,000 to $1,800,000 (Average = $1,558,728)**
- Includes costs from three (3) local contractors as well as an Engineer's Opinion of Probable Costs (EOPC).
- See cost model summary (A4) in appendix.

- The areas for cost savings over the multi-year approach are as follows:
    - Potential Cost Escalation - $300,000 to $400,000 Savings
    - Contractor Mobilization - $20,000 to $50,000 Savings
    - Engineering/Const. Mgmt. & Testing - $20,000 to $50,000 Savings
- Completing the system in a single phase would likely require the WBMD to incur debt.

Note the following:

- These numbers do not include financing costs (if WBMD decided to incur debt)
- The contractors are not currently motivated to provide competitive numbers. Their costs could be reduced through an actual competitive bid process.
- Typically, a larger project will receive lower unit costs than multiple smaller projects.
- The EOPC produced the lowest costs in both the single-year and multi-year models.

Roadway Assessment

The existing roads in Ruby Ranch consist of approximately 5 miles of unpaved roads of varying widths, with roadside drainage ditches and storm culverts. A majority of the roads are constructed with Recycled Asphalt Pavement (RAP). RAP is a popular choice for unpaved roads in Colorado. It is literally the biproduct of tearing out or milling asphalt roads. It still contains the oils and binders that were included in the asphalt mix so it tends to hold up longer and create less dust than a traditional gravel road. In the past few years; however, RAP has been shown to posses certain undesired environmental and health qualities. See several environmental studies in the References section for additional information.

Current roadway issues raised by homeowners include: washboard surface, dust and cost of maintenance.

Currently, the WBMD budgets $35,000 annually for summer roadway maintenance. Maintenance operations include: regrading washboard areas, adding more RAP where necessary & dust control. The current method of dust control is spraying magnesium chloride on the surface once per summer. This amount has been exceeded and needs to be re-evaluated.

Existing Roadway Network

The existing roads are not paved and consist mainly of gravel and RAP. Most of the roads were dedicated as roads in the original platting of the development. The property for these roads is owned by the WBMD. Several additional “roads” are through private properties and serve as access to several lots. These were dedicated as Private Access Easements, and most are 40’ in witdth. WBMD maintains a majority of the roads in easements. These legal designations do not affect the WBMD policy for road maintenance, nor do they affect Summit County policies. See the Road Inventory List (B2) in the appendix.

FILING NO. 1	
Dedicated Roads	**Access Easements**
• Ruby Ranch Road	• S. Ruby Lane (Lots 2, 3 & 4)
• Ruby Road	• Chickadee Lane (Lots 19, 20 & 26)
• Topaz Road	• Bootlegger Lake Road (Lots 25 & 26)
• Jade Road	• Garnet Lane (Lots 22, 23 & 24)
• Garnet Road	
FILING NO. 2	
Dedicated Roads	**Access Easements**
• Emerald Road	• Pearl Lane (Lots 47, 48, 52A &52B)
• Opal Road	• Diamond Road (Lot 54)
• Agate Road	
• Pearl Road	

Annual Maintenance Costs

As noted previously the WBMD budgets funds for routine roadway maintenance. This amount is planned to increase due to planned improvements including: reestablishing the road crown, super-elevating the curves, re-establishing the roadside drainage ditches and adding additional treatments of dust control.

Previous Year Expenditures

Year	General Road Maintenance (excludes snow removal)	Mag Chloride	Recycled Asphalt (RAP)	Totals
2014	$17,917	$6,177	$25,000	$49,094
2015	$18,493	$6,281	$25,000	$49,774
2016	$10,121	$8,163	$25,000	$43,284
2017	$16,279	$9,414	$30,000	$55,693
2018	$6,020	$9,550	$30,000	$45,570
Totals	**$68,830**	**$39,584**	**$135,000**	**$243,414**

Costs provided by Community Resource Services (8/24/2018)

Traffic Count and Speed Data

See Appendix C at the end of this report.

Surface Options Considered

Recycled Asphalt Pavement (RAP)

RAP is currently utilized throughout Ruby Ranch.

Pros:
- Generally, generate lower speeds than paved
- Recycled material is environmentally responsible

Cons:
- High annual maintenance costs
- More RAP is required each year
- Possible health concerns
- Dust

Gravel Road

A standard gravel road utilizes a specific combination of rock sizes to form a stable driving surface.

Pros:
- Generally, generate lower speeds than paved
- No oils or binders (besides MagCl)

Cons:
- Dust
- High annual maintenance costs
- More gravel would be required each year

Double Chip Seal

Two (2) thin layers of asphalt placed over an existing gravel road to reduce mud, dust and wash boarding.

Pros:
- Lower cost than full thickness pavement
- Low Dust
- Smooth riding. Less wear/tear on vehicles

Cons:
- Durability. Likely to be damaged by snow plowing
- Initially costs more than current unpaved road

Asphalt Pavement

Asphalt pavement provides a stable, all-weather surface that would require little significant maintenance for many years.

Pros:

- Low Dust
- Smooth riding (Less wear & tear on vehicles)
- Very durable
- Small annual maintenance costs

Cons:

- Initial cost is highest of the options
- High repair/replace costs at end of life
- Potential for increased traffic speeds

Roadway Classifications

Roads can be classified based on the volume of traffic and speed limits. The different classifications can determine lane widths and pavement type desired. Ruby Ranch appears to have roads that can be divided into three different classifications as follows:

- **Tier 1** - Roads that connect local roads to SH 9. They are the longest roads and carry the highest volumes of traffic. Some homes have access to the network on these roads.
- **Tier 2** – Roads that extend from collector roads to provide access to driveways. Lower traffic.
- **Tier 3** - Short roads or shared access drives that provide access to homes. Minimal traffic.

Criteria	Tier 1	Tier 2	Tier 3
Speed Limit	20 MPH	15 MPH	10-15 MPH
Lane Width	11’	10’	10’
Shoulder Width	2’	1’	1’
Approx. Length	7,000’ 1.44 miles	11,430’ 2.16 miles	9,100’ 1.72 miles

See the Road Classification Map (B1) and Road Inventory Data (B2) in the appendix.

Traffic Calming

According to the Federal Highway Administration (FHWA):

> “The primary purpose of traffic calming is to support the livability and vitality of residential and commercial areas through improvements in non-motorist safety, mobility, and comfort. These objectives are typically achieved by reducing vehicle speeds or volumes on a single street or a street network. Traffic calming measures consist of horizontal, vertical, lane narrowing, roadside, and other features that use self-enforcing physical or psycho-perception means to produce desired effects.”

FHWA lists over 20 different measures to consider. Through experience and discussions with local jurisdictions, we have narrowed the list to 6 options.

- Lateral Shift
- Chicane
- Mini-Roundabout
- Speed Hump
- Choker

- Signs

The speeds observed during the traffic counts indicate that there is currently no need for traffic calming measures; however, if the community desires slower speeds, the measures listed above can be reviewed and implemented.

Dust Control

Current dust control measures include treating the roads with Magnesium Chloride (MagCl) once per summer. MagCl is the product utilized by many Colorado counties for dust abatement due to its cost, availability and performance. Options evaluated include:

- Magnesium Chloride – A liquid produced from naturally-occurring minerals in the Great Salt Lakes. MagCl is non-toxic and is said to be safe for plants and animals.
- Lignin – A naturally occurring polymer found in wood that acts like glue. The product works by binding the road surface particles together. The dust particles are trapped by the high-viscosity, naturally sticky material. It is environmentally safe, non-toxic and non-corrosive.
- Soybean Oil Soapstock – A common base oil for soaps and a byproduct of soybean oil. Applied as a liquid and last an entire season.

Cost Models, Reserve Account and Evaluations

Understanding that dust and washboard roads are a concern for residents, an evaluation of paving some of the roads is provided.

Maintaining Current Roads:

- Re-establish road centerline crowns to promote runoff
- Clean and clear roadside drainage ditches to convey runoff adequately
- Increase MagCl from 1x per season to 3x per season for better dust control
- Estimate increase annual budget/reserve from $35,000/year to $50,000/year

Asphalt Paving Option 1 - All Tier 1 Roads:

- Approximately 7,600 feet (1.44 miles) of road.
- Estimated costs **$908,600**. See Cost Model summary (B5) in appendix
- Includes 6 road intersections
- Includes 8’ multi-use gravel trail
- Connects to 11 driveways

Asphalt Paving Option 2 – Ruby Ranch Road plus 100-yd past intersection:

- Approximately 3,200 feet (0.61 miles) of road. See Opt. 2 Map (B6) in appendix.
- Anticipated costs **$372,054**. See Cost Model summary (B8) in appendix
- Includes 1 road intersection
- Includes 8’ multi-use gravel trail
- Includes 600 feet of public county road (Gate House to Smith Ranch north access)
- Connects to 3 driveways

Double Chip Seal Collector and Local Roads:

- Estimate from Rocky Mountain Chip Seal dated 5/29/2018.
    - Option 1 – Chip Seal all - **$626,765**
    - Option 2 – Chip Seal roads & asphalt pave (3”) cul-de-sacs - **$690,939**

Deciding When to Pave

Many articles have been written about when to change from an unpaved (gravel) road to a paved asphalt road. See references for more detailed information.

According to an Associate Professor at Colorado State University, "Paving an unsurfaced road includes certain tradeoffs. The advantages include waterproofing the subgrade and base course. This reduces potential for load related damage of the surface during wet weather. Paving reduces dust. Most users enjoy the smoother ride qualities that paving produces. And pavements can accommodate more varieties of vehicles than unpaved roads.

However, the initial cost of unsurfaced roads is low. If maintained effectively, aggregate surfaced roads provide an adequate riding surface. And, depending on the structure of the subgrade and base course the aggregate surfaced road may be easier and less expensive to maintain and require less operator skill. Traffic speeds are usually lower and, although potholes occur more frequently, can be repaired faster."

There are several different factors involved and this study provides the basic information for many of them. Eight (8) items should be addressed prior to paving:

1. A formal Road Management Program should be developed and adopted
2. The RROA/WBMD should be committed to the Program
3. Traffic count data should be evaluated
4. Safety and Design Criteria should be evaluated
5. Develop a Roadway Cost Model
6. Roadway base and drainage issues should be resolved
7. Detailed comparison of Pavement Life and Maintenance Costs
8. Weighing public opinion

A Surface Treatment Matrix has been provided in the appendix (B10). Residents can complete the matrix with the scores that are important to them to assist in their decision-making process.

Life Cycle Costs:

See the detailed analysis in the appendix (B11).

CONDITION	20-YR COSTS	% PAVED	% UNPAVED
Unpaved Roads	$1,420,000	0%	100%
Option 1 Paving	$2,314,953	27%	73%
Option 2 Paving	$1,830,518	11%	89%

The higher costs for the paving options are due to the continued need for annual maintenance for the remaining unpaved roads.

Reference Websites:

- Safe Asphalt for Everyone: www.safeasphalt.com
- National Asphalt Pavement Association: www.asphaltpavement.org
- Summit County Mapping: http://gis.summitcountyco.gov/Map/
- Colorado Asphalt Pavement Association: http://co-asphalt.com/

Conclusions

- **Waterline Replacements**
    - Long-term cost savings could be realized by completing the remaining system replacements all at once. As you can see from the table below, delaying the replacement can be costly. Costs below do not include costs of financing.

Original Estimate from JR Engineering dated 2/6/1998	$978,000
Amount spent to-date over 8-years (approx. $140K/yr)	$1,120,000
Estimated amount to complete over 7-years (average)	$2,195,985
Estimated amount to complete in single phase (average)	$1,558,728
Potential savings for single phase	$637,257

    - Construction traffic for the waterline replacement could be condensed to one (1) summer versus continuing construction traffic for another seven (7) or more summers.
    - Risks of waterline breaks, water outages and associated emergency repairs could be reduced or eliminated by completing the remaining system.
    - Consideration should be made to complete waterlines before any roadway improvements as to not tear into new roadways.
- **Roadway Treatments**
    - Washboard roads and dust are a concern heard from the residents.
    - The dust from Recycled Asphalt Pavement (RAP) has the potential to pose human health and environmental concerns in certain circumstances
    - Gravel roads (opposed to RAP) would likely produce more overall dust; therefore, additional treatments of MagCl would be needed
    - Many roads have lost their “crown” or “super-elevation” and many roadside ditches are in disrepair. These drainage issues should be resolved regardless of a paving decision.
    - Double Chip Seal pavement would resolve the washboard and dust issues; however, its low durability rating is concerning. Snow plowing operations could accidentally destroy sections of the pavement.
    - Asphalt paving has a high initial cost but should be relatively maintenance free for 7-10 years. Reserve budget would be required for when a chip seal or pothole repairs are needed. Additional budget would be required when an overlay is required (approx. 20-years).
    - Average vehicle speeds my increase due to asphalt pavement being installed. The speeds may require the addition of traffic calming measures.
    - Asphalt paving has been shown to reduce wear and tear on vehicles; therefore, paving the roads would reduce vehicle maintenance costs for each resident.

References

1. *Water Distribution System Evaluation*, JR Engineering, February 1998
2. *Summit County Land Use and Development Code, Chapter 5: Road & Bridge Standards*, October 8, 2013
3. *The Ranch's Water System*, Jeff Bork, August 12, 2004
4. *Recycling Hot Mix Asphalt Pavements*, National Asphalt Pavement Association, April 1996
5. *The Benefits of Using Recycled Asphalt Pavement* brochure, Colorado Asphalt Pavement Association, undated
6. *Life-Cycle Cost Analysis*: A Position Paper, Asphalt Pavement Alliance
7. *Unpaved Road Dust Management*, Central Federal Lands Highway Division, January 2013
8. *Why use Mag-Chloride for Dust Control if You Care About the Environment*, April 7, 2017
9. *Reuse of Recycled Asphalt Pavement and Millings*, Morris County, June 2014
10. *Recommended Criteria in the Decision Process for Paving Unsurfaced Roadways*, Scott Shuler, 2007
11. *Traffic Calming Fact Sheet*, Institute of Transportation Engineers, May 2018
12. *Ruby Ranch Roads – A Case for Paving*, June 2018
13. *When to Pave a Gravel Road*, Kentucky Transportation Center, undated
14. Ruby Ranch Filing 1 Plat, October 4, 1979
15. Ruby Ranch Filing 2 Plat, May 20, 1981
16. *Reclaimed Asphalt Pavement: Stockpile Emissions and Leachate*, National Asphalt Pavement Association, March 29, 2017
17. *Recycled Asphalt Pavement and Asphalt Millings Reuse Guidance*, New Jersey Department of Environmental Protection, March 2013
18. *Environmental Impacts of Reclaimed Asphalt Pavement*, New Jersey DOT, May 2017
19. *Optimizing Recycling – Reclaimed Asphalt Pavement in Building and Construction*, StopWaste and Healthy Building Network, 2017

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- Bill Perkins – Stan Miller, Inc.
- Chris Baer – Grand County Road & Bridge
- Tom Clayton – Colorado Asphalt Pavement Association

- **Appendix A – Water Infrastructure**
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  - **B2 - Inventory Data**
  - **B3 - Cross-Sections**
  - **B4 - Quantity Calculations**
  - **B5 - Option 1 – Paving Cost Model**
  - **B6 - Option 2 – Paving Map**
  - **B7 - Option 2 - Quantities**
  - **B8 - Option 2 – Paving Cost Model**
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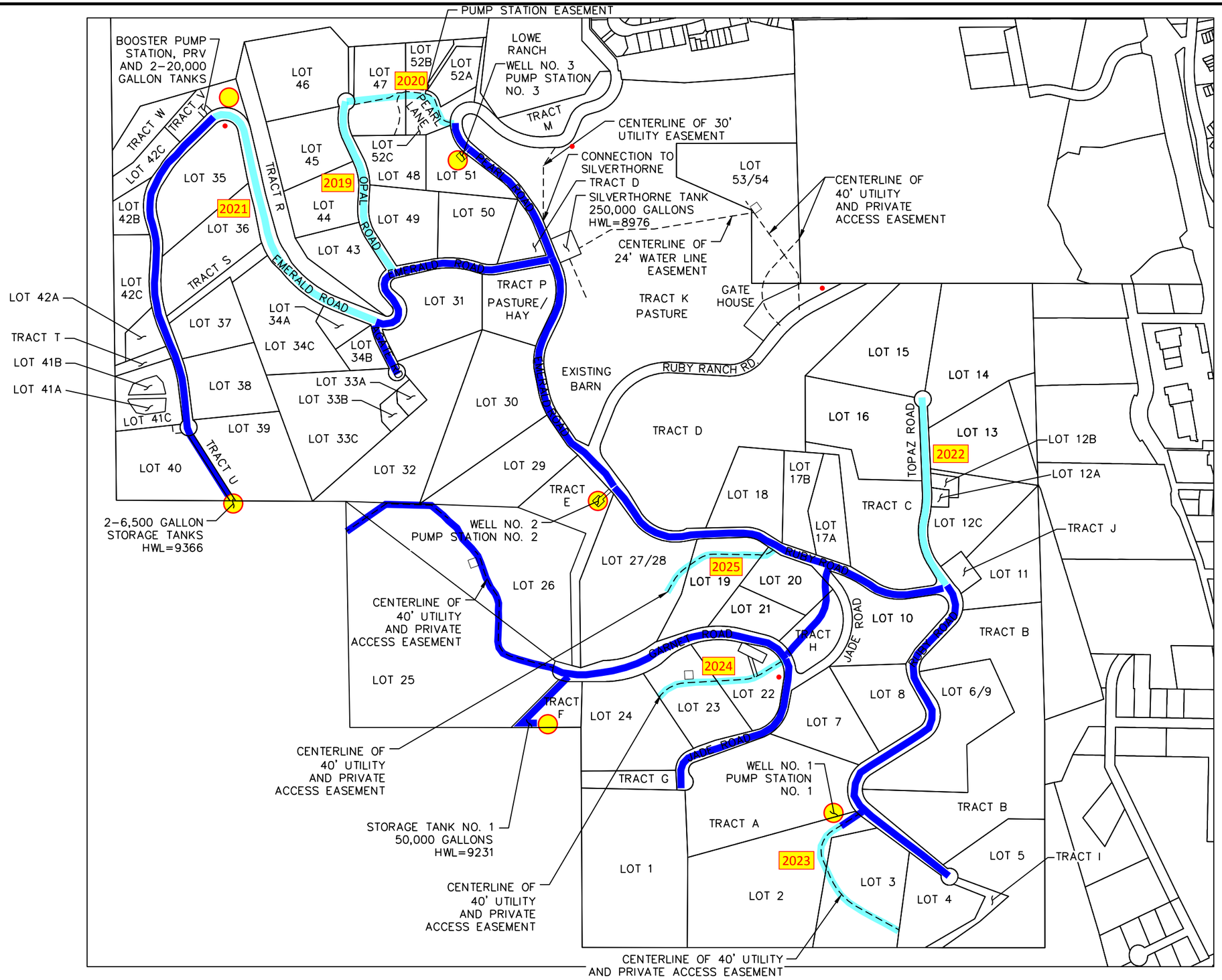
- **Appendix C – Traffic Study**
- **Appendix D – Geotechnical Study**

Appendix A
Water Infrastructure

A1 - WATER MAP



600 0 600

SCALE: 1" = 600'

LEGEND

- WATERLINE TO BE REPLACED
- WATERLINE COMPLETED
- WBMD WATER INFRASTRUCTURE
- YEAR - POSSIBLE YEAR/PHASE
- HYDRANT

MIRO	RUBY RANCH	SCALE: 1"=600'
	WATER EXHIBIT	SHEET: CSK-01
	JOB NO. 18103 CHECKED BY: JDC DRAWN BY: DAT DATE: 08/31/18	

RUBY RANCH WATER SERVICE ANALYSIS

FILING 1				TYPE
LOT	MTR	GAL/YR	NOTES	
1	X	39,200		R
2	X	43,000		F
3	V	0	Vacant - To Be Developed	TBD
4	X	11,200		P
5	X	39,500		R
6	O	N/A	Private Well	F
7	X	39,200		F
8	V	0	Vacant - To Be Developed	TBD
9			Combined with Lot 6	
10	X	70,200		F
10	X	0	Secondary Structure/Meter	
11	X	60,000		F
12A	X	12,500		P
12B	X	11,600		F
12C			Common Area/Open Space	
13	X	23,800		P
14	X	64,000		P
15	X	16,750		R
16	X	71,200		F
17A	X	14,200		P
17B	X	16,400		F
18	X	14,800		P
19	X	7,400		P
20	X	26,000	Meter Broken - Estimate	F
21	X	31,000		F
22	V	0	Vacant - To Be Developed	TBD
23	V	0	Vacant - To Be Developed	TBD
24	X	32,200		F
25	X	50,400		R
26	X	23,400		F
27			Combined with Lot 28	
28	X	39,500		P
	24	**- METERS (X)**		
	4	**- VACANT (V)**		
	1	**- NOT IN WBMD (O)**		

FILING 2				TYPE
LOT	MTR	GAL/YR	NOTES	
29	V	0	Vacant - To Be Developed	TBD
30	X	28,000		F
31	X	38,000		R
32	X	38,500		F
33A	V	0	Vacant - To Be Developed	TBD
33B	X	12,000		P
33C			Common Area/Open Space	
34A	X	19,400		F
34B	X	8,600		P
34C			Common Area/Open Space	
35	X	20,400		P
36	X	38,800		P
37	X	23,400		P
38	X	32,200		P
39	X	0	No Data. Low Use.	P
40	X	40,600		F
41A	V	0	Vacant - To Be Developed	TBD
41B	X	24,200		P
41C			Common Area/Open Space	
42A	X	100,000		R
42B	X	13,400		P
42C			Common Area/Open Space	
43		0	Under Construction	TBD
44	X	48,000		R
45	X	57,000		P
46	X	47,333		F
47	X	24,400		R
48	X	24,000		P
49	X	12,800		P
50	X	10,600		P
51	X	76,200		R
52A	X	0	No Data. Low Use.	P
52B	X	18,400		P
52C			Common Area/Open Space	
53			Combined with Lot 54	
54	O	0	Town meter	P
Barn		0	Service line, no meter	
	25	**- METERS (X)**		
	3	**- VACANT (V)**		
	1	**- NOT IN WBMD (O)**		

49	**TOTAL ACTIVE METERS**
7	**TOTAL LOTS TO BE DEVELOPED**
2	**NOT CONNECTED TO WBMD WATER**

*** F = FULL-TIME; P = PART-TIME; R = RENTAL**

FILING 1	
12	**FULL-TIME RESIDENTS (F)**
8	**PART-TIME RESIDENTS (P)**
4	**RENTAL PROPERTIES (R)**

TOTALS
17
24
9
50

FILING 2	
5	**FULL-TIME RESIDENTS (F)**
16	**PART-TIME RESIDENTS (P)**
5	**RENTAL PROPERTIES (R)**

A3.a - Multi-Year Costs

RUBY RANCH WATERLINE REPLACEMENT PROGRAM

ESTIMATE OF MULTI-YEAR COSTS

CONTRACTOR 1

				2019 (YR 1)		2020 (YR 2)		2021 (YR 3)		2022 (YR 4)		2023 (YR 5)		2024 (YR 6)		2025 (YR 7)		
ITEM	DESCRIPTION	UNIT	UNIT COST	QTY	COST	QTY	COST	QTY	COST	QTY	COST	QTY	COST	QTY	COST	QTY	COST	
1	6" C900 305 Water Main	LF	$105.00	0	$0.00	0	$0.00	1,850	$194,250.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	
2	6" Bend and Thrust Block	EA	$550.00	0	$0.00	0	$0.00	4	$2,200.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	
3	6" Gate Valve	EA	$1,500.00	0	$0.00	0	$0.00	4	$6,000.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	
4	6" Fittings (Tee, Rdcr, Plug)	EA	$550.00	0	$0.00	0	$0.00	2	$1,100.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	
5	Connection to existing 6" main	EA	$4,100.00	1	$4,100.00	1	$4,100.00	1	$4,100.00	1	$4,100.00	1	$4,100.00	1	$4,100.00	1	$4,100.00	
6	Connection to existing domestic service	EA	$3,500.00	4	$14,000.00	3	$10,500.00	3	$10,500.00	7	$24,500.00	3	$10,500.00	3	$10,500.00	4	$14,000.00	
7	Connection to existing 3" main	EA	$3,400.00	1	$3,400.00	1	$3,400.00	0	$0.00	1	$3,400.00	0	$0.00	0	$0.00	0	$0.00	
8	2" or 3" Gate Valve	EA	$1,250.00	2	$2,500.00	2	$2,500.00	0	$0.00	2	$2,500.00	2	$2,500.00	2	$2,500.00	2	$2,500.00	
9	2" or 3" Water Main	LF	$89.00	1,250	$111,250.00	950	$84,550.00	250	$22,250.00	1,250	$111,250.00	950	$84,550.00	825	$73,425.00	810	$72,090.00	
10	2" or 3" Bends and Fittings	EA	$375.00	4	$1,500.00	4	$1,500.00	0	$0.00	3	$1,125.00	4	$1,500.00	4	$1,500.00	3	$1,125.00	
11	Connection to Well an Booster Pump	EA	$5,100.00	0	$0.00	0	$0.00	1	$5,100.00	0	$0.00	1	$5,100.00	0	$0.00	0	$0.00	
12	Road and Ditch repair	LS	$25,000.00	1	$25,000.00	1	$25,000.00	1	$25,000.00	1	$25,000.00	1	$25,000.00	1	$25,000.00	1	$25,000.00	
13	Haul off excess material (offsite)	LS	VARIES	1	$7,500.00	0	$6,500.00	1	$9,200.00	1	$8,800.00	1	$8,000.00	1	$8,000.00	1	$9,200.00	
14	Remove and Replace culvert (18" CMP)	EA	$4,900.00	2	$9,800.00	1	$4,900.00	2	$9,800.00	2	$9,800.00	2	$9,800.00	1	$4,900.00	1	$4,900.00	
15	Revegetation	SY	$0.20	2,500	$500.00	10,000	$2,000.00	3,000	$600.00	3,500	$700.00	2,000	$400.00	1,750	$350.00	1,750	$350.00	
16	Mobilization and Staging	LS	VARIES	1	$10,000.00	1	$10,000.00	1	$17,500.00	1	$13,500.00	1	$10,000.00	1	$10,000.00	1	$11,000.00	
17	Insulation - 4"	LF	$38.00	200	$7,600.00	200	$7,600.00	200	$7,600.00	200	$7,600.00	200	$7,600.00	100	$3,800.00	200	$7,600.00	
18	Traffic Control	LS	VARIES	1	$3,000.00	1	$2,000.00	1	$5,000.00	1	$4,000.00	1	$4,000.00	1	$4,000.00	1	$5,000.00	
19	Remove and Replace Unsuitable Soil	CY	$75.15	100	$7,515.00	50	$3,757.50	100	$7,515.00	100	$7,515.00	75	$5,636.25	50	$3,757.50	50	$3,757.50	
20	Air Relief/Blowoff	EA	$3,500.00	0	$0.00	1	$3,500.00	0	$0.00	1	$3,500.00	1	$3,500.00	1	$3,500.00	1	$3,500.00	
21	Recycled Base	TON	$52.50	365	$19,162.50	0	$0.00	475	$24,937.50	340	$17,850.00	245	$12,862.50	185	$9,712.50	185	$9,712.50	TOTALS
22			**Sub-Total**		**$226,828**		**$171,808**		**$352,653**		**$245,140**		**$195,049**		**$165,045**		**$173,835**	**$1,530,356**
23			**Contingency 10%**		$22,683		$17,181		$35,265		$24,514		$19,505		$16,505		$17,384	**$153,036**
24			**Annual Escalation 7%**	7%	$17,466	14%	$26,458	21%	$81,463	28%	$75,503	35%	$75,094	42%	$76,251	49%	$93,697	**$445,932**
25			**Contractor Overhead and Profit 0%**		$0		$0		$0		$0		$0		$0		$0	**$0**
26			**Engineering/Const. Mgmt./Testing 6%**		$16,019		$12,927		$28,163		$20,709		$17,379		$15,468		$17,095	**$127,759**
27			**ANNUAL TOTAL**		**$282,995**		**$228,373**		**$497,543**		**$365,867**		**$307,026**		**$273,268**		**$302,010**	**$2,257,083**

Notes, Comments or Clarifications:

1. Overhead and Profit included in Unit Costs

A3.b - Multi-Year Costs

RUBY RANCH WATERLINE REPLACEMENT PROGRAM

ESTIMATE OF MULTI-YEAR COSTS

CONTRACTOR 2

				2019 (YR 1)		2020 (YR 2)		2021 (YR 3)		2022 (YR 4)		2023 (YR 5)		2024 (YR 6)		2025 (YR 7)		
ITEM	DESCRIPTION	UNIT	UNIT COST	QTY	COST	QTY	COST	QTY	COST	QTY	COST	QTY	COST	QTY	COST	QTY	COST	
1	6" C900 305 Water Main	LF	$100.00	0	$0.00	0	$0.00	1,850	$185,000.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	
2	6" Bend and Thrust Block	EA	$450.00	0	$0.00	0	$0.00	4	$1,800.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	
3	6" Gate Valve	EA	$1,500.00	0	$0.00	0	$0.00	4	$6,000.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	
4	6" Fittings (Tee, Rdcr, Plug)	EA	$650.00	0	$0.00	0	$0.00	2	$1,300.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	
5	Connection to existing 6" main	EA	$3,250.00	1	$3,250.00	1	$3,250.00	1	$3,250.00	1	$3,250.00	1	$3,250.00	1	$3,250.00	1	$3,250.00	
6	Connection to existing domestic service	EA	$2,000.00	4	$8,000.00	3	$6,000.00	3	$6,000.00	7	$14,000.00	3	$6,000.00	3	$6,000.00	4	$8,000.00	
7	Connection to existing 3" main	EA	$3,000.00	1	$3,000.00	1	$3,000.00	0	$0.00	1	$3,000.00	0	$0.00	0	$0.00	0	$0.00	
8	2" or 3" Gate Valve	EA	$1,250.00	2	$2,500.00	2	$2,500.00	0	$0.00	2	$2,500.00	2	$2,500.00	2	$2,500.00	2	$2,500.00	
9	2" or 3" Water Main	LF	$72.00	1,250	$90,000.00	950	$68,400.00	250	$18,000.00	1,250	$90,000.00	950	$68,400.00	825	$59,400.00	810	$58,320.00	
10	2" or 3" Bends and Fittings	EA	$200.00	4	$800.00	4	$800.00	0	$0.00	3	$600.00	4	$800.00	4	$800.00	3	$600.00	
11	Connection to Well an Booster Pump	EA	$3,000.00	0	$0.00	0	$0.00	1	$3,000.00	0	$0.00	1	$3,000.00	0	$0.00	0	$0.00	
12	Road and Ditch repair	LS	$10,000.00	1	$10,000.00	1	$10,000.00	1	$10,000.00	1	$10,000.00	1	$10,000.00	1	$10,000.00	1	$10,000.00	
13	Haul off excess material (offsite)	LS	$63,000.00	1	$63,000.00	0	$0.00	1	$63,000.00	1	$63,000.00	1	$63,000.00	1	$63,000.00	1	$63,000.00	
14	Remove and Replace culvert (18" CMP)	EA	$3,800.00	2	$7,600.00	1	$3,800.00	2	$7,600.00	2	$7,600.00	2	$7,600.00	1	$3,800.00	1	$3,800.00	
15	Revegetation	SY	$0.25	2,500	$625.00	10,000	$2,500.00	3,000	$750.00	3,500	$875.00	2,000	$500.00	1,750	$437.50	1,750	$437.50	
16	Mobilization and Staging	LS	$10,000.00	1	$10,000.00	1	$10,000.00	1	$10,000.00	1	$10,000.00	1	$10,000.00	1	$10,000.00	1	$10,000.00	
17	Insulation - 4"	LF	$12.00	200	$2,400.00	200	$2,400.00	200	$2,400.00	200	$2,400.00	200	$2,400.00	100	$1,200.00	200	$2,400.00	
18	Traffic Control	LS	$20,000.00	1	$20,000.00	1	$20,000.00	1	$20,000.00	1	$20,000.00	1	$20,000.00	1	$20,000.00	1	$20,000.00	
19	Remove and Replace Unsuitable Soil	CY	$70.00	100	$7,000.00	50	$3,500.00	100	$7,000.00	100	$7,000.00	75	$5,250.00	50	$3,500.00	50	$3,500.00	
20	Air Relief/Blowoff	EA	$5,000.00	0	$0.00	1	$5,000.00	0	$0.00	1	$5,000.00	1	$5,000.00	1	$5,000.00	1	$5,000.00	
21	Recycled Base	TON	$20.00	365	$7,300.00	0	$0.00	475	$9,500.00	340	$6,800.00	245	$4,900.00	185	$3,700.00	185	$3,700.00	**TOTALS**
22			**Sub-Total**		**$235,475**		**$141,150**		**$354,600**		**$246,025**		**$212,600**		**$192,588**		**$194,508**	**$1,576,945**
23			**Contingency 10%**		$23,548		$14,115		$35,460		$24,603		$21,260		$19,259		$19,451	**$157,695**
24			**Annual Escalation 6%**	6%	$15,541	12%	$18,632	18%	$70,211	24%	$64,951	30%	$70,158	36%	$76,265	42%	$89,862	**$405,620**
25			**Contractor Overhead and Profit 12%**		$32,948		$20,868		$55,232		$40,269		$36,482		$34,573		$36,458	**$256,831**
26			**Engineering/Const. Mgmt./Testing 6%**		$16,474		$10,434		$27,616		$20,135		$18,241		$17,287		$18,229	**$128,416**
27			**ANNUAL TOTALS**		**$323,985**		**$205,198**		**$543,120**		**$395,982**		**$358,741**		**$339,971**		**$358,508**	**$2,525,506**

A3.c - Multi-Year Costs

RUBY RANCH WATERLINE REPLACEMENT PROGRAM

ENGINEER'S OPINION OF MULTI-YEAR COSTS

				2019 (YR 1)		2020 (YR 2)		2021 (YR 3)		2022 (YR 4)		2023 (YR 5)		2024 (YR 6)		2025 (YR 7)		
ITEM	DESCRIPTION	UNIT	UNIT COST	QTY	COST	QTY	COST	QTY	COST	QTY	COST	QTY	COST	QTY	COST	QTY	COST	
1	6" C900 305 Water Main	LF	$90.50	0	$0.00	0	$0.00	1,850	$167,425.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	
2	6" Bend and Thrust Block	EA	$550.00	0	$0.00	0	$0.00	4	$2,200.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	
3	6" Gate Valve	EA	$450.00	0	$0.00	0	$0.00	4	$1,800.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	
4	6" Fittings (Tee, Rdcr, Plug)	EA	$1,950.00	0	$0.00	0	$0.00	2	$3,900.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	
5	Connection to existing 6" main	EA	$1,950.00	1	$1,950.00	1	$1,950.00	1	$1,950.00	1	$1,950.00	1	$1,950.00	1	$1,950.00	1	$1,950.00	
6	Connection to existing domestic service	EA	$1,650.00	4	$6,600.00	3	$4,950.00	3	$4,950.00	7	$11,550.00	3	$4,950.00	3	$4,950.00	4	$6,600.00	
7	Connection to existing 3" main	EA	$2,100.00	1	$2,100.00	1	$2,100.00	0	$0.00	1	$2,100.00	0	$0.00	0	$0.00	0	$0.00	
8	2" or 3" Gate Valve	EA	$1,000.00	2	$2,000.00	2	$2,000.00	0	$0.00	2	$2,000.00	2	$2,000.00	2	$2,000.00	2	$2,000.00	
9	2" or 3" Water Main	LF	$85.00	1,250	$106,250.00	950	$80,750.00	250	$21,250.00	1,350	$114,750.00	950	$80,750.00	875	$74,375.00	860	$73,100.00	
10	2" or 3" Bends and Fittings	EA	$450.00	4	$1,800.00	4	$1,800.00	0	$0.00	4	$1,800.00	4	$1,800.00	4	$1,800.00	3	$1,350.00	
11	Connection to Well and Booster Pump	EA	$10,000.00	0	$0.00	0	$0.00	1	$10,000.00	0	$0.00	1	$10,000.00	0	$0.00	0	$0.00	
12	Road and Ditch repair	LS	$3,000.00	1	$3,000.00	1	$3,000.00	1	$3,000.00	1	$3,000.00	1	$3,000.00	1	$3,000.00	1	$3,000.00	
13	Haul off excess material (offsite)	LS	$4,000.00	1	$4,000.00	0	$0.00	1	$4,000.00	1	$4,000.00	1	$4,000.00	1	$4,000.00	1	$4,000.00	
14	Remove and Replace culvert (18" CMP)	EA	$5,400.00	2	$10,800.00	1	$5,400.00	2	$10,800.00	2	$10,800.00	2	$10,800.00	1	$5,400.00	1	$5,400.00	
15	Revegetation	SY	$0.96	2,500	$2,400.00	10,000	$9,600.00	3,000	$2,880.00	3,500	$3,360.00	2,000	$1,920.00	1,750	$1,680.00	1,750	$1,680.00	
16	Mobilization and Staging	LS	$7,000.00	1	$7,000.00	1	$7,000.00	1	$7,000.00	1	$7,000.00	1	$7,000.00	1	$7,000.00	1	$7,000.00	
17	Insulation - 4"	LF	$6.00	200	$1,200.00	200	$1,200.00	200	$1,200.00	200	$1,200.00	200	$1,200.00	100	$600.00	200	$1,200.00	
18	Traffic Control	LS	$3,000.00	1	$3,000.00	1	$3,000.00	1	$3,000.00	1	$3,000.00	1	$3,000.00	1	$3,000.00	1	$3,000.00	
19	Remove and Replace Unsuitable Soil	CY	$44.95	100	$4,495.00	50	$2,247.50	100	$4,495.00	100	$4,495.00	75	$3,371.25	50	$2,247.50	50	$2,247.50	
20	Air Relief/Blowoff	EA	$2,200.00	0	$0.00	1	$2,200.00	0	$0.00	1	$2,200.00	1	$2,200.00	1	$2,200.00	1	$2,200.00	
21	Recycled Base	TON	$49.00	365	$17,885.00	250	$12,250.00	475	$23,275.00	340	$16,660.00	245	$12,005.00	185	$9,065.00	185	$9,065.00	
22	Engineering/Const. Mgmt./Testing	LS	$9,500.00	1	$9,500.00	1	$9,500.00	1	$9,500.00	1	$9,500.00	1	$9,500.00	1	$9,500.00	1	$9,500.00	**TOTALS**
23	**Sub-Total**				**$183,980**		**$148,948**		**$282,625**		**$199,365**		**$159,446**		**$132,768**		**$133,293**	**$ 1,240,424**
25	**Contingency**	**10%**			$18,398		$14,895		$28,263		$19,937		$15,945		$13,277		$13,329	**$ 124,042**
24	**6% Annual Escalation**			**6%**	$12,143	**12%**	$19,661	**18%**	$55,960	**24%**	$52,632	**30%**	$52,617	**36%**	$52,576	**42%**	$61,581	**$ 307,170**
26	**Contractor Profit**	**8%**			$17,162		$14,680		$29,348		$21,755		$18,241		$15,890		$16,656	**$ 133,731**
27	**TOTALS**				**$231,682**		**$198,184**		**$396,195**		**$293,689**		**$246,249**		**$214,510**		**$224,859**	**$ 1,805,367**

Notes:

a. Unit Costs are installed costs and include labor and materials.

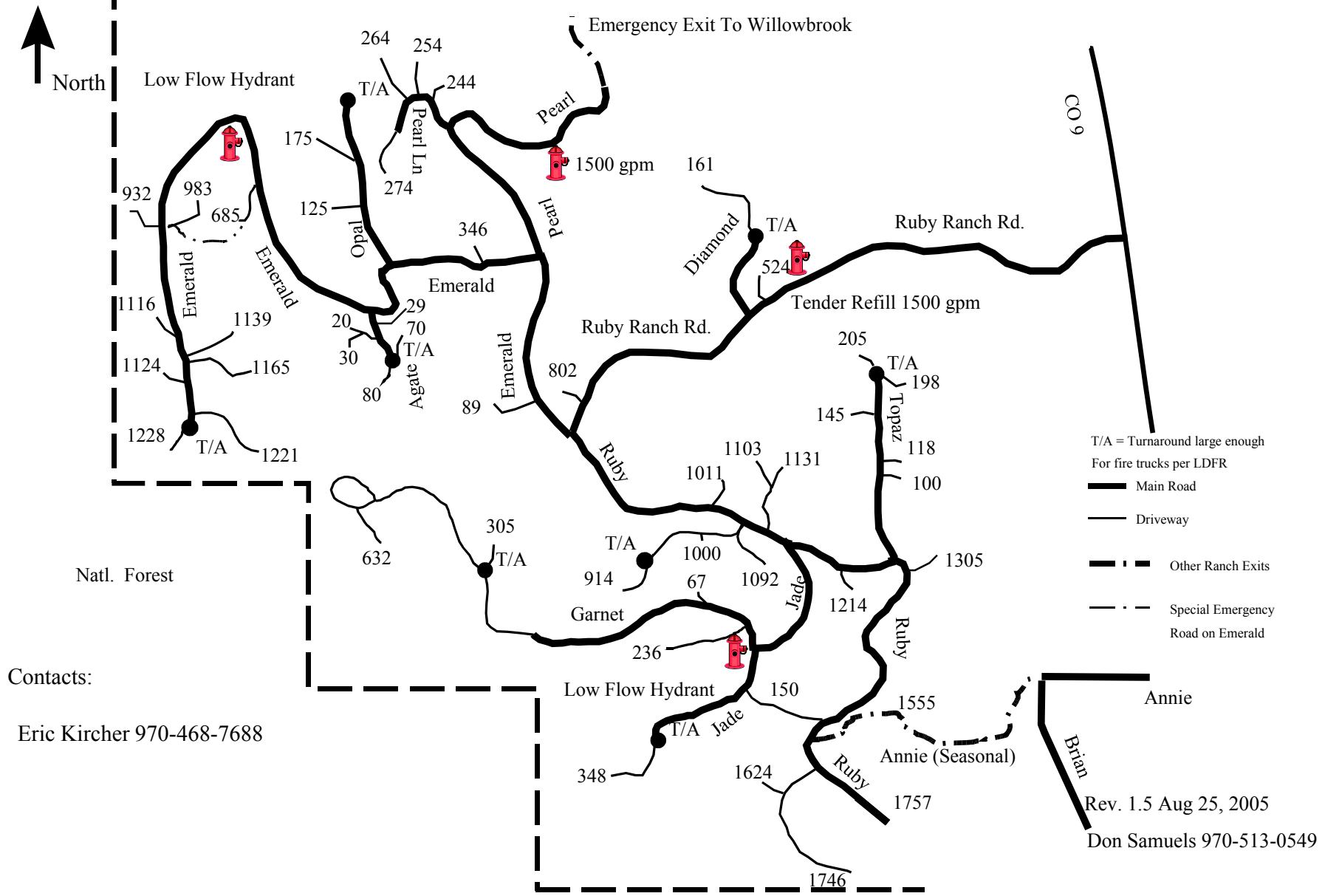
RUBY RANCH WATERLINE REPLACEMENT PROGRAM

ESTIMATE OF COSTS - SINGLE PHASE

				Contractor 1		Contractor 2		Contractor 3		EOPC	
ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST	UNIT COST	TOTAL COST	UNIT COST	TOTAL COST	UNIT COST	TOTAL COST
1	6" C900 305 Water Main	1,850	LF	$105.00	$194,250.00	$100.00	$185,000.00	$69.00	$127,650.00	$90.50	$167,425.00
2	6" Bend and Thrust Block	4	EA	$550.00	$2,200.00	$450.00	$1,800.00	$380.00	$1,520.00	$550.00	$2,200.00
3	6" Gate Valve	4	EA	$1,500.00	$6,000.00	$1,500.00	$6,000.00	$1,400.00	$5,600.00	$450.00	$1,800.00
4	6" Fittings (Tee, Rdcr, Plug)	2	EA	$550.00	$1,100.00	$650.00	$1,300.00	$0.00	$0.00	$1,950.00	$3,900.00
5	Connection to existing 6" main	7	EA	$4,100.00	$28,700.00	$3,250.00	$22,750.00	$5,000.00	$35,000.00	$2,250.00	$15,750.00
6	Connection to existing domestic service	27	EA	$3,500.00	$94,500.00	$2,000.00	$54,000.00	$1,800.00	$48,600.00	$1,650.00	$44,550.00
7	Connection to existing 3" main	3	LS	$3,400.00	$10,200.00	$3,000.00	$9,000.00	$4,000.00	$12,000.00	$2,100.00	$6,300.00
8	2" or 3" Gate Valve	12	EA	$1,250.00	$15,000.00	$1,250.00	$15,000.00	$1,150.00	$13,800.00	$1,000.00	$12,000.00
9	2" or 3" Water Main	6,285	LF	$89.00	$559,365.00	$72.00	$452,520.00	$62.00	$389,670.00	$85.00	$534,225.00
10	2" or 3" Bends and Fittings	22	EA	$375.00	$8,250.00	$200.00	$4,400.00	$258.00	$5,676.00	$450.00	$9,900.00
11	Connection to Well an Booster Pump	2	LS	$5,100.00	$10,200.00	$3,000.00	$6,000.00	$2,000.00	$4,000.00	$10,000.00	$20,000.00
12	Road and Ditch repair	1	LS	$150,000.00	$150,000.00	$200,000.00	$200,000.00	$28,000.00	$28,000.00	$3,000.00	$3,000.00
13	Haul off excess material (offsite)	1	LS	$95,091.00	$95,091.00	$63,000.00	$63,000.00	$12,000.00	$12,000.00	$4,000.00	$4,000.00
14	Remove and Replace culvert (18" CMP)	11	EA	$4,900.00	$53,900.00	$3,800.00	$41,800.00	$28,000.00	$308,000.00	$5,400.00	$59,400.00
15	Revegetation	24,500	SY	$0.20	$4,900.00	$0.25	$6,125.00	$1.02	$24,990.00	$0.96	$23,520.00
16	Mobilization and Staging	1	LS	$20,000.00	$20,000.00	$10,000.00	$10,000.00	$35,000.00	$35,000.00	$7,000.00	$7,000.00
17	Insulation - 4"	1,300	LF	$38.00	$49,400.00	$12.00	$15,600.00	$28.00	$36,400.00	$6.00	$7,800.00
18	Traffic Control	1	LS	$25,000.00	$25,000.00	$20,000.00	$20,000.00	$16,000.00	$16,000.00	$3,000.00	$3,000.00
19	Remove and Replace Unsuitable Soil	525	CY	$75.15	$39,453.75	$70.00	$36,750.00	$42.00	$22,050.00	$44.95	$23,598.75
20	Air Relief/Blowoff	5	EA	$3,500.00	$17,500.00	$5,000.00	$25,000.00	$8,400.00	$42,000.00	$2,200.00	$11,000.00
21	Recycled Base	1,795	TON	$52.50	$94,237.50	$20.00	$35,900.00	$40.00	$71,800.00	$49.00	$87,955.00
22				**Sub-Total**	**$1,479,247**		**$1,211,945**		**$1,239,756**		**$1,048,324**
23				**Contingency**	**10%** $147,925	**10%**	$121,195	**10%**	$123,976	**10%**	$104,832
23				**Contractor Overhead and Profit**	**6%** $97,630	**12%**	$159,977	**8%**	$109,099	**8%**	$92,252
23				**Engineering**	**4%** $59,170	**4%**	$48,478	**4%**	$49,590	**4%**	$41,933
24				**Inspections & Testing**	**2%** $29,585	**2%**	$24,239	**2%**	$24,795	**2%**	$20,966
25				**TOTALS**	**$1,813,557**		**$1,565,833**		**$1,547,215**		**$1,308,308**

A5 - Fire Map

Ruby Ranch Subdivision



Contacts:

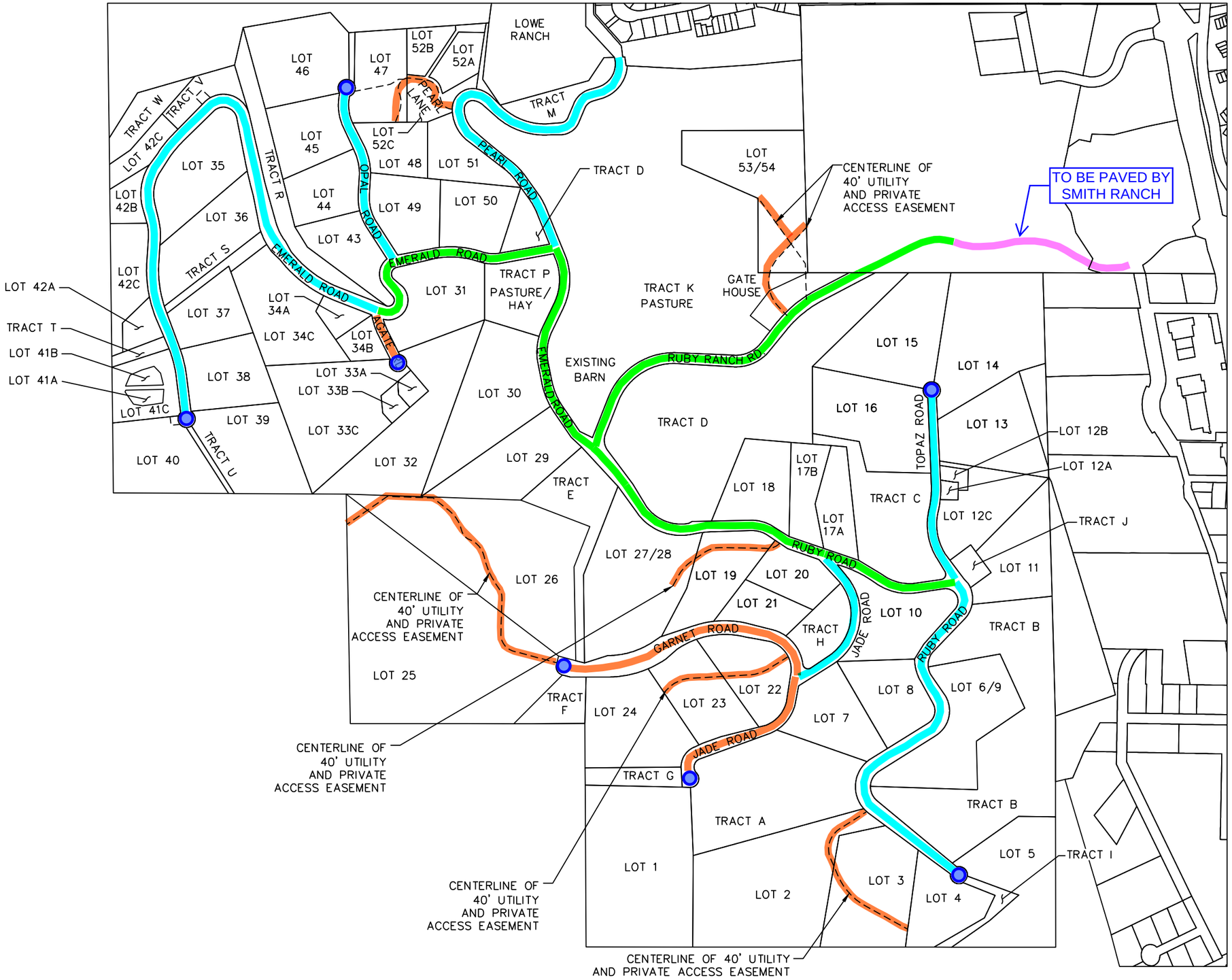
Eric Kircher 970-468-7688

Rev. 1.5 Aug 25, 2005

Don Samuels 970-513-0549

Appendix B
Roadway Infrastructure

B1 - ROAD MAP



600 0 600

SCALE: 1" = 600'

LEGEND

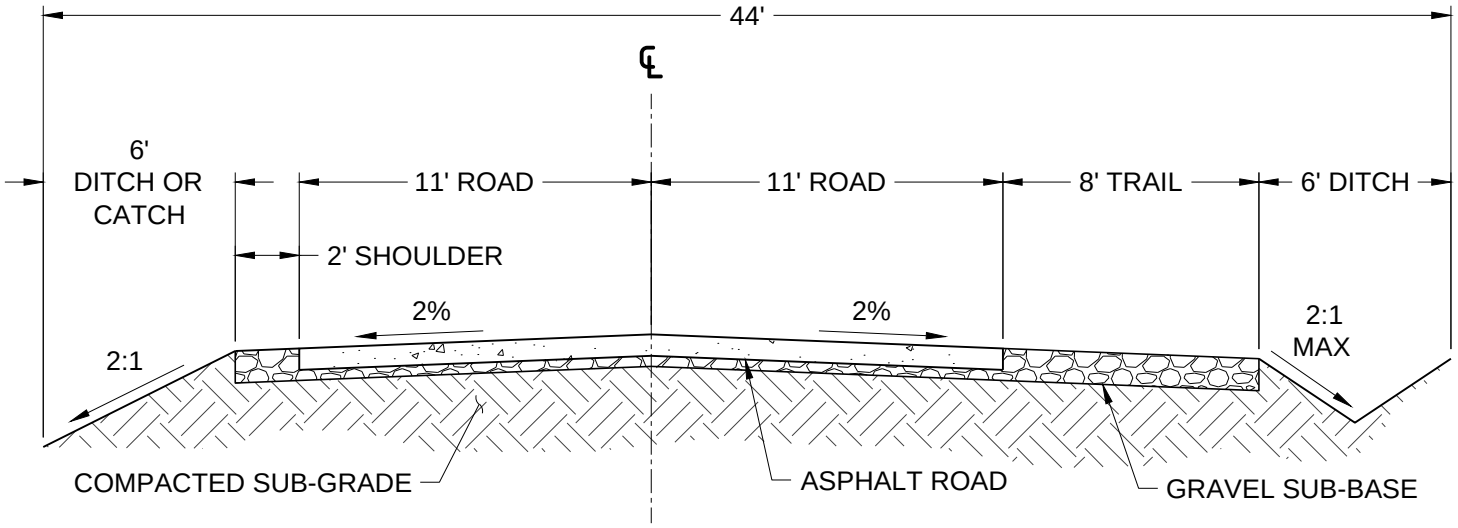
- TIER 1 ROAD
- TIER 2 ROAD
- TIER 3 ROAD
- PUBLIC ROAD
- DEDICATED CUL-DE-SAC

NOTE:
ROAD TIERS ARE BASED ON AVERAGE NUMBER OF DAILY VEHICLE TRIPS AND NUMBER OF RESIDENCES SERVED. THEY ARE NOT OFFICIAL AND DO NOT IMPACT FIRE OR EMS SERVICES. THEY ARE PROVIDED TO ASSIST WITH THE UNDERSTANDING OF TRAFFIC IN RUBY RANCH.

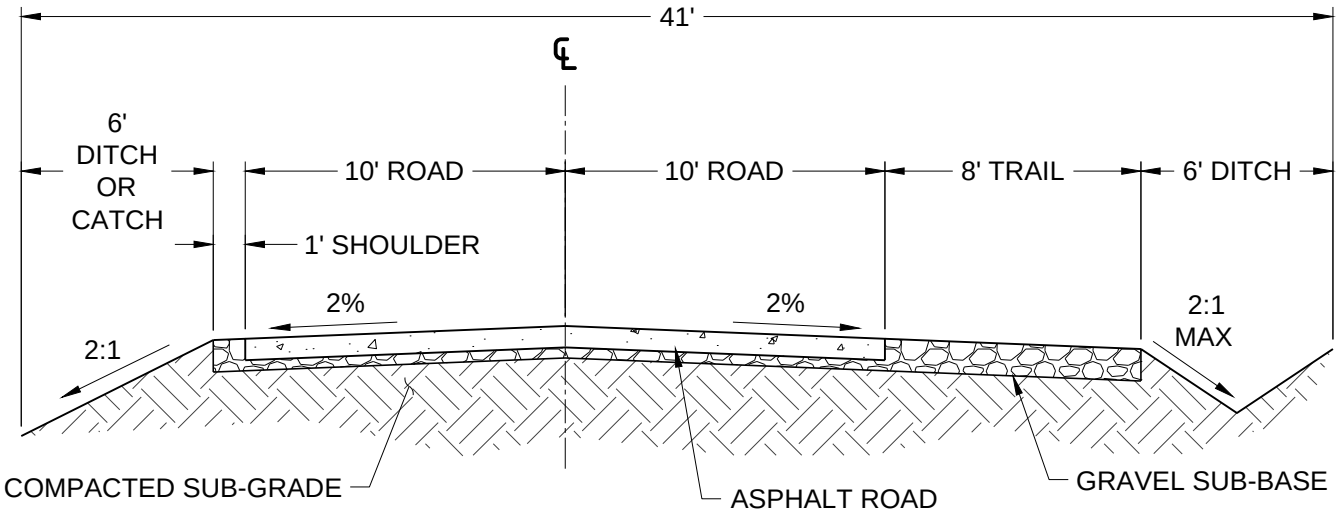
MIRO	RUBY RANCH	SCALE: 1"=600'
	ROAD EXHIBIT	SHEET: CSK-02
	JOB NO. 18103 CHECKED BY: JDC DRAWN BY: DAT DATE: 08/31/18	

RUBY RANCH
ROAD INVENTORY

Road Name	County Road No.	Filing No.	Length (feet)	Class.	# of Driveways	Cul-de-sac	Notes
Ruby Ranch Road	1304	1	2,000	Tier 1	0		Gate House to Barn
Ruby Ranch Road (Public)	1304		600	Tier 1	0		To Smith Ranch N. Access
Diamond Road	1308	2	600	Tier 3	1		Lot 54
Ruby Road 1	1304	1	2,400	Tier 1	4		Ruby Ranch Road to Topaz
Ruby Road 2	1304	1	2,300	Tier 2	4	X	Topaz to Cul-de-sac
South Ruby Lane	N/A	1	1,000	Tier 3	3		Lots 2, 3 & 4
Chickadee Lane	N/A	1	1,000	Tier 3	3		Lots 19, 20 & 26
Topaz Road	1302	1	1,200	Tier 2	6	X	
Jade Road 1	1301	1	950	Tier 2	0		Ruby to Garnet
Jade Road 2	1301	1	1,050	Tier 3	2	X	Garnet to Cul-de-sac
Bootlegger Lake Road	N/A	1	1,900	Tier 3	2		Lots 25 & 26.
Garnet Road	1300	1	1,500	Tier 3	1	X	
Garnet Lane	1300	1	1,000	Tier 3	3		Lots 22, 23 & 24
Emerald Road 1	1305	2	1,200	Tier 1	1		Ruby to Pearl
Emerald Road 2	1305	2	950	Tier 1	2		Pearl to Opal
Emerald Road 3	1305	2	450	Tier 1	0		Opal to Agate - "S-Curves"
Emerald Road 4	1305	2	3,700	Tier 2	10	X	Agate to Cul-de-sac
Pearl Road	1310	2	2,280	Tier 2	1		
Pearl Lane	1310	2	700	Tier 3	4		Lots 47, 48, 52A & 52B
Opal Road	1306	2	1,000	Tier 2	4	X	
Agate Road	1307	2	350	Tier 3	6	X	
			28,130 LF		**57**	**7**	
			5.33 Miles				

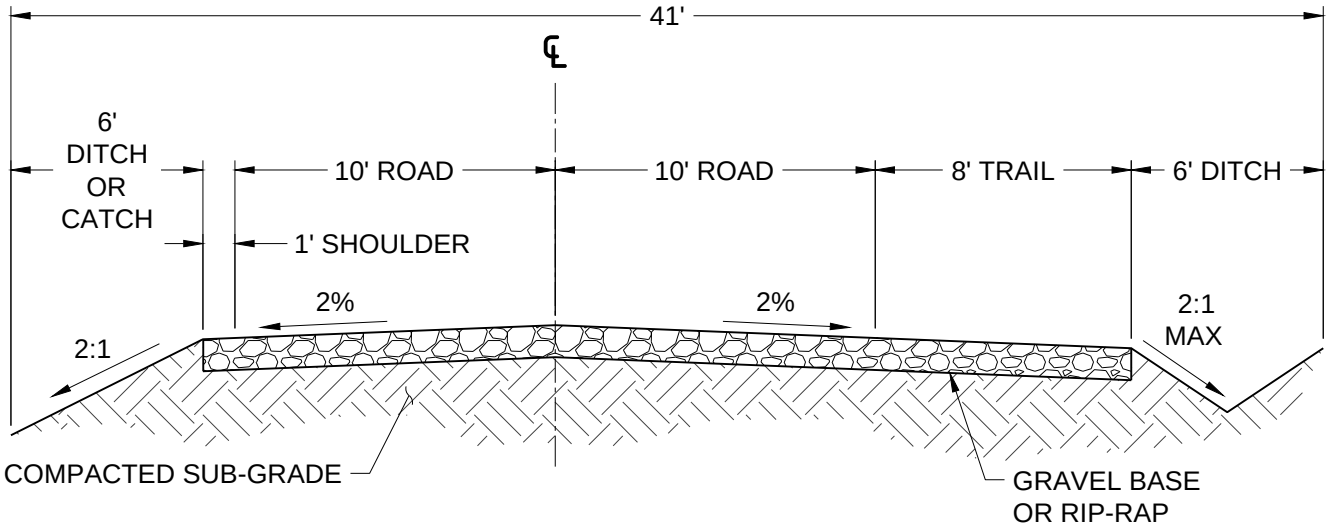


TIER 1 ROAD CROSS SECTION

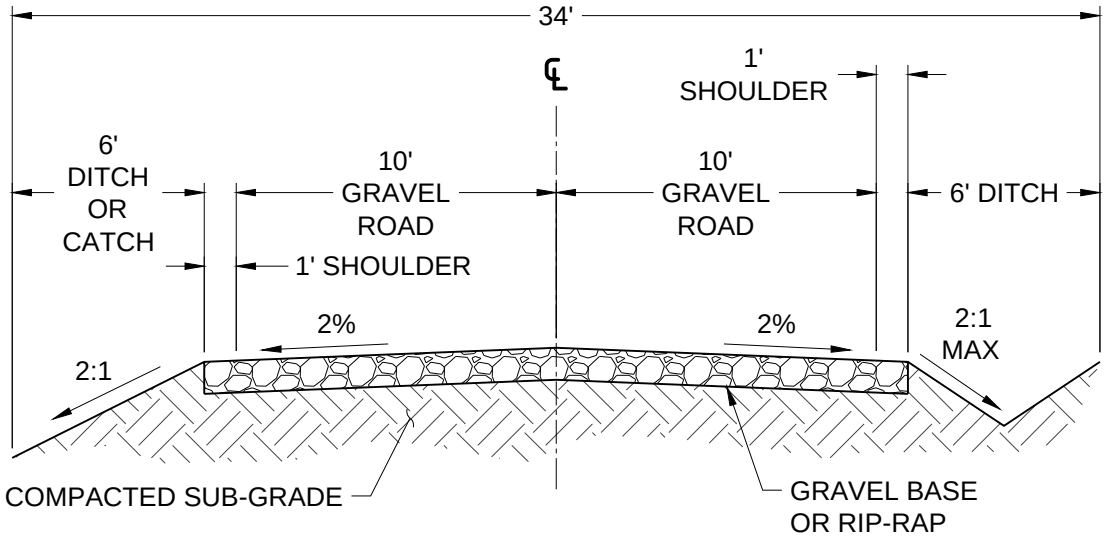


TIER 2 ROAD CROSS SECTION

MIRO	RUBY RANCH	SCALE: 1"=6'
	TYPICAL ROAD CROSS SECTIONS	SHEET: CSK-4.0
	JOB NO. 18103 / CHECKED BY: JDC / DRAWN BY: DAT / DATE: 08/31/18	



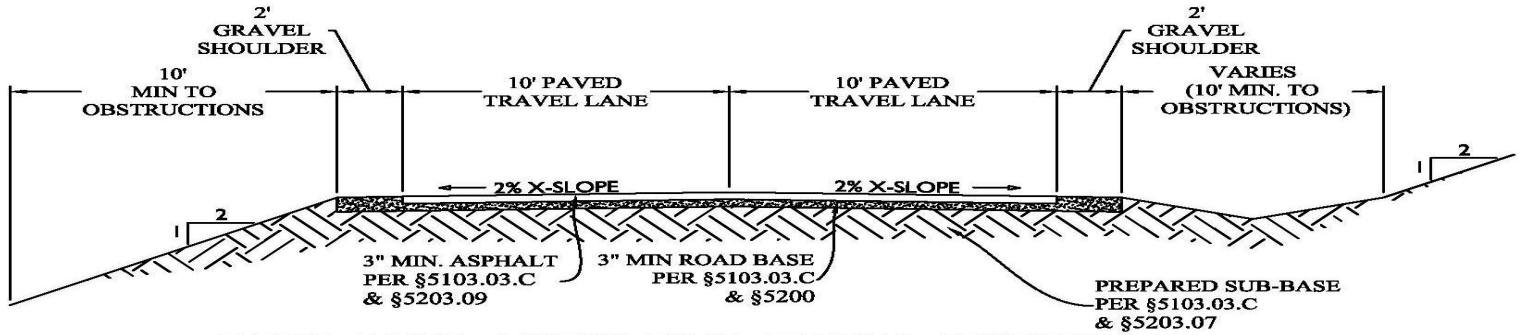
TIER 3 WITH TRAIL CROSS SECTION



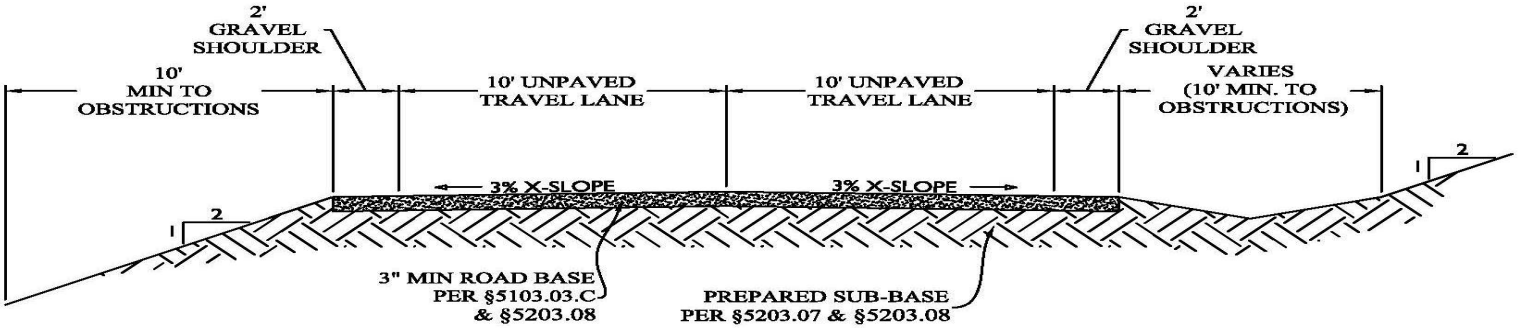
TIER 3 CROSS SECTION

MIRO	RUBY RANCH	SCALE: 1"=6'
	TYPICAL ROAD CROSS SECTIONS	SHEET: CSK-4.1
	JOB NO. 18103 | CHECKED BY: JDC | DRAWN BY: DAT | DATE: 08/31/18	

FIGURE 5-2 Typical Cross-sections for Local Access Road

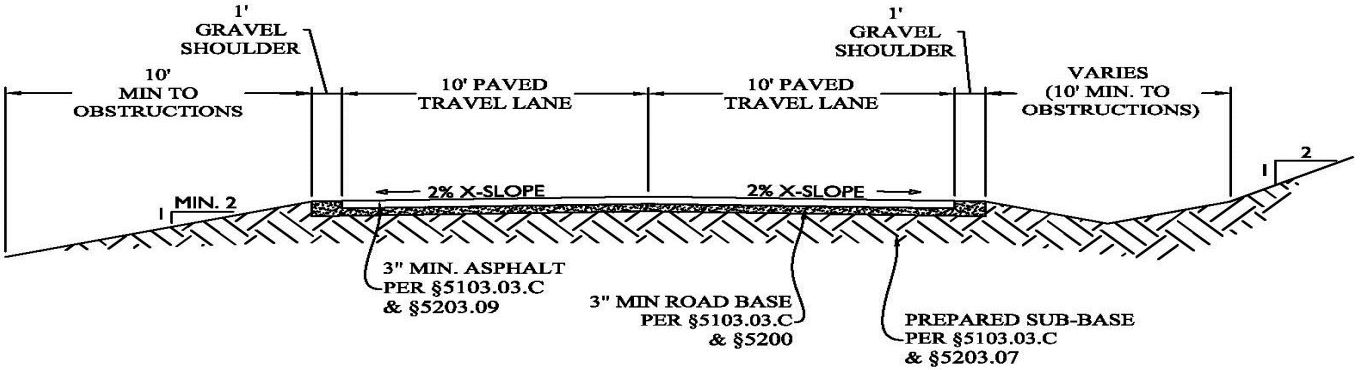


PAVED LOCAL ACCESS ROAD TYPICAL SECTION
60–FOOT RIGHT–OF–WAY

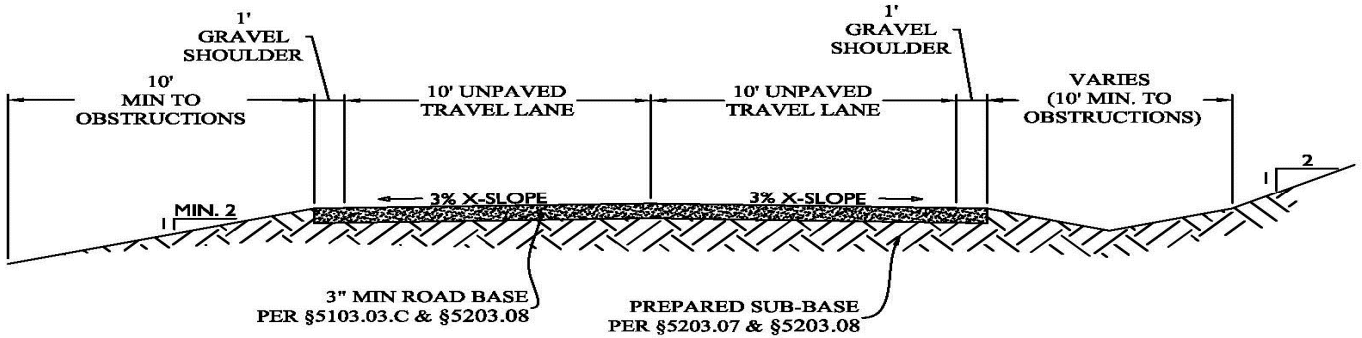


UNPAVED LOCAL ACCESS ROAD TYPICAL SECTION
60–FOOT RIGHT–OF–WAY

FIGURE 5-3 Typical Cross-sections for Low Volume Roads



PAVED LOW VOLUME ROAD TYPICAL SECTION
50–FOOT RIGHT–OF–WAY



UNPAVED LOW VOLUME ROAD TYPICAL SECTION
50–FOOT RIGHT–OF–WAY

RUBY RANCH
ROAD QUANTITIES

										ASPHALT			BASE COURSE			
ROAD NAME	CLASS.	LENGTH (feet)	ROAD WIDTH (feet)	LANE WIDTH (feet)	GRAVEL SHOULDER (feet)	TRAIL WIDTH (feet)	DITCH WIDTH (feet)	TOTAL WIDTH (feet)	PAVED AREA (sf)	ASPHALT THICKNESS (in)	ASPHALT VOLUME (cf)	ASPHALT WEIGHT (ton)	BASE THICKNESS (in)	BASE VOLUME (cf)	BASE WEIGHT (ton)	PREP (sf)
Ruby Ranch Road	Tier 1	2,000	22	11	2	6	6	44	44,000	4	14,667	1,100.0	2	10,667	720.0	88,000
Ruby Ranch Road (Public)	Tier 1	600	22	11	2	0	6	38	13,200	4	4,400	330.0	2	2,600	175.5	22,800
Diamond Road	Tier 3	600	20	10	1	0	6	34	12,000	3	3,000	225.0	2	2,200	148.5	20,400
Ruby Road 1	Tier 1	2,400	22	11	2	6	6	44	52,800	4	17,600	1,320.0	2	12,800	864.0	105,600
Ruby Road 2	Tier 2	2,300	20	10	1	7	6	41	46,000	3	11,500	862.5	2	11,117	750.4	94,300
South Ruby Lane	Tier 3	1,000	20	10	1	0	6	34	20,000	3	5,000	375.0	2	3,667	247.5	34,000
Chickadee Lane	Tier 3	1,000	20	10	1	0	6	34	20,000	3	5,000	375.0	2	3,667	247.5	34,000
Topaz Road	Tier 2	1,200	20	10	1	7	6	41	24,000	3	6,000	450.0	2	5,800	391.5	49,200
Jade Road 1	Tier 2	950	20	10	1	7	6	41	19,000	3	4,750	356.3	2	4,592	309.9	38,950
Jade Road 2	Tier 3	1,050	20	10	1	7	6	41	21,000	3	5,250	393.8	2	5,075	342.6	43,050
Bootlegger Lake Road	Tier 3	1,900	20	10	1	0	6	34	38,000	3	9,500	712.5	2	6,967	470.3	64,600
Garnet Road	Tier 3	1,500	20	10	1	7	6	41	30,000	3	7,500	562.5	2	7,250	489.4	61,500
Garnet Lane	Tier 3	1,000	20	10	1	0	6	34	20,000	3	5,000	375.0	2	3,667	247.5	34,000
Emerald Road 1	Tier 1	1,200	22	11	2	6	6	44	26,400	4	8,800	660.0	2	6,400	432.0	52,800
Emerald Road 2	Tier 1	950	22	11	2	6	6	44	20,900	4	6,967	522.5	2	5,067	342.0	41,800
Emerald Road 3	Tier 1	450	22	11	2	6	6	44	9,900	4	3,300	247.5	2	2,400	162.0	19,800
Emerald Road 4	Tier 2	3,700	20	10	1	7	6	41	74,000	3	18,500	1,387.5	2	17,883	1,207.1	151,700
Pearl Road	Tier 2	2,280	20	10	1	7	6	41	45,600	3	11,400	855.0	2	11,020	743.9	93,480
Pearl Lane	Tier 3	700	20	10	1	0	6	34	14,000	3	3,500	262.5	2	2,567	173.3	23,800
Opal Road	Tier 2	1,000	20	10	1	7	6	41	20,000	3	5,000	375.0	2	4,833	326.3	41,000
Agate Road	Tier 3	350	20	10	1	7	6	41	7,000	3	1,750	131.3	2	1,692	114.2	14,350
TOTALS		**28,130**							**577,800**		**158,383**	**11,879**		**131,928**	**8,905**	**1,129,130**

Asphalt Unit Weight	150 pcf
Road Base Unit Weight	135 pcf
Tier 1 Asphalt Thickness	4 in
Tier 2 Asphalt Thickness	3 in
Tier 3 Asphalt Thickness	3 in
Base Course	2 in

	Length (feet)	Length (miles)	Asphalt (ton)	Base (ton)	Prep (sf)	Seed (sf)	4" Trail (ton)
Tier 1	7,600	1.44	4,180	2,696	330,800	91,200	1,260
Tier 2	11,430	2.16	4,286	3,729	468,630	137,160	2,057
Tier 3	9,100	1.72	3,413	2,481	329,700	109,200	522
Totals	**28,130**	**5.33**	**11,879**	**8,905**	**1,129,130**	**337,560**	**3,839**

ENGINEER'S OPINION OF PROBABLE COSTS

Option 1 - Asphalt Paving for Tier 1 Roads

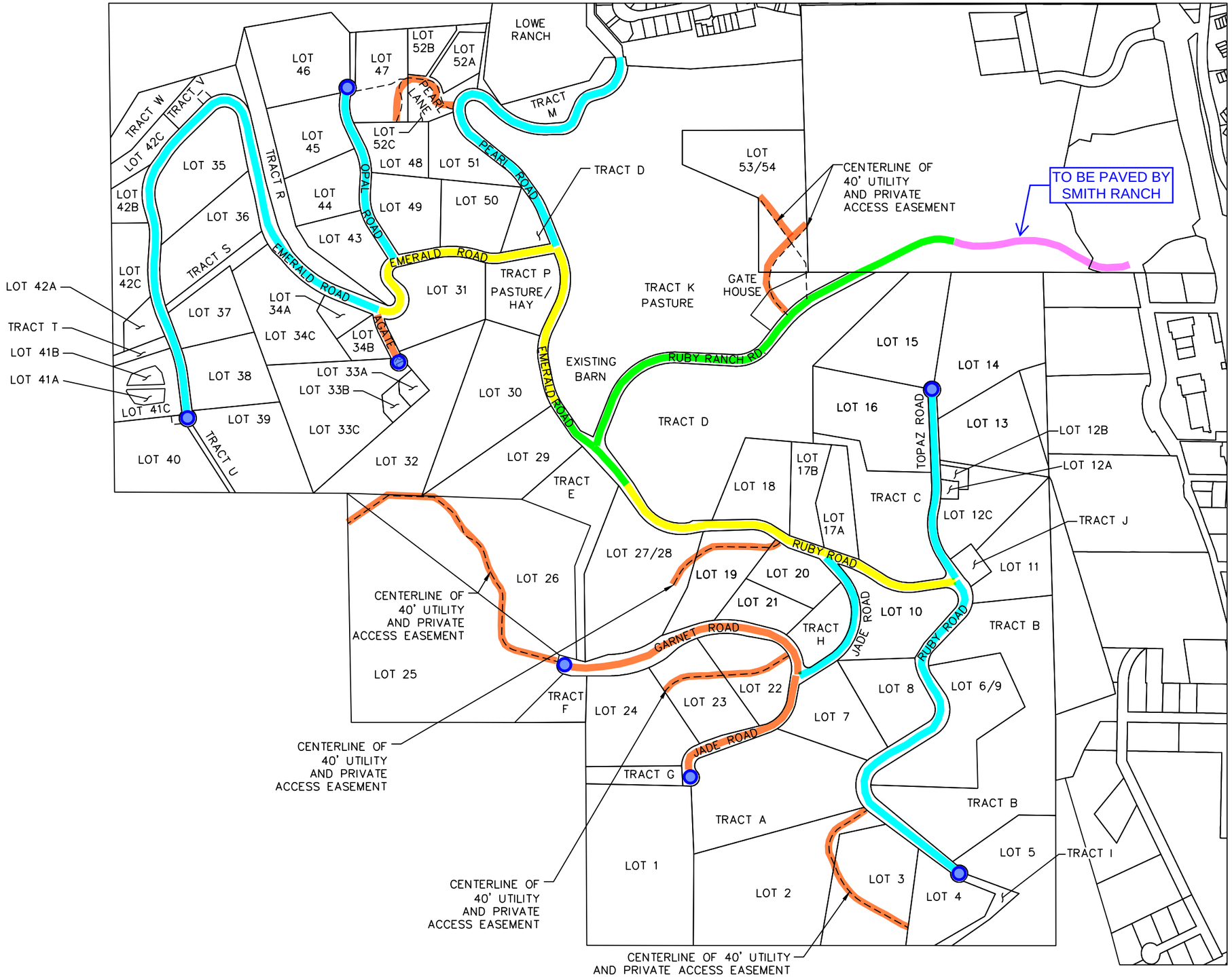
PROJECT: Willow Brook Metro District
PROJECT # 18-103
DATE: 8/31/2018
BY: JDC

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST
1	Mobilization	1	LS	$15,000.00	$15,000.00
2	Traffic Control	1	LS	$12,000.00	$12,000.00
3	Construction Surveying	1	LS	$15,000.00	$15,000.00
4	Erosion Control	1	LS	$25,000.00	$25,000.00
5	Tier 1 - Subgrade Preperation	330,800	SF	$0.10	$33,080.00
6	Tier 1 - Base Course - CDOT Class 6	2,696	TON	$30.00	$80,880.00
7	Tier 1 - Asphalt Pavement - 4" Grading SX	4,180	TON	$100.00	$418,000.00
8	Tier 1 - Seed/Mulch	91,200	SF	$0.20	$18,240.00
9	Tier 1 - Trail	1,260	TON	$30.00	$37,800.00
10	Driveway Connection	11	EA	$5,000.00	$55,000.00
11	Road Intersections	6	EA	$10,000.00	$60,000.00
12					$0.00
13					$0.00
14					$0.00
15	Sub-Total				**$770,000.00**
15	Contingency	10%			**$77,000.00**
15	Engineering	6%			**$46,200.00**
16	Inspections & Testing	2%			**$15,400.00**
17					
18	**TOTAL**				**$908,600.00**
	LINEAL FEET PAVED	7,600		**$/LF**	$119.55

Notes:

a. Unit Costs are installed costs and include labor and materials.
b. Paves approximately 1.44 miles of road

B6 - PAVING OPTION 2



600 0 600

SCALE: 1" = 600'

LEGEND

- TIER 1A ROAD
- TIER 1B ROAD
- TIER 2 ROAD
- TIER 3 ROAD
- PUBLIC ROAD
- DEDICATED CUL-DE-SAC

NOTE:
ROAD TIERS ARE BASED ON AVERAGE NUMBER OF DAILY VEHICLE TRIPS AND NUMBER OF RESIDENCES SERVED. THEY ARE NOT OFFICIAL AND DO NOT IMPACT FIRE OR EMS SERVICES. THEY ARE PROVIDED TO ASSIST WITH THE UNDERSTANDING OF TRAFFIC IN RUBY RANCH.

MIRO	RUBY RANCH	SCALE: 1"=600'
	ROAD EXHIBIT	SHEET: CSK-02
	JOB NO. 18103 CHECKED BY: JDC DRAWN BY: DAT DATE: 08/31/18	

B7 - Option 2 Quantities

RUBY RANCH
ROAD QUANTITIES

										ASPHALT			BASE COURSE			
ROAD NAME	CLASS.	LENGTH (feet)	WIDTH (feet)	LANE WIDTH (feet)	GRAVEL SHOULDER (feet)	TRAIL WIDTH (feet)	DITCH WIDTH (feet)	TOTAL WIDTH (feet)	ROAD AREA (sq-ft)	ASPHALT THICKNESS (in)	ASPHALT VOLUME (cf)	ASPHALT WEIGHT (ton)	BASE THICKNESS (in)	BASE VOLUME (cf)	BASE WEIGHT (ton)	PREP (sf)
Ruby Ranch Road	Tier 1	2,000	22	11	2	8	6	44	44,000	4	14,667	1,100.0	2	7,333	495.0	88,000
Ruby Ranch Road (Public)	Tier 1	600	22	11	2	8	6	44	13,200	4	4,400	330.0	2	2,200	148.5	26,400
Ruby Road	Tier 1	300	22	11	2	8	6	44	6,600	4	2,200	165.0	2	1,100	74.3	13,200
Emerald Road 1	Tier 1	300	22	11	2	8	6	44	6,600	4	2,200	165.0	2	1,100	74.3	13,200
	TOTALS	**3,200**							**70,400**		**23,467**	**1,760**		**11,733**	**792**	**140,800**

Asphalt Unit Weight	150	pcf
Road Base Unit Weight	135	pcf
Tier 1 Asphalt Thickness	4	in
Base Course	2	in

	Length (feet)	Length (miles)	Asphalt (ton)	Base (ton)	Prep (sf)	Seed (sf)	4" Trail (ton)
Tier 1	3,200	0.61	1,760	792	140,800	38,400	576

ENGINEER'S OPINION OF PROBABLE COSTS

Asphalt Paving for Ruby Ranch Road

PROJECT: Willow Brook Metro District
PROJECT # 18-103
DATE: 8/31/2018
BY: JDC

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST
1	Mobilization	1	LS	$10,000.00	$10,000.00
2	Traffic Control	1	LS	$8,500.00	$8,500.00
3	Construction Surveying	1	LS	$10,000.00	$10,000.00
4	Erosion Control	1	LS	$18,000.00	$18,000.00
5	Subgrade Preperation	140,800	SF	$0.10	$14,080.00
6	Base Course - CDOT Class 6	792	TON	$30.00	$23,760.00
7	Asphalt Pavement - Grading SX	1,760	TON	$100.00	$176,000.00
8	Seed/Mulch	38,400	SF	$0.20	$7,680.00
9	Trail	576	TON	$30.00	$17,280.00
10	Driveway Connection	4	EA	$5,000.00	$20,000.00
11	Road Intersections	1	EA	$10,000.00	$10,000.00
12					$0.00
13					$0.00
14					$0.00
15	Sub-Total				**$315,300.00**
15	Contingency	10%			**$31,530.00**
15	Engineering	6%			**$18,918.00**
16	Inspections & Testing	2%			**$6,306.00**
17					
18	**TOTAL**				**$372,054.00**
	LINEAL FEET PAVED	3,200		**$/LF**	$116.27

Notes:

a. Unit Costs are installed costs and include labor and materials.
b. Paves approximately 0.61 miles of road

P.O. BOX 245
Jefferson, CO. 80456
Phone:719-836-7060
Cell: 719-839-1719
rpeters@rockymountainchipseal.com

Estimate

May 29, 2018

Ruby Ranch Subdivision
% Mr. EJ Olbright

Subject: Ruby Ranch Chipseal Project 2018

Job Description: provide road double chipseal on 81,504 square yards of existing roadways in Ruby Ranch Subdivision, Silverthorne, CO

Detail of Job Description: Rocky Mountain Chipseal, LLC will provide the following equipment, labor, and materials to complete the above described job description.

- Asphalt Distributor, Chip Spreader, 15-ton Rollers, Dump Trucks, Front end loader and Power Brooms.
- CRS-2R emulsified asphalt for chipseal applications.
- 50/50 diluted emulsified asphalt for fog seal after final brooming.
- 3/8" & 3/4" Chip Aggregate

Option 2 substitutes chip sealed cul-de-sacs for 3" Pavement.

Chipseal and Fogseal

Item	Description:	QTY	Unit	Unit Price	Extended Price
opt 1	Chipseal with Fogseal (roads and cul-de-sacs)	81,504	SY	$7.69	$626,765.76
opt 2	Chipseal with Fog Roads only	77,640	SY		$597,051.60
	Paved Cul-de-sacs	652	TON	144.00	$93,888.00
	Total opt 2				$690,939.60

Notes: Standard Terms and Conditions to follow.

- All scheduling contingent upon agreement of Owner and Rocky Mountain Chipseal, LLC herein referred to as (RMC).
- Prices above based on completing each task in one mobilization. If an additional mobilization is required, charges may apply.
- Quoted prices valid for 30 days unless otherwise noted.
- RMC is not responsible for notification, nor removal of vehicles and property from work areas.
- RMC will require this proposal with Standard Terms and Conditions and Exclusions be included in any contractual agreement.
- Excess Chips are to be swept off the driving surface to the sides of the roadway. All pick up and removal if required will be done by the owner or at additional cost.
- If quantities differ from above, billing will reflect agreed upon measured quantities.
- Price quoted based on minimum square yardage of 81,000.
- All Materials are to be paid for by owner at the time of authorization to start work.

EXCLUSIONS (Unless Otherwise Specified): Bonds, Permits, Plans, Engineering, Survey, Staking, As-Builts, Testing, Inspection, Masking, Weed Killer, Demolition and reconstruction of road or road sections, Excavation, Vegetation Removal, Vegetation Replacement, Preservative Seals, Prime coats, Pavement Markings (chip tabs & striping), Traffic Control, Signage, Removal or Replacement of striping, Road Prep other than pre-sweeping of pavement, Removal of Mud or Debris on Roadway, Erosion Control, Project Information Sign, Public notification,

removal of vehicles and property from work areas. Any Special Insurance Requirements and any Warranty of Base or Sub-base stability.

Ruby Ranch Subdivision, HOA herein referred to as Owner will Provide the following….

- Staging area for equipment and aggregate at the job site. The owner will be responsible for all left-over chips at the stockpile site and on the shoulders of the road.

The undersigned agrees to hold the above labor prices for a period of 30 days from the bid date. If this proposal is accepted, RMC will enter into a contract with the Owner and will proceed under the direction of the Owner's designated representative at which time a definite installation date will be arranged.

Rick Peters, Manager.
Manager, Rocky Mountain Chipseal, LLC

RUBY RANCH
ROAD TREATMENT SELECTION MATRIX

This matrix is being provided to assist homeowner's with their decision regarding pavement.

SAMPLE				
CRITERIA	**RECYCLED ASPHALT PAVEMENT (RAP)**	**GRAVEL ROAD**	**DOUBLE CHIP SEAL**	**ASPHALT PAVEMENT**
Initial Cost	8	8	4	1
Annual Maintenance Costs	2	2	4	8
Additional Debt for WBMD	10	10	5	2
Durability	2	2	4	8
Speeding Issues	8	8	4	2
Dust Production	2	2	6	8
Health Issues	2	4	6	8
Environmental Impacts	2	2	6	8
TOTALS	**36**	**38**	**39**	**45**

* Rating Scale: 1=BAD, 10=GOOD

CRITERIA	**RECYCLED ASPHALT PAVEMENT (RAP)**	**GRAVEL ROAD**	**DOUBLE CHIP SEAL**	**ASPHALT PAVEMENT**
Initial Cost				
Annual Maintenance Costs				
Additional Debt for WBMD				
Durability				
Speeding Issues				
Dust Production				
Health Issues				
Environmental Impacts				
TOTALS				

RUBY RANCH
LIFE CYCLE COST ANALYSIS

	UNPAVED ROADS			ASPHALT PAVING - OPTION 1				ASPHALT PAVING - OPTION 2		
YEAR	Present Maint. Costs	Cost w/ Escalation		Unpaved Maint.	Asphalt Maint.	Notes		Unpaved Maint.	Asphalt Maint.	Notes
1	$50,000	$52,000		$37,951	$908,600	Initial Construction		$46,085	$372,054	Initial Construction
2	$50,000	$54,000		$39,411	$0			$47,857	$0	
3	$50,000	$56,000		$40,870	$0			$49,630	$0	
4	$50,000	$58,000		$42,330	$0			$51,402	$0	
5	$50,000	$60,000		$43,790	$0			$53,175	$0	
6	$50,000	$62,000		$45,249	$0			$54,947	$0	
7	$50,000	$64,000		$46,709	$10,000	Crack Sealing		$56,720	$5,000	Crack Sealing
8	$50,000	$66,000		$48,169	$0			$58,492	$0	
9	$50,000	$68,000		$49,628	$0			$60,264	$0	
10	$50,000	$70,000		$51,088	$5,000	Pot Hole Repairs		$62,037	$2,500	Pot Hole Repairs
11	$50,000	$72,000		$52,547	$0			$63,809	$0	
12	$50,000	$74,000		$54,007	$0			$65,582	$0	
13	$50,000	$76,000		$55,467	$0			$67,354	$0	
14	$50,000	$78,000		$56,926	$0			$69,127	$0	
15	$50,000	$80,000		$58,386	$75,000	Chip Seal		$70,899	$40,000	Chip Seal
16	$50,000	$82,000		$59,846	$0			$72,672	$0	
17	$50,000	$84,000		$61,305	$0			$74,444	$0	
18	$50,000	$86,000		$62,765	$5,000	Pot Hole Repair		$76,217	$2,500	Pot Hole Repair
19	$50,000	$88,000		$64,225	$0			$77,989	$0	
20	$50,000	$90,000		$65,684	$275,000	Overlay (2")		$79,762	$150,000	Overlay (2")
	$1,000,000	**$1,420,000**		**$1,036,353**	**$1,278,600**	**TOTALS**		**$1,258,464**	**$572,054**	**TOTALS**
				$2,314,953				**$1,830,518**		

Escalation = 4%

Tot. Roads (LF)	28,130

Opt 1 Pave (LF)	7,600
Unpaved (LF)	20,530
% Unpaved	73%
Unpaved Maint.	$36,491

Opt 2 Pave (LF)	3,200
Unpaved (LF)	24,930
% Unpaved	89%
Unpaved Maint.	$44,312

Appendix C
Traffic Study

Ruby Ranch

Traffic Analysis

1.0 Traffic Data Collection

Traffic count data were collected at four locations on and near the Ruby Ranch to assess the existing conditions. Traffic volumes, speeds, and vehicle classification data were collected from Tuesday July 31st through Monday August 6th. The approximate count locations are shown in Figure 1. They included:

- Ruby Ranch Road east of Diamond Road (Location 1)
- Ruby Ranch Road east of Emerald Road (Location 2)
- Emerald Road north of Ruby Ranch Road (Location 3)
- South Ruby Road south of Ruby Ranch Road (Location 4).

The traffic volumes are summarized in Figures 2 through 5. The highest volume day at count locations 1, 2, and 4 was Friday August 3rd. At count location 3, the highest volume day was on Monday August 6th.

Locations 1 and 2 should have very similar traffic volumes. The differences could be attributed to the method used to collect the data. Road tube counters were used which are not 100% accurate, however, they are an economical method and are widely used in the traffic engineering industry. Some of the difference between the counts at locations 1 and 2 could be vehicles that drive to the gate and turn around.

The 85th and 50th percentile traffic speeds are contained in Table 1. They are summarized by count location and downhill versus uphill. Traffic engineers use the 85th percentile speeds as a guideline for determining speed limits. The 50th percentile speed is representative of the average speed. The summary in Table 1 shows the following.

- For the downhill locations, the 85th percentile speeds ranged from 24 MPH to 19 MPH. The 50th percentile speeds ranged from 20 MPH to 16 MPH.
- For the uphill locations, the 85th percentile speeds ranged from 24 MPH to 19 MPH. The 50th percentile speeds ranged from 19 MPH to 15 MPH.

The speed summary shows that there was not a large variation in the speeds for the downhill vehicles versus the uphill vehicles.

The maximum speeds at each location by direction of travel are included in the table. They were collected in 5 MPH speed intervals. Table 1 includes the number of times that a vehicle was traveling in the 5 MPH maximum speed range and the percentage of the total traffic for the seven day period that those occurrences represent.

2.0 Daily Traffic Volume Projections

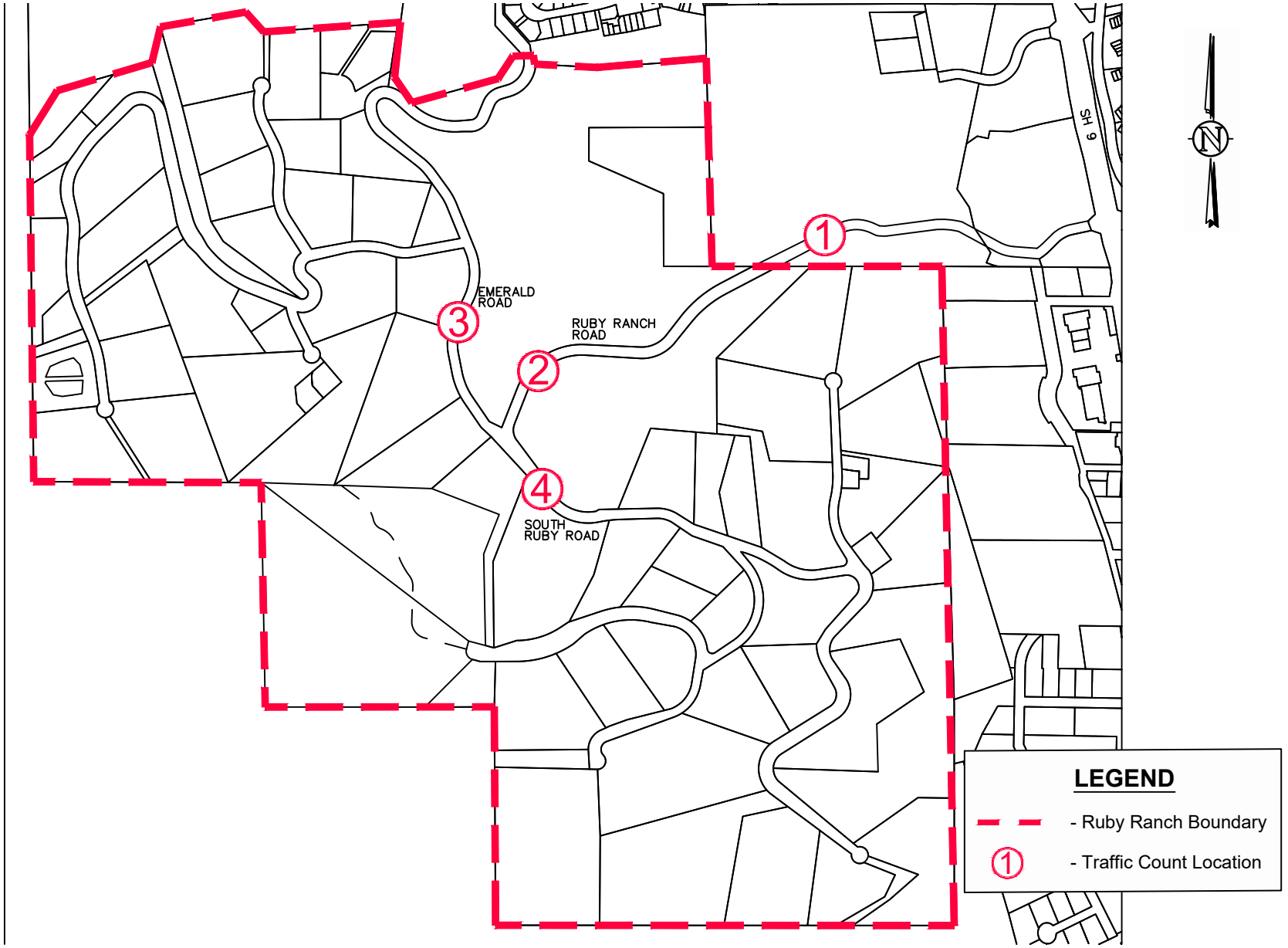
The daily traffic volumes were projected for a peak period at the four traffic count locations. There are three main categories of homeowners in Ruby Ranch including those who occupy their home year-round, those who occupy their home on a part time basis, and others who rent out their home to visitors. The trip generation rate

for a single family detached home was used as a basis to develop the daily traffic volume projections. The rate is contained in the Institute of Transportation Engineers (ITE) Trip Generation manual[1]. The definition of a trip is driving on or off of a particular site. For example, a trip to the grocery store equals two trips with one trip leaving the home and the second trip returning to the home.

The estimated daily traffic volumes for the four count locations are contained in Table 2. To develop these estimates, the number of trips generated by each home was based on the approximate annual water usage for each home. First, the homes that are occupied year-round by the owners were each assigned 10 daily trips based on the ITE trip generation rate. One trip occurs when a vehicle enters the property and a second trip occurs when a vehicle leaves the property. For these homes, the average annual water usage was calculated as a basis for comparison to the part time occupancy and rental properties. Second, the part time and rental properties were assigned daily trips based on a comparison of the annual water usage for each property as compared to the average annual water usage for the homes that are occupied year-round. Finally, each of the undeveloped lots was assigned 10 daily trips. The projected traffic volumes for each of the count locations are:

- Count Location 1 – 442
- Count Location 2 – 436
- Count Location 3 – 189
- Count Location 4 – 227

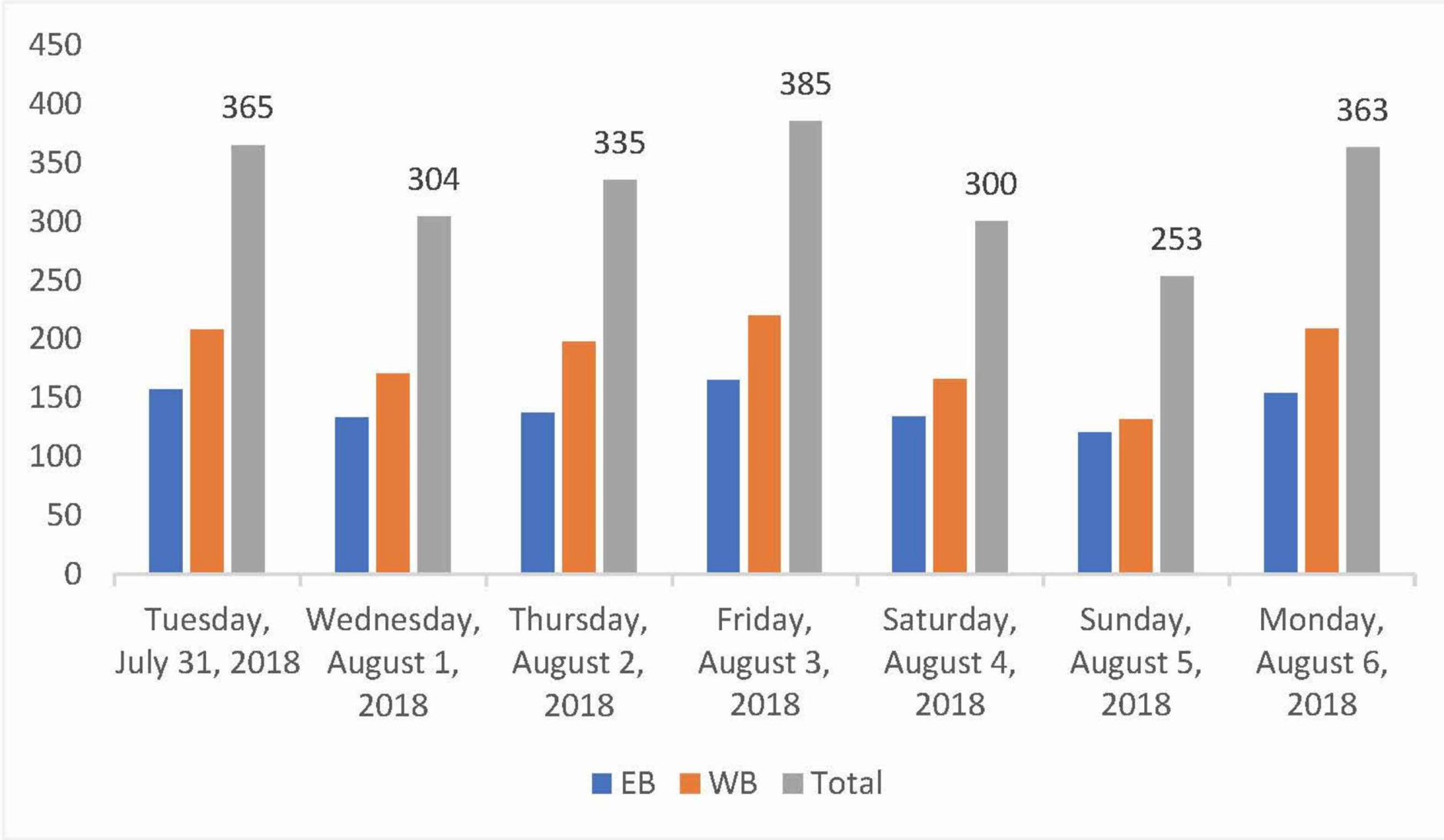
[1] Trip Generation. Institute of Transportation Engineers. 10th Edition. September 2017.



STS

Potable Water and Roadway Report
TRAFFIC COUNT LOCATIONS

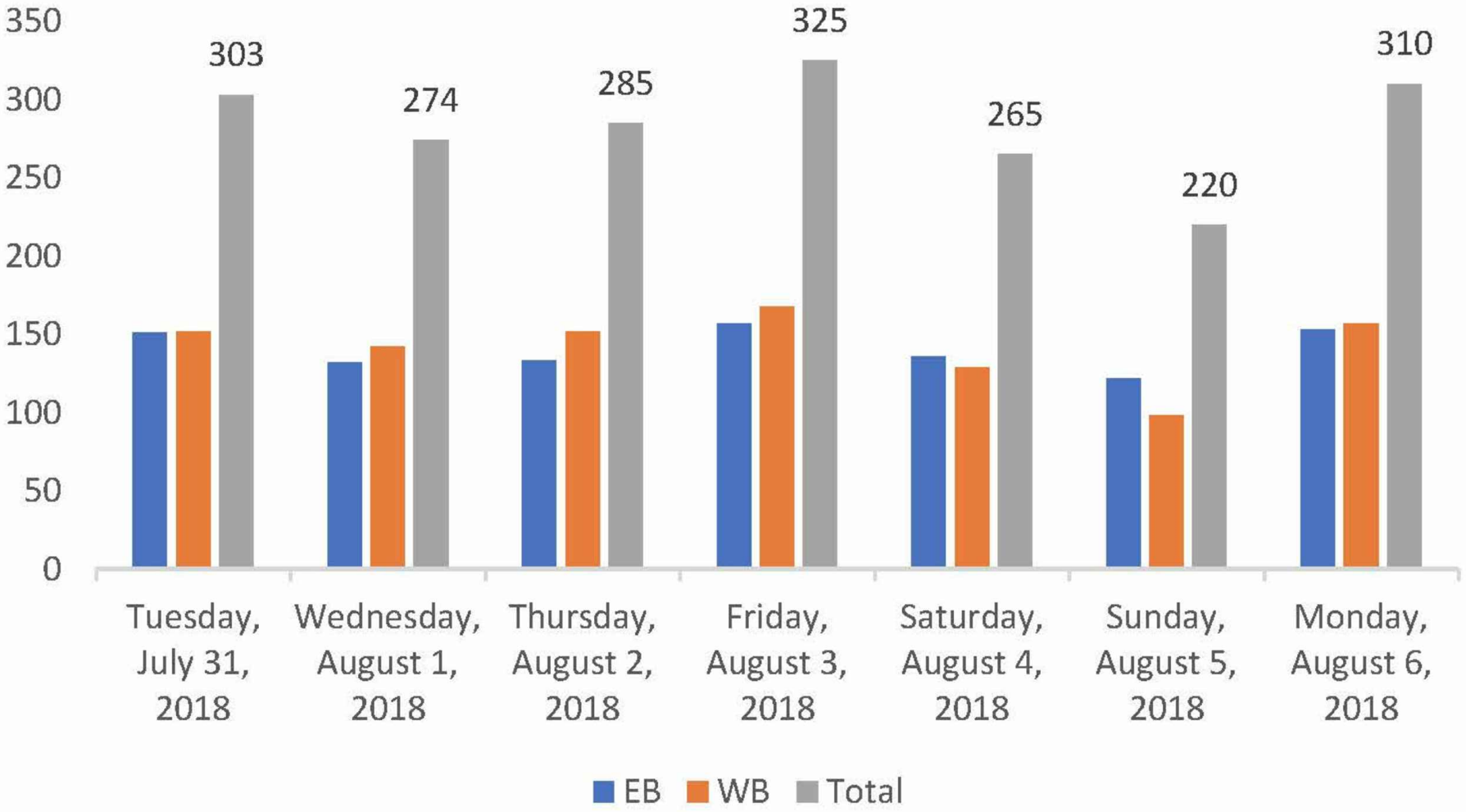
Scale	NTS	Date	August 31, 2018	Drawn by	JBH	Job #	Ruby Ranch	Figure	1



Potable Water and Roadway Report

TRAFFIC VOLUME SUMMARY - RUBY RANCH ROAD EAST OF DIAMOND ROAD (LOCATION 1)

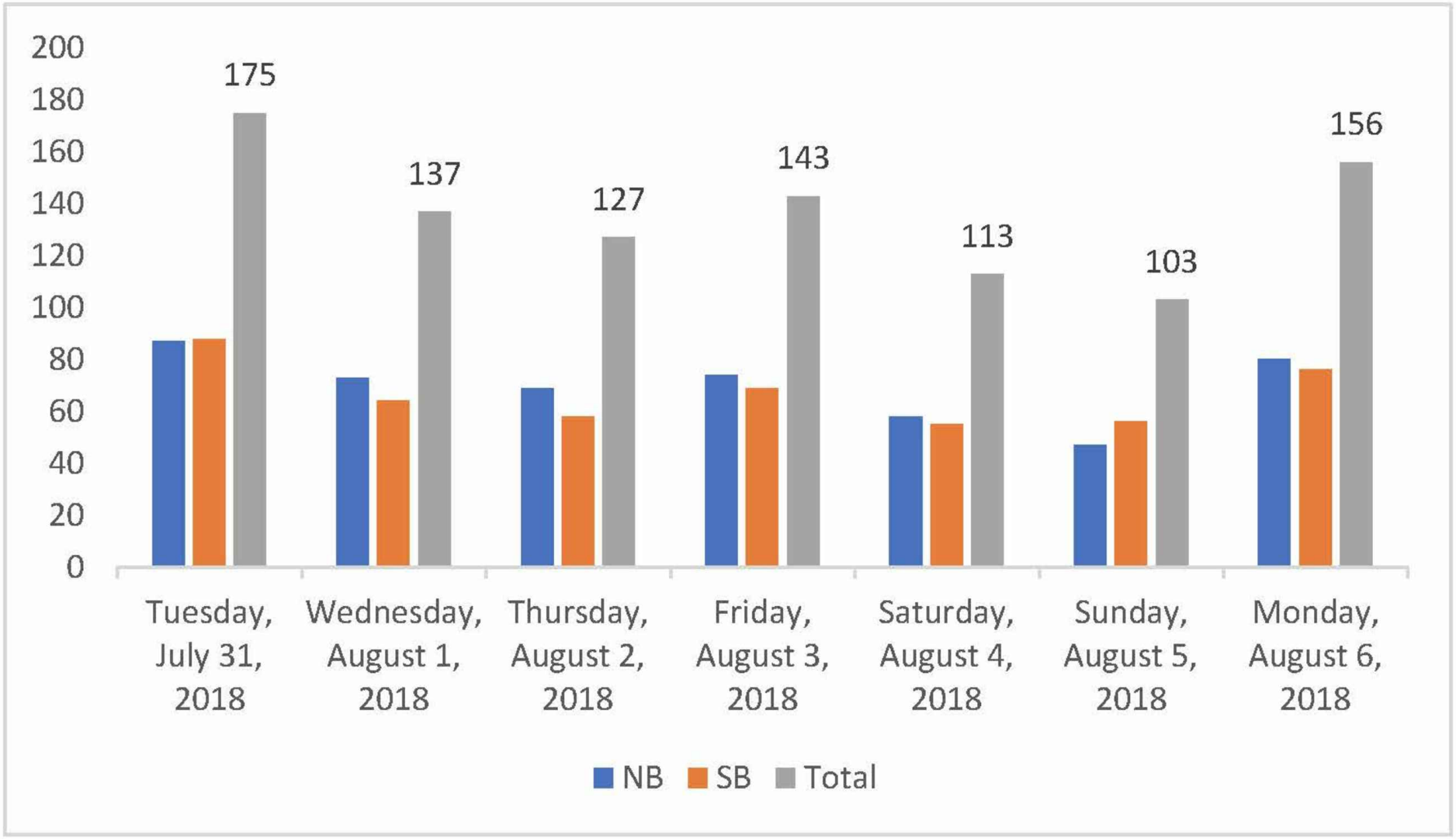
Scale	NTS	Date	August 31, 2018	Drawn by	JBH	Job #	Ruby Ranch	Figure	2



Potable Water and Roadway Report

TRAFFIC VOLUME SUMMARY - RUBY RANCH ROAD EAST OF EMERALD ROAD (LOCATION 2)

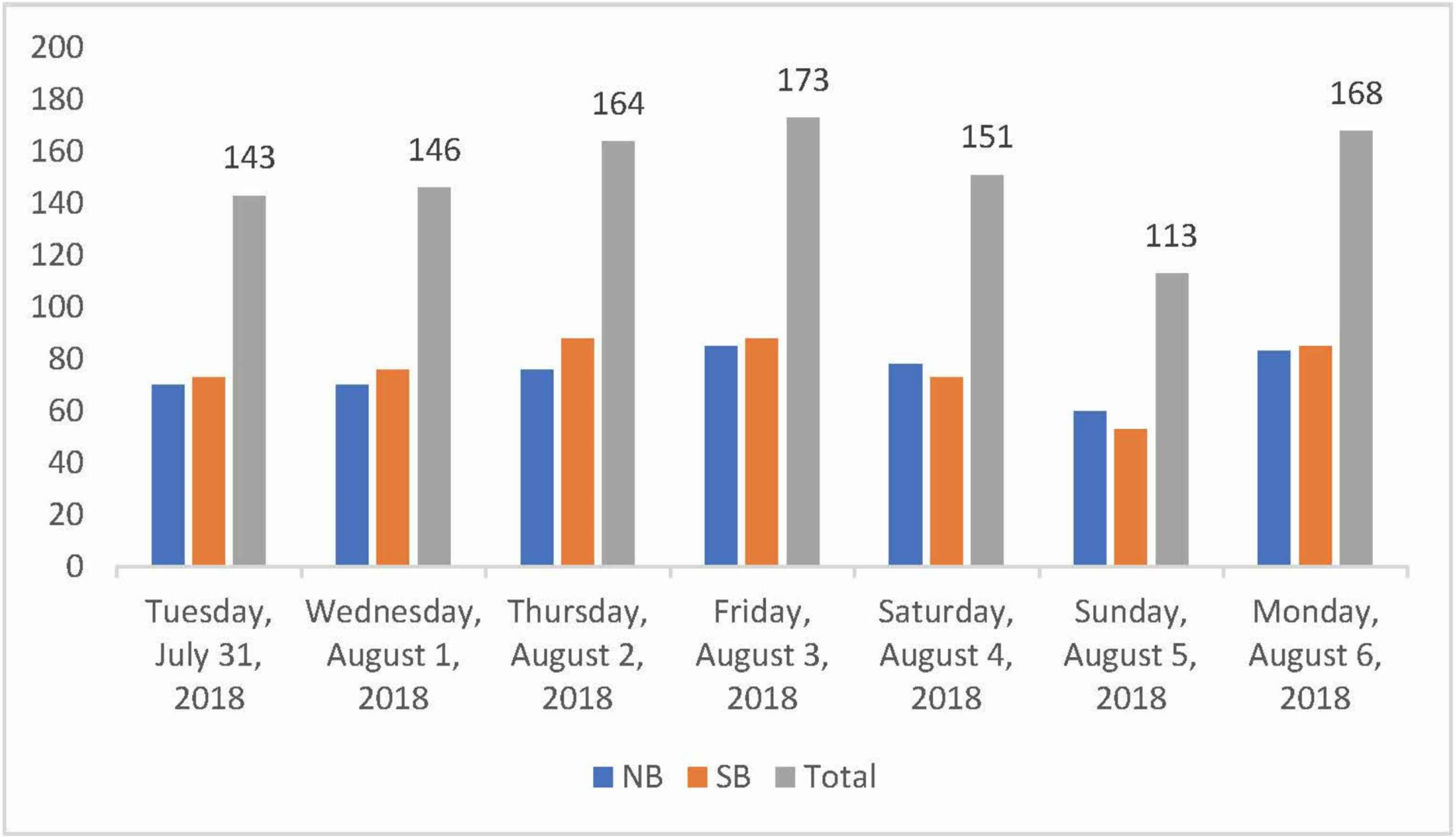
Scale	NTS	Date	August 31, 2018	Drawn by	JBH	Job #	Ruby Ranch	Figure	3



Potable Water and Roadway Report

TRAFFIC VOLUME SUMMARY - EMERALD ROAD NORTH OF RUBY RANCH ROAD (LOCATION 3)

Scale	NTS	Date	August 31, 2018	Drawn by	JBH	Job #	Ruby Ranch	Figure	4



Potable Water and Roadway Report

TRAFFIC VOLUME SUMMARY - SOUTH RUBY ROAD SOUTH OF RUBY RANCH ROAD (LOCATION 4)

Scale	NTS	Date	August 31, 2018	Drawn by	JBH	Job #	Ruby Ranch	Figure	5

Table 1. Traffic Speed Summary

Count Location Number	Count Location Name	50th Percentile Speed [1]		85th Percentile Speed [1]		Maximum Speed Range [1, 2]	
		Downhill (Eastbound)	Uphill (Westbound)	Downhill (Eastbound)	Uphill (Westbound)	Downhill (Eastbound)	Uphill (Westbound)
1	Ruby Ranch Road east of Diamond Road	19	15	24	20	31 - 35 6 occurrences 0.60%	26 - 30 31 occurrences 2.38%
2	Ruby Ranch Road east of Emeral Road	18	15	22	19	31 - 35 1 occurrence 0.11%	26 - 30 11 occurrences 1.10%
---	---	Downhill (Southbound)	Uphill (Northbound)	Downhill (Southbound)	Uphill (Northbound)	Downhill (Southbound)	Uphill (Northbound)
3	Emeral Road north of Ruby Ranch Road	16	15	19	19	26 - 30 4 occurrences 0.82%	26 - 30 1 occurrence 0.21%
---	---	Downhill (Northbound)	Uphill (Southbound)	Downhill (Northbound)	Uphill (Southbound)	Downhill (Northbound)	Uphill (Southbound)
4	South Ruby Road south of Ruby Ranch Road	20	19	24	24	31 - 35 1 occurrence 0.19%	31 - 35 3 occurrences 0.56%

Notes.

1. Speeds are expressed in miles per hour.
2. The percentages represent the percent of vehicles that were in the maximum speed range for the week that the data were collected.

This table is formatted to be printed on an 11" x 17" sheet of paper.

Table 2. Projected Traffic Volumes

Full Time Occupancy [1, 2]		
Lot #	Annual Water Usage	Daily Trips
2	43,000	10
6 & 9	---	10
7	39,200	10
10	70,200	10
11	60,000	10
12B	11,600	10
16	71,200	10
17B	16,400	10
20	26,000	10
21	31,000	10
24	32,200	10
26	23,400	10
30	28,000	10
32	38,500	10
34A	19,400	10
40	40,600	10
46	47,333	10
Total	598,033	---
Average	37,000	---

Part Time Occupancy [3]		
Lot #	Annual Water Usage	Daily Trips
4	11,200	3
12A	12,500	3
13	23,800	6
14	64,000	17
17A	14,200	4
18	14,800	4
19	7,400	2
27 & 28	39,500	11
33B	12,000	3
34B	8,600	2
35	20,400	6
36	38,800	10
37	23,400	6
38	32,200	9
39	23,000	6
41B	24,200	7
42B	13,400	4
45	57,000	15
47	24,400	7
48	24,000	6
49	12,800	3
50	10,600	3
52A	23,000	6
52B	18,400	5
53 & 54	23,000	6
Total	576,600	---
Average	23,000	---

Rental Occupancy [3]		
Lot #	Annual Water Usage	Daily Trips
1	39,200	11
5	39,500	11
15	16,750	5
25	50,400	14
31	38,000	10
42A	100,000	27
44	48,000	13
51	76,200	21
Total	408,050	---
Average	51,000	---

Undeveloped [4]	
Lot #	Daily Trips
3	10
8	10
22	10
23	10
29	10
33A	10
41A	10
43	10

Open Space
Lot #
12C
33C
34C
41C
42C
52C

Projected Traffic Counts [5]	
Count Location 1	
Lot	Daily Trips
53 & 54	6
Count Loc 2	436
Total	**442**

Count Location 2	
Lot	Daily Trips
29	10
30	10
Count Loc 3	189
Count Loc 4	227
Total	**436**

Count Location 3	
Lot	Daily Trips
31	10
32	10
33A	10
33B	2
34A	10
34B	2
35	6
36	10
37	6
38	9
39	6
40	10
42B	4
43	10
44	13
45	15
46	10
47	7
49	3
50	3
51	21
52A	6
52B	5
Total	**189**

Count Location 4	
Lot	Daily Trips
1	11
2	10
3	10
4	3
5	11
7	10
8	10
10	10
11	10
13	6
14	17
15	5
16	10
17A	4
17B	10
18	4
19	2
20	10
21	10
22	10
23	10
24	10
25	14
26	10
27 & 28	11
Total	**227**

Notes.

1. The average daily trips for a home that is occupied year around was based on the trip generation rate that is contained in the Trip Generation manual (Institute of Transportation Engineers, September 2017).
2. The annual water usage estimates for each home were provided by the Willowbrook Metro District.
3. The trip generation for part time occupancy and rental properties was based on a comparison of the water usage for each property with the average water usage for properties that are occupied year around.
4. The trip generation for the undeveloped properties assumed that they will be occupied year around.
5. Refer to Figure 1 for the traffic count locations.

TRAFFIC COUNT RAW DATA

All Traffic Data

Wheat Ridge, CO 80033

LOCATION 1

Date Start: 31-Jul-18
Date End: 06-Aug-18
Site Code: 1
RUBY RANCH RD E.O. DIAMOND RD

EB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
07/31/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
06:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
07:00	0	6	**6**	0	0	0	0	0	0	0	0	0	0	12
08:00	0	7	4	0	0	0	0	0	0	0	0	0	0	11
09:00	1	**12**	5	0	0	0	0	0	0	0	0	0	0	**18**
10:00	0	4	3	0	0	**1**	0	0	0	0	0	0	0	8
11:00	**2**	7	1	0	0	0	0	0	0	0	0	0	0	10
12 PM	0	8	3	0	0	1	0	0	0	0	0	0	0	12
13:00	0	10	**5**	0	0	0	0	0	0	0	0	0	0	15
14:00	0	3	2	0	**1**	1	0	0	0	0	0	0	0	7
15:00	0	**14**	3	0	1	**2**	0	0	0	0	0	0	0	**20**
16:00	0	8	4	0	1	1	0	0	0	0	0	0	0	14
17:00	0	10	2	0	0	0	0	0	0	0	0	0	0	12
18:00	0	2	3	0	0	0	0	0	0	0	0	0	0	5
19:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
20:00	0	4	1	0	0	0	0	0	0	0	0	0	0	5
21:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
22:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Day Total	3	103	42	0	3	6	0	0	0	0	0	0	0	157
Percent	1.9%	65.6%	26.8%	0.0%	1.9%	3.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	11:00	09:00	07:00			10:00								09:00
Vol.	2	12	6			1								18
PM Peak		15:00	13:00		14:00	15:00								15:00
Vol.		14	5		1	2								20

All Traffic Data

Wheat Ridge, CO 80033

Date Start: 31-Jul-18
Date End: 06-Aug-18
Site Code: 1
RUBY RANCH RD E.O. DIAMOND RD

EB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
08/01/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
06:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
07:00	0	4	2	0	**1**	0	0	0	0	0	0	0	0	7
08:00	0	**12**	0	0	0	0	0	0	0	0	0	0	0	12
09:00	0	10	**5**	0	1	0	0	0	0	0	0	0	0	**16**
10:00	0	7	2	0	1	0	0	0	0	0	0	0	0	10
11:00	0	6	5	0	0	0	0	0	0	0	0	0	0	11
12 PM	0	4	3	0	0	0	0	0	0	0	0	0	0	7
13:00	0	2	1	0	**1**	0	0	0	0	0	0	0	0	4
14:00	0	3	3	0	0	0	0	0	0	0	0	0	0	6
15:00	0	**9**	5	0	1	0	0	0	0	0	0	0	0	15
16:00	0	9	**6**	0	0	**2**	0	0	0	0	0	0	0	**17**
17:00	0	5	2	0	1	1	0	0	0	0	0	0	0	9
18:00	0	4	1	0	0	0	0	0	0	0	0	0	0	5
19:00	0	3	2	0	0	0	0	0	0	0	0	0	0	5
20:00	0	5	0	0	1	0	0	0	0	0	0	0	0	6
21:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Day Total	0	85	38	0	7	3	0	0	0	0	0	0	0	133
Percent	0.0%	63.9%	28.6%	0.0%	5.3%	2.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak		08:00	09:00		07:00									09:00
Vol.		12	5		1									16
PM Peak		15:00	16:00		13:00	16:00								16:00
Vol.		9	6		1	2								17

All Traffic Data

Wheat Ridge, CO 80033

Date Start: 31-Jul-18
Date End: 06-Aug-18
Site Code: 1
RUBY RANCH RD E.O. DIAMOND RD

EB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
08/02/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
06:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:00	0	2	1	0	0	0	0	**1**	0	0	0	0	0	4
08:00	0	7	1	0	**1**	1	0	0	0	0	0	0	0	10
09:00	0	11	**5**	0	0	1	0	0	**1**	0	0	0	0	**18**
10:00	0	6	1	0	1	**2**	0	0	0	0	0	0	0	10
11:00	0	**12**	4	0	1	0	0	0	0	0	0	0	0	17
12 PM	0	5	4	0	0	0	0	0	0	0	0	0	0	9
13:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
14:00	0	7	1	0	0	0	0	0	0	0	0	0	0	8
15:00	0	6	**6**	0	0	0	0	0	0	0	0	0	0	12
16:00	0	**10**	4	0	0	0	0	**1**	0	0	0	0	0	**15**
17:00	0	5	2	0	0	0	0	0	0	0	0	0	0	7
18:00	0	10	4	0	0	0	0	0	0	0	0	0	0	14
19:00	0	5	0	0	0	0	0	0	0	0	0	0	0	5
20:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
21:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Day Total	0	92	35	0	3	4	0	2	1	0	0	0	0	137
Percent	0.0%	67.2%	25.5%	0.0%	2.2%	2.9%	0.0%	1.5%	0.7%	0.0%	0.0%	0.0%	0.0%	
AM Peak		11:00	09:00		08:00	10:00		07:00	09:00					09:00
Vol.		12	5		1	2		1	1					18
PM Peak		16:00	15:00					16:00						16:00
Vol.		10	6					1						15

All Traffic Data

Wheat Ridge, CO 80033

Date Start: 31-Jul-18
Date End: 06-Aug-18
Site Code: 1
RUBY RANCH RD E.O. DIAMOND RD

EB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
08/03/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
06:00	0	2	1	0	0	0	0	0	0	0	0	0	0	3
07:00	0	3	1	0	0	1	0	0	0	0	0	0	0	5
08:00	0	12	3	0	0	**2**	0	0	0	0	0	0	0	17
09:00	0	13	**4**	0	**1**	1	0	0	0	0	0	0	0	**19**
10:00	0	**14**	4	0	0	1	0	0	0	0	0	0	0	19
11:00	0	9	4	0	1	0	0	0	0	0	0	0	0	14
12 PM	0	**10**	2	0	0	0	0	0	0	0	0	0	0	12
13:00	0	10	2	0	0	0	0	0	0	0	0	0	0	12
14:00	0	8	1	0	0	0	0	0	0	0	0	0	0	9
15:00	0	7	2	0	0	0	0	0	0	0	0	0	0	9
16:00	0	5	**3**	0	0	0	0	0	0	0	0	0	0	8
17:00	0	10	3	0	0	0	0	0	0	0	0	0	0	**13**
18:00	0	9	2	0	0	0	0	0	0	0	0	0	0	11
19:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
20:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
21:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
22:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Day Total	0	126	32	0	2	5	0	0	0	0	0	0	0	165
Percent	0.0%	76.4%	19.4%	0.0%	1.2%	3.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak		10:00	09:00		09:00	08:00								09:00
Vol.		14	4		1	2								19
PM Peak		12:00	16:00											17:00
Vol.		10	3											13

All Traffic Data

Wheat Ridge, CO 80033

Date Start: 31-Jul-18
Date End: 06-Aug-18
Site Code: 1
RUBY RANCH RD E.O. DIAMOND RD

EB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
08/04/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
06:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
07:00	0	0	2	0	0	0	0	0	0	0	0	0	0	2
08:00	0	8	2	0	**1**	0	0	0	0	0	0	0	0	11
09:00	0	13	0	0	0	0	0	0	0	0	0	0	0	13
10:00	0	**15**	**3**	0	0	0	0	0	0	0	0	0	0	**18**
11:00	0	13	0	0	0	0	0	0	0	0	0	0	0	13
12 PM	0	**12**	3	0	**1**	0	0	0	0	0	0	0	0	**16**
13:00	0	7	**4**	0	0	0	0	0	0	0	0	0	0	11
14:00	0	5	0	0	0	0	0	0	0	0	0	0	0	5
15:00	0	6	2	0	0	0	0	0	0	0	0	0	0	8
16:00	0	9	0	0	0	0	0	0	0	0	0	0	0	9
17:00	0	5	0	0	0	0	0	0	0	0	0	0	0	5
18:00	0	10	0	0	0	0	0	0	0	0	0	0	0	10
19:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
20:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
21:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Day Total	0	116	16	0	2	0	0	0	0	0	0	0	0	134
Percent	0.0%	86.6%	11.9%	0.0%	1.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak		10:00	10:00		08:00									10:00
Vol.		15	3		1									18
PM Peak		12:00	13:00		12:00									12:00
Vol.		12	4		1									16

All Traffic Data

Wheat Ridge, CO 80033

Date Start: 31-Jul-18
Date End: 06-Aug-18
Site Code: 1
RUBY RANCH RD E.O. DIAMOND RD

EB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
08/05/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	1	**1**	0	0	0	0	0	0	0	0	0	0	2
05:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
06:00	0	5	1	0	0	0	0	0	0	0	0	0	0	6
07:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
08:00	0	3	0	0	**1**	0	0	0	0	0	0	0	0	4
09:00	0	6	1	0	0	0	0	0	0	0	0	0	0	7
10:00	0	**19**	0	0	0	0	0	0	0	0	0	0	0	**19**
11:00	0	9	0	0	0	0	0	0	0	0	0	0	0	9
12 PM	0	**11**	2	0	0	0	0	0	0	0	0	0	0	**13**
13:00	0	5	2	0	0	0	0	0	0	0	0	0	0	7
14:00	0	6	2	0	0	0	0	0	0	0	0	0	0	8
15:00	0	6	0	0	0	0	0	0	0	0	0	0	0	6
16:00	0	6	2	0	0	**1**	0	0	0	0	0	0	0	9
17:00	0	7	**3**	0	0	0	0	0	0	0	0	0	0	10
18:00	0	5	0	0	0	0	0	0	0	0	0	0	0	5
19:00	0	7	0	0	0	0	0	0	0	0	0	0	0	7
20:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Day Total	0	103	16	0	1	1	0	0	0	0	0	0	0	121
Percent	0.0%	85.1%	13.2%	0.0%	0.8%	0.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak		10:00	04:00		08:00									10:00
Vol.		19	1		1									19
PM Peak		12:00	17:00			16:00								12:00
Vol.		11	3			1								13

All Traffic Data

Wheat Ridge, CO 80033

Date Start: 31-Jul-18
Date End: 06-Aug-18
Site Code: 1
RUBY RANCH RD E.O. DIAMOND RD

EB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
08/06/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
07:00	0	7	3	0	0	0	0	0	0	0	0	0	0	10
08:00	0	**13**	3	0	**1**	0	0	0	0	0	0	0	0	**17**
09:00	0	11	3	0	0	0	0	0	0	0	0	0	0	14
10:00	0	10	**6**	0	1	0	0	0	0	0	0	0	0	17
11:00	0	11	2	0	1	0	0	0	0	0	0	0	0	14
12 PM	0	3	2	0	0	0	0	0	0	0	0	0	0	5
13:00	0	3	2	0	**1**	0	0	0	0	0	0	0	0	6
14:00	0	7	3	0	0	0	0	0	0	0	0	0	0	10
15:00	0	**10**	3	0	0	0	0	0	0	0	0	0	0	**13**
16:00	0	7	**6**	0	0	0	0	0	0	0	0	0	0	13
17:00	0	7	2	0	1	0	0	0	0	0	0	0	0	10
18:00	**1**	4	5	0	1	**1**	0	0	0	0	0	0	0	12
19:00	0	6	2	0	0	0	0	0	0	0	0	0	0	8
20:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Day Total	1	103	43	0	6	1	0	0	0	0	0	0	0	154
Percent	0.6%	66.9%	27.9%	0.0%	3.9%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak		08:00	10:00		08:00									08:00
Vol.		13	6		1									17
PM Peak	18:00	15:00	16:00		13:00	18:00								15:00
Vol.	1	10	6		1	1								13
Grand Total	4	728	222	0	24	20	0	2	1	0	0	0	0	1001
Percent	0.4%	72.7%	22.2%	0.0%	2.4%	2.0%	0.0%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	

All Traffic Data

Wheat Ridge, CO 80033

Date Start: 31-Jul-18
Date End: 06-Aug-18
Site Code: 1
RUBY RANCH RD E.O. DIAMOND RD

WB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
07/31/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
07:00	0	4	4	0	0	0	0	0	0	0	0	0	0	8
08:00	1	10	**5**	0	0	0	0	0	0	0	0	0	0	16
09:00	1	6	2	0	0	**1**	0	0	0	0	0	0	0	10
10:00	1	9	4	0	0	0	0	0	0	0	0	0	0	14
11:00	**2**	**12**	2	0	0	0	**1**	0	0	0	0	0	0	**17**
12 PM	0	14	1	0	0	0	0	0	0	0	0	0	0	15
13:00	1	14	2	0	0	**1**	0	0	0	0	0	0	0	18
14:00	2	7	1	0	0	1	0	0	0	0	0	0	0	11
15:00	**3**	16	2	0	0	0	0	0	0	0	0	0	0	21
16:00	2	**20**	2	0	0	1	**1**	0	0	0	0	0	0	**26**
17:00	2	14	2	0	0	0	0	0	0	0	0	0	0	18
18:00	2	7	0	0	0	0	0	0	0	0	0	0	0	9
19:00	3	4	**3**	0	0	0	0	0	0	0	0	0	0	10
20:00	1	4	1	0	0	0	0	0	0	0	0	0	0	6
21:00	1	1	0	0	0	0	0	0	0	0	0	0	0	2
22:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
23:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Day Total	22	148	32	0	0	4	2	0	0	0	0	0	0	208
Percent	10.6%	71.2%	15.4%	0.0%	0.0%	1.9%	1.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	11:00	11:00	08:00			09:00	11:00							11:00
Vol.	2	12	5			1	1							17
PM Peak	15:00	16:00	19:00			13:00	16:00							16:00
Vol.	3	20	3			1	1							26

All Traffic Data

Wheat Ridge, CO 80033

Date Start: 31-Jul-18
Date End: 06-Aug-18
Site Code: 1
RUBY RANCH RD E.O. DIAMOND RD

WB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
08/01/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
07:00	0	1	**3**	0	0	0	0	0	0	0	0	0	0	4
08:00	**1**	**12**	3	0	**1**	0	0	0	0	0	0	0	0	**17**
09:00	0	10	2	0	1	0	0	0	0	0	0	0	0	13
10:00	0	7	2	0	0	0	0	0	0	0	0	0	0	9
11:00	1	6	1	0	0	0	0	0	0	0	0	0	0	8
12 PM	2	5	1	0	0	0	0	0	0	0	0	0	0	8
13:00	1	11	**3**	0	0	0	0	0	0	0	0	0	0	15
14:00	**3**	**14**	3	0	0	0	0	0	0	0	0	0	0	**20**
15:00	1	7	2	0	1	**1**	0	0	0	0	0	0	0	12
16:00	1	11	2	0	0	0	**1**	0	0	0	0	0	0	15
17:00	2	11	2	0	0	0	0	0	0	0	0	0	0	15
18:00	1	11	2	0	**2**	0	0	0	0	0	0	0	0	16
19:00	1	7	0	0	1	0	0	0	0	0	0	0	0	9
20:00	1	5	0	0	0	0	0	0	0	0	0	0	0	6
21:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Day Total	15	121	27	0	6	1	1	0	0	0	0	0	0	171
Percent	8.8%	70.8%	15.8%	0.0%	3.5%	0.6%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	08:00	08:00	07:00		08:00									08:00
Vol.	1	12	3		1									17
PM Peak	14:00	14:00	13:00		18:00	15:00	16:00							14:00
Vol.	3	14	3		2	1	1							20

All Traffic Data

Wheat Ridge, CO 80033

Date Start: 31-Jul-18
Date End: 06-Aug-18
Site Code: 1
RUBY RANCH RD E.O. DIAMOND RD

WB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
08/02/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:00	**3**	6	**3**	0	0	**1**	0	0	0	0	0	0	0	**13**
08:00	0	3	2	0	0	0	0	0	**1**	0	0	0	0	6
09:00	3	5	2	0	0	0	0	0	0	0	0	0	0	10
10:00	0	**9**	3	0	**1**	0	0	0	0	0	0	0	0	13
11:00	0	7	1	0	0	1	0	0	0	0	0	0	0	9
12 PM	0	7	1	0	0	0	0	0	0	0	0	0	0	8
13:00	**3**	9	1	0	0	0	0	0	0	0	0	0	0	13
14:00	3	10	**2**	0	0	0	0	0	0	0	0	0	0	15
15:00	3	9	2	0	**1**	0	0	0	0	0	0	0	0	15
16:00	2	**24**	1	0	0	0	0	0	0	0	0	0	0	**27**
17:00	1	12	2	0	0	0	0	0	0	0	0	0	0	15
18:00	2	11	0	0	0	0	0	0	0	0	0	0	0	13
19:00	1	12	0	0	0	0	0	0	0	0	0	0	0	13
20:00	2	12	2	0	0	0	0	0	0	0	0	0	0	16
21:00	2	6	0	0	0	0	0	0	0	0	0	0	0	8
22:00	0	2	1	0	0	0	0	0	0	0	0	0	0	3
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Day Total	25	145	23	0	2	2	0	0	1	0	0	0	0	198
Percent	12.6%	73.2%	11.6%	0.0%	1.0%	1.0%	0.0%	0.0%	0.5%	0.0%	0.0%	0.0%	0.0%	
AM Peak	07:00	10:00	07:00		10:00	07:00			08:00					07:00
Vol.	3	9	3		1	1			1					13
PM Peak	13:00	16:00	14:00		15:00									16:00
Vol.	3	24	2		1									27

All Traffic Data

Wheat Ridge, CO 80033

Date Start: 31-Jul-18
Date End: 06-Aug-18
Site Code: 1
RUBY RANCH RD E.O. DIAMOND RD

WB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
08/03/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
06:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
07:00	**2**	7	1	0	0	0	0	0	0	0	0	0	0	10
08:00	2	**12**	1	0	**1**	**1**	0	0	0	0	0	0	0	**17**
09:00	1	7	0	0	0	1	0	0	0	0	0	0	0	9
10:00	2	12	**2**	0	1	0	0	0	0	0	0	0	0	17
11:00	2	11	0	0	0	0	0	0	0	0	0	0	0	13
12 PM	1	14	**3**	0	0	0	0	0	0	0	0	0	0	18
13:00	2	8	0	0	0	0	0	0	0	0	0	0	0	10
14:00	1	**18**	2	0	0	0	0	0	0	0	0	0	0	**21**
15:00	1	8	0	0	0	0	0	0	0	0	0	0	0	9
16:00	3	13	1	0	0	0	0	0	0	0	0	0	0	17
17:00	**4**	13	0	0	0	0	0	0	0	0	0	0	0	17
18:00	1	12	2	0	0	0	0	0	0	0	0	0	0	15
19:00	2	17	1	0	0	0	0	0	0	0	0	0	0	20
20:00	2	5	1	0	0	0	0	0	0	0	0	0	0	8
21:00	1	7	0	0	0	0	0	0	0	0	0	0	0	8
22:00	2	4	0	0	0	0	0	0	0	0	0	0	0	6
23:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
Day Total	29	172	15	0	2	2	0	0	0	0	0	0	0	220
Percent	13.2%	78.2%	6.8%	0.0%	0.9%	0.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	07:00	08:00	10:00		08:00	08:00								08:00
Vol.	2	12	2		1	1								17
PM Peak	17:00	14:00	12:00											14:00
Vol.	4	18	3											21

All Traffic Data

Wheat Ridge, CO 80033

Date Start: 31-Jul-18
Date End: 06-Aug-18
Site Code: 1
RUBY RANCH RD E.O. DIAMOND RD

WB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
08/04/18	**1**	1	0	0	0	0	0	0	0	0	0	0	0	2
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
08:00	0	6	0	0	0	0	0	0	0	0	0	0	0	6
09:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
10:00	1	**9**	**1**	0	0	0	0	0	0	0	0	0	0	**11**
11:00	0	7	0	0	0	0	0	0	0	0	0	0	0	7
12 PM	2	9	0	0	0	0	0	0	0	0	0	0	0	11
13:00	3	**17**	0	0	0	0	0	0	0	0	0	0	0	**20**
14:00	2	16	0	0	0	0	0	0	0	0	0	0	0	18
15:00	1	15	1	0	0	0	0	0	0	0	0	0	0	17
16:00	0	10	1	0	0	0	0	0	0	0	0	0	0	11
17:00	1	6	0	0	0	0	0	0	0	0	0	0	0	7
18:00	1	14	**4**	0	0	0	0	0	0	0	0	0	0	19
19:00	1	11	0	0	0	0	0	0	0	0	0	0	0	12
20:00	**4**	9	0	0	0	0	0	0	0	0	0	0	0	13
21:00	2	3	0	0	0	0	0	0	0	0	0	0	0	5
22:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Day Total	19	140	7	0	0	0	0	0	0	0	0	0	0	166
Percent	11.4%	84.3%	4.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	00:00	10:00	10:00											10:00
Vol.	1	9	1											11
PM Peak	20:00	13:00	18:00											13:00
Vol.	4	17	4											20

All Traffic Data

Wheat Ridge, CO 80033

Date Start: 31-Jul-18
Date End: 06-Aug-18
Site Code: 1
RUBY RANCH RD E.O. DIAMOND RD

WB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
08/05/18	0	1	0	0	0	0	0	0	0	0	0	0	0	1
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
06:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	0	5	0	0	**1**	0	0	0	0	0	0	0	0	6
09:00	**2**	3	0	0	0	0	0	0	0	0	0	0	0	5
10:00	0	8	0	0	0	0	0	0	0	0	0	0	0	8
11:00	1	**9**	0	0	0	0	0	0	0	0	0	0	0	**10**
12 PM	1	6	0	0	0	0	0	0	0	0	0	0	0	7
13:00	**3**	11	1	0	0	0	0	0	0	0	0	0	0	**15**
14:00	1	10	2	0	0	0	0	0	0	0	0	0	0	13
15:00	2	8	0	0	0	0	0	0	0	0	0	0	0	10
16:00	1	4	2	0	0	0	0	0	0	0	0	0	0	7
17:00	0	**13**	1	0	0	0	0	0	0	0	0	0	0	14
18:00	2	9	**3**	0	0	0	0	0	0	0	0	0	0	14
19:00	0	10	0	0	0	0	0	0	0	0	0	0	0	10
20:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
21:00	2	4	0	0	0	0	0	0	0	0	0	0	0	6
22:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
23:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Day Total	15	106	10	0	1	0	0	0	0	0	0	0	0	132
Percent	11.4%	80.3%	7.6%	0.0%	0.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	09:00	11:00			08:00									11:00
Vol.	2	9			1									10
PM Peak	13:00	17:00	18:00											13:00
Vol.	3	13	3											15

All Traffic Data

Wheat Ridge, CO 80033

Date Start: 31-Jul-18
Date End: 06-Aug-18
Site Code: 1
RUBY RANCH RD E.O. DIAMOND RD

WB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
08/06/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
07:00	0	10	0	0	0	0	0	0	0	0	0	0	0	10
08:00	0	10	1	0	0	0	0	0	0	0	0	0	0	11
09:00	**8**	**13**	**2**	0	**1**	0	0	0	0	0	0	0	0	**24**
10:00	1	8	0	0	0	0	0	0	0	0	0	0	0	9
11:00	1	10	1	0	1	**1**	0	0	0	0	0	0	0	14
12 PM	1	9	2	0	0	0	0	0	0	0	0	0	0	12
13:00	2	**20**	3	0	0	0	0	**1**	0	0	0	0	0	**26**
14:00	4	8	**4**	0	0	0	0	0	0	0	0	0	0	16
15:00	3	9	1	0	**1**	0	0	0	0	0	0	0	0	14
16:00	0	6	2	0	0	0	0	0	0	0	0	0	0	8
17:00	4	15	2	0	0	0	0	0	0	0	0	0	0	21
18:00	**6**	14	0	0	0	0	0	0	0	0	0	0	0	20
19:00	1	5	1	0	0	0	0	0	0	0	0	0	0	7
20:00	1	3	0	0	0	0	0	0	0	0	0	0	0	4
21:00	0	5	1	0	0	0	0	0	0	0	0	0	0	6
22:00	1	2	0	0	0	0	0	0	0	0	0	0	0	3
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Day Total	33	151	20	0	3	1	0	1	0	0	0	0	0	209
Percent	15.8%	72.2%	9.6%	0.0%	1.4%	0.5%	0.0%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	09:00	09:00	09:00		09:00	11:00								09:00
Vol.	8	13	2		1	1								24
PM Peak	18:00	13:00	14:00		15:00			13:00						13:00
Vol.	6	20	4		1			1						26
Grand Total	158	983	134	0	14	10	3	1	1	0	0	0	0	1304
Percent	12.1%	75.4%	10.3%	0.0%	1.1%	0.8%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	

All Traffic Data

Wheat Ridge, CO 80033

LOCATION 2

Date Start: 31-Jul-18
Date End: 06-Aug-18
Site Code: 2
RUBY RANCH RD E.O. EMERALD RD

EB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
07/31/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
06:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
07:00	0	5	**6**	0	0	0	0	0	0	0	0	0	0	11
08:00	0	8	2	0	0	0	0	0	0	0	0	0	0	10
09:00	1	**11**	4	0	0	0	0	0	0	0	0	0	0	**16**
10:00	0	4	3	0	0	**1**	0	0	0	0	0	0	0	8
11:00	**2**	8	1	0	0	0	0	0	0	0	0	0	0	11
12 PM	0	7	3	0	0	**1**	0	0	0	0	0	0	0	11
13:00	**2**	**13**	2	0	0	0	0	0	0	0	0	0	0	17
14:00	0	3	2	0	0	1	0	0	0	0	0	0	0	6
15:00	0	13	**5**	0	**1**	0	0	0	0	0	0	0	0	**19**
16:00	1	11	3	0	0	1	0	0	0	0	0	0	0	16
17:00	0	9	2	0	0	0	0	0	0	0	0	0	0	11
18:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
19:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
20:00	0	2	1	0	0	0	0	0	0	0	0	0	0	3
21:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
22:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Day Total	6	105	35	0	1	4	0	0	0	0	0	0	0	151
Percent	4.0%	69.5%	23.2%	0.0%	0.7%	2.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	11:00	09:00	07:00			10:00								09:00
Vol.	2	11	6			1								16
PM Peak	13:00	13:00	15:00		15:00	12:00								15:00
Vol.	2	13	5		1	1								19

All Traffic Data

Wheat Ridge, CO 80033

Date Start: 31-Jul-18
Date End: 06-Aug-18
Site Code: 2
RUBY RANCH RD E.O. EMERALD RD

EB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
08/01/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
06:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:00	0	4	1	0	0	0	0	0	0	0	0	0	0	5
08:00	0	**12**	1	0	0	0	0	0	0	0	0	0	0	13
09:00	0	11	**4**	0	**2**	0	0	0	0	0	0	0	0	**17**
10:00	0	8	1	0	0	**1**	0	0	0	0	0	0	0	10
11:00	0	7	3	0	0	0	0	0	0	0	0	0	0	10
12 PM	0	6	1	0	0	0	0	0	0	0	0	0	0	7
13:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
14:00	0	4	2	0	0	0	0	0	0	0	0	0	0	6
15:00	0	12	2	0	**1**	0	0	0	0	0	0	0	0	15
16:00	0	**13**	**4**	0	0	**2**	0	0	0	0	0	0	0	**19**
17:00	0	5	3	0	0	1	0	0	0	0	0	0	0	9
18:00	0	5	0	0	0	0	0	0	0	0	0	0	0	5
19:00	0	3	1	0	1	0	0	0	0	0	0	0	0	5
20:00	0	5	0	0	0	0	0	0	0	0	0	0	0	5
21:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Day Total	0	100	24	0	4	4	0	0	0	0	0	0	0	132
Percent	0.0%	75.8%	18.2%	0.0%	3.0%	3.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak		08:00	09:00		09:00	10:00								09:00
Vol.		12	4		2	1								17
PM Peak		16:00	16:00		15:00	16:00								16:00
Vol.		13	4		1	2								19

All Traffic Data

Wheat Ridge, CO 80033

Date Start: 31-Jul-18
Date End: 06-Aug-18
Site Code: 2
RUBY RANCH RD E.O. EMERALD RD

EB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
08/02/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
06:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:00	0	5	2	0	0	0	0	**1**	0	0	0	0	0	8
08:00	0	8	0	0	0	1	0	0	0	0	0	0	0	9
09:00	0	9	**5**	0	0	1	0	0	**1**	0	0	0	0	16
10:00	0	7	1	0	0	**2**	0	0	0	0	0	0	0	10
11:00	0	**12**	4	0	**1**	0	0	0	0	0	0	0	0	**17**
12 PM	0	8	0	0	0	0	0	0	0	0	0	0	0	8
13:00	0	6	0	0	0	0	0	0	0	0	0	0	0	6
14:00	0	6	0	0	0	0	0	0	0	0	0	0	0	6
15:00	0	7	**4**	0	0	0	0	0	0	0	0	0	0	11
16:00	0	11	2	0	0	0	0	0	0	0	0	0	0	13
17:00	0	5	2	0	0	0	0	0	0	0	0	0	0	7
18:00	0	**13**	1	0	0	0	0	0	0	0	0	0	0	**14**
19:00	0	5	0	0	0	0	0	0	0	0	0	0	0	5
20:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
21:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Day Total	0	105	21	0	1	4	0	1	1	0	0	0	0	133
Percent	0.0%	78.9%	15.8%	0.0%	0.8%	3.0%	0.0%	0.8%	0.8%	0.0%	0.0%	0.0%	0.0%	
AM Peak		11:00	09:00		11:00	10:00		07:00	09:00					11:00
Vol.		12	5		1	2		1	1					17
PM Peak		18:00	15:00											18:00
Vol.		13	4											14

All Traffic Data

Wheat Ridge, CO 80033

Date Start: 31-Jul-18
Date End: 06-Aug-18
Site Code: 2
RUBY RANCH RD E.O. EMERALD RD

EB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
08/03/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
06:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
07:00	0	4	0	0	0	1	0	0	0	0	0	0	0	5
08:00	0	14	1	0	0	**2**	0	0	0	0	0	0	0	17
09:00	0	**17**	1	0	**1**	1	0	0	0	0	0	0	0	**20**
10:00	0	13	**2**	0	1	1	0	0	0	0	0	0	0	17
11:00	0	13	0	0	0	0	0	0	0	0	0	0	0	13
12 PM	0	10	0	0	0	0	0	0	0	0	0	0	0	10
13:00	0	11	1	0	0	0	0	0	0	0	0	0	0	12
14:00	0	8	0	0	0	0	0	0	0	0	0	0	0	8
15:00	0	7	1	0	0	0	0	0	0	0	0	0	0	8
16:00	0	5	**2**	0	0	0	0	0	0	0	0	0	0	7
17:00	0	**12**	1	0	0	0	0	0	0	0	0	0	0	**13**
18:00	0	8	1	0	0	0	0	0	0	0	0	0	0	9
19:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
20:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
21:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
22:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Day Total	0	140	10	0	2	5	0	0	0	0	0	0	0	157
Percent	0.0%	89.2%	6.4%	0.0%	1.3%	3.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak		09:00	10:00		09:00	08:00								09:00
Vol.		17	2		1	2								20
PM Peak		17:00	16:00											17:00
Vol.		12	2											13

All Traffic Data

Wheat Ridge, CO 80033

Date Start: 31-Jul-18
Date End: 06-Aug-18
Site Code: 2
RUBY RANCH RD E.O. EMERALD RD

EB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
08/04/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
06:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
07:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
08:00	0	8	**3**	0	0	0	0	0	0	0	0	0	0	11
09:00	0	13	0	0	0	0	0	0	0	0	0	0	0	13
10:00	0	**17**	0	0	0	0	0	0	0	0	0	0	0	**17**
11:00	0	13	0	0	0	0	0	0	0	0	0	0	0	13
12 PM	0	**14**	1	0	**1**	0	0	0	0	0	0	0	0	**16**
13:00	0	9	**2**	0	0	0	0	0	0	0	0	0	0	11
14:00	0	7	0	0	0	0	0	0	0	0	0	0	0	7
15:00	0	7	2	0	0	0	0	0	0	0	0	0	0	9
16:00	**1**	9	0	0	0	0	0	0	0	0	0	0	0	10
17:00	0	5	0	0	0	0	0	0	0	0	0	0	0	5
18:00	0	10	0	0	0	0	0	0	0	0	0	0	0	10
19:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
20:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
21:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Day Total	1	125	9	0	1	0	0	0	0	0	0	0	0	136
Percent	0.7%	91.9%	6.6%	0.0%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak		10:00	08:00											10:00
Vol.		17	3											17
PM Peak	16:00	12:00	13:00		12:00									12:00
Vol.	1	14	2		1									16

All Traffic Data

Wheat Ridge, CO 80033

Date Start: 31-Jul-18
Date End: 06-Aug-18
Site Code: 2
RUBY RANCH RD E.O. EMERALD RD

EB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
08/05/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	1	**1**	0	0	0	0	0	0	0	0	0	0	2
05:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
06:00	0	5	1	0	0	0	0	0	0	0	0	0	0	6
07:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
08:00	0	5	0	0	0	0	0	0	0	0	0	0	0	5
09:00	0	7	0	0	0	0	0	0	0	0	0	0	0	7
10:00	0	**20**	0	0	0	0	0	0	0	0	0	0	0	**20**
11:00	0	8	0	0	0	0	0	0	0	0	0	0	0	8
12 PM	0	**14**	0	0	0	0	0	0	0	0	0	0	0	**14**
13:00	0	5	1	0	0	0	0	0	0	0	0	0	0	6
14:00	0	5	2	0	0	0	0	0	0	0	0	0	0	7
15:00	0	6	0	0	0	0	0	0	0	0	0	0	0	6
16:00	0	6	2	0	0	**1**	0	0	0	0	0	0	0	9
17:00	0	7	**3**	0	0	0	0	0	0	0	0	0	0	10
18:00	0	6	0	0	0	0	0	0	0	0	0	0	0	6
19:00	0	7	0	0	0	0	0	0	0	0	0	0	0	7
20:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Day Total	0	110	11	0	0	1	0	0	0	0	0	0	0	122
Percent	0.0%	90.2%	9.0%	0.0%	0.0%	0.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak		10:00	04:00											10:00
Vol.		20	1											20
PM Peak		12:00	17:00			16:00								12:00
Vol.		14	3			1								14

All Traffic Data

Wheat Ridge, CO 80033

Date Start: 31-Jul-18
Date End: 06-Aug-18
Site Code: 2
RUBY RANCH RD E.O. EMERALD RD

EB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
08/06/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
07:00	0	9	2	0	0	0	0	0	0	0	0	0	0	11
08:00	0	13	**3**	0	0	0	0	0	0	0	0	0	0	16
09:00	0	11	3	0	0	0	0	0	0	0	0	0	0	14
10:00	0	**16**	1	0	0	0	0	0	0	0	0	0	0	**17**
11:00	0	12	1	0	**1**	0	0	0	0	0	0	0	0	14
12 PM	0	3	2	0	0	0	0	0	0	0	0	0	0	5
13:00	0	5	0	0	**1**	0	0	0	0	0	0	0	0	6
14:00	0	8	2	0	0	0	0	0	0	0	0	0	0	10
15:00	0	**11**	1	0	0	0	0	0	0	0	0	0	0	12
16:00	0	11	2	0	0	0	0	0	0	0	0	0	0	13
17:00	0	7	**3**	0	0	0	0	0	0	0	0	0	0	10
18:00	**2**	9	3	0	0	0	0	0	0	0	0	0	0	**14**
19:00	0	4	2	0	0	0	0	0	0	0	0	0	0	6
20:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Day Total	2	124	25	0	2	0	0	0	0	0	0	0	0	153
Percent	1.3%	81.0%	16.3%	0.0%	1.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak		10:00	08:00		11:00									10:00
Vol.		16	3		1									17
PM Peak	18:00	15:00	17:00		13:00									18:00
Vol.	2	11	3		1									14
Grand Total	9	809	135	0	11	18	0	1	1	0	0	0	0	984
Percent	0.9%	82.2%	13.7%	0.0%	1.1%	1.8%	0.0%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	

All Traffic Data

Wheat Ridge, CO 80033

Date Start: 31-Jul-18
Date End: 06-Aug-18
Site Code: 2
RUBY RANCH RD E.O. EMERALD RD

WB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
07/31/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00	0	1	3	0	0	0	0	0	0	0	0	0	0	4
07:00	**1**	1	3	0	**1**	0	0	0	0	0	0	0	0	6
08:00	0	6	**5**	0	0	0	0	0	0	0	0	0	0	11
09:00	1	3	1	0	0	**1**	0	0	0	0	0	0	0	6
10:00	0	6	3	0	0	0	0	0	0	0	0	0	0	9
11:00	1	**9**	1	0	0	1	0	0	0	0	0	0	0	**12**
12 PM	0	12	1	0	0	0	0	0	0	0	0	0	0	13
13:00	0	11	**3**	0	0	**1**	0	0	0	0	0	0	0	15
14:00	0	7	1	0	0	1	0	0	0	0	0	0	0	9
15:00	0	14	2	0	0	0	0	0	0	0	0	0	0	16
16:00	0	13	3	0	0	1	0	0	0	0	0	0	0	**17**
17:00	0	**16**	0	0	0	0	0	0	0	0	0	0	0	16
18:00	0	6	0	0	0	0	0	0	0	0	0	0	0	6
19:00	0	4	1	0	0	0	0	0	0	0	0	0	0	5
20:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
21:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
22:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
23:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Day Total	3	116	27	0	1	5	0	0	0	0	0	0	0	152
Percent	2.0%	76.3%	17.8%	0.0%	0.7%	3.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	07:00	11:00	08:00		07:00	09:00								11:00
Vol.	1	9	5		1	1								12
PM Peak		17:00	13:00			13:00								16:00
Vol.		16	3			1								17

All Traffic Data

Wheat Ridge, CO 80033

Date Start: 31-Jul-18
Date End: 06-Aug-18
Site Code: 2
RUBY RANCH RD E.O. EMERALD RD

WB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
08/01/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:00	0	2	1	0	0	0	0	0	0	0	0	0	0	3
08:00	0	7	**3**	0	**1**	0	0	0	0	0	0	0	0	**11**
09:00	0	**9**	1	0	1	0	0	0	0	0	0	0	0	11
10:00	0	9	1	0	0	0	0	0	0	0	0	0	0	10
11:00	0	5	0	0	0	0	0	0	0	0	0	0	0	5
12 PM	0	5	1	0	0	0	0	0	0	0	0	0	0	6
13:00	0	13	0	0	0	0	0	0	0	0	0	0	0	13
14:00	0	**14**	2	0	0	0	0	0	0	0	0	0	0	**16**
15:00	0	9	0	0	**1**	1	0	0	0	0	0	0	0	11
16:00	0	11	0	0	0	**2**	0	0	0	0	0	0	0	13
17:00	**1**	13	0	0	0	0	0	0	0	0	0	0	0	14
18:00	0	9	**3**	0	0	0	0	**1**	**1**	0	0	0	0	14
19:00	0	6	0	0	1	0	0	0	0	0	0	0	0	7
20:00	0	5	0	0	0	0	0	0	0	0	0	0	0	5
21:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Day Total	1	120	12	0	4	3	0	1	1	0	0	0	0	142
Percent	0.7%	84.5%	8.5%	0.0%	2.8%	2.1%	0.0%	0.7%	0.7%	0.0%	0.0%	0.0%	0.0%	
AM Peak		09:00	08:00		08:00									08:00
Vol.		9	3		1									11
PM Peak	17:00	14:00	18:00		15:00	16:00		18:00	18:00					14:00
Vol.	1	14	3		1	2		1	1					16

All Traffic Data

Wheat Ridge, CO 80033

Date Start: 31-Jul-18
Date End: 06-Aug-18
Site Code: 2
RUBY RANCH RD E.O. EMERALD RD

WB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
08/02/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:00	**1**	1	2	0	**1**	**1**	0	0	0	0	0	0	0	6
08:00	0	4	1	0	1	0	0	0	**1**	0	0	0	0	7
09:00	0	**9**	1	0	0	1	0	0	0	0	0	0	0	**11**
10:00	0	6	**3**	0	0	1	0	0	0	0	0	0	0	10
11:00	0	5	1	0	0	1	0	0	0	0	0	0	0	7
12 PM	0	6	0	0	0	0	0	0	0	0	0	0	0	6
13:00	0	9	0	0	0	0	0	0	0	0	0	0	0	9
14:00	0	10	0	0	0	0	0	0	0	0	0	0	0	10
15:00	0	6	**3**	0	0	0	0	0	0	0	0	0	0	9
16:00	0	**21**	1	0	0	0	0	0	0	0	0	0	0	**22**
17:00	0	12	1	0	0	0	0	0	0	0	0	0	0	13
18:00	0	11	0	0	0	0	0	0	0	0	0	0	0	11
19:00	0	8	0	0	0	0	0	0	0	0	0	0	0	8
20:00	0	12	1	0	0	0	0	0	0	0	0	0	0	13
21:00	0	6	0	0	0	0	0	0	0	0	0	0	0	6
22:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Day Total	1	130	14	0	2	4	0	0	1	0	0	0	0	152
Percent	0.7%	85.5%	9.2%	0.0%	1.3%	2.6%	0.0%	0.0%	0.7%	0.0%	0.0%	0.0%	0.0%	
AM Peak	07:00	09:00	10:00		07:00	07:00			08:00					09:00
Vol.	1	9	3		1	1			1					11
PM Peak		16:00	15:00											16:00
Vol.		21	3											22

All Traffic Data

Wheat Ridge, CO 80033

Date Start: 31-Jul-18
Date End: 06-Aug-18
Site Code: 2
RUBY RANCH RD E.O. EMERALD RD

WB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
08/03/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
06:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
07:00	0	5	1	0	0	0	0	0	0	0	0	0	0	6
08:00	0	5	**3**	0	**1**	**3**	0	0	0	0	0	0	0	12
09:00	0	6	0	0	0	2	0	0	0	0	0	0	0	8
10:00	**1**	**10**	1	0	1	0	0	0	0	0	0	0	0	**13**
11:00	0	9	0	0	0	0	0	0	0	0	0	0	0	9
12 PM	0	16	**1**	0	0	0	0	0	0	0	0	0	0	**17**
13:00	0	8	0	0	0	0	0	0	0	0	0	0	0	8
14:00	0	**17**	0	0	0	0	0	0	0	0	0	0	0	17
15:00	0	6	0	0	0	0	0	0	0	0	0	0	0	6
16:00	0	10	0	0	0	0	0	0	0	0	0	0	0	10
17:00	0	13	0	0	0	0	0	0	0	0	0	0	0	13
18:00	0	12	0	0	0	0	0	0	0	0	0	0	0	12
19:00	0	12	1	0	0	0	0	0	0	0	0	0	0	13
20:00	0	8	0	0	0	0	0	0	0	0	0	0	0	8
21:00	0	7	0	0	0	0	0	0	0	0	0	0	0	7
22:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
23:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
Day Total	1	153	7	0	2	5	0	0	0	0	0	0	0	168
Percent	0.6%	91.1%	4.2%	0.0%	1.2%	3.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	10:00	10:00	08:00		08:00	08:00								10:00
Vol.	1	10	3		1	3								13
PM Peak		14:00	12:00											12:00
Vol.		17	1											17

All Traffic Data

Wheat Ridge, CO 80033

Date Start: 31-Jul-18
Date End: 06-Aug-18
Site Code: 2
RUBY RANCH RD E.O. EMERALD RD

WB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
08/04/18	0	1	0	0	0	0	0	0	0	0	0	0	0	1
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
08:00	0	3	**1**	0	0	0	0	0	0	0	0	0	0	4
09:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
10:00	0	6	0	0	**1**	0	0	0	0	0	0	0	0	**7**
11:00	0	**7**	0	0	0	0	0	0	0	0	0	0	0	7
12 PM	0	8	0	0	0	0	0	0	0	0	0	0	0	8
13:00	0	13	2	0	0	0	0	0	0	0	0	0	0	15
14:00	0	**15**	0	0	0	0	0	0	0	0	0	0	0	15
15:00	0	10	3	0	0	0	0	0	0	0	0	0	0	13
16:00	0	8	0	0	**1**	0	0	0	0	0	0	0	0	9
17:00	**1**	5	0	0	0	0	0	0	0	0	0	0	0	6
18:00	0	12	**4**	0	0	0	0	0	0	0	0	0	0	**16**
19:00	0	10	0	0	0	0	0	0	0	0	0	0	0	10
20:00	0	9	0	0	0	0	0	0	0	0	0	0	0	9
21:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Day Total	1	116	10	0	2	0	0	0	0	0	0	0	0	129
Percent	0.8%	89.9%	7.8%	0.0%	1.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak		11:00	08:00		10:00									10:00
Vol.		7	1		1									7
PM Peak	17:00	14:00	18:00		16:00									18:00
Vol.	1	15	4		1									16

All Traffic Data

Wheat Ridge, CO 80033

Date Start: 31-Jul-18
Date End: 06-Aug-18
Site Code: 2
RUBY RANCH RD E.O. EMERALD RD

WB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
08/05/18	0	1	0	0	0	0	0	0	0	0	0	0	0	1
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
09:00	0	3	0	0	0	**1**	0	0	0	0	0	0	0	4
10:00	0	**7**	0	0	0	0	0	0	0	0	0	0	0	**7**
11:00	0	7	0	0	0	0	0	0	0	0	0	0	0	7
12 PM	0	5	0	0	0	0	0	0	0	0	0	0	0	5
13:00	0	7	1	0	0	0	0	0	0	0	0	0	0	8
14:00	0	5	**2**	0	0	0	0	0	0	0	0	0	0	7
15:00	0	8	0	0	0	0	0	0	0	0	0	0	0	8
16:00	0	5	1	0	0	0	0	0	0	0	0	0	0	6
17:00	**1**	**10**	1	0	0	0	0	0	0	0	0	0	0	**12**
18:00	1	9	2	0	0	0	0	0	0	0	0	0	0	12
19:00	0	7	0	0	0	0	0	0	0	0	0	0	0	7
20:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
21:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
22:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
23:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Day Total	2	87	8	0	0	1	0	0	0	0	0	0	0	98
Percent	2.0%	88.8%	8.2%	0.0%	0.0%	1.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak		10:00				09:00								10:00
Vol.		7				1								7
PM Peak	17:00	17:00	14:00											17:00
Vol.	1	10	2											12

All Traffic Data

Wheat Ridge, CO 80033

Date Start: 31-Jul-18
Date End: 06-Aug-18
Site Code: 2
RUBY RANCH RD E.O. EMERALD RD

WB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
08/06/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
07:00	0	8	0	0	0	0	0	0	0	0	0	0	0	8
08:00	0	6	3	0	0	0	0	0	0	0	0	0	0	9
09:00	**2**	11	**4**	0	**1**	0	0	0	0	0	0	0	0	**18**
10:00	0	6	0	0	0	0	0	0	0	0	0	0	0	6
11:00	1	**12**	0	0	1	**1**	0	0	0	0	0	0	0	15
12 PM	0	8	2	0	0	0	0	0	0	0	0	0	0	10
13:00	**1**	**16**	**3**	0	0	0	0	**1**	0	0	0	0	0	**21**
14:00	0	10	1	0	0	0	0	0	0	0	0	0	0	11
15:00	0	7	2	0	**1**	0	0	0	0	0	0	0	0	10
16:00	0	5	1	0	0	0	0	0	0	0	0	0	0	6
17:00	0	12	2	0	0	0	0	0	0	0	0	0	0	14
18:00	0	12	0	0	0	0	0	0	0	0	0	0	0	12
19:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
20:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
21:00	0	5	0	0	0	0	0	0	0	0	0	0	0	5
22:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Day Total	4	129	19	0	3	1	0	1	0	0	0	0	0	157
Percent	2.5%	82.2%	12.1%	0.0%	1.9%	0.6%	0.0%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	09:00	11:00	09:00		09:00	11:00								09:00
Vol.	2	12	4		1	1								18
PM Peak	13:00	13:00	13:00		15:00			13:00						13:00
Vol.	1	16	3		1			1						21
Grand Total	13	851	97	0	14	19	0	2	2	0	0	0	0	998
Percent	1.3%	85.3%	9.7%	0.0%	1.4%	1.9%	0.0%	0.2%	0.2%	0.0%	0.0%	0.0%	0.0%	

All Traffic Data

Wheat Ridge, CO 80033

LOCATION 3

Date Start: 31-Jul-18
Date End: 06-Aug-18
Site Code: 3
EMERALD RD N.O. RUBY RANCH RD

NB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
07/31/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00	0	4	1	0	0	0	0	0	0	0	0	0	0	5
07:00	0	2	4	0	0	0	0	0	0	0	0	0	0	6
08:00	0	4	**6**	0	0	0	0	0	0	0	0	0	0	**10**
09:00	**1**	2	1	0	0	**1**	0	0	0	0	0	0	0	5
10:00	0	2	3	0	0	0	0	0	0	0	0	0	0	5
11:00	0	**7**	2	0	**1**	0	0	0	0	0	0	0	0	10
12 PM	0	4	0	0	0	0	0	0	0	0	0	0	0	4
13:00	0	5	3	0	0	**1**	0	0	0	0	0	0	0	9
14:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
15:00	0	**6**	2	0	0	0	0	0	0	0	0	0	0	8
16:00	0	5	**4**	0	0	1	0	0	0	0	0	0	0	**10**
17:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
18:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
19:00	0	3	2	0	0	0	0	0	0	0	0	0	0	5
20:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
21:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Day Total	1	54	28	0	1	3	0	0	0	0	0	0	0	87
Percent	1.1%	62.1%	32.2%	0.0%	1.1%	3.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	09:00	11:00	08:00		11:00	09:00								08:00
Vol.	1	7	6		1	1								10
PM Peak		15:00	16:00			13:00								16:00
Vol.		6	4			1								10

All Traffic Data

Wheat Ridge, CO 80033

Date Start: 31-Jul-18
Date End: 06-Aug-18
Site Code: 3
EMERALD RD N.O. RUBY RANCH RD

NB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
08/01/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
07:00	0	0	2	0	0	0	0	0	0	0	0	0	0	2
08:00	0	3	**3**	0	**1**	0	0	0	0	0	0	0	0	7
09:00	0	**11**	1	0	1	0	0	0	0	0	0	0	0	**13**
10:00	0	4	2	0	0	0	0	0	0	0	0	0	0	6
11:00	0	2	1	0	0	0	0	0	0	0	0	0	0	3
12 PM	0	2	1	0	0	0	0	0	0	0	0	0	0	3
13:00	0	4	1	0	0	0	0	0	0	0	0	0	0	5
14:00	0	4	**2**	0	0	0	0	0	0	0	0	0	0	6
15:00	0	2	0	0	**1**	1	0	0	0	0	0	0	0	4
16:00	0	**6**	0	0	0	**2**	0	0	0	0	0	0	0	**8**
17:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
18:00	0	4	1	0	0	0	0	0	**1**	0	0	0	0	6
19:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
20:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
21:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Day Total	0	50	16	0	3	3	0	0	1	0	0	0	0	73
Percent	0.0%	68.5%	21.9%	0.0%	4.1%	4.1%	0.0%	0.0%	1.4%	0.0%	0.0%	0.0%	0.0%	
AM Peak		09:00	08:00		08:00									09:00
Vol.		11	3		1									13
PM Peak		16:00	14:00		15:00	16:00			18:00					16:00
Vol.		6	2		1	2			1					8

All Traffic Data

Wheat Ridge, CO 80033

Date Start: 31-Jul-18
Date End: 06-Aug-18
Site Code: 3
EMERALD RD N.O. RUBY RANCH RD

NB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
08/02/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:00	0	1	**2**	0	**1**	**1**	0	0	0	0	0	0	0	5
08:00	0	3	2	0	1	0	0	0	**1**	0	0	0	0	**7**
09:00	0	3	0	0	0	1	0	0	0	0	0	0	0	4
10:00	0	5	2	0	0	0	0	0	0	0	0	0	0	7
11:00	0	**6**	0	0	0	1	0	0	0	0	0	0	0	7
12 PM	0	1	1	0	0	0	0	0	0	0	0	0	0	2
13:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
14:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
15:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
16:00	0	5	**2**	0	0	0	0	0	0	0	0	0	0	**7**
17:00	0	**6**	1	0	0	0	0	0	0	0	0	0	0	7
18:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
19:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
20:00	0	4	1	0	0	0	0	0	0	0	0	0	0	5
21:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Day Total	0	51	12	0	2	3	0	0	1	0	0	0	0	69
Percent	0.0%	73.9%	17.4%	0.0%	2.9%	4.3%	0.0%	0.0%	1.4%	0.0%	0.0%	0.0%	0.0%	
AM Peak		11:00	07:00		07:00	07:00			08:00					08:00
Vol.		6	2		1	1			1					7
PM Peak		17:00	16:00											16:00
Vol.		6	2											7

All Traffic Data

Wheat Ridge, CO 80033

Date Start: 31-Jul-18
Date End: 06-Aug-18
Site Code: 3
EMERALD RD N.O. RUBY RANCH RD

NB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
08/03/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
07:00	0	5	1	0	0	0	0	0	0	0	0	0	0	6
08:00	0	1	**2**	0	**1**	**2**	0	0	0	0	0	0	0	6
09:00	0	3	0	0	0	1	0	0	0	0	0	0	0	4
10:00	0	**8**	2	0	1	0	0	0	0	0	0	0	0	**11**
11:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
12 PM	0	5	**1**	0	0	0	0	0	0	0	0	0	0	6
13:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
14:00	0	**7**	0	0	0	0	0	0	0	0	0	0	0	**7**
15:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
16:00	0	6	0	0	0	0	0	0	0	0	0	0	0	6
17:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
18:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
19:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
20:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
21:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
22:00	**1**	3	0	0	0	0	0	0	0	0	0	0	0	4
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Day Total	1	61	7	0	2	3	0	0	0	0	0	0	0	74
Percent	1.4%	82.4%	9.5%	0.0%	2.7%	4.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak		10:00	08:00		08:00	08:00								10:00
Vol.		8	2		1	2								11
PM Peak	22:00	14:00	12:00											14:00
Vol.	1	7	1											7

All Traffic Data

Wheat Ridge, CO 80033

Date Start: 31-Jul-18
Date End: 06-Aug-18
Site Code: 3
EMERALD RD N.O. RUBY RANCH RD

NB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
08/04/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	0	0	**1**	0	0	0	0	0	0	0	0	0	0	1
09:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
10:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
11:00	0	**5**	0	0	0	0	0	0	0	0	0	0	0	**5**
12 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	1
13:00	0	6	0	0	0	0	0	0	0	0	0	0	0	6
14:00	0	**12**	0	0	0	0	0	0	0	0	0	0	0	**12**
15:00	0	6	0	0	0	0	0	0	0	0	0	0	0	6
16:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
17:00	0	5	0	0	0	0	0	0	0	0	0	0	0	5
18:00	0	3	**3**	0	0	0	0	0	0	0	0	0	0	6
19:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
20:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
21:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Day Total	0	53	5	0	0	0	0	0	0	0	0	0	0	58
Percent	0.0%	91.4%	8.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak		11:00	08:00											11:00
Vol.		5	1											5
PM Peak		14:00	18:00											14:00
Vol.		12	3											12

All Traffic Data

Wheat Ridge, CO 80033

Date Start: 31-Jul-18
Date End: 06-Aug-18
Site Code: 3
EMERALD RD N.O. RUBY RANCH RD

NB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
08/05/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
09:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
10:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
11:00	0	**4**	0	0	0	0	0	0	0	0	0	0	0	**4**
12 PM	0	2	0	0	0	0	0	0	0	0	0	0	0	2
13:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
14:00	0	2	1	0	0	0	0	0	0	0	0	0	0	3
15:00	0	5	0	0	0	0	0	0	0	0	0	0	0	5
16:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
17:00	0	**6**	0	0	0	0	0	0	0	0	0	0	0	6
18:00	0	5	**2**	0	0	0	0	0	0	0	0	0	0	**7**
19:00	0	6	0	0	0	0	0	0	0	0	0	0	0	6
20:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Day Total	0	43	4	0	0	0	0	0	0	0	0	0	0	47
Percent	0.0%	91.5%	8.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak		11:00												11:00
Vol.		4												4
PM Peak		17:00	18:00											18:00
Vol.		6	2											7

All Traffic Data

Wheat Ridge, CO 80033

Date Start: 31-Jul-18
Date End: 06-Aug-18
Site Code: 3
EMERALD RD N.O. RUBY RANCH RD

NB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
08/06/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
07:00	0	5	1	0	0	0	0	0	0	0	0	0	0	6
08:00	1	1	1	0	0	0	0	0	0	0	0	0	0	3
09:00	**2**	**8**	**3**	0	**1**	0	**1**	0	0	0	0	0	0	**15**
10:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
11:00	0	4	0	0	1	0	0	0	**1**	0	0	0	0	6
12 PM	0	1	1	0	0	0	0	0	0	0	0	0	0	2
13:00	0	**9**	0	0	0	0	0	0	0	0	0	0	0	9
14:00	0	5	1	0	0	0	0	0	0	0	0	0	0	6
15:00	0	2	1	0	**1**	0	0	0	0	0	0	0	0	4
16:00	0	4	1	0	0	0	0	0	0	0	0	0	0	5
17:00	**1**	7	**2**	0	0	0	0	0	0	0	0	0	0	**10**
18:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
19:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
20:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
21:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Day Total	4	59	12	0	3	0	1	0	1	0	0	0	0	80
Percent	5.0%	73.8%	15.0%	0.0%	3.8%	0.0%	1.3%	0.0%	1.3%	0.0%	0.0%	0.0%	0.0%	
AM Peak	09:00	09:00	09:00		09:00		09:00		11:00					09:00
Vol.	2	8	3		1		1		1					15
PM Peak	17:00	13:00	17:00		15:00									17:00
Vol.	1	9	2		1									10
Grand Total	6	371	84	0	11	12	1	0	3	0	0	0	0	488
Percent	1.2%	76.0%	17.2%	0.0%	2.3%	2.5%	0.2%	0.0%	0.6%	0.0%	0.0%	0.0%	0.0%	

All Traffic Data

Wheat Ridge, CO 80033

Date Start: 31-Jul-18
Date End: 06-Aug-18
Site Code: 3
EMERALD RD N.O. RUBY RANCH RD

SB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
07/31/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
07:00	0	**4**	4	0	0	0	0	0	0	0	0	0	0	8
08:00	0	2	2	0	0	0	0	0	0	0	0	0	0	4
09:00	**1**	4	**5**	0	0	0	0	0	0	0	0	0	0	**10**
10:00	0	2	3	0	0	**1**	0	0	0	0	0	0	0	6
11:00	1	4	1	0	0	0	0	0	0	0	0	0	0	6
12 PM	0	5	2	0	0	**1**	0	0	0	0	0	0	0	8
13:00	0	**7**	2	0	0	0	0	0	0	0	0	0	0	9
14:00	0	1	2	0	0	1	0	0	0	0	0	0	0	4
15:00	0	7	**3**	0	0	0	0	0	0	0	0	0	0	10
16:00	0	7	3	0	**1**	1	0	0	0	0	0	0	0	**12**
17:00	0	2	2	0	0	0	0	0	0	0	0	0	0	4
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
20:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
21:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Day Total	2	51	30	0	1	4	0	0	0	0	0	0	0	88
Percent	2.3%	58.0%	34.1%	0.0%	1.1%	4.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	09:00	07:00	09:00			10:00								09:00
Vol.	1	4	5			1								10
PM Peak		13:00	15:00		16:00	12:00								16:00
Vol.		7	3		1	1								12

All Traffic Data

Wheat Ridge, CO 80033

Date Start: 31-Jul-18
Date End: 06-Aug-18
Site Code: 3
EMERALD RD N.O. RUBY RANCH RD

SB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
08/01/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
07:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
08:00	0	2	1	0	0	0	0	0	0	0	0	0	0	3
09:00	0	**6**	**4**	0	**2**	0	0	0	0	0	0	0	0	**12**
10:00	0	3	2	0	0	0	0	0	0	0	0	0	0	5
11:00	0	2	3	0	0	0	0	0	0	0	0	0	0	5
12 PM	0	1	2	0	0	0	0	0	0	0	0	0	0	3
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:00	0	1	2	0	0	0	0	0	0	0	0	0	0	3
15:00	0	4	2	0	**1**	0	0	0	0	0	0	0	0	7
16:00	0	**5**	**4**	0	0	**2**	0	0	0	0	0	0	0	**11**
17:00	0	5	1	0	1	1	0	0	0	0	0	0	0	8
18:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
19:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
20:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
21:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Day Total	0	34	23	0	4	3	0	0	0	0	0	0	0	64
Percent	0.0%	53.1%	35.9%	0.0%	6.3%	4.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak		09:00	09:00		09:00									09:00
Vol.		6	4		2									12
PM Peak		16:00	16:00		15:00	16:00								16:00
Vol.		5	4		1	2								11

All Traffic Data

Wheat Ridge, CO 80033

Date Start: 31-Jul-18
Date End: 06-Aug-18
Site Code: 3
EMERALD RD N.O. RUBY RANCH RD

SB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
08/02/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:00	0	3	0	0	0	0	0	**1**	0	0	0	0	0	4
08:00	0	1	2	0	0	1	0	0	0	0	0	0	0	4
09:00	**1**	**4**	**3**	0	0	**2**	0	0	0	0	0	0	0	**10**
10:00	0	2	1	0	**1**	2	0	0	0	0	0	0	0	6
11:00	0	2	2	0	1	0	0	0	0	0	0	0	0	5
12 PM	0	2	**3**	0	0	0	0	0	0	0	0	0	0	5
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
15:00	0	2	2	0	0	0	0	0	0	0	0	0	0	4
16:00	0	3	2	0	0	0	0	0	0	0	0	0	0	5
17:00	0	1	2	0	0	0	0	0	0	0	0	0	0	3
18:00	0	**5**	1	0	0	0	0	0	0	0	0	0	0	**6**
19:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
20:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
21:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Day Total	1	31	18	0	2	5	0	1	0	0	0	0	0	58
Percent	1.7%	53.4%	31.0%	0.0%	3.4%	8.6%	0.0%	1.7%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	09:00	09:00	09:00		10:00	09:00		07:00						09:00
Vol.	1	4	3		1	2		1						10
PM Peak		18:00	12:00											18:00
Vol.		5	3											6

All Traffic Data

Wheat Ridge, CO 80033

Date Start: 31-Jul-18
Date End: 06-Aug-18
Site Code: 3
EMERALD RD N.O. RUBY RANCH RD

SB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
08/03/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
07:00	0	2	0	0	0	**1**	0	0	0	0	0	0	0	3
08:00	0	3	**2**	0	0	1	0	0	0	0	0	0	0	6
09:00	0	8	1	0	**1**	1	0	0	0	0	0	0	0	11
10:00	0	**10**	2	0	1	1	0	0	0	0	0	0	0	**14**
11:00	0	5	1	0	0	0	0	0	0	0	0	0	0	6
12 PM	0	3	0	0	0	0	0	0	0	0	0	0	0	3
13:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
14:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
15:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
16:00	0	1	**2**	0	0	0	0	0	0	0	0	0	0	3
17:00	0	**5**	2	0	0	0	0	0	0	0	0	0	0	**7**
18:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
19:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
20:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
21:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Day Total	0	52	11	0	2	4	0	0	0	0	0	0	0	69
Percent	0.0%	75.4%	15.9%	0.0%	2.9%	5.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak		10:00	08:00		09:00	07:00								10:00
Vol.		10	2		1	1								14
PM Peak		17:00	16:00											17:00
Vol.		5	2											7

All Traffic Data

Wheat Ridge, CO 80033

Date Start: 31-Jul-18
Date End: 06-Aug-18
Site Code: 3
EMERALD RD N.O. RUBY RANCH RD

SB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
08/04/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
06:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
07:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
08:00	0	1	**2**	0	0	0	0	0	0	0	0	0	0	3
09:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
10:00	0	6	0	0	0	0	0	0	0	0	0	0	0	6
11:00	0	**9**	0	0	0	0	0	0	0	0	0	0	0	**9**
12 PM	0	**5**	0	0	0	0	0	0	0	0	0	0	0	5
13:00	0	2	**2**	0	0	0	0	0	0	0	0	0	0	4
14:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
15:00	0	5	1	0	0	0	0	0	0	0	0	0	0	**6**
16:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
17:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
18:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
19:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
20:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
21:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Day Total	0	48	7	0	0	0	0	0	0	0	0	0	0	55
Percent	0.0%	87.3%	12.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak		11:00	08:00											11:00
Vol.		9	2											9
PM Peak		12:00	13:00											15:00
Vol.		5	2											6

All Traffic Data

Wheat Ridge, CO 80033

Date Start: 31-Jul-18
Date End: 06-Aug-18
Site Code: 3
EMERALD RD N.O. RUBY RANCH RD

SB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
08/05/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	1	**1**	0	0	0	0	0	0	0	0	0	0	2
06:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
07:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
08:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
09:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
10:00	0	**9**	0	0	0	0	0	0	0	0	0	0	0	**9**
11:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
12 PM	0	**6**	**1**	0	0	0	0	0	0	0	0	0	0	**7**
13:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
14:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
15:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
16:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
17:00	0	5	0	0	0	0	0	0	0	0	0	0	0	5
18:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
19:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
20:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
21:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Day Total	0	52	4	0	0	0	0	0	0	0	0	0	0	56
Percent	0.0%	92.9%	7.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak		10:00	05:00											10:00
Vol.		9	1											9
PM Peak		12:00	12:00											12:00
Vol.		6	1											7

All Traffic Data

Wheat Ridge, CO 80033

Date Start: 31-Jul-18
Date End: 06-Aug-18
Site Code: 3
EMERALD RD N.O. RUBY RANCH RD

SB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
08/06/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
07:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
08:00	0	4	**3**	0	0	0	0	0	0	0	0	0	0	7
09:00	0	**7**	1	0	0	0	0	0	0	0	0	0	0	**8**
10:00	0	6	2	0	0	0	0	0	0	0	0	0	0	8
11:00	0	3	1	0	**1**	0	0	0	0	0	0	0	0	5
12 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:00	0	3	2	0	**1**	0	0	0	0	0	0	0	0	6
14:00	0	**5**	0	0	0	0	0	0	0	0	0	0	0	5
15:00	0	5	0	0	0	0	0	0	0	0	0	0	0	5
16:00	0	3	4	0	0	0	0	0	0	0	0	0	0	7
17:00	0	3	4	0	0	0	0	0	0	0	0	0	0	7
18:00	**1**	3	**5**	0	1	**1**	0	0	0	0	0	0	0	**11**
19:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Day Total	1	48	23	0	3	1	0	0	0	0	0	0	0	76
Percent	1.3%	63.2%	30.3%	0.0%	3.9%	1.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak		09:00	08:00		11:00									09:00
Vol.		7	3		1									8
PM Peak	18:00	14:00	18:00		13:00	18:00								18:00
Vol.	1	5	5		1	1								11
Grand Total	4	316	116	0	12	17	0	1	0	0	0	0	0	466
Percent	0.9%	67.8%	24.9%	0.0%	2.6%	3.6%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	

All Traffic Data

Wheat Ridge, CO 80033

LOCATION 4

Date Start: 31-Jul-18
Date End: 06-Aug-18
Site Code: 4
S RUBY RD S.O RUBY RANCH RD

NB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
07/31/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
06:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
07:00	0	2	**2**	0	0	0	0	0	0	0	0	0	0	4
08:00	0	**7**	0	0	0	0	0	0	0	0	0	0	0	**7**
09:00	0	5	1	0	0	0	0	0	0	0	0	0	0	6
10:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
11:00	**1**	3	0	0	0	0	0	0	0	0	0	0	0	4
12 PM	0	3	1	0	0	0	0	0	0	0	0	0	0	4
13:00	0	4	1	0	0	0	0	0	0	0	0	0	0	5
14:00	0	2	0	0	**1**	0	0	0	0	0	0	0	0	3
15:00	0	**9**	1	0	1	0	0	0	0	0	0	0	0	**11**
16:00	0	6	1	0	0	0	0	0	0	0	0	0	0	7
17:00	0	5	0	0	0	0	0	0	0	0	0	0	0	5
18:00	0	1	**3**	0	0	0	0	0	0	0	0	0	0	4
19:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
20:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
21:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Day Total	1	57	10	0	2	0	0	0	0	0	0	0	0	70
Percent	1.4%	81.4%	14.3%	0.0%	2.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	11:00	08:00	07:00											08:00
Vol.	1	7	2											7
PM Peak		15:00	18:00		14:00									15:00
Vol.		9	3		1									11

All Traffic Data

Wheat Ridge, CO 80033

Date Start: 31-Jul-18
Date End: 06-Aug-18
Site Code: 4
S RUBY RD S.O RUBY RANCH RD

NB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
08/01/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
06:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:00	0	2	1	0	**1**	0	0	0	0	0	0	0	0	4
08:00	0	**10**	0	0	0	0	0	0	0	0	0	0	0	**10**
09:00	0	4	**3**	0	0	0	0	0	0	0	0	0	0	7
10:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
11:00	0	3	2	0	0	0	0	0	0	0	0	0	0	5
12 PM	0	3	**4**	0	0	0	0	0	0	0	0	0	0	7
13:00	0	2	1	0	**1**	0	0	0	0	0	0	0	0	4
14:00	0	2	1	0	0	0	0	0	0	0	0	0	0	3
15:00	0	**6**	2	0	0	0	0	0	0	0	0	0	0	**8**
16:00	0	6	0	0	0	0	0	0	0	0	0	0	0	6
17:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
18:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
19:00	0	0	0	0	1	0	0	0	0	0	0	0	0	1
20:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
21:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Day Total	0	52	15	0	3	0	0	0	0	0	0	0	0	70
Percent	0.0%	74.3%	21.4%	0.0%	4.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak		08:00	09:00		07:00									08:00
Vol.		10	3		1									10
PM Peak		15:00	12:00		13:00									15:00
Vol.		6	4		1									8

All Traffic Data

Wheat Ridge, CO 80033

Date Start: 31-Jul-18
Date End: 06-Aug-18
Site Code: 4
S RUBY RD S.O RUBY RANCH RD

NB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
08/02/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
06:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:00	0	2	2	0	**1**	0	0	0	0	0	0	0	0	5
08:00	0	6	1	0	0	0	0	0	0	0	0	0	0	7
09:00	0	**7**	**3**	0	0	0	0	0	0	0	0	0	0	**10**
10:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
11:00	0	7	1	0	0	0	0	0	0	0	0	0	0	8
12 PM	0	2	0	0	0	0	0	0	0	0	0	0	0	2
13:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
14:00	0	4	1	0	0	0	0	0	0	0	0	0	0	5
15:00	0	3	**4**	0	0	0	0	0	0	0	0	0	0	7
16:00	0	**5**	2	0	0	0	0	0	0	0	0	0	0	7
17:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
18:00	0	5	3	0	0	0	0	0	0	0	0	0	0	**8**
19:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
20:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
21:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Day Total	0	55	20	0	1	0	0	0	0	0	0	0	0	76
Percent	0.0%	72.4%	26.3%	0.0%	1.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak		09:00	09:00		07:00									09:00
Vol.		7	3		1									10
PM Peak		16:00	15:00											18:00
Vol.		5	4											8

All Traffic Data

Wheat Ridge, CO 80033

Date Start: 31-Jul-18
Date End: 06-Aug-18
Site Code: 4
S RUBY RD S.O RUBY RANCH RD

NB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
08/03/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
06:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
07:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
08:00	0	**10**	0	0	0	0	0	0	0	0	0	0	0	**10**
09:00	0	7	1	0	0	0	0	0	0	0	0	0	0	8
10:00	0	3	0	0	0	**1**	0	0	0	0	0	0	0	4
11:00	0	4	**2**	0	0	0	0	0	0	0	0	0	0	6
12 PM	0	5	**2**	0	0	0	0	0	0	0	0	0	0	7
13:00	0	**8**	0	0	0	0	0	0	0	0	0	0	0	**8**
14:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
15:00	0	6	1	0	0	0	0	0	0	0	0	0	0	7
16:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
17:00	0	3	2	0	0	0	0	0	0	0	0	0	0	5
18:00	0	5	2	0	0	0	0	0	0	0	0	0	0	7
19:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
20:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
21:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
22:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Day Total	0	72	12	0	0	1	0	0	0	0	0	0	0	85
Percent	0.0%	84.7%	14.1%	0.0%	0.0%	1.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak		08:00	11:00			10:00								08:00
Vol.		10	2			1								10
PM Peak		13:00	12:00											13:00
Vol.		8	2											8

All Traffic Data

Wheat Ridge, CO 80033

Date Start: 31-Jul-18
Date End: 06-Aug-18
Site Code: 4
S RUBY RD S.O RUBY RANCH RD

NB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
08/04/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
06:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	0	8	0	0	**1**	0	0	0	0	0	0	0	0	9
09:00	0	8	0	0	0	0	0	0	0	0	0	0	0	8
10:00	0	**10**	**1**	0	0	0	0	0	0	0	0	0	0	**11**
11:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
12 PM	0	**8**	**3**	0	**1**	0	0	0	0	0	0	0	0	**12**
13:00	0	5	2	0	0	0	0	0	0	0	0	0	0	7
14:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
15:00	0	2	2	0	0	0	0	0	0	0	0	0	0	4
16:00	0	5	0	0	0	0	0	0	0	0	0	0	0	5
17:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
18:00	0	8	0	0	0	0	0	0	0	0	0	0	0	8
19:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
20:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
21:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Day Total	0	68	8	0	2	0	0	0	0	0	0	0	0	78
Percent	0.0%	87.2%	10.3%	0.0%	2.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak		10:00	10:00		08:00									10:00
Vol.		10	1		1									11
PM Peak		12:00	12:00		12:00									12:00
Vol.		8	3		1									12

All Traffic Data

Wheat Ridge, CO 80033

Date Start: 31-Jul-18
Date End: 06-Aug-18
Site Code: 4
S RUBY RD S.O RUBY RANCH RD

NB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
08/05/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	**1**	0	0	0	0	0	0	0	0	0	0	1
05:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
06:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
07:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
08:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
09:00	0	4	1	0	0	0	0	0	0	0	0	0	0	5
10:00	0	**7**	0	0	0	0	0	0	0	0	0	0	0	**7**
11:00	0	5	0	0	0	0	0	0	0	0	0	0	0	5
12 PM	0	**4**	0	0	0	0	0	0	0	0	0	0	0	4
13:00	0	3	**2**	0	0	0	0	0	0	0	0	0	0	**5**
14:00	0	2	2	0	0	0	0	0	0	0	0	0	0	4
15:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
16:00	0	2	1	0	0	**1**	0	0	0	0	0	0	0	4
17:00	0	3	2	0	0	0	0	0	0	0	0	0	0	5
18:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
19:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
20:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Day Total	0	49	10	0	0	1	0	0	0	0	0	0	0	60
Percent	0.0%	81.7%	16.7%	0.0%	0.0%	1.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak		10:00	04:00											10:00
Vol.		7	1											7
PM Peak		12:00	13:00			16:00								13:00
Vol.		4	2			1								5

All Traffic Data

Wheat Ridge, CO 80033

Date Start: 31-Jul-18
Date End: 06-Aug-18
Site Code: 4
S RUBY RD S.O RUBY RANCH RD

NB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
08/06/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:00	0	6	2	0	0	0	0	0	0	0	0	0	0	8
08:00	0	7	1	0	**1**	0	0	0	0	0	0	0	0	9
09:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
10:00	0	4	**3**	0	1	0	0	0	0	0	0	0	0	8
11:00	0	**8**	2	0	0	0	0	0	0	0	0	0	0	**10**
12 PM	0	2	2	0	0	0	0	0	0	0	0	0	0	4
13:00	0	0	0	0	**1**	0	0	0	0	0	0	0	0	1
14:00	0	4	3	0	0	0	0	0	0	0	0	0	0	7
15:00	0	**6**	**4**	0	0	**1**	0	0	0	0	0	0	0	**11**
16:00	0	5	4	0	0	0	0	0	0	0	0	0	0	9
17:00	0	4	0	0	1	0	0	0	0	0	0	0	0	5
18:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
19:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
20:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Day Total	0	55	23	0	4	1	0	0	0	0	0	0	0	83
Percent	0.0%	66.3%	27.7%	0.0%	4.8%	1.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak		11:00	10:00		08:00									11:00
Vol.		8	3		1									10
PM Peak		15:00	15:00		13:00	15:00								15:00
Vol.		6	4		1	1								11
Grand Total	1	408	98	0	12	3	0	0	0	0	0	0	0	522
Percent	0.2%	78.2%	18.8%	0.0%	2.3%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	

All Traffic Data

Wheat Ridge, CO 80033

Date Start: 31-Jul-18
Date End: 06-Aug-18
Site Code: 4
S RUBY RD S.O RUBY RANCH RD

SB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
07/31/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
09:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00	0	**3**	**1**	0	0	0	0	0	0	0	0	0	0	**4**
11:00	**1**	1	0	0	0	0	0	0	0	0	0	0	0	2
12 PM	0	9	1	0	0	0	0	0	0	0	0	0	0	10
13:00	0	1	3	0	0	0	0	0	0	0	0	0	0	4
14:00	0	5	0	0	**1**	0	0	0	0	0	0	0	0	6
15:00	**1**	**10**	0	0	1	0	0	0	0	0	0	0	0	12
16:00	0	6	0	0	0	0	0	0	0	0	0	0	0	6
17:00	0	10	**4**	0	0	0	0	0	0	0	0	0	0	**14**
18:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
19:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
20:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
21:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
22:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
23:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Day Total	2	58	11	0	2	0	0	0	0	0	0	0	0	73
Percent	2.7%	79.5%	15.1%	0.0%	2.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	11:00	10:00	10:00											10:00
Vol.	1	3	1											4
PM Peak	15:00	15:00	17:00		14:00									17:00
Vol.	1	10	4		1									14

All Traffic Data

Wheat Ridge, CO 80033

Date Start: 31-Jul-18
Date End: 06-Aug-18
Site Code: 4
S RUBY RD S.O RUBY RANCH RD

SB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
08/01/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
08:00	0	3	0	0	**1**	0	0	0	0	0	0	0	0	4
09:00	0	**5**	**4**	0	0	0	0	0	0	0	0	0	0	**9**
10:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
11:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
12 PM	**1**	3	1	0	0	0	0	0	0	0	0	0	0	5
13:00	0	5	1	0	0	0	0	0	0	0	0	0	0	6
14:00	0	5	**5**	0	0	0	0	0	0	0	0	0	0	**10**
15:00	0	4	2	0	0	0	0	0	0	0	0	0	0	6
16:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
17:00	0	**7**	2	0	0	0	0	0	0	0	0	0	0	9
18:00	0	5	1	0	**1**	0	0	0	0	0	0	0	0	7
19:00	0	4	0	0	1	0	0	0	0	0	0	0	0	5
20:00	0	5	0	0	0	0	0	0	0	0	0	0	0	5
21:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Day Total	1	55	17	0	3	0	0	0	0	0	0	0	0	76
Percent	1.3%	72.4%	22.4%	0.0%	3.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak		09:00	09:00		08:00									09:00
Vol.		5	4		1									9
PM Peak	12:00	17:00	14:00		18:00									14:00
Vol.	1	7	5		1									10

All Traffic Data

Wheat Ridge, CO 80033

Date Start: 31-Jul-18
Date End: 06-Aug-18
Site Code: 4
S RUBY RD S.O RUBY RANCH RD

SB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
08/02/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
08:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
09:00	0	3	**3**	0	0	0	0	0	0	0	0	0	0	**6**
10:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
11:00	0	**5**	1	0	0	0	0	0	0	0	0	0	0	6
12 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	1
13:00	0	4	1	0	0	0	0	0	0	0	0	0	0	5
14:00	0	4	**3**	0	0	0	0	0	0	0	0	0	0	7
15:00	0	4	3	0	**1**	0	0	0	0	0	0	0	0	8
16:00	0	**10**	1	0	0	0	0	0	0	0	0	0	0	**11**
17:00	0	5	1	0	0	0	0	0	0	0	0	0	0	6
18:00	0	7	1	0	0	0	0	0	0	0	0	0	0	8
19:00	0	4	2	0	0	0	0	0	0	0	0	0	0	6
20:00	0	9	1	0	0	0	0	0	0	0	0	0	0	10
21:00	0	5	1	0	0	0	0	0	0	0	0	0	0	6
22:00	0	2	1	0	0	0	0	0	0	0	0	0	0	3
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Day Total	0	67	20	0	1	0	0	0	0	0	0	0	0	88
Percent	0.0%	76.1%	22.7%	0.0%	1.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak		11:00	09:00											09:00
Vol.		5	3											6
PM Peak		16:00	14:00		15:00									16:00
Vol.		10	3		1									11

All Traffic Data

Wheat Ridge, CO 80033

Date Start: 31-Jul-18
Date End: 06-Aug-18
Site Code: 4
S RUBY RD S.O RUBY RANCH RD

SB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
08/03/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
06:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
08:00	0	**4**	0	0	0	0	0	0	0	0	0	0	0	**4**
09:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
10:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
11:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
12 PM	0	7	2	0	0	0	0	0	0	0	0	0	0	9
13:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
14:00	0	6	**3**	0	0	0	0	0	0	0	0	0	0	9
15:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
16:00	0	3	2	0	0	0	0	0	0	0	0	0	0	5
17:00	0	**11**	2	0	0	0	0	0	0	0	0	0	0	**13**
18:00	0	9	0	0	0	0	0	0	0	0	0	0	0	9
19:00	0	9	0	0	0	0	0	0	0	0	0	0	0	9
20:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
21:00	0	5	1	0	0	0	0	0	0	0	0	0	0	6
22:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
23:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
Day Total	0	77	11	0	0	0	0	0	0	0	0	0	0	88
Percent	0.0%	87.5%	12.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak		08:00												08:00
Vol.		4												4
PM Peak		17:00	14:00											17:00
Vol.		11	3											13

All Traffic Data

Wheat Ridge, CO 80033

Date Start: 31-Jul-18
Date End: 06-Aug-18
Site Code: 4
S RUBY RD S.O RUBY RANCH RD

SB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
08/04/18	0	0	0	0	0	**1**	0	0	0	0	0	0	0	1
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
08:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
09:00	0	**4**	0	0	0	0	0	0	0	0	0	0	0	**4**
10:00	0	2	**1**	0	**1**	0	0	0	0	0	0	0	0	4
11:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
12 PM	0	4	**2**	0	0	0	0	0	0	0	0	0	0	6
13:00	0	9	2	0	0	0	0	0	0	0	0	0	0	**11**
14:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
15:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
16:00	**1**	4	1	0	0	0	0	0	0	0	0	0	0	6
17:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
18:00	0	**10**	1	0	0	0	0	0	0	0	0	0	0	11
19:00	0	5	0	0	0	0	0	0	0	0	0	0	0	5
20:00	0	8	0	0	0	0	0	0	0	0	0	0	0	8
21:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Day Total	1	62	8	0	1	1	0	0	0	0	0	0	0	73
Percent	1.4%	84.9%	11.0%	0.0%	1.4%	1.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak		09:00	10:00		10:00	00:00								09:00
Vol.		4	1		1	1								4
PM Peak	16:00	18:00	12:00											13:00
Vol.	1	10	2											11

All Traffic Data

Wheat Ridge, CO 80033

Date Start: 31-Jul-18
Date End: 06-Aug-18
Site Code: 4
S RUBY RD S.O RUBY RANCH RD

SB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
08/05/18	0	1	0	0	0	0	0	0	0	0	0	0	0	1
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
08:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
09:00	0	**4**	0	0	0	**1**	0	0	0	0	0	0	0	**5**
10:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
11:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
12 PM	0	3	0	0	0	0	0	0	0	0	0	0	0	3
13:00	0	2	**3**	0	0	0	0	0	0	0	0	0	0	**5**
14:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
15:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
16:00	0	2	1	0	0	0	0	0	0	0	0	0	0	3
17:00	0	**5**	0	0	0	0	0	0	0	0	0	0	0	5
18:00	0	4	1	0	0	0	0	0	0	0	0	0	0	5
19:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
20:00	0	2	1	0	0	0	0	0	0	0	0	0	0	3
21:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
22:00	**2**	0	0	0	0	0	0	0	0	0	0	0	0	2
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Day Total	2	43	7	0	0	1	0	0	0	0	0	0	0	53
Percent	3.8%	81.1%	13.2%	0.0%	0.0%	1.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak		09:00				09:00								09:00
Vol.		4				1								5
PM Peak	22:00	17:00	13:00											13:00
Vol.	2	5	3											5

All Traffic Data

Wheat Ridge, CO 80033

Date Start: 31-Jul-18
Date End: 06-Aug-18
Site Code: 4
S RUBY RD S.O RUBY RANCH RD

SB

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
08/06/18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
08:00	0	4	**2**	0	**1**	0	0	0	0	0	0	0	0	7
09:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
10:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
11:00	**1**	**6**	2	0	0	0	0	0	0	0	0	0	0	**9**
12 PM	0	5	2	0	0	0	0	0	0	0	0	0	0	7
13:00	0	3	**3**	0	**1**	0	0	**1**	0	0	0	0	0	8
14:00	0	4	3	0	0	0	0	0	0	0	0	0	0	7
15:00	0	6	3	0	0	0	0	0	0	0	0	0	0	**9**
16:00	0	4	3	0	0	0	0	0	0	0	0	0	0	7
17:00	0	**8**	1	0	0	0	0	0	0	0	0	0	0	9
18:00	0	5	1	0	0	0	0	0	0	0	0	0	0	6
19:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
20:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
21:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
22:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Day Total	1	57	24	0	2	0	0	1	0	0	0	0	0	85
Percent	1.2%	67.1%	28.2%	0.0%	2.4%	0.0%	0.0%	1.2%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	11:00	11:00	08:00		08:00									11:00
Vol.	1	6	2		1									9
PM Peak		17:00	13:00		13:00			13:00						15:00
Vol.		8	3		1			1						9
Grand Total	7	419	98	0	9	2	0	1	0	0	0	0	0	536
Percent	1.3%	78.2%	18.3%	0.0%	1.7%	0.4%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	

Appendix D
Geotechnical Study

CTL | THOMPSON INCORPORATED

SUBGRADE INVESTIGATION AND PAVEMENT THICKNESS DESIGN
RUBY RANCH ROADS
RUBY RANCH SUBDIVISION
DILLON, COLORADO

Prepared For:

Willow Brook Metropolitan District
7995 East Prentice Avenue, Suite 103E
Greenwood Village, Colorado 80111

Attention: Sue Blair

Project No. SU01457.000-135

August 31, 2018

1790 Airport Road, Unit 2, Breckenridge, Colorado 80424
Telephone: 970-453-2047 www.ctlthompson.com

TABLE OF CONTENTS

SCOPE

This report presents the results of our Subgrade Investigation and Pavement Thickness Design for the Ruby Ranch Roads Pavement Project Lot to be located throughout the Ruby Ranch Subdivision in Summit County, Colorado. We conducted this investigation to evaluate subsurface conditions and provide geotechnical engineering recommendations for the proposed new pavement. Our report was prepared from data developed during our field exploration, engineering analysis, and experience in the area. This report includes a description of the subsurface conditions observed in exploratory borings and presents geotechnical engineering recommendations for thickness of new pavement section. The scope was described in a Service Agreement (SU01457.000) dated July 30, 2018 and Contract Modification No. 1 dated August 2, 2018.

Recommendations contained in this report were developed based on our understanding of the planned construction. If plans differ significantly from the descriptions contained in the report, we should be informed so that we determine whether our recommendations and design criteria are appropriate.

SITE CONDITIONS

The site is located throughout the Ruby Ranch Subdivision, which is accessed off Blue River Parkway via Ruby Ranch Road, near Silverthorne, CO, as shown on Figure 1. The subdivision is generally bordered by national forest to the South and west, and by residential developments to the North and East. The topography across the site is variable and generally mountainous. Several streams and irrigation canals cross the site.

PROPOSED CONSTRUCTION

The existing road surfaces in the development are gravel. We understand the existing roads may be regraded and surfaced with asphalt pavement. Vehicular traffic is expected to be primarily passenger vehicles with occasional truck traffic.

SUBSURFACE CONDITIONS

Our field investigation consisted of drilling twenty exploratory borings, to the maximum depth of 20 feet, at the approximate locations shown on Figure 2. The borings were advanced using a truck-mounted drill rig and 4-inch diameter, continuous-flight solid-stem auger. Our representatives observed drilling operations, logged the soils encountered, and obtained samples. Summary logs of the soils encountered and results of field penetration resistance tests are shown on Figures 3 through 5.

Subsurface conditions observed in the exploratory borings consisted mostly of fill (roadway embankment material). The fill soils varied greatly and consisted of a mixture clay, sand and grave. Native gravels were encountered in TH-3 and TH-7. Native clay and shale bedrock was encountered in TH-19 and TH-20.

Samples obtained in the field were returned to our laboratory where field classifications were checked and samples were selected for pertinent testing. Swell consolidation testing conducted on samples of the onsite fill soils, shown on Figures 6 thru 8, indicates low expansion potential and moderate compressibility when wetted under a constant surcharge. Gradation test results of the sand and gravel soils are presented on Figure 6. Laboratory test results are summarized on Table I.

GEOLOGIC HAZARDS

We reviewed the following geologic mapping showing the site.

1. Geologic Map of the Dillon Quadrangle, Summit and Grand Counties, Colorado, by Karl S. Kellogg with the U.S. Geologic Survey, 2002.

Mapping across the subdivision includes several different geologic deposits including glacial till (Pinedale) in the North portion, landslide deposits in the center and South areas, diamicton, Pierre shale and alluvium/colluvium. Our field investigation and observations at the site generally support the mapping.

SITE EARTHWORK

We anticipate excavation of the soils can be accomplished using conventional, heavy duty excavating equipment. Sides of excavations need to be sloped to meet local, state and federal safety regulations. The soils will likely classify as Type C soils based on OSHA standards governing excavations. Temporary slopes deeper than 4 feet that are not retained should be no steeper than 1.5 to 1 (horizontal to vertical) in Type C soils. Excavations may encounter cobbles and boulders. Contractors should identify the soils encountered and ensure that applicable standards are met. Contractors are responsible for site safety and maintenance of the work site.

Stabilization of the roadway near borings TH-6 and TH-19/20 will likely require a deep subexcavation of 5 to 10 feet and replacement with imported granular fill. Groundwater was not encountered in these borings, which indicates that a cutoff drain is likely not beneficial in these areas. We can provide additional subexcavation recommendations upon request.

No groundwater seepage was encountered in the exploratory pits at the time of excavation. Some seepage may occur during foundation excavation, particularly if it occurs during seasonal runoff. The footing areas should be protected from any seepage and precipitation through the use of shallow trenches and sumps. Excavations should be sloped to a gravity discharge or to a temporary sump where water can be removed by pumping, if necessary.

PAVEMENT SECTION THICKNESS

Our recommendations assume a properly prepared subgrade and drained conditions. The collection and diversion of surface water away from paved areas is extremely important to the satisfactory performance of the pavement. Drainage design should provide for the removal of water from the paved areas to limit wetting of the subgrade soils. Frost susceptible soils (with high levels of silt and/or clay) can be problematic if there is a free water source and heaving can occur. The onsite soils have low to moderate frost susceptibility. The presence of shallow groundwater seepage makes frost heave more

likely to occur. Ditch design to divert water is critical. Our recommendations for pavement section thickness are given below:

Based on our field testing results and conditions encountered, our preliminary recommendations for asphalt thickness are as follows. Our recommendations assume a properly prepared subgrade.

Collector Roads, which includes Ruby Road (from entrance to Topaz Road) Emerald Road (from Ruby Road to beyond Agate Road):

- 4 inches of asphalt over 2 inches of aggregate base course.

Local Roads, which includes Topaz Road, Ruby Road South of Topaz, Jade Road (from Ruby Road to Garnet Road), Pearl Road, Opal Road, and Emerald Road West of Agate Road).

- 3 inches of asphalt over 2 inches of aggregate base course.

Driveways, which includes Jade Road (South of Garnet Road), Garnet Road and Agate Road.

- 3 inches asphalt over 2 inches of aggregate base course.

Subgrade Preparation and Aggregate Base Course

The existing roadways should be compacted with a smooth drum roller and then be proof-rolled with a fully loaded tandem dump truck with a gross weight of at least 50,000 pounds. Proof-rolls should occur in each lane and down the centerline of each road. Areas which deform excessively should be scarified and brought to within 2 percent of optimum moisture content and recompacted. Another proof-roll of the area should be conducted. If excessive deflection occurs, the soils should removed and replaced with structural fill to achieve a stable subgrade prior to placing pavement materials. The depth of sub-excavation should be determined on a case by case basis at the time of construction. Normally, sub-excavations to stabilize subgrade are 1 to 2 feet in depth. In some cases, geogrid reinforcement can be used to reduce subexcavation depths. Based on the conditions encountered, we do not expect many areas that will require subexcavation.

Structural fill placed beneath pavements should consist of CDOT Class 6 aggregate base course. The subgrade and structural fill should be compacted to at least 95% of the maximum Modified Proctor (ASTM D-1557) dry density at a moisture content within 2 percent of optimum.

Aggregate base course should have a minimum 'R' value of 84 and meet CDOT Class 6 gradation specifications. The aggregate base course should be compacted to at

least 95% of the maximum Modified Proctor (ASTM D-1557) dry density at a moisture content within 2 percent of optimum.

Asphalt Pavement

The asphalt should consist of a mixture of aggregate, filler and asphalt cement. The asphalt mixture should meet the Summit County or Colorado Department of Transportation (CDOT) grading requirements for an asphalt mix. The asphalt should be a batched hot mix, approved by the engineer, and placed and compacted to a density of 92% to 96% of the maximum theoretical density, determined according to Colorado Procedure 51. The asphalt should be placed in lifts not exceeding 3 inches thick or less than 1.5 inches thick. We recommend State Highway Grading SX.

Concrete Pavement

All concrete should be based on a mix design established by a qualified engineer. A CDOT Class P mix is acceptable. The design mix should consist of aggregate, Portland cement, water, and additives which will meet the requirements contained in this section. The concrete should have a modulus of rupture of third point loading of 630 psi. Normally, concrete with a 28-day compressive strength of 4,000 psi will meet this requirement. Concrete should contain approximately 6 percent entrained air. Maximum allowable slump should not exceed 4 inches.

The concrete should contain joints not greater than 15 feet on centers. Joints should be sawed or formed by pre-molded filler. The joints should be at least ¼ of the slab thickness. Expansion joints should be provided at the end of each construction sequence and between the concrete slab and adjacent structures. Expansion joints, where required, should be filled with a ½-inch thick asphalt impregnated fiber. Concrete should be cured by protecting against loss of moisture, rapid temperature changes and mechanical injury for at least three days after placement.

SURFACE DRAINAGE

Surface drainage is critical to the performance of pavements. Recommendations in this report are based on effective drainage for the life of the improvements and cannot

be relied upon if effective drainage is not maintained. The collection and diversion of surface water away from paved areas is extremely important to the satisfactory performance of the pavement. Drainage design should provide for the removal of water from the paved areas and prevent wetting of the subgrade soils. Water was observed in the road ditches near borings TH-12 (Pearl Rd), TH-14 (Opal Rd) and TH-20 (Emerald Rd). Proper ditch design in these areas is critical.

CONSTRUCTION OBSERVATIONS

This report has been prepared for the exclusive use of Willow Brook Metropolitan District and the design team for the purpose of providing geotechnical design and construction criteria for the proposed project. The information, conclusions, and recommendations presented herein are based upon consideration of many factors including, but not limited to, the type of structures proposed, the geologic setting, and the subsurface conditions encountered. The conclusions and recommendations contained in the report are not valid for use by others. Standards of practice evolve in the area of geotechnical engineering. The recommendations provided in this report are appropriate for about three years. If the proposed project is not constructed within about three years, we should be contacted to determine if we should update this report.

We recommend that CTL | Thompson, Inc. provide construction observation services to allow us the opportunity to verify whether soil conditions are consistent with those found during this investigation. If others perform these observations, they must accept responsibility to judge whether the recommendations in this report remain appropriate.

GEOTECHNICAL RISK

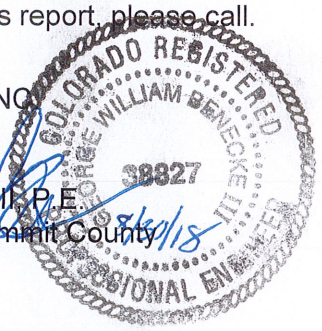
The concept of risk is an important aspect with any geotechnical evaluation primarily because the methods used to develop geotechnical recommendations do not comprise an exact science. We never have complete knowledge of subsurface conditions. Our analysis must be tempered with engineering judgment and experience. Therefore, the recommendations presented in any geotechnical evaluation should not be considered risk-free. Our recommendations represent our judgment of those measures that are necessary to increase the chances that the pavements will perform satisfactorily. It is critical that all

recommendations in this report are followed during construction. The owner must assume responsibility for maintaining the structures and use appropriate practices regarding drainage and landscaping.

LIMITATIONS

Our exploratory borings were located to provide a reasonably accurate picture of subsurface conditions. Variations in the subsurface conditions not indicated by the borings will occur. A representative of our firm should test the base course during placement and observe pavement subgrade to confirm that the exposed soils are as expected and suitable for support of the pavement as designed. We believe this investigation was conducted in a manner consistent with that level of care and skill ordinarily exercised by geotechnical engineers currently practicing under similar conditions in the locality of this project. No warranty, express or implied, is made. If we can be of further service in discussing the contents of this report, please call.

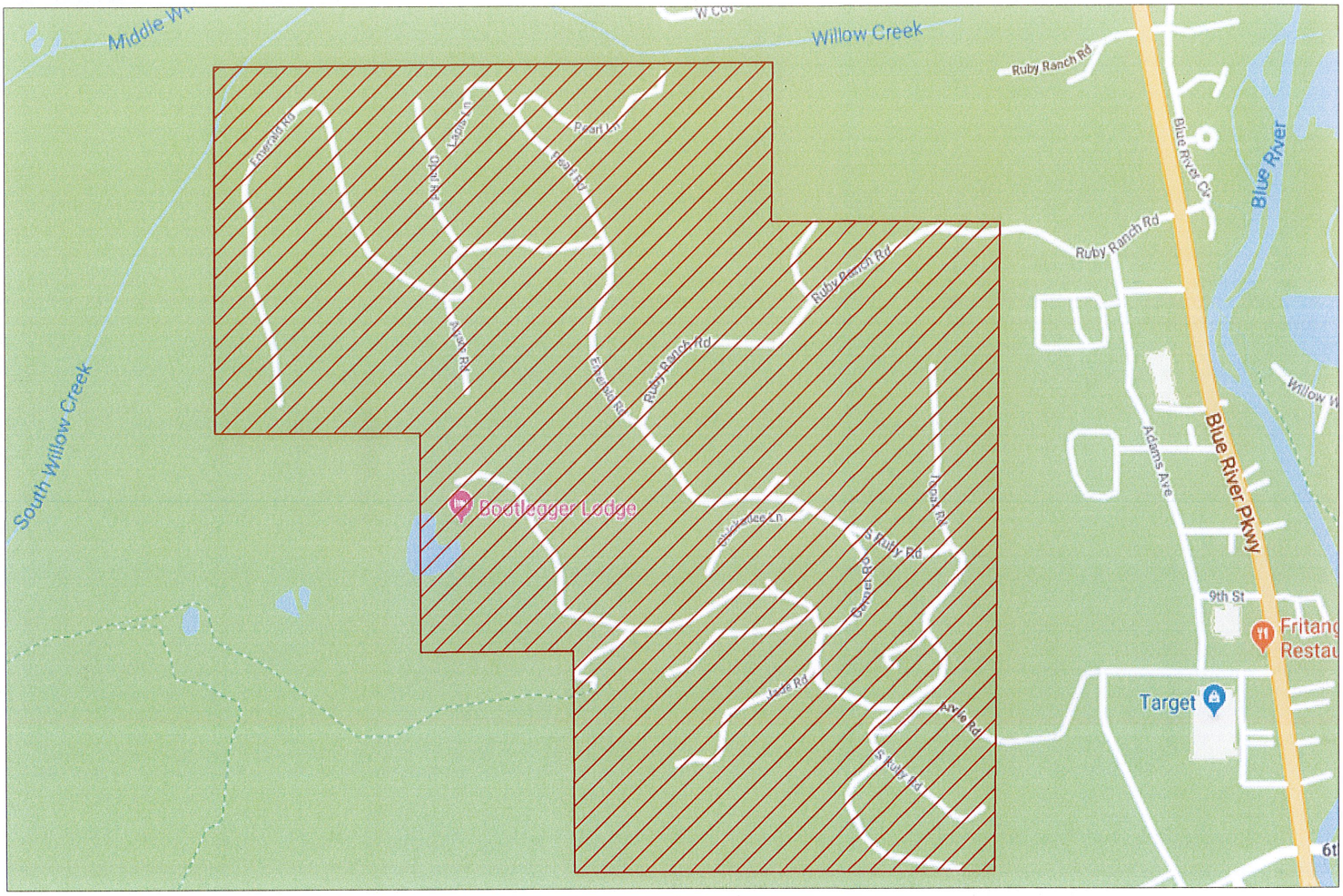
CTL | THOMPSON, INC.



George W. Benecke III, P.E.
Division Manager, Summit County

cc. sblair@crsofcolorado.com
EJO@cfcc.com

Not to scale

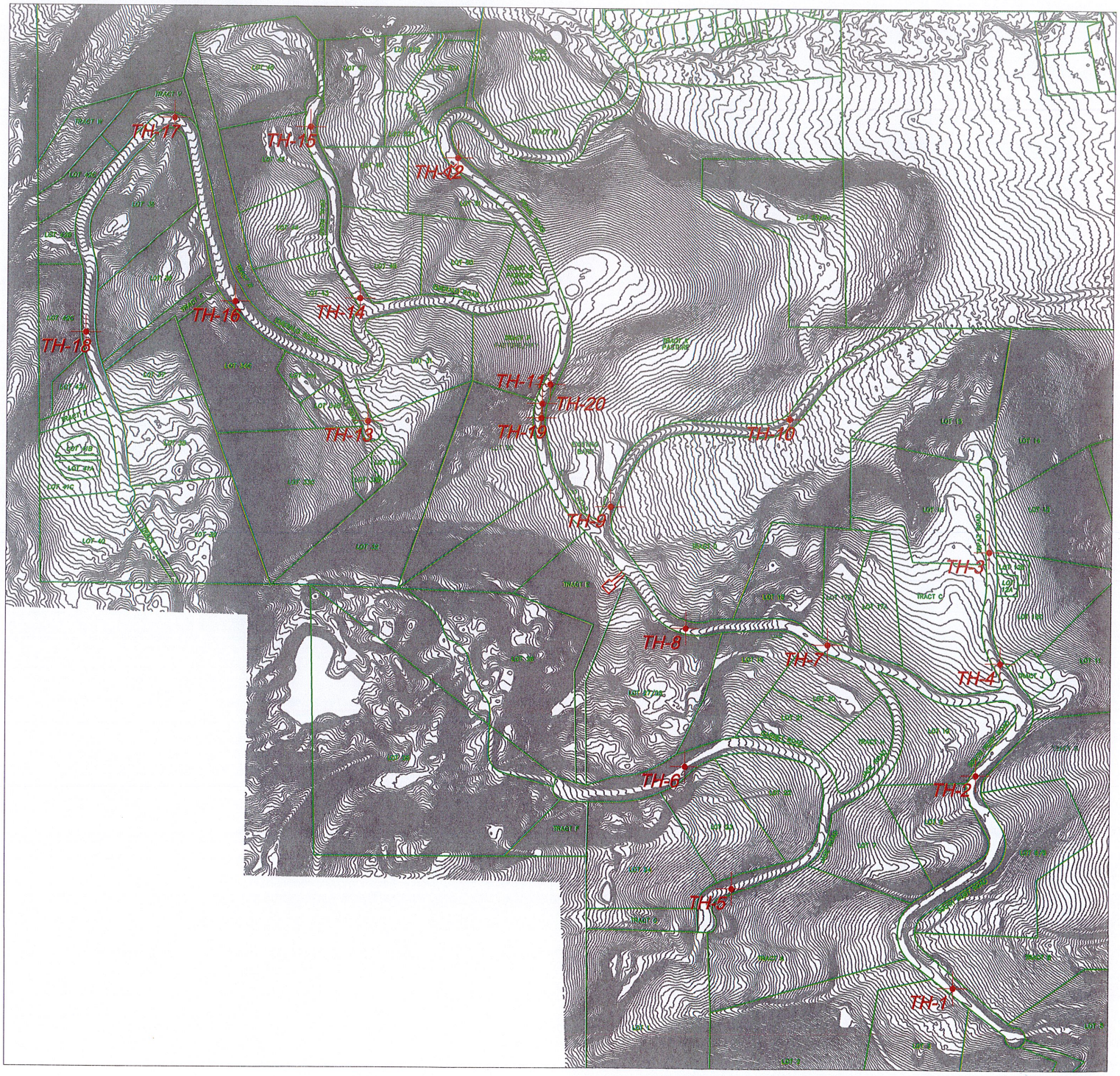


VICINITY MAP

Figure 1

Project No. SU01457.000-135/125

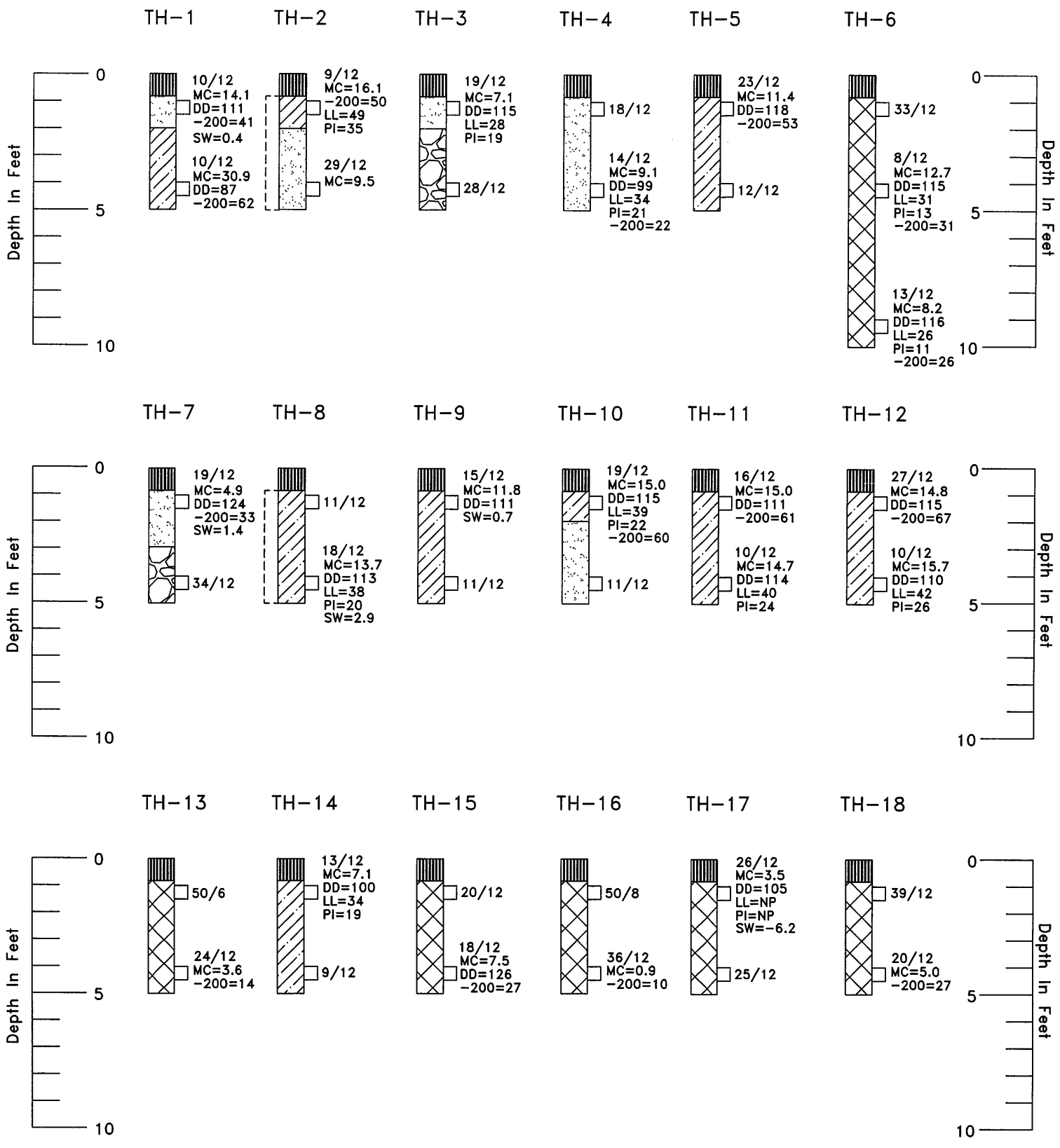
Scale: 1 inch = 350 feet



LOCATIONS OF EXPLORATORY BORINGS

Project No. SU01457.000-135/125

Figure 2



SUMMARY LOGS OF EXPLORATORY BORINGS

Project No. SU01457.000-135

Figure 3

LEGEND:

ROADBASE; $\frac{3}{4}$ in. gravel with sand, slightly moist, light brown, medium dense. (GW)

FILL; SAND; clayey, moist to very moist, brown to dark brown, loose to medium dense with scattered debris, mulch, and organics. (SC)

FILL; CLAY; slightly sandy to sandy, with some areas of slightly gravelly clay, moist to very moist, dark brown to black, medium stiff to stiff, with scattered organics, mulch, and debris. (CL)

FILL; SAND; gravelly, clayey, with some cobbles and some boulders, moist, brown, dense to very dense, with scattered debris including tree stumps. (GM)

NATIVE; GRAVEL; clayey, sandy, moist, brown, dense. (GC)

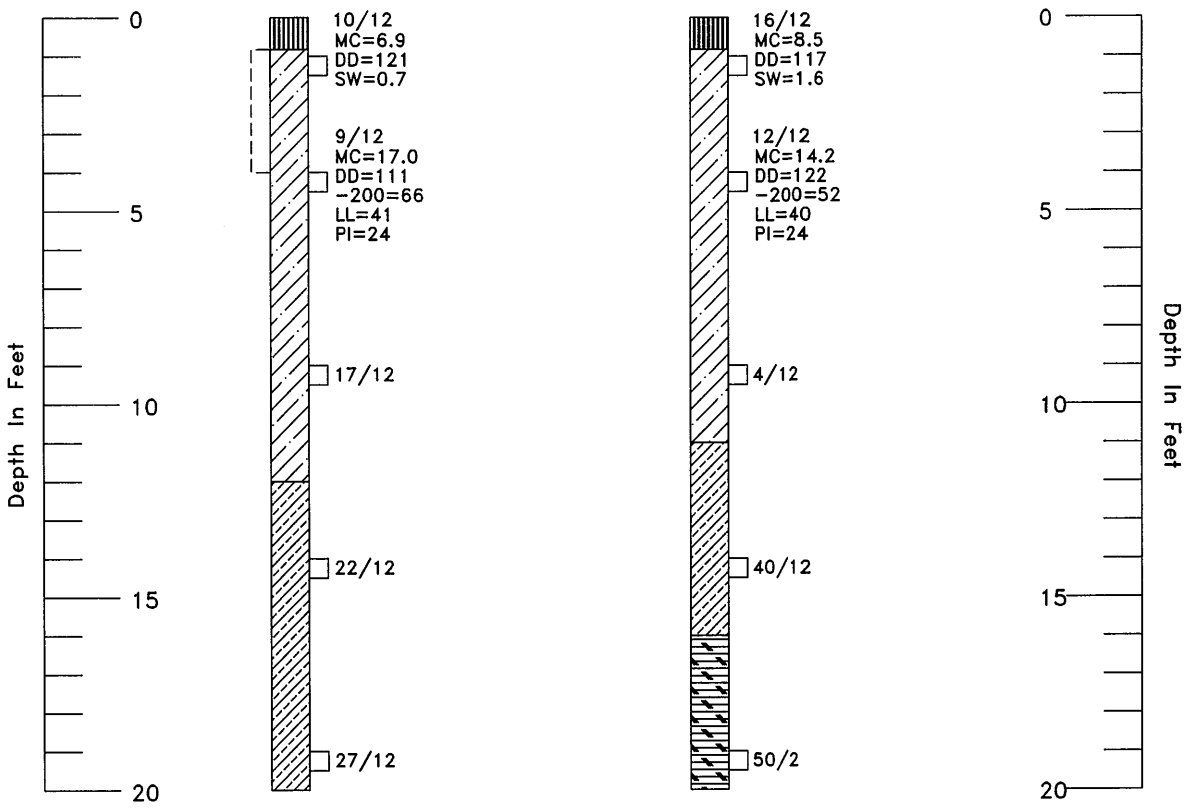
Relatively undisturbed hand–driven sample.

Disturbed bulk sample.

NOTES:

1. The borings were drilled on 08/08/18 using 4–inch diameter continuous flight auger and a truck–mounted D90 drill rig.
2. No groundwater was observed in the borings at the time of drilling. Groundwater levels can fluctuate.
3. Boring locations as shown on Figure 2 were measured from site features and should be considered approximate.
4. These exploratory borings are subject to the explanations, limitations and conclusions contained in this report.

SUMMARY LOGS OF EXPLORATORY BORINGS



LEGEND:

ROADBASE; $\frac{3}{4}$ in. gravel with sand, slightly moist, light brown, medium dense. (GW)

FILL; CLAY; slightly sandy to sandy, moist to very moist, soft to stiff, dark brown to black and green, with debris such as organics, mulch, hay. (CL)

NATIVE; CLAY; slightly sandy, silty, moist to very moist, very stiff, orange-brown and medium-brown. (CL)

BEDROCK; SHALE; gravel, clayey, very moist, hard, dark brown to black. (GC)

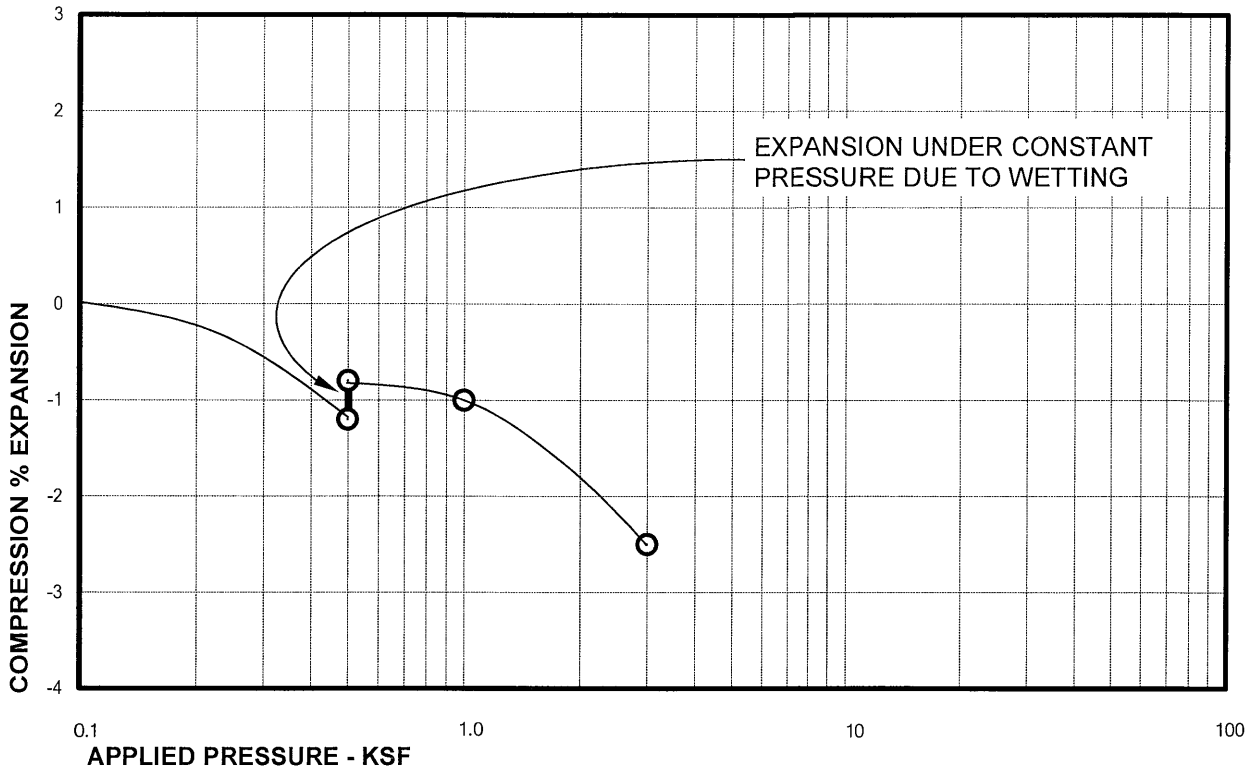
Relatively undisturbed hand-driven sample.

Disturbed bulk sample.

NOTES:

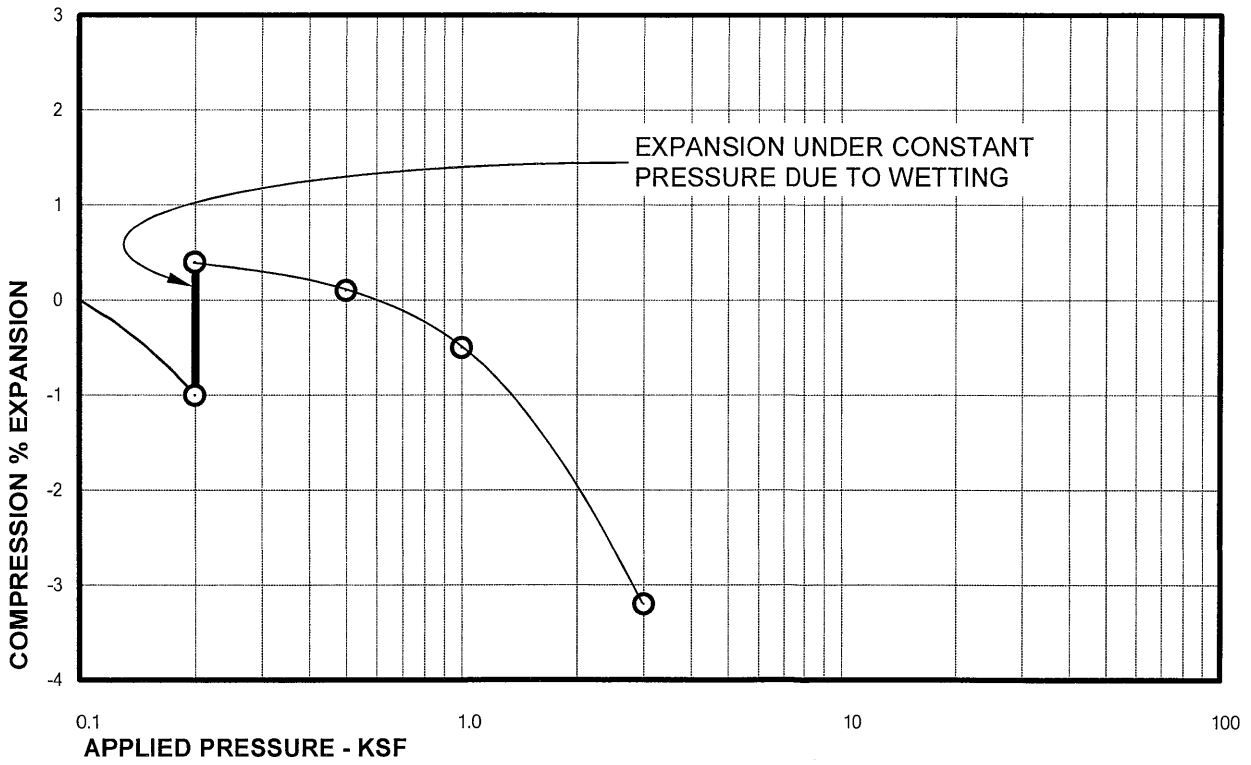
1. The borings were drilled on 08/08/18 using 4-inch diameter continuous flight auger and a truck-mounted D90 drill rig.
2. No groundwater was observed in the borings at the time of drilling or when checked several days later. Groundwater levels can fluctuate.
3. Boring locations as shown on Figure 2 were measured from site features and should be considered approximate.
4. These exploratory borings are subject to the explanations, limitations and conclusions contained in this report.

SUMMARY LOGS OF EXPLORATORY BORINGS



Sample of SAND; clayey (SC)
From TH-1 @ 1'

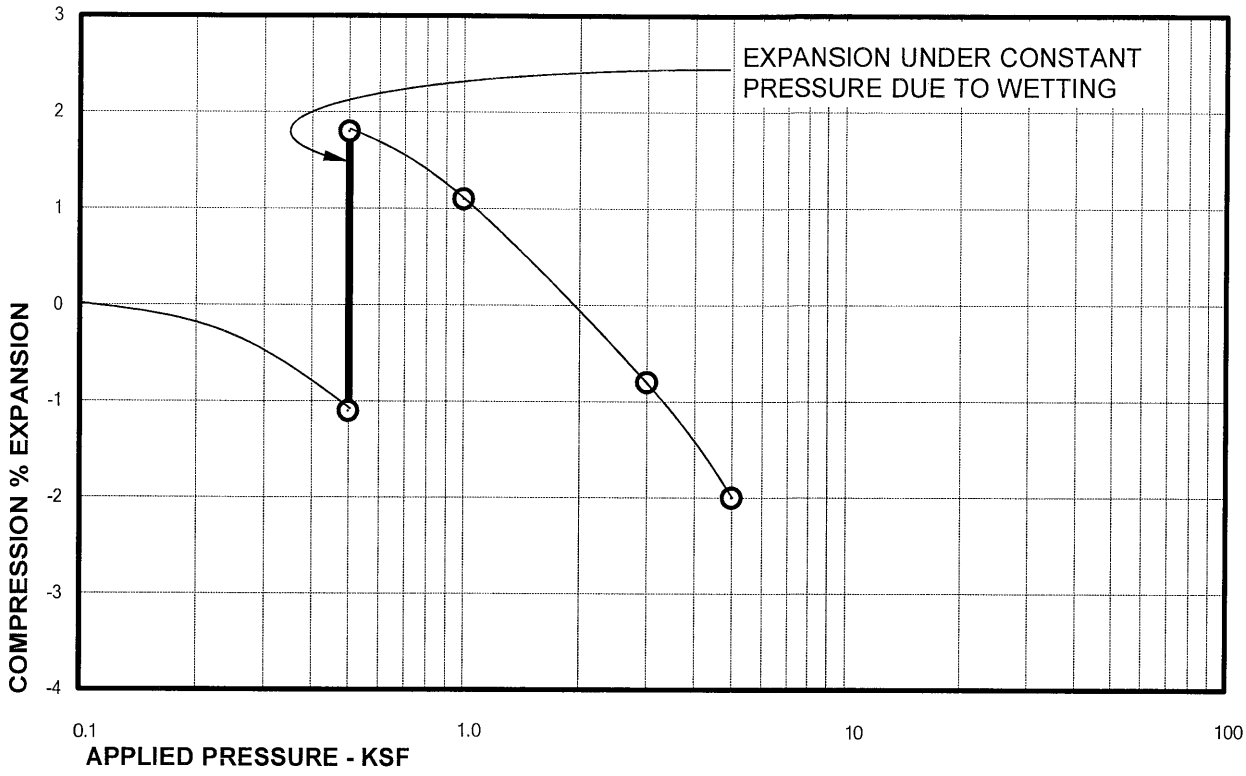
DRY UNIT WEIGHT= 111 PCF
MOISTURE CONTENT= 14.1 %



Sample of SAND; clayey (SC)
From TH-7 @ 1'

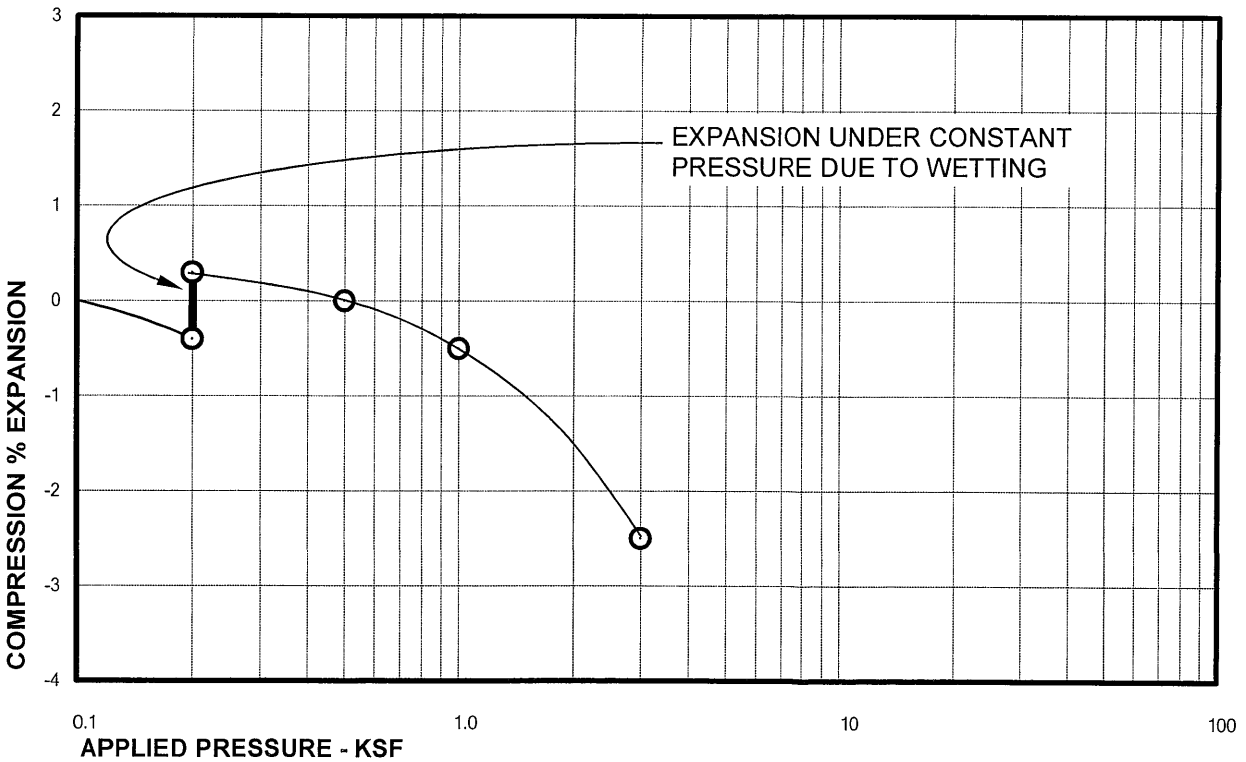
DRY UNIT WEIGHT= 124 PCF
MOISTURE CONTENT= 4.9 %

Swell Consolidation Test Results



Sample of CLAY; sandy (CL)
From TH-8 @ 4'

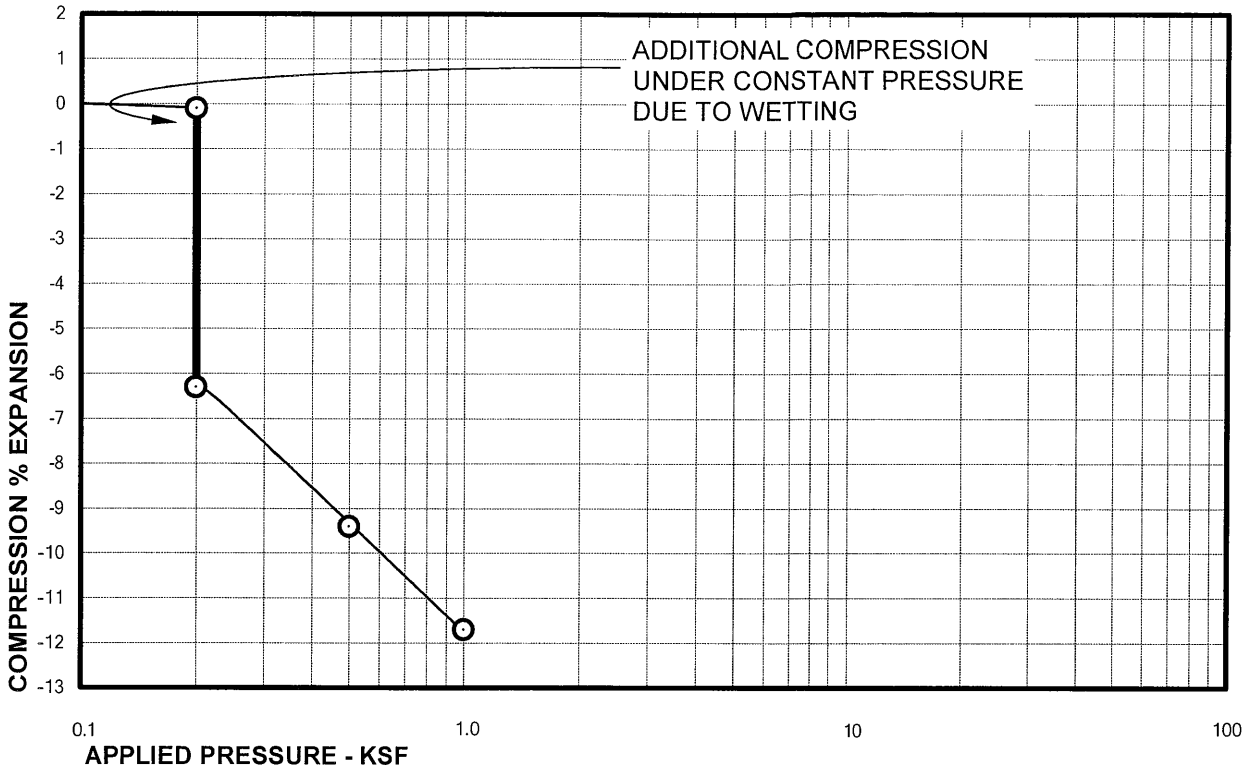
DRY UNIT WEIGHT= 113 PCF
MOISTURE CONTENT= 13.7 %



Sample of CLAY; sandy (CL)
From TH-9 @ 1'

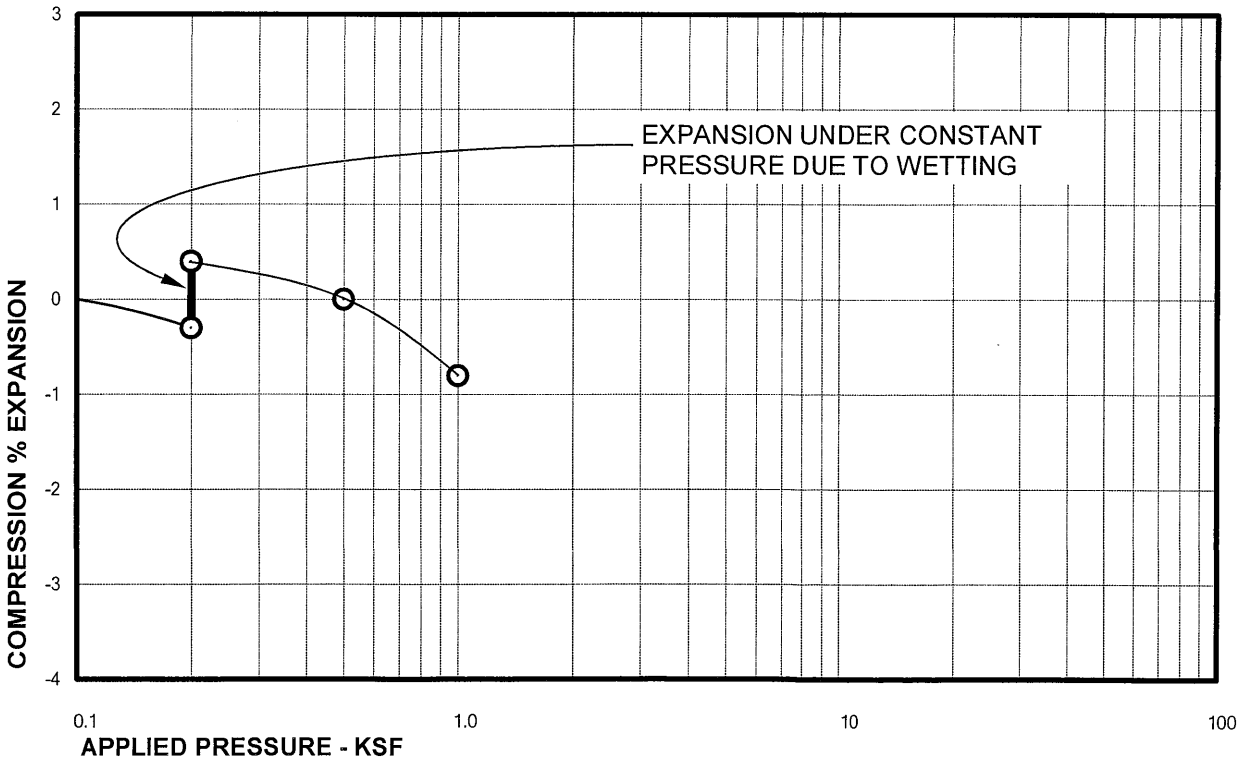
DRY UNIT WEIGHT= 111 PCF
MOISTURE CONTENT= 11.8 %

Swell Consolidation Test Results



Sample of SAND; gravelly, clayey (SP-SM)
From TH-17 @ 1'

DRY UNIT WEIGHT= 105 PCF
MOISTURE CONTENT= 3.5 %



Sample of CLAY; sandy (CL)
From TH-19 @ 1'

DRY UNIT WEIGHT= 121 PCF
MOISTURE CONTENT= 6.9 %

Swell Consolidation Test Results

TABLE I

SUMMARY OF LABORATORY TESTING
CTL|T PROJECT NO. SU01457.000-135

EXPLORATORY PIT	DEPTH (FEET)	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	ATTERBERG LIMITS		SWELL TEST RESULTS*			PERCENT GRAVEL (%)	SULFATE CONC. (%)	PASSING NO. 200 SIEVE (%)	DESCRIPTION
				LIQUID LIMIT (%)	PLASTICITY INDEX (%)	SWELL (%)	APPLIED PRESSURE (PSF)	SWELL PRESSURE (PSF)				
TH-1	1	14.1	111			0.4	500	1,300			41	SAND; clayey (SC)
TH-1	4	30.9	87								62	CLAY; sandy (CL)
TH-2	1	16.1		49	35						50	CLAY; sandy (CL)
TH-2	4	9.5										SAND; clayey (SC)
TH-3	1	7.1	115	28	13							SAND; clayey (SC)
TH-4	4	9.1	99	34	21						22	SAND; clayey (SC)
TH-5	1	11.4	118								53	CLAY; sandy (CL)
TH-6	4	12.7	115	31	13						31	SAND; gravelly, clayey (SP-SM)
TH-6	9	8.2	116	26	11						26	SAND; gravelly, clayey (SP-SM)
TH-7	1	4.9	124			1.4	200	1300			33	SAND; clayey (SC)
TH-8	4	13.7	113	38	20	2.9	500	3300				CLAY; sandy (CL)
TH-9	1	11.8	111			0.7	200	900				CLAY; sandy (CL)
TH-10	1	15.0	115	39	22						60	CLAY; sandy (CL)
TH-11	1	15.0	111								61	CLAY; sandy (CL)
TH-11	4	14.7	114	40	24							CLAY; sandy (CL)
TH-12	1	14.8	115								67	CLAY; sandy (CL)
TH-12	4	15.7	110	42	26							CLAY; sandy (CL)
TH-13	4	3.6									14	SAND; gravelly, clayey (SP-SM)
TH-14	1	7.1	100	34	19							CLAY; sandy (CL)
TH-15	4	7.5	126								27	SAND; gravelly, clayey (SP-SM)
TH-16	4	0.9									10	SAND; gravelly, clayey (SP-SM)
TH-17	1	3.5	105	NP	NP	-6.2	200	NA				SAND; gravelly, clayey (SP-SM)
TH-18	4	5.0									27	SAND; gravelly, clayey (SP-SM)
TH-19	1	6.9	121			0.7	200	700				CLAY; sandy (CL)

TABLE I

SUMMARY OF LABORATORY TESTING
CTL|T PROJECT NO. SU01457.000-135

EXPLORATORY PIT	DEPTH (FEET)	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	ATTERBERG LIMITS		SWELL TEST RESULTS*			PERCENT GRAVEL (%)	SULFATE CONC. (%)	PASSING NO. 200 SIEVE (%)	DESCRIPTION
				LIQUID LIMIT (%)	PLASTICITY INDEX (%)	SWELL (%)	APPLIED PRESSURE (PSF)	SWELL PRESSURE (PSF)				
TH-19	4	17.0	111	41	24						66	CLAY; sandy (CL)
TH-20	1	8.5	117			1.6	200	1300				CLAY; sandy (CL)
TH-20	4	14.2	122	40	24						52	CLAY; sandy (CL)