

## CHAPTER VII

# Future Travel Volumes

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### INTRODUCTION

The next stage of the process was to model future volumes. Future growth data for the demographic variables were developed by the LSC Team cooperatively with Rifle city staff. Growth was projected for 2025. Growth projections were allocated to the TAZs and then used in the model. Chapter VI described in detail the development of future land use conditions for use in the travel demand model. Table VII-1 shows the summary demographic and land development data used in the travel demand model.

The modeling for the future traffic volumes followed the same process as modeling the base year, except for the calibration. The future land use projections were used with the calibrated trip generation rates to determine the total future year trip generation. These trips were then distributed and assigned to the network using the parameters established during the calibration/validation process. The street system which has been used is the existing street system. This gives an indication of anticipated traffic conditions based on projected growth without any improvements to the transportation system.

Upon review, the base year model will be adjusted as needed and used to develop the final forecast of future traffic volumes. The volume differences and related roadway capacities will be the basis for recommending improvements to the transportation system. Potential improvements will be analyzed using the model results to determine those improvements which will be most effective in meeting future transportation needs. This will be accomplished by representing the proposed improvements as changes in the network. These may take the form of new links connecting nodes in the existing network or changes in capacity on the existing network links.

**Table VII-1  
Base Year Housing and Existing Land Development**

<b>TAZ</b>	<b>Area Description</b>	<b>Land Use</b>	<b>Dwelling Units</b>
1	Outside City Limits, Northeast #1	S.F. Residential	40
3	Outside City Limits, Northeast #2	S.F. Residential	30
4	Northeast Rifle Farmland	County Lands	12
5	North Rifle Low/Med Residential	S.F. Residential	120
6	Northwest Rifle Medium Density Residential	S.F./Commercial	315
7	Northeast Rifle Medium Density Residential	S.F. Residential	34
8	Columbine Ford Dealership	Car Dealership	60
9	Wamsley Elementary	Elementary School	0
10	Northeast Rifle Low/Med Density Residential	S.F. Residential	10
11	Creekmeadows Development	S.F. Residential	85
12	Industrial/Commercial Hwy 13/Railroad 2	Mixed	0
13	Industrial/Commercial Hwy 13/Railroad 1	Mixed	6
14	Jct Hwy 13/Railroad Comm/High Density Residential	Mixed	146
15	Rifle Bypass at Hwy 13/Railroad Commercial	Commercial/Industrial	9
16	Rifle High School	School/S.F. Residential	10
17	Northeast of Rifle High School	S.F. Residential	11
18	East Central Rifle Medium Density Residential	S.F. Residential	9
19	West of Fairgrounds	S.F. Residential	70
20	Fairgrounds	Small Office Space	0
21	City Market Area	Mixed	31
22	North Central Medium Density Residential/Comm	Mixed	9
23	North Central Low/Medium Density Residential	S.F. Residential	11
24	Northeast Rifle Low Density Residential	S.F. Residential	62
25	Northeast #2 Rifle Low Density Residential	S.F. Residential	56
26	Northeast Rifle #3 Low Density Residential	S.F. Residential	300
27	Northeast Rifle #4 Low Density Residential	S.F. Residential	52
28	North Central Rifle #4 Low Density Residential	S.F. Residential	24
29	Central Rifle Low Density Residential	S.F. Residential	37
30	Central Rifle Low/Med Density Residential/Commercial	Gas Station and Residential Area	39
31	ESMA Lewis School	School/Med Density Residential	18
32	East Central Rifle Low/Med Density Residential	S.F. Residential	242
33	Northwest Low/Med Density Residential	S.F. Residential	112
34	Directly North of Hwy 6	Mixed	15
35	River Flood Plain	Commercial	0
36	CBD #7	Commercial/Residential	4
37	CBD #1	Mixed	6
38	CBD #2	Mixed	16
39	CBD #3	Mixed	13
40	CBD #4	Mixed	13
41	CBD #5	Mixed	0
42	CBD #6	Mixed	3
43	Original Rifle Townsite 2	Medium Density Residential	34
44	Med/High Density Res Central	Mixed Density Residential	26
45	Low/Med Res Central	S.F. Residential	40
46	Low/Med Res East Central	S.F. Residential	46
47	Low Density Res East Central	S.F. Residential	27
48	Low/Medium East Central	S.F. Residential	23
49	Original Rifle Townsite 1	Medium Density Residential	22
50	Med/Dens Res Central	S.F. Residential	20
51	Low/Med Res SE Central	S.F. Residential	29

**Table VII-1, continued**  
**Base Year Housing and Existing Land Development**

<b>TAZ</b>	<b>Area Description</b>	<b>Land Use</b>	<b>Dwelling Units</b>
52	Low/Med Res East Central	S.F. Residential	43
53	Developing Res East Central	S.F. Residential	2
54	Grand River Hospital	Hospital and Residential	71
55	Rifle Nursing Home	Nursing Home	12
56	Northeast Rifle #5 Low Density Residential	S.F. Residential	49
57	Rifle Trailer Park Area	S.F. Residential	300
58	US 6 East Frontage	No Development	0
59	East Central Rifle adjacent to Hwy 6 (East Study Area)	No Development	0
60	Park and Ride	Parking Lot	0
61	Hwy 6 West Frontage	No Development	0
62	Water Treatment Area	Light Industrial	0
63	Commercial/Industrial area North of Hwy 6	Commercial/Industrial	80
64	Frontage of I-70/Hwy6 West	No Development	0
65	West of Rifle Interchange/Colorado River	Mixed/Rest Area	6
66	Rifle Village	S.F. Residential	104
67	Rifle Interchange, SW Side	S.F. Residential	30
68	South Bluff Residential	S.F. Residential	0
69	South of Gas Stations off I-70	Commercial Center	5
70	Burger King	Commercial	0
71	New Hospital	No Development	0
72	Bank/Developing Big Lots Stores	No Development	0
73	Northeast of New Hospital Site	No Development	2
74	Rifle Business Park	Limited Commercial Development	0
75	Rifle Storage Park	Limited Mini-Storage Development	0
76	Directly South of Industrial Park	Business Park	0
77	South of City Limits and Industrial Park	No Development	5
78	NW of Hwy 6 to West Interchange #1	No Development	0
79	NW of Hwy 6 to West Interchange #2	No Development	0
80	Airport	Limited Industrial	0
81	Airport Industrial Zone	Limited Industrial	0
82	Southeast Study Area	No Development	0
83	Southwest of Silt	No Development	0
84	Gravel Pit	Rifle Gravel Pit	0

KSF = 1,000 Square Feet of Developed Building Space

ITE = Various estimation criteria based upon Institute of Transportation Engineers, Trip Generation, 6th Edition, 1997

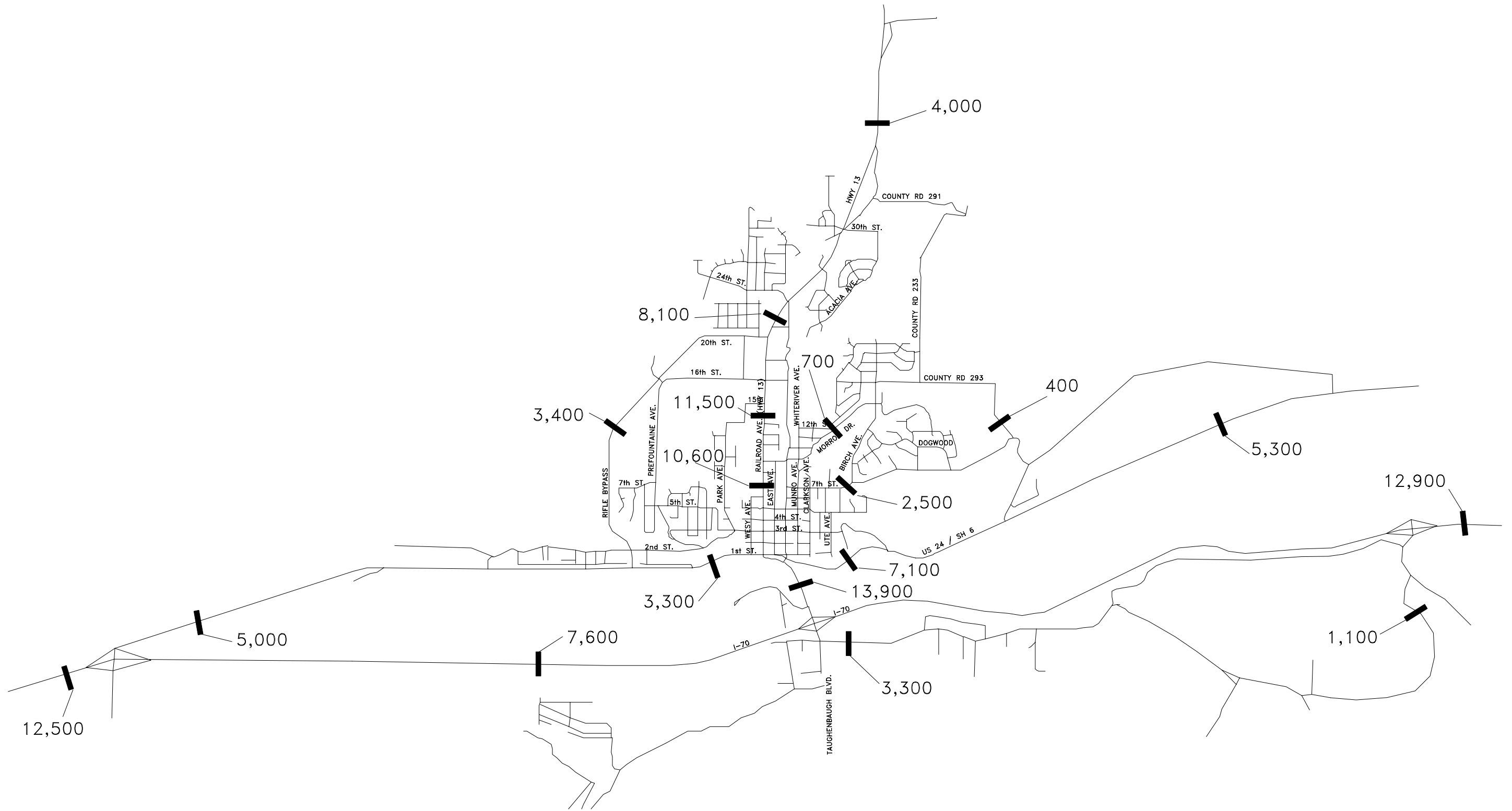
N/A = Only residential uses in the TAZ

Source: LSC, 2002

## *Future Travel Volumes*

The calibrated QRS model for the base-year (2002) City of Rifle network consisted of 94 traffic analysis zones and 4 external zones (gateways to the county). The model has been fit to represent the existing traffic conditions in the Rifle study area and more specifically, the Rifle urban area. Acceptable error ranges were established and the model was adjusted until modeled volumes were within the acceptable ranges. Figure VII-1 shows the base year traffic volumes in Rifle.

Future land use projections were then used to estimate future traffic volumes. The future deficiencies were identified and alternate transportation system improvements were identified and evaluated using the City of Rifle model.



Legend:

XX,XXX –Average weekday traffic (vehicles per day)



NOT TO SCALE



LSC NO.:	015990	FIGURE NO.:	VII-1
Base Year – 2002 Traffic Volumes			
Rifle Transportation Master Plan			

## **FORECASTED TRAFFIC VOLUMES**

### **Low-Growth Scenario**

The Low-Growth Scenario for Rifle is based upon assumptions of development patterns using households and commercial/retail/industrial area. Table VII-2 shows the summary demographic and land use data for the low-growth scenario. These volumes are based on the land use information described in Chapter VI. Overall trips per day in the study area are projected to increase from 65,522 to approximately 117,700 per day, an increase of 80 percent. Figure VII-2 illustrates the Low-Growth Scenario future traffic volumes.

All of the major roads in the area—including Railroad Avenue, SH 13, and Airport Road—show significant projected increases in traffic volumes. All of the intersections on Railroad Avenue can be expected to experience significant delays during peak hours. As a result of this increased delay, more traffic will be using Whiteriver Avenue which is not currently designed to carry significant traffic volumes. The increase is primarily due to the location of expected growth. Residential growth is expected to occur to the north and northeast of downtown Rifle. Commercial and industrial growth is expected to occur along Airport Road east of Taughenbaugh Boulevard. The streets and intersections that connect these areas were not designed to accommodate large traffic volumes.

The lack of multiple north/south arterials and multiple east/west arterials places significant pressure on Railroad Avenue and US 6 to serve the adjacent properties AND move traffic from one side of the city to the other.

**Table VII-2  
Low-Growth Scenario Projected Housing and Land Development**

<b>TAZ</b>	<b>Area Description</b>	<b>Land Use</b>	<b>Dwelling Units</b>
1	Outside City Limits, Northeast #1	S.F. Residential	40
3	Outside City Limits, Northeast #2	S.F. Residential	75
4	Northeast Rifle Farmland	County Lands	75
5	North Rifle Low/Med Residential	S.F. Residential	200
6	Northwest Rifle Medium Density Residential	S.F./Commercial	410
7	Northeast Rifle Medium Density Residential	S.F. Residential	50
8	Columbine Ford Dealership	Car Dealership	65
9	Wamsley Elementary	Elementary School	75
10	Northeast Rifle Low/Med Density Residential	S.F. Residential	50
11	Creekmeadows Development	S.F. Residential	125
12	Industrial/Commercial Hwy 13/Railroad 2	Mixed	0
13	Industrial/Commercial Hwy 13/Railroad 1	Mixed	6
14	Jct Hwy 13/Railroad Comm/High Density Residential	Mixed	146
15	Rifle Bypass at Hwy 13/Railroad Commercial	Commercial/Industrial	150
16	Rifle High School	School/S.F. Residential	10
17	Northeast of Rifle High School	S.F. Residential	100
18	East Central Rifle Medium Density Residential	S.F. Residential	75
19	West of Fairgrounds	S.F. Residential	80
20	Fairgrounds	Small Office Space	0
21	City Market Area	Mixed	31
22	North Central Medium Density Residential/Comm	Mixed	15
23	North Central Low/Medium Density Residential	S.F. Residential	11
24	Northeast Rifle Low Density Residential	S.F. Residential	77
25	Northeast #2 Rifle Low Density Residential	S.F. Residential	62
26	Northeast Rifle #3 Low Density Residential	S.F. Residential	375
27	Northeast Rifle #4 Low Density Residential	S.F. Residential	125
28	North Central Rifle #4 Low Density Residential	S.F. Residential	24
29	Central Rifle Low Density Residential	S.F. Residential	38
30	Central Rifle Low/Med Density Residential/Commercial	Gas Station and Residential Area	39
31	ESMA Lewis School	School/Med Density Residential	18
32	East Central Rifle Low/Med Density Residential	S.F. Residential	256
33	Northwest Low/Med Density Residential	S.F. Residential	150
34	Directly North of Hwy 6	Mixed	15
35	River Flood Plain	Commercial	0
36	CBD #7	Commercial/Residential	4
37	CBD #1	Mixed	6
38	CBD #2	Mixed	16
39	CBD #3	Mixed	13
40	CBD #4	Mixed	13
41	CBD #5	Mixed	0
42	CBD #6	Mixed	3
43	Original Rifle Townsite 2	Medium Density Residential	34
44	Med/High Density Res Central	Mixed Density Residential	26
45	Low/Med Res Central	S.F. Residential	40
46	Low/Med Res East Central	S.F. Residential	49
47	Low Density Res East Central	S.F. Residential	27
48	Low/Medium East Central	S.F. Residential	24
49	Original Rifle Townsite 1	Medium Density Residential	22
50	Med/Dens Res Central	S.F. Residential	20
51	Low/Med Res SE Central	S.F. Residential	30

**Table VII-2, continued**  
**Low-Growth Scenario Projected Housing and Land Development**

<b>TAZ</b>	<b>Area Description</b>	<b>Land Use</b>	<b>Dwelling Units</b>
52	Low/Med Res East Central	S.F. Residential	43
53	Developing Res East Central	S.F. Residential	2
54	Grand River Hospital	Hospital and Residential	71
55	Rifle Nursing Home	Nursing Home	75
56	Northeast Rifle #5 Low Density Residential	S.F. Residential	75
57	Rifle Trailer Park Area	S.F. Residential	300
58	US 6 East Frontage	No Development	0
59	East Central Rifle adjacent to Hwy 6 (East Study Area)	No Development	0
60	Park and Ride	Parking Lot	0
61	Hwy 6 West Frontage	No Development	0
62	Water Treatment Area	Light Industrial	0
63	Commercial/Industrial area North of Hwy 6	Commercial/Industrial	80
64	Frontage of I-70/Hwy 6 West	Light Industrial	0
65	West of Rifle Interchange/Colorado River	Rest Area/Commercial	6
66	Rifle Village	S.F. Residential	120
67	Rifle Interchange, SW Side	S.F. Residential	75
68	South Bluff Residential	S.F. Residential	0
69	South of Gas Stations off I-70	Commercial Center	5
70	Burger King	Commercial	0
71	New Hospital	Grand River Hospital	0
72	Bank/Developing Big Lots Stores	Rifle Retail Ventures	0
73	Northeast of New Hospital Site	Business Park	2
74	Rifle Business Park	Limited Commercial Development	0
75	Rifle Storage Park	Limited Mini-Storage Development	0
76	Directly South of Industrial Park	Business Park	0
77	South of City Limits and Industrial Park	Industrial Park	5
78	NWof Hwy 6 to West Interchange #1	No Development	0
79	NWof Hwy 6 to West Interchange #2	Commercial	0
80	Airport	Limited Industrial	0
81	Airport Industrial Zone	Limited Industrial	0
82	Southeast Study Area	Limited Industrial	0
83	Southwest of Silt	No Development	0
84	Gravel Pit	Rifle Gravel Pit	0

KSF = 1,000 Square Feet of Developed Building Space

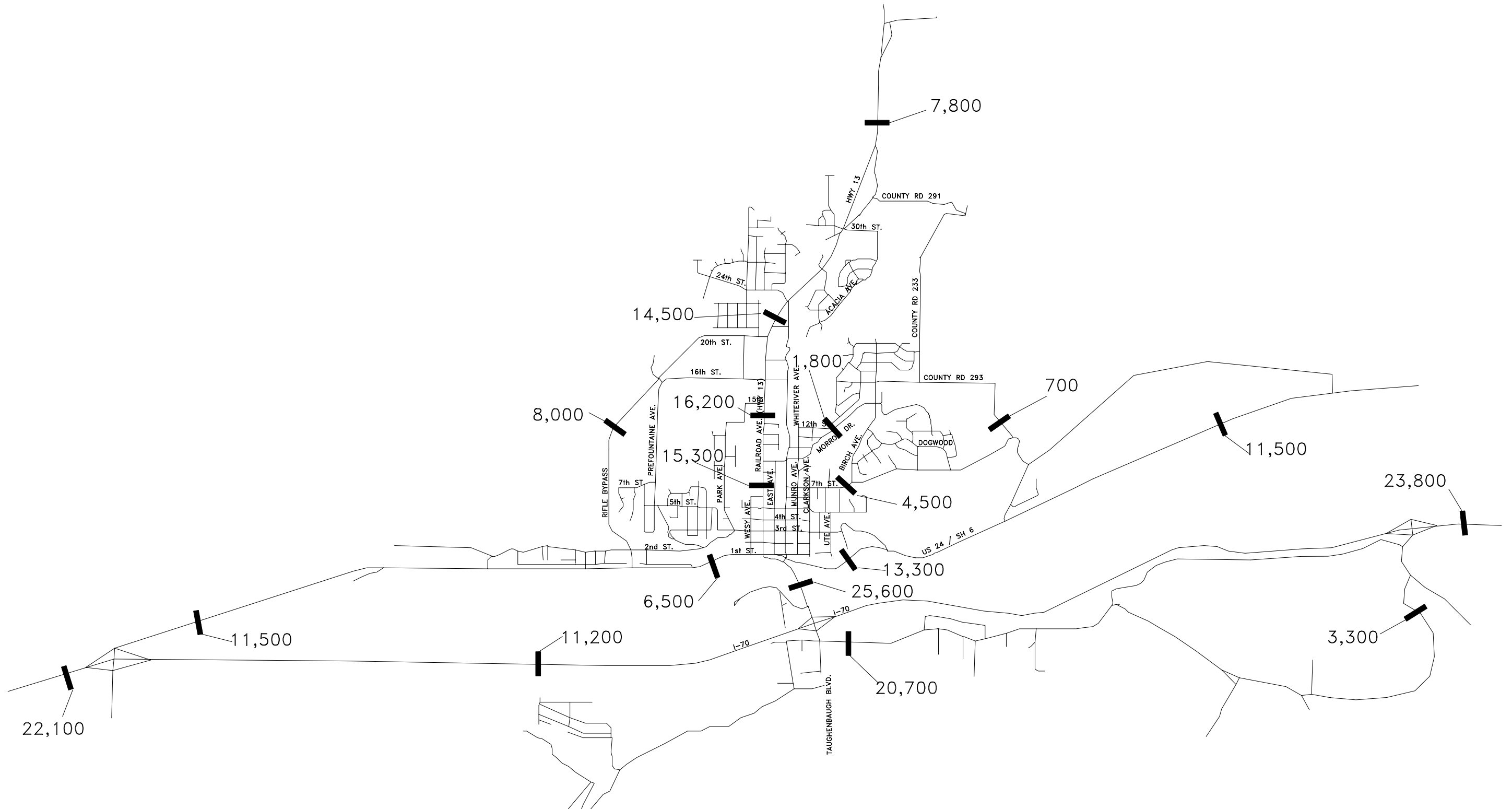
ITE = Various estimation criteria based upon Institute of Transportation Engineers, *Trip Generation, 6th Edition, 1997*

N/A = Only residential uses in the TAZ

Source: LSC, 2002

*Future Travel Volumes*

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Legend:

XX,XXX –Average weekday traffic (vehicles per day)



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LSC NO.:	015990	FIGURE NO.:	VII-2
2025 Low Growth Scenario Traffic Volumes			
Rifle Transportation Master Plan			

## **High-Growth Scenario**

The High-Growth Scenario is a modification of the Low-Growth Scenario. In this scenario, a higher rate of growth is expected to occur in the next 20 to 25 years. This growth is a combination of both population, households, and non-residential land development. Table VII-3 shows the summary demographic and land development used to forecast future traffic volumes. The high-growth scenario shows an increase from the base model trips of 65,522 to 139,200 per day, an increase of approximately 112 percent. Similar to the low-growth scenario, the major roads will experience significant increased traffic volumes. The high-growth scenario will see more growth on US 6 west of Rifle and on the truck bypass partially due to complete gridlock on Railroad Avenue. Figure VII-3 illustrates the High-Growth Scenario future traffic volumes.

Appendices E, F, and G show the daily trips for each TAZ for the base year model, the low-growth scenario, and the high-growth scenario.

**Table VII-3  
High-Growth Scenario Projected Housing and Land Development**

<b>TAZ</b>	<b>Area Description</b>	<b>Land Use</b>	<b>Dwelling Units</b>
1	Outside City Limits, Northeast #1	S.F. Residential	40
3	Outside City Limits, Northeast #2	S.F. Residential	200
4	Northeast Rifle Farmland	S.F. Residential	300
5	North Rifle Low/Med Residential	S.F. Residential	400
6	Northwest Rifle Medium Density Residential	S.F./Commercial	410
7	Northeast Rifle Medium Density Residential	S.F. Residential	75
8	Columbine Ford Dealership	Car Dealership	65
9	Wamsley Elementary	Elementary School	200
10	Northeast Rifle Low/Med Density Residential	S.F. Residential	175
11	Creekmeadows Development	S.F. Residential	150
12	Industrial/Commercial Hwy 13/Railroad 2	Mixed	0
13	Industrial/Commercial Hwy 13/Railroad 1	Mixed	6
14	Jct Hwy 13/Railroad Comm/High Density Residential	Mixed	146
15	Rifle Bypass at Hwy 13/Railroad Commercial	Commercial/Industrial	200
16	Rifle High School	School/S.F. Residential	10
17	Northeast of Rifle High School	S.F. Residential	150
18	East Central Rifle Medium Density Residential	S.F. Residential	100
19	West of Fairgrounds	S.F. Residential	90
20	Fairgrounds	Small Office Space	0
21	City Market Area	Mixed	31
22	North Central Medium Density Residential/Comm	Mixed	15
23	North Central Low/Medium Density Residential	S.F. Residential	11
24	Northeast Rifle Low Density Residential	S.F. Residential	77
25	Northeast #2 Rifle Low Density Residential	S.F. Residential	62
26	Northeast Rifle #3 Low Density Residential	S.F. Residential	475
27	Northeast Rifle #4 Low Density Residential	S.F. Residential	175
28	North Central Rifle #4 Low Density Residential	S.F. Residential	24
29	Central Rifle Low Density Residential	S.F. Residential	38
30	Central Rifle Low/Med Density Residential/Commercial	Commercial/Residential	39
31	ESMA Lewis School	School/Med Density Residential	18
32	East Central Rifle Low/Med Density Residential	S.F. Residential	256
33	Northwest Low/Med Density Residential	S.F. Residential	150
34	Directly North of Hwy 6	Mixed	15
35	River Flood Plain	Commercial	0
36	CBD #7	Commercial/Residential	4
37	CBD #1	Mixed	6
38	CBD #2	Mixed	16
39	CBD #3	Mixed	13
40	CBD #4	Mixed	13
41	CBD #5	Mixed	0
42	CBD #6	Mixed	3
43	Original Rifle Townsite 2	Medium Density Residential	34
44	Med/High Density Res Central	Mixed Density Residential	26
45	Low/Med Res Central	S.F. Residential	40
46	Low/Med Res East Central	S.F. Residential	49
47	Low Density Res East Central	S.F. Residential	27
48	Low/Medium East Central	S.F. Residential	24
49	Original Rifle Townsite 1	Medium Density Residential	22
50	Med/Dens Res Central	S.F. Residential	20
51	Low/Med Res SE Central	S.F. Residential	30
52	Low/Med Res East Central	S.F. Residential	43

**Table VII-3, continued**  
**High-Growth Scenario Projected Housing and Land Development**

<b>TAZ</b>	<b>Area Description</b>	<b>Land Use</b>	<b>Dwelling Units</b>
53	Developing Res East Central	S.F. Residential	2
54	Grand River Hospital	Hospital and Residential	71
55	Rifle Nursing Home	Nursing Home	75
56	Northeast Rifle #5 Low Density Residential	S.F. Residential	75
57	Rifle Trailer Park Area	S.F. Residential	300
58	US 6 East Frontage	No Development	0
59	East Central Rifle adjacent to Hwy 6 (East Study Area)	No Development	0
60	Park and Ride	Parking Lot	0
61	Hwy 6 West Frontage	No Development	5
62	Water Treatment Area	Light Industrial	0
63	Commercial/Lodging/Multi-Family Households	Commercial and Lodging Area	100
64	Frontage of I-70/Hwy 6 West	Light Industrial	0
65	West of Rifle Interchange/Colorado River	Rest Area Commercial	6
66	Rifle Village	S.F. Residential	150
67	Rifle Interchange, SW Side	S.F. Residential	120
68	South Bluff Residential	S.F. Residential	50
69	South of Gas Stations off I-70	Commercial Center	5
70	Burger King	Commercial	0
71	New Hospital	Grand River Hospital	0
72	Bank/Developing Big Lots Stores	Rifle Retail Ventures	0
73	Northeast of New Hospital Site	Business Park	2
74	Rifle Business Park	Limited Commercial Development	0
75	Rifle Storage Park	Limited Mini-Storage Development	0
76	Directly South of Industrial Park	Business Park	0
77	South of City Limits and Industrial Park	Industrial Park	5
78	NW of Hwy 6 to West Interchange #1	Light Industrial	0
79	NW of Hwy 6 to West Interchange #2	Commercial/Lodging	0
80	Airport	Limited Industrial	0
81	Airport Industrial Zone	Limited Industrial	0
82	Southeast Study Area	Limited Industrial	0
83	Southwest of Silt	No Development	0
84	Gravel Pit	Rifle Gravel Pit	200

KSF = 1,000 Square Feet of Developed Building Space

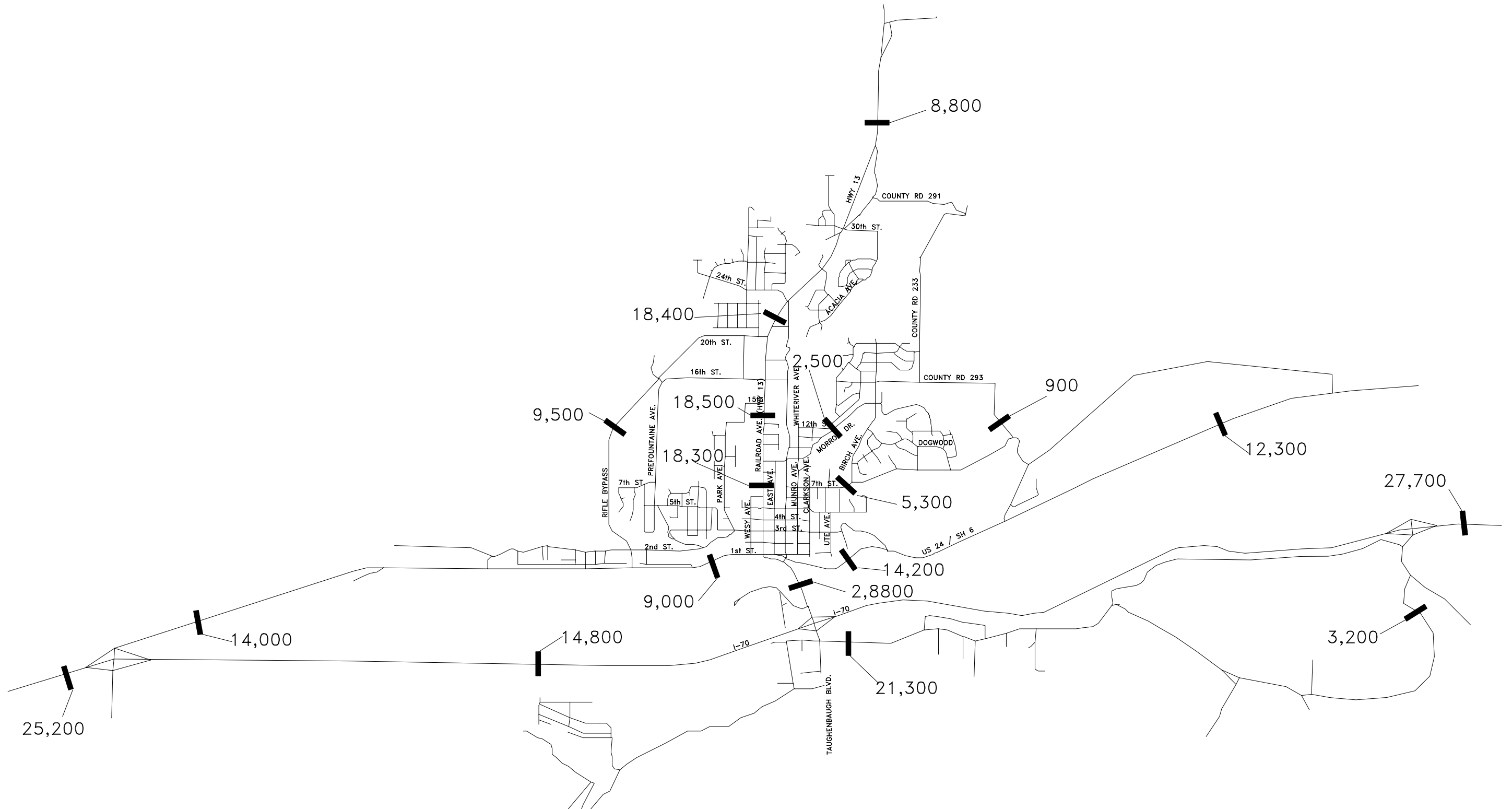
ITE = Various estimation criteria based upon Institute of Transportation Engineers, Trip Generation, 6th Edition, 1997

N/A = Only residential uses in the TAZ

Source: LSC, 2002

*Future Travel Volumes*

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Legend:

XX,XXX –Average weekday traffic (vehicles per day)



NOT TO SCALE



LSC NO.:	015990	FIGURE NO.:	VII-3
2025 High Growth Scenario Traffic Volumes			
Rifle Transportation Master Plan			