

III. FORECASTED GROWTH

In order to properly identify potential improvement projects for the transportation system in Evans, it is important to first understand the nature and volume of traffic in the study area in the future. It is also useful to understand existing traffic flow patterns, as presented in the previous chapter. The analysis of future traffic volumes for the Evans study area is based on the 2030 regional transportation model developed by the North Front Range Metropolitan Planning Organization (NFR MPO). This computerized model includes the entire North Front Range region. The model area extends from SH 66 to the south to Larimer County Road 88 to the north, and from east of Greeley to west of Fort Collins. It was used as a basis for Evans forecasts because it provides the context of Evans in relation to the rest of northern Colorado including Greeley, Fort Collins, and Loveland.



A. Land Use Forecast

Demographic data sets, including household and employment estimates and forecasts associated with a system of transportation analysis zones (TAZs), form the basis for travel demand forecasting. The TAZ system in the Evans area is shown on Figure 12. NFR regional household and employment estimates for 1998 and forecasts for 2030 were used as an initial basis. The regional data were then refined in the Evans Urban Growth Area based on the City's Comprehensive Master Plan and anticipated development in the city. The land use estimates for the Evans area are significantly higher than those included in the North Front Range model. The Evans forecasts include significant development along the Two Rivers Parkway, consistent with the City's Comprehensive Master Plan, as well as development south of the South Platte River that is anticipated to occur if 35th Avenue is extended across the river, providing an additional north-south connection. Based upon previous trends, as well as regional growth patterns identified with the NFR regional demand forecasting, it was determined that the forecasting horizon for this growth scenario was closer to the 2030 horizon. For transportation planning purposes, the 2030 horizon was used in determining the long range transportation needs.

The traffic modeling process assigns different trip generation characteristics to employment in the retail and non-retail sectors. Table 6 provides a summary of the 1998 and projected 2030 residential and employment data within the Evans Urban Growth Area.

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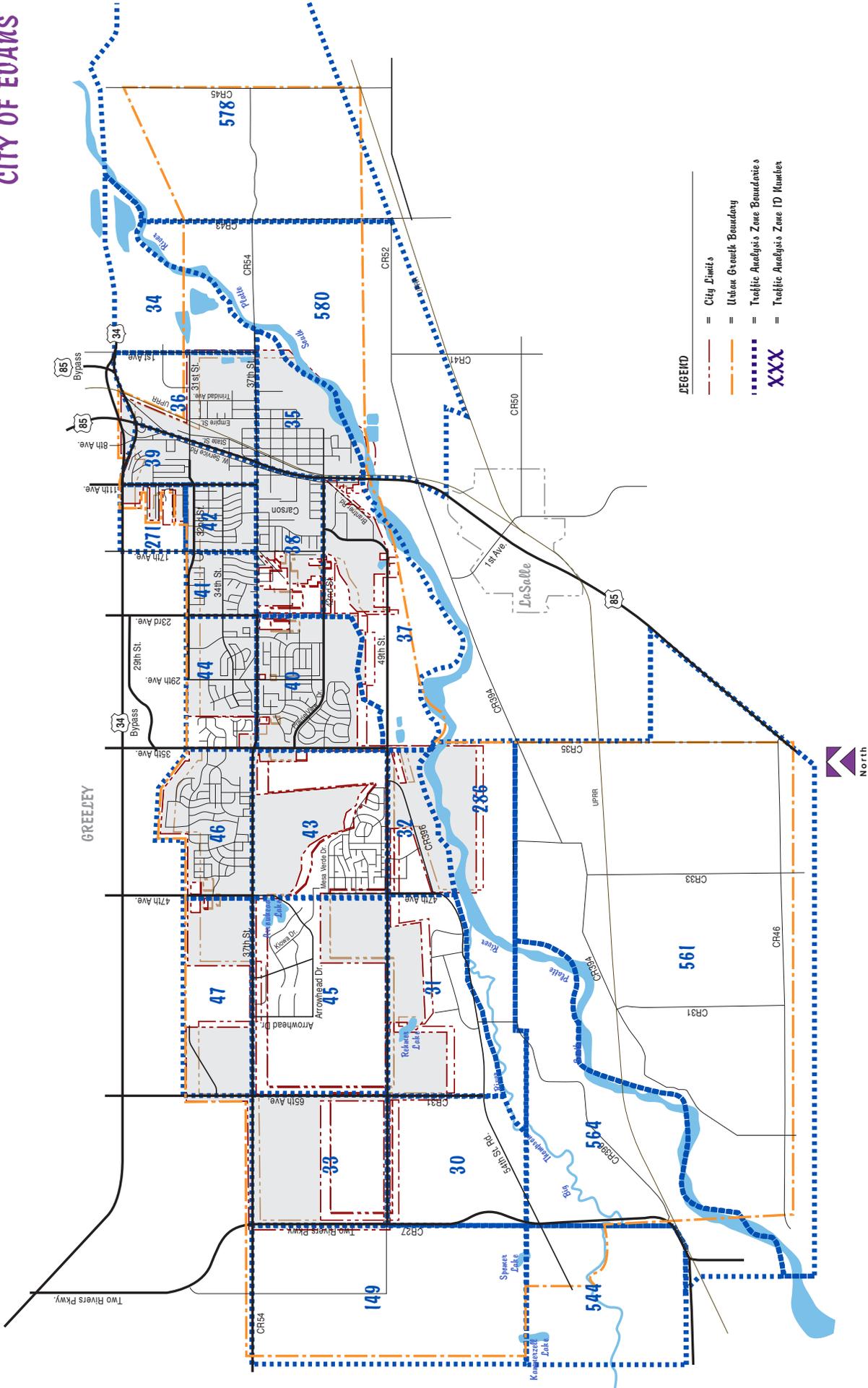


Figure 12
TRAFFIC ANALYSIS ZONES



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Table 6. Existing and Projected Household and Employment Data

	1998	2030	% Annual Growth (1998 to 2030)
Households	4,361	21,205	5.1%
Retail Employment	849	3,670	4.7%
Non-Retail Employment	2,674	8,945	3.9%
Total Employment	3,521	12,615	4.12%

The 2030 household and employment forecasts have been allocated to the Evans TAZ network as shown in Table 7.

Table 7. 2030 Household and Employment Forecasts by TAZ

TAZ	Households	Retail Employment	Non-Retail Employment	Total Employment
30	1,280	25	1	26
31	701	243	655	10
32	450	31	25	56
33	1,028	500	1500	2000
34	514	101	467	568
35	417	89	412	502
36	470	85	393	478
37	1,242	114	52	166
38	554	51	184	235
39	1,000	150	1073	1223
40	1,727	83	184	267
41	1,316	200	250	450
42	708	25	513	538
43	864	34	41	75
44	537	507	617	1124
45	1,049	56	23	79
46	1,040	150	200	350
47	472	193	0	193
149	1,920	500	1500	2000
271	792	44	474	518
286	15	0	0	0
544	42	0	52	52
561	2500	0	12	12
564	20	0	25	25
578	167	0	171	171
580	43	0	76	76
TOTAL	21205	3670	8945	12615

The relative increases in household growth from 1998 to 2030 are illustrated on Figure 13. The highest concentration of household growth is expected to occur primarily through the central portion of the city along the 37th and 49th Street corridors, as well as in the southern portion of the Urban Growth Area. Figure 14 shows the relative increases in total employment from 1998 to 2030. The highest concentrations of employment growth are expected to occur along the 37th Street corridor and along the Two Rivers Parkway corridor.

B. 2030 Traffic Forecasts

The future travel demand patterns in the Evans area and the North Front Range region are primarily a function of the population and employment opportunities in the area. The household and employment data outlined in the preceding section were used as input in the NFR travel demand model. The model provided traffic forecasts on the various street networks that were used to assess improvement needs. These forecasted volumes could then be used to identify deficiencies in the roadway network and to evaluate the effectiveness of alternative improvements.

C. Travel Patterns

The future travel demand patterns in the Evans area and the other communities in the North Front Range are shown on Figure 15. Internal trip making is expected to comprise only 11 percent of the total daily trips which have either an origin or a destination in Evans. The majority of the Evans trips (66%) are projected to be made between Evans and Greeley. Additional outside trips include 2.3 percent to other areas such as Loveland, Fort Collins, Denver, etc.

D. Screenline Analysis

A simple method of creating “screenlines” was used to compare the projected traffic volumes with the existing traffic volumes and to compare these volumes with the design capacities of the roadways. A screenline is a straight line drawn across a number of streets providing travel in the same direction. All traffic volumes traveling across that particular screenline added together provide an understanding of the travel patterns and deficiencies in the network along a specific orientation (i.e. north-south or east-west).

The results of the two screenline analyses in the Evans area are shown on Figure 16. Bar graphs of the existing volumes and the projected year 2030 volumes with the extension of 35th Avenue across the South Platte River are shown next to each screenline. The design capacity is also shown on each graph.

Screenline 1 includes 37th Street, 49th Street and 54th Street Road between Two Rivers Parkway and 65th Avenue. The existing volume along the screenline is well below the existing design capacity of 34,000 vehicles per day (vpd). The 2030 forecasted daily volumes are forecasted to be in the range of 45,700 vpd, indicating the need for additional capacity in the east-west direction.

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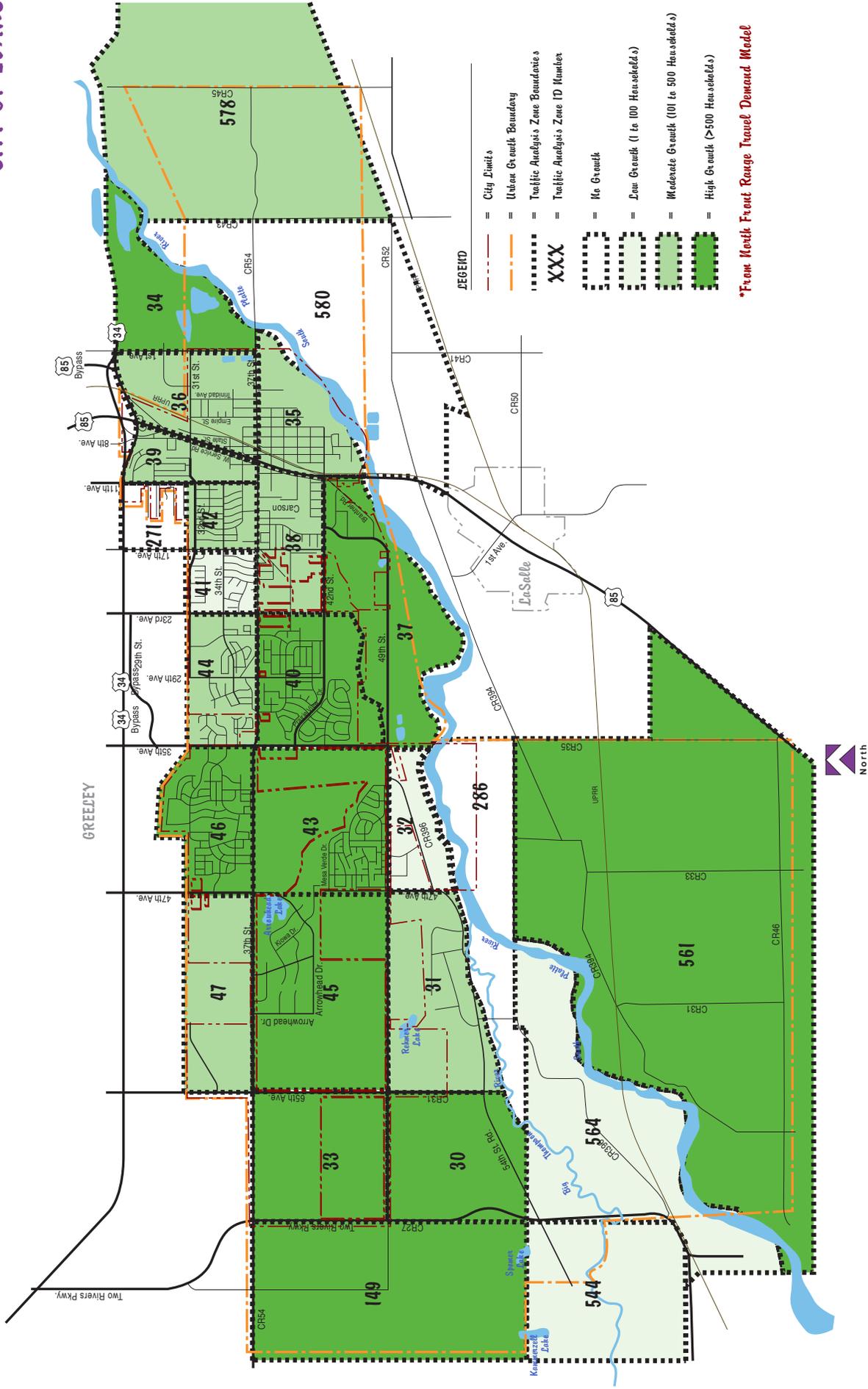


Figure 13
HOUSEHOLD GROWTH
(1998 - 2030)

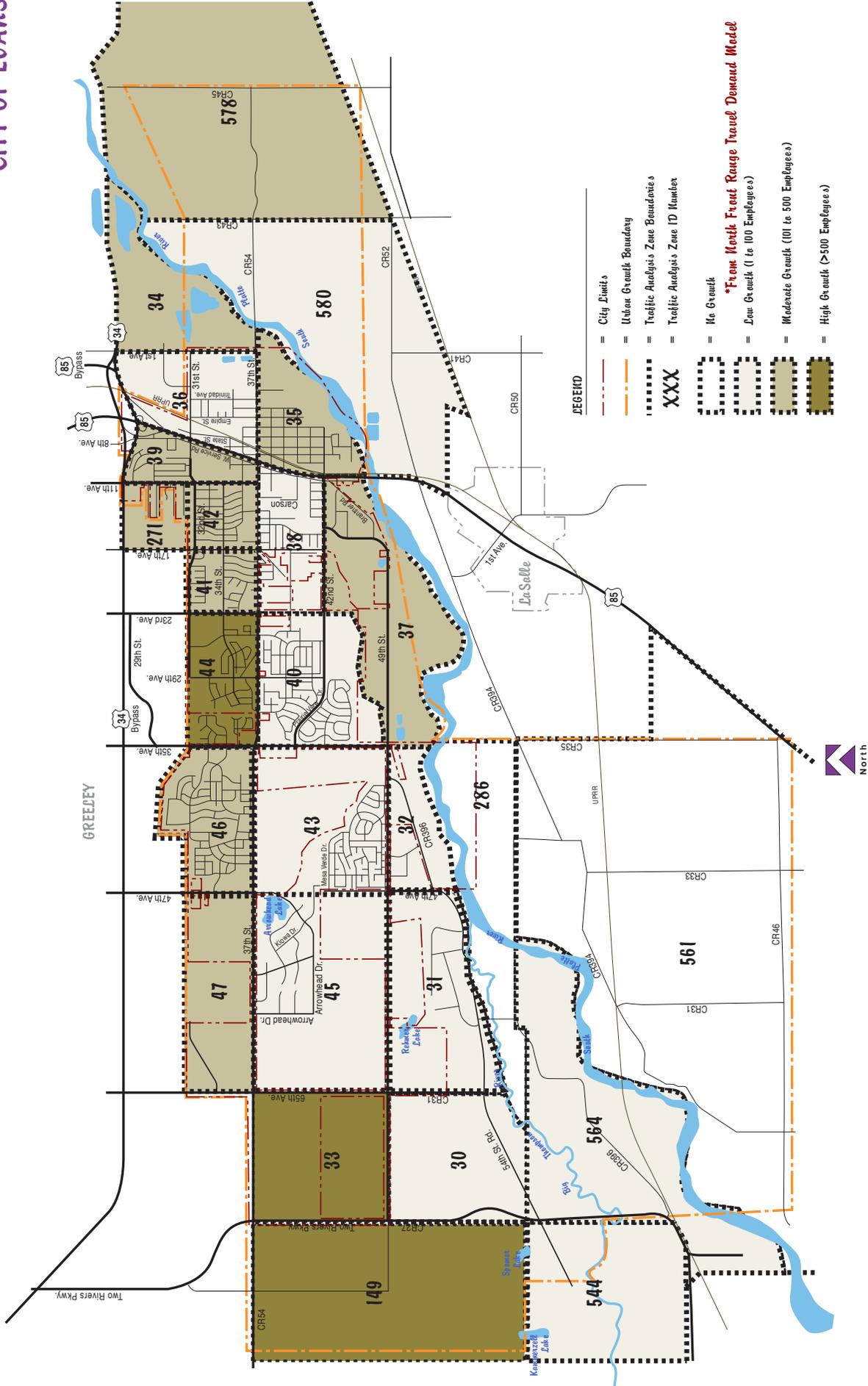


Figure 14
EMPLOYMENT GROWTH
(1998 - 2030)



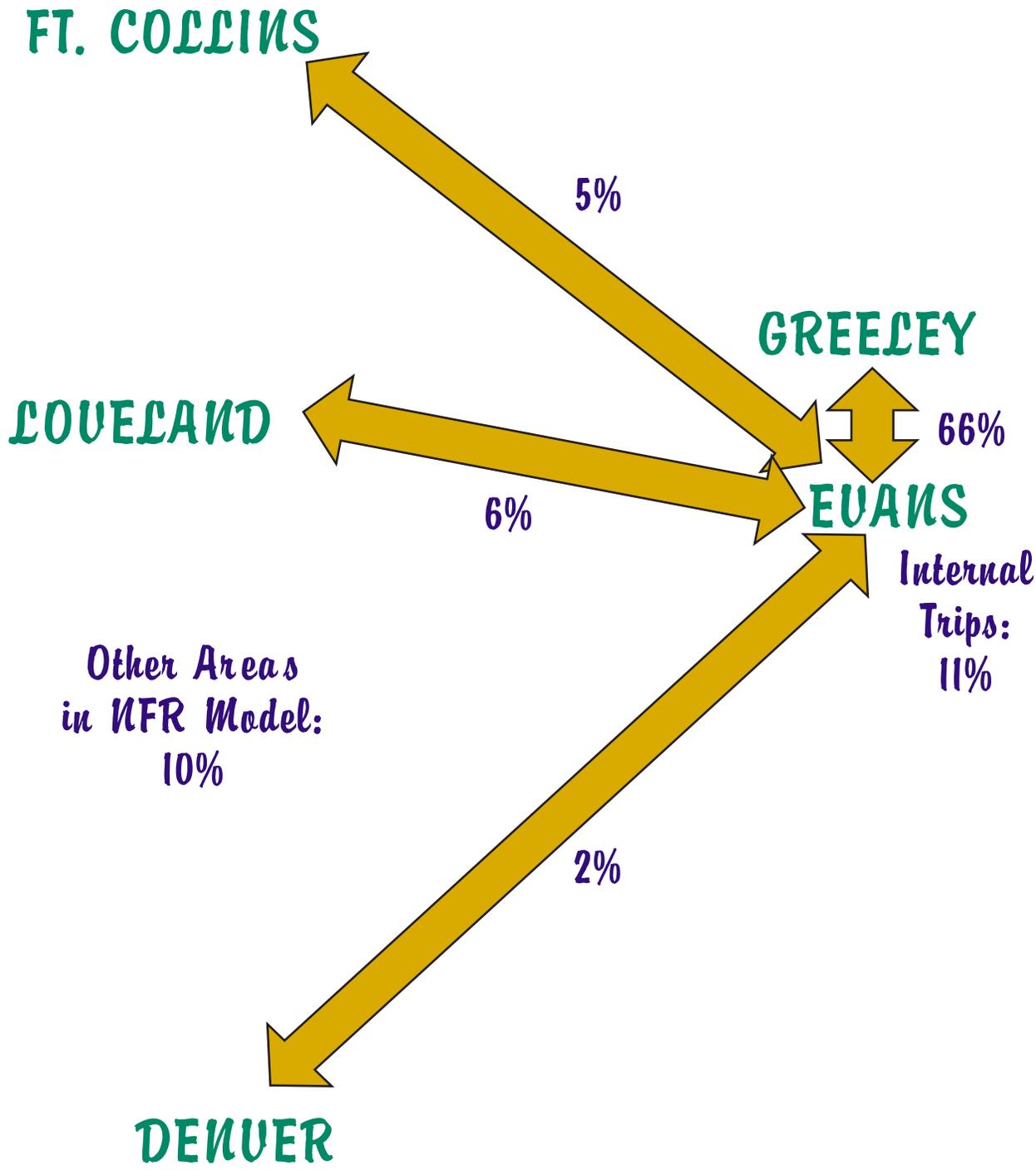


Figure 15

2030 DAILY
TRIP DISTRIBUTION

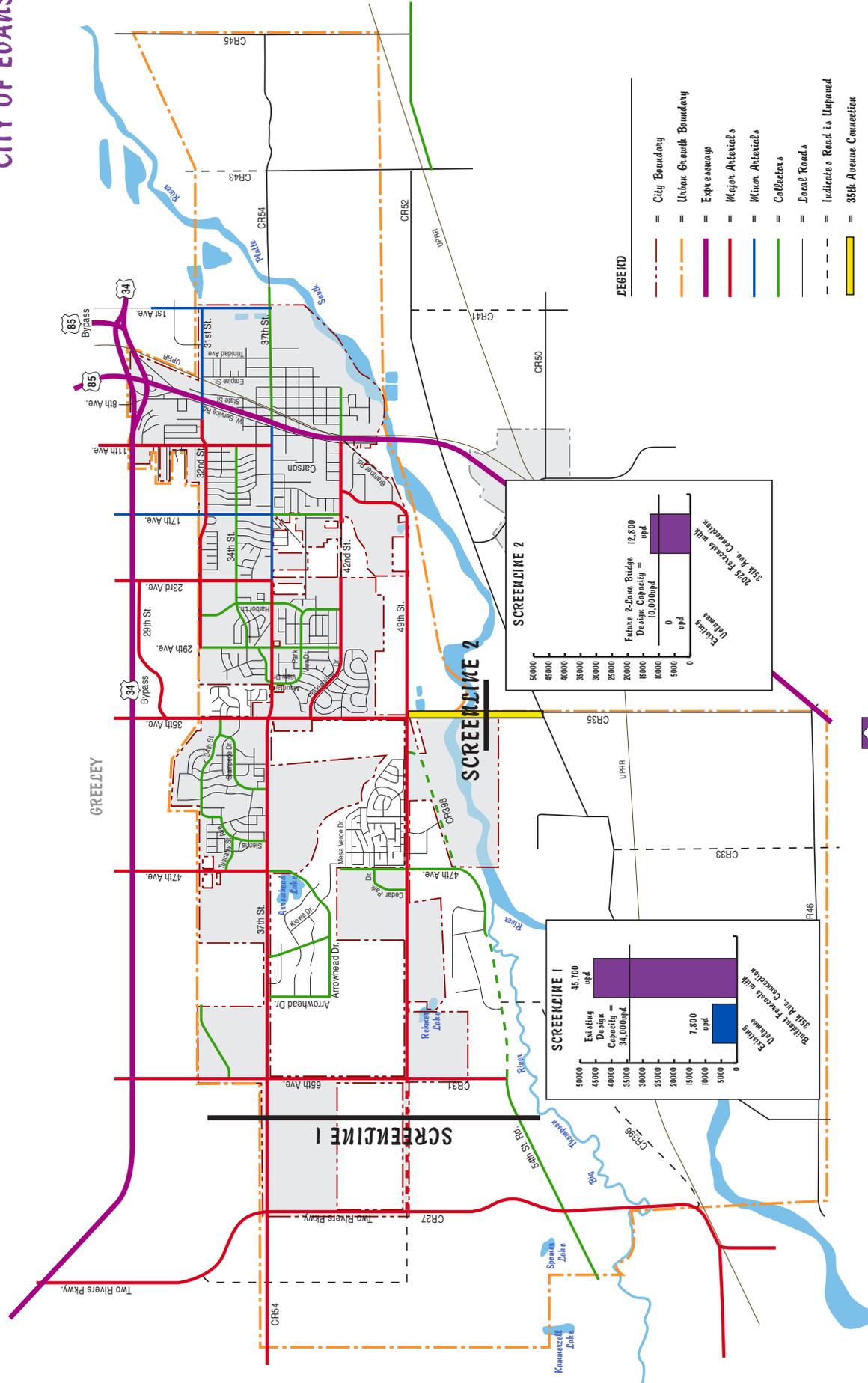


Figure 16
SCREENLINE DAILY TRAFFIC VOLUMES

Screenline 2 was done specifically to address the need for the 35th Avenue connection across the South Platte River. Since there is no bridge existing today, the existing traffic volume along the screenline is zero. With the addition of a two-lane bridge, the forecasted 2030 daily volume is forecasted in the range of 12,800 vpd, which is above the design capacity of 10,000 vpd. This indicates that there may be sufficient demand on the future bridge to necessitate four lanes at or beyond 2030.

E. Projected Traffic Demand

With the general trends observed in the screenline analyses in mind, the initial model run involved assigning 2030 volumes to the base case roadway network. The base case network includes 37th Street/CR 54 as four lanes to I-25 and US 34 as six lanes to I-25, both of which are regional improvements which are anticipated to be complete by 2030. Additionally, the 23rd Avenue extension to 42nd Street is included in the base case network because it is planned for completion in the next three years by the City of Evans. The forecasted 2030 volumes on the base case network are shown on Figure 17. This assignment was used to identify specific roadways on which significant congestion could be expected in the future if no improvements were made beyond the base case network. Figure 16 also identifies those roadway segments that are expected to have moderate and high levels of growth. Moderate levels include up to two times existing volume, while high growth is considered to be greater than doubling of the existing volume.

F. Improvement Alternatives

The results of the screenline and capacity deficiency analyses, along with input from the public, were used to identify potential roadway improvement alternatives. Each alternative was incorporated into the travel demand model, and separate model runs were conducted to evaluate the effects of the individual improvements. The following roadway improvement alternatives were considered:

- ◆ 23rd Avenue extension from 42nd Street to 49th Street
- ◆ Prairie View Drive/47th Avenue Connection
- ◆ 35th Avenue Bridge over South Platte River
- ◆ 32nd Street extension – Two Rivers Parkway to 29th Avenue
- ◆ 49th Street widening to four lanes – Two Rivers Parkway to Brantner
- ◆ 54th Street Road widening to four lanes – Two Rivers Parkway to 49th Street
- ◆ Two Rivers Parkway widening to four lanes – US 34 Bypass to south of 54th Street Road
- ◆ 65th Avenue widening to four lanes – US 34 to 54th Street Road

The impact of each improvement alternative on the surrounding roadway network was evaluated. Those improvements which are expected to provide significant relief to the system and/or provide continuity in the roadway network were selected for further consideration. Several improvement alternatives were eliminated because of right-of-way constraints or negligible benefit to the overall network. The following is a discussion of the alternatives which are expected to provide significant benefit to the system and are included in the Master Streets Plan.

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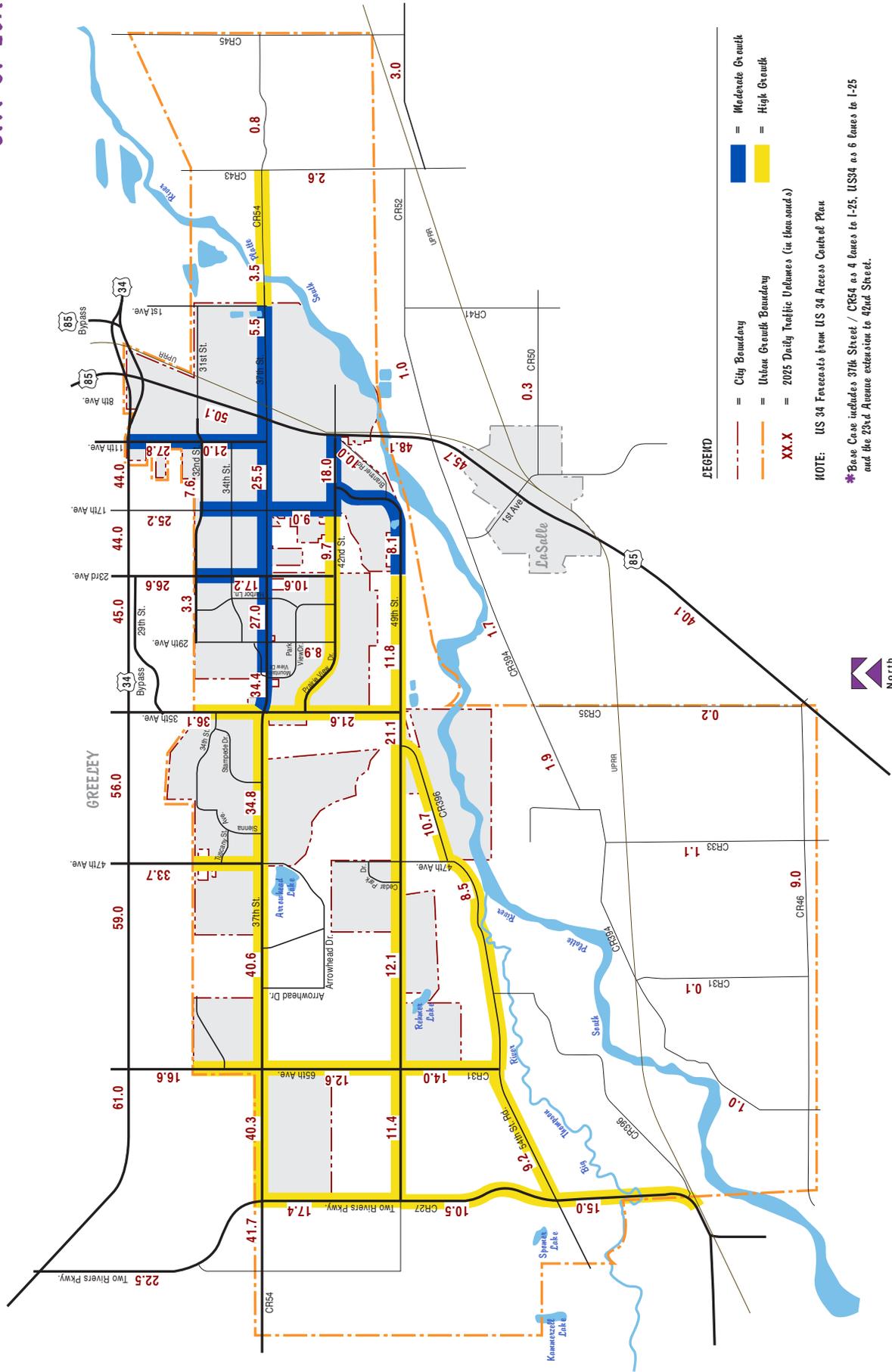


Figure 17
2030 FORECASTS
on BASE CASE NETWORK*

35th Avenue Bridge over South Platte River – This connection over the South Platte River will provide additional north-south connectivity between the current city limits and the southern area included in the Long Range Growth boundary. The bridge would also provide an alternate route for both Evans and Greeley traffic to access US 85 to the south.

Two Rivers Parkway Widening – This corridor is expected to be a primary route for north-south travel through Weld County in the future. In order to accommodate the potential growth along the corridor, Two Rivers Parkway will need to be four lanes.

23rd Avenue Extension – Connecting 23rd Avenue from its current terminus to 49th Street will complete the grid system in this area of Evans, providing an alternative route for travel and relieving congestion on 35th Avenue.

Prairie View/47th Avenue Connection – This connection would provide continuity in the roadway network and would provide some relief to the 37th Street corridor. Drainage and property acquisition are some of the challenges to implementation.

49th Street Widening – Widening 49th Street through Evans would provide for improved local movement through the city, while relieving the 37th Street corridor by providing alternate east/west route through Evans.

