

III. 2020 CONDITIONS

A. Economic and Demographic Conditions

Rocky Mountain National Park Visitation

Visitation trends over the past decade, a period itself characterized by strong local and regional population growth, served as the basis for projecting future park visitation. Changes in monthly visitation between 1991 and 2000 were the basis for projecting future monthly visitation. Projected monthly visitation levels were summed to derive projected annual visitation.

Results of this process indicate that annual visitation at RMNP will climb steadily, exceeding four million in 2010 and approaching five million annual visitors in 2020 – see Table 8. The total increase of nearly 1.6 million visitors over the 20-year period represents an overall growth of 47 percent over the 2000 visitation and a compounded annual growth rate of nearly two percent. To a large degree, the increase will reflect national population growth and increases in the number of international visitors. However, strong population growth in the Estes Valley study area, the rest of Larimer County, and along the Colorado Front Range will also be a significant contributing factor to future visitation levels. According to the Colorado Division of Local Government (CDLG), Larimer County’s population will increase by more than 100,000 residents to nearly 356,000 by 2020. Colorado’s statewide population will increase by 1.7 million residents to exceed 6.0 million during the same period.

Table 8. Projected Annual Visitation at Rocky Mountain National Park, 2000 - 2020

Year	Annual Visitation
2000	3,379,800
2005	3,732,600
2010	4,173,800
2015	4,731,900
2020	5,446,600

Sources: URS Corp. and Rocky Mountain National Park

RMNP visitation will increase across the board, but summer will continue to be the peak season with combined visitation during June, July and August increasing from just over 1.9 million in 2000 to nearly 2.5 million in 2020 (a 31 percent increase). Peak monthly visitation is expected to continue occurring in July. Based on these projections, RMNP will experience record visitation of one million or more visitors in a single month sometime between 2010 and 2015.

Population

Future transportation demand will also correspond to long-term resident population growth in the study area. Recent economic, demographic, and residential construction trends and the land use information from the comprehensive plan provide the basis for projecting resident population in the study area.

As mentioned previously, Larimer County’s population is projected to climb by more than 100,000 residents over the next 20 years, reaching almost 356,000 by 2020. Looking forward, the influences that affected population growth in the study area over the past decade will remain relevant over the next 20 years. Consequently, it is reasonable to assume that future population growth in the study area will continue to increase at a faster rate than the county’s future growth. Given this assumption, the resident population of the study area is projected to grow to 15,000 in 2010 and to 19,000 in 2020 (see Table 9). Over the 20-year period, the net change represents a compounded annual growth rate of 2.8 percent, compared to a compounded rate of 1.8 percent for Larimer County as a whole.

Table 9. Population Projections to 2020 for Larimer County & Estes Valley Study Area

Geographic Area	1990	2000	2005	2010	2015	2020
Larimer County	186,136	251,494	278,900	304,900	330,400	355,900
Estes Valley Study Area	7,759	11,034	13,100	15,100	17,100	19,000
Sources: Colorado Division of Local Government and the team						

The projected year 2020 population of 19,000 residents for the study area approximates that associated with a build-out or full residential development condition defined in the 1999 Estes Park Comprehensive Plan. Predicated on the amount of vacant developable land remaining, approximate development densities considering zoning, slopes, the impact of conservation easements and other factors, the build-out condition represented a reasonable estimate of maximum future development levels. In turn, these are used by the Town for long-term facility and service planning purposes. Although the Comprehensive Plan did not forecast the timing for achieving the build-out condition, its occurrence within the timeframe for the transportation plan, though somewhat coincidental, is also appropriate for the purposes of establishing long-term transportation demand.

Land Use and Projected Future Development

Implicit in the population projections is the on-going construction of additional housing on private lands throughout the study area. Additional non-residential construction will also occur to meet rising consumer demand associated with the expanding population base and increasing visitation to RMNP. As is presently the case for the existing inventory of non-residential space, much of this new building will be retail and service oriented space, including the construction of additional short-term overnight lodging accommodations. Estimates of future development reflect the population and visitor projections described previously, the remaining development capacity identified in the Comprehensive Plan, a variety of economic assumptions, and professional judgments by the project team and Town planning staff.

Through 2020, 2,600 additional dwelling units are forecasted to be built in the study area. That number is consistent with the concept of full residential development capacity established in the Comprehensive Plan. However, even that level of development would be inadequate to support the full year-round resident population projected previously. Rather, what is expected to occur is for more units to convert from seasonal or occasional use to full-time occupancy. The projected population growth implies such a shift for approximately 500 of the nearly 2,300 such units identified in the 2000 census.

Projections of future non-residential development are tied to forecasted changes in economic activity, primarily changes in peak visitation levels and changes in resident consumer spending. Recent trends in retail sales and lodging occupancy rates were combined with existing land use and development data to estimate the incremental development required to maintain a balance between market supply and demand comparable to current conditions.

The results of that analysis, shown in Table 10, anticipated the development of 1,400 additional short-term overnight accommodations and 658,000 square feet of commercial space. Reflecting current conditions, 500,000 square feet or 80 percent of the total new space is expected to house/be occupied by stores, eating and drinking establishments and other types of retail shops.

Table 10. Estes Valley Projected Development – 2000 to 2020, By Type

Type of Development	Incremental Development
Year-Round Residences	2,600 dwelling units
Lodging/Accommodations **	1,400 units
Retail	500,000 square feet
Office	125,000 square feet
Industrial	33,000 square feet
** Accommodations include hotel and motel rooms, cabins, condominiums and RV/camping space. Sources: The Town of Estes Park and the Estes Valley Transportation Alternative Study team.	

Unlike for future residential development, the projected non-residential development does not represent a full development scenario. Rather, the incremental commercial development through 2020 absorbs about half the remaining vacant land and capacity identified for such use in the Comprehensive Plan. However, most of the remaining development capacity is likely to be located in smaller, fragmented parcels or parcels with building envelopes constrained by topography making future development more costly and hence, uncertain.

B. Travel Demand and Traffic Forecasting

In order to determine what transportation system improvements will be necessary over the next 20 years and how successful they will be, it is important to estimate the demand for travel during that time period. The following paragraphs detail the methodology, assumptions, and results of the traffic forecasting process to develop traffic forecasts for a peak summer weekend (design day) in 2020 for the Estes Valley Study Area.

Process

There are two major components of future traffic growth in the Estes Valley study area; changes in existing land uses and changes in visitation for Estes Park and RMNP. In order to develop traffic forecasts for these two categories, established traffic forecasting processes were followed, consisting of:

- ◆ Determining the increment of development by parcel or change in visitation,
- ◆ Placing the development into geographic areas,
- ◆ Performing a trip generation analysis of the development and visitation changes utilizing trip generation rates as presented in the Trip Generation Manual, Sixth Edition, produced by the Institute of Transportation Engineers and historic data from Estes Park and RMNP,
- ◆ Separating trips by purpose and origin/destination. The potential trip purposes are home-based work (HBW) trips, home-based non work (HBNW) trips, and non-home based (NHB) trips,
- ◆ Performing trip distribution for the trips to estimate the number of trips that occur entirely within the study area and those that start or end outside the boundaries of the study area,
- ◆ Assigning traffic to particular streets and intersections to travel between their origin and destination.

The result of this process is the predicted additional traffic for a peak summer weekend in 2020. The predicted traffic is then added to the existing traffic in the study area to arrive at total 2020 traffic. Data on the community development increment were taken from zoning maps provided by the Town of Estes Park and are consistent with the Town plan. The changes in visitation for RMNP were taken from data the Park provided on future visitation levels.

Trip Generation

Trip generation was performed for both the increment of development and changes in visitation. Trip generation rates for different land uses were determined by utilizing the database of information presented in the Trip Generation Manual. We utilized this as a basis for our trip generation. These rates were then calibrated based on local experience to arrive at locally acceptable trip generation rates.

RMNP visitation trip generation estimates were based on visitor projections from RMNP as well as entrance data collected on the number of people per vehicle, entrance station utilization, and vehicle travel patterns through the Park. The trips to and from RMNP were divided into overnight trips and day trips to aid in the trip assignment task.

A trip generation reduction factor was applied to the downtown Estes Park area to account for multiple purpose trips or trips where a vehicle parks once, the occupants visit more than one establishment, and the vehicle leaves. In general, trips were counted on a one-for-one basis per establishment visited. Due to parking conditions in downtown Estes Park many people park once and visit several destinations. To account for this, trips for retail establishments in the downtown were reduced by 50 percent and trips for retail uses outside the central business district were reduced by 25 percent.

Trip Distribution

This task was performed to determine the number of trips that stay within the study area as well as trips that start or end outside the study area. The likely routes for trips into and out of the study area were also analyzed. Based on the visitation, land uses, and population of Estes Park, trip characteristics were determined. Table 11 shows the trip distribution assumptions developed.

Table 11. Internal/External Assumptions by Purpose and Generator

Land Use Category	Distribution by Purpose					
	Home-Based Work		Home-Based Non-Work		Non-Home Based	
	Internal	External	Internal	External	Internal	External
<i>Residential Dwelling Units</i>						
Full Time Resident	60%	40%	75%	25%	75%	25%
Part Time Rental	60%	40%	75%	25%	75%	25%
Part Time Non Rental	60%	40%	75%	25%	75%	25%
Employee Housing	80%	20%	75%	25%	75%	25%
<i>Commercial</i>						
Hotel/Resort	75%	25%	75%	25%	75%	25%
Low Intensity Retail Commercial	75%	25%	65%	35%	60%	40%
Medium Intensity Retail Commercial	75%	25%	65%	35%	60%	40%
High Intensity Retail Commercial	75%	25%	65%	35%	60%	40%
Office	65%	35%	65%	35%	65%	35%
Industrial	40%	60%	20%	80%	25%	75%
Recreational	60%	40%	50%	50%	25%	75%
Civic	60%	40%	50%	50%	50%	50%

Additionally, traffic volumes on the three major accesses to the study area (not including RMNP) were analyzed to determine the percent of traffic utilizing them. It was found that approximately 37 percent travel the US 34 corridor to and from the east, 42 percent travel the US 36 corridor to and from the east, and 21 percent travel the SH 7 corridor to and from the south. This data was used in the trip assignment portion of the process.

It was also important in this task to determine the appropriate characteristics of each land use type with respect to the trip types being generated. Table 12 shows the assumptions made on trip types by land use category.

Table 12. Trip Type Assumptions by Generator

Land Use Category	Trip Type by Purpose		
	Home-Based Work	Home-Based Non-Work	Non-Home Based
<i>Residential Dwelling Units</i>			
Full Time Resident	15%	65%	20%
Part Time Rental	5%	75%	20%
Part Time Non Rental	5%	75%	20%
Employee Housing	80%	15%	5%
<i>Commercial</i>			
Hotel/Resort	15%	5%	80%
Low Intensity Retail Commercial	10%	45%	45%
Medium Intensity Retail Commercial	10%	45%	45%
High Intensity Retail Commercial	10%	45%	45%
Office	75%	5%	20%
Industrial	80%	5%	15%
Recreational	10%	60%	30%
Civic	10%	60%	30%

Trip Assignment

Once the trip generation and distribution were known, trip assignment began. A gravity-based trip assignment model was developed using origin-destination pairs as an assignment driver. The model was developed with the MINUTP software and included all major roadway infrastructure, land use changes, and park visitation projections as described above. Once trip generation rates, land uses, trip characteristics such as trip type and internal/external trip distribution were known, they were entered into the model. Roadway characteristics such as numbers of lanes, road type, speed limit, and roadway length were also entered into the model. The model then developed logical trip travel paths based on origin-destination pairs using a rational lowest travel time method. These travel paths were analyzed by project staff to determine their reasonableness based on the land use changes and existing traffic patterns.

Results

In general traffic in the study area is predicted to grow in proportion to visitation and land use changes in the magnitude of approximately 33 percent. Local fluctuations of this area-wide percent change exist due to desirable travel paths and localized land use development.

Figure 18 illustrates the 2020 peak hour traffic volumes developed. Figure 19 compares the existing and 2020 predominant daily travel patterns if no modifications are made to the existing transportation system. As shown, volumes along US 36, east of downtown, would nearly double, and volumes along US 34 east of downtown Estes Park also increase substantially. Volumes west of downtown, along US 36 could reach 25,000 vehicles on the design day in 2020.

C. Parking Demand

Future Parking Projections in Estes Park

In July 2001, an occupancy study was undertaken for the public parking spaces in downtown Estes Park. Hourly occupancy counts were conducted at each of the public parking lots in the downtown area to determine the adequacy of the existing parking supply. The study revealed that between the hours of 12 pm and 3 pm, in excess of 88 percent of the available 1,200 parking spaces were occupied. At 1 pm, 94 percent of the total public parking supply was occupied. This is considered fully occupied.

Three separate variables were examined to determine the potential future parking demand in downtown Estes Park by 2020.

- ◆ ***Downtown Commercial Development (low growth)***
Commercial development in the downtown area is anticipated to increase by 250,000 square feet (including the Stanley Village area) by 2020. This would represent a floor space increase of 24 percent from the existing 1,045,600 square feet of commercial space. Assuming that these new commercial properties would attract parking at the same rate as existing businesses, the projected parking demand would also increase by 24 percent.
- ◆ ***Visitations to Rocky Mountain National Park (medium growth)***
Visitations to RMNP are anticipated to increase by 1.2 million visitors by 2020. This would represent an increase of 36 percent from the existing 3.38 million visitors in 2000. This increase is consistent with the Colorado Department of Transportation 20-year growth factors for US 34 and US 36. It would be logical to assume that the additional visitors would stop in downtown Estes Park at the same rate as the current level of visitors, and that, parking demand would also increase by 36 percent.
- ◆ ***Historical Traffic Volumes East of Estes Park (high growth)***
Annual average daily traffic volumes have been recorded east of Town on both US 34 and US 36 for the last 16 years. Historically, growth on US 34 has been about 2 percent annually and 3.5 percent annually on US 36. Together, growth on US 34 and US 36 has been about 2.8 percent annually. Applying this historical data to estimate 2020 traffic volumes, yields a growth factor of 65 percent. It seems reasonable that as downtown commercial development and visitation to RMNP increase, traffic volumes and parking demand would also increase.

Today's downtown design day parking demand is 1,130 vehicles. The three variables just described provide three growth factors for estimating future parking demand. Applying these three factors yields a peak parking demand of between 1,395 vehicles and 1,855 vehicles.

The middle factor, growth in RMNP visitation, was chosen to estimate future parking demand. This factor was chosen because of the strong correlation between RMNP visitation and downtown parking demand and because this 36 percent factor is consistent with CDOT's projected traffic increase in the area.

Based on	Percent Increase	2020 Peak Parking Demand (Vehicles)
Downtown Commercial Growth	24 Percent	1,395
Growth in RMNP Visitation	36 Percent	1,540
Historical Traffic Increase	65 Percent	1,855

Recommended Parking Supply

To provide convenient parking that does not require excessive searching or re-circulation by motorists, the parking supply should be approximately 110 percent of the peak parking demand. Based on this, the recommended downtown parking supply should be about 1,725 parking spaces for an estimated parking demand of 1,540 vehicles. This is about 525 spaces more than today's downtown parking supply (see Figure 20).

The location of this parking supply must be coordinated with any future local transit system to provide an integrated transportation system. Transit service with parking located east of downtown would intercept day visitors prior to them entering downtown Estes Park and would therefore reduce downtown congestion. Additional parking in the downtown core area would encourage more motorists to drive into downtown and would therefore increase vehicle volumes and congestion. Possible locations for parking are discussed in the transit section of this report.

Figure 20. Downtown Parking Supply and Demand

