US 50 Corridor East

Partnering for Progress

US 50 Corridor East Tier 1 Final Environmental Impact Statement and Record of Decision

Economics Technical Memorandum

December 2017

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1. Project Overview

The US 50 Corridor East Tier 1 Environmental Impact Statement (US 50 Tier 1 EIS) was initiated by the project's lead agencies, the Colorado Department of Transportation (CDOT) and the Federal Highway Administration (FHWA). The purpose of the US 50 Tier 1 EIS is to provide, within the framework of the National Environmental Policy Act of 1969 (NEPA), a corridor location decision for U.S. Highway 50 (US 50) from Pueblo, Colorado, to the vicinity of the Colorado-Kansas state line that CDOT and the communities can use to plan and program future improvements, preserve right of way, pursue funding opportunities, and allow for resource planning efforts.

The US 50 Tier 1 EIS officially began in January 2006 when the Notice of Intent was published in the *Federal Register*. The US 50 Tier 1 EIS project area (Figure 1-1) is the area in which US 50 Tier 1 EIS alternatives were assessed. This area traverses nine municipalities and four counties in the Lower Arkansas Valley of Colorado. The nine municipalities include (from west to east) the city of Pueblo, town of Fowler, town of Manzanola, city of Rocky Ford, town of Swink, city of La Junta, city of Las Animas, town of Granada, and town of Holly. The four counties that fall within this project area are Pueblo, Otero, Bent, and Prowers counties.

The project area does not include the city of Lamar. A separate Environmental Assessment (EA), the *US 287 at Lamar Reliever Route Environmental Assessment*, includes both US 50 and U.S. Highway 287 (US 287) in its project area, since they share the same alignment. The Finding of No Significant Impact (FONSI) for the project was signed November 10, 2014. The EA/FONSI identified a proposed action that bypasses the city of Lamar to the east. The proposed action of the *US 287 at Lamar Reliever Route Environmental Assessment* begins at the southern end of US 287 near County Road (CR) C-C and extends nine miles to State Highway (SH) 196. Therefore, alternatives at Lamar are not considered in this US 50 Tier 1 EIS.

Figure 1-1. US 50 Tier 1 EIS Project Area

2. Resource Definition

Economics for the US 50 Tier 1 EIS is defined as future levels of economic activity for local businesses. The types of businesses evaluated are chosen based on their connection to and reliance on US 50. They include businesses along the existing US 50 corridor, traveler-oriented businesses, and highway-dependent businesses. Because of the importance of the agricultural industry in the Lower Arkansas Valley and because US 50 is the primary farm-to-market route, effects to agricultural operations (i.e., farms and ranches) also are evaluated. Definitions of terminology used in this technical memorandum are presented in Table 2-1.

Table 2-1. Terminology Used in this Economics Technical Memorandum

Term	Definition
Highway-dependent business	Businesses that rely on a fast, efficient transportation system that can move goods between their locations and regional or long-distance destinations
Project communities	The nine project municipalities, as well as Pueblo, Otero, Bent, and Prowers counties
Project counties	Pueblo, Otero, Bent, and Prowers counties
Project municipalities	The city of Pueblo, town of Fowler, town of Manzanola, city of Rocky Ford, town of Swink, city of La Junta, city of Las Animas, town of Granada, and town of Holly
Traveler-oriented business	Businesses that are particularly dependent on through-traffic; they include gas stations, restaurants, lodging, convenience stores, and other related services

3. Applicable Laws, Regulations, and Guidance

This analysis adheres to the National Environmental Policy Act of 1969 and its regulations (23 CFR 771), the Council on Environmental Quality (CEQ) regulations (40 CFR Parts 1500-1508), and the Moving Ahead for Progress in the 21st Century Act (MAP-21). No other laws, regulations, and guidance are used.

4. Methodology

The US 50 Corridor East project is a Tier 1 EIS. "Tiering" for this process means that the work involved will be conducted in two phases, or tiers, as follows:

- Tier 1—A broad-based (i.e., corridor level) NEPA analysis and data collection effort. The goal of Tier 1 is to determine a general corridor location (not a roadway footprint). Data sources will include existing quantitative data, qualitative information, or both. Mitigation strategies (not necessarily specific mitigation activities) and corridor-wide mitigation opportunities will be identified. Additionally, the Tier 1 EIS will identify sections of independent utility (SIUs) and provide strategies for access management and corridor preservation.
- Tier 2—A detailed (i.e., project level) NEPA analysis and data collection effort. The goal of Tier 2 studies will be to determine an alignment location for SIU identified in Tier 1. Data sources will include project-level data, including field data collection when appropriate. Tier 2 studies will provide project-specific impacts, mitigation, and permitting for each proposed project.

Resource methodology overviews were developed to identify and document which resource evaluation activities would be completed during the Tier 1 EIS, and which would be completed during Tier 2 studies. These overviews are intended to be guidelines to ensure that the Tier 1 EIS remains a broad-based analysis, while clarifying (to the public and resource agencies) when particular data and decisions would be addressed in the tiered process.

These overviews were approved by FHWA and CDOT in 2005, and they were agreed upon by the resource agencies during the project's scoping process between February and April of 2006.

Each overview summarizes the following information for the given resource:

- Relevant data or information sources—the types of corridor-level data that will be collected and the sources of that data
- Data collection and analysis methodology—how the data collection and analysis will be completed
- Project area—defined as one to four miles wide surrounding the existing US 50 facility beginning in Pueblo, Colorado, at Interstate 25 (I-25) and extending to the Colorado-Kansas state line (resources will be reviewed within this band, and it is the same for all resources)
- Effects—the type(s) of effect(s) to be identified
- Mitigation options—how mitigation will be addressed
- Deliverables—how the activities above will be documented
- Regulatory guidance/requirements—a list of applicable laws, regulations, agreements, and guidance that will be followed during the review of the resources

These overviews are used by the project's resource specialists as guidelines to ensure that their activities are relevant to the Tier 1 decision (i.e., corridor location). As the resource specialists conducted their work, data sources or analysis factors were added or removed. The final actions of the resource specialists are described below. The resource methodology overview for economics has been attached to this technical memorandum as Appendix A for reference only. Additionally, abbreviations and acronyms used in this report are listed in Appendix B.

4.1. Data Collection and Analysis Methodology

The primary tools used to complete this review of economics for the US 50 Tier 1 EIS are described below. They include a literature review and an analysis of local businesses that are either connected to or reliant on US 50.

4.1.1. Literature Review

Because there is an extensive amount of research on this subject conducted over several decades, a select group of studies were reviewed that focus on the effects of transportation improvements on rural communities. These studies were chosen for their applicability to the communities along US 50 in the project area.

The studies reviewed were all conducted during the 1990s and early 2000s and focused on effects in small towns and rural communities. One of the studies was especially comprehensive in providing an overview of rural communities and small urban areas where new around-town routes were implemented. This overview documented studies in 47 U.S. states and six Canadian provinces. The other studies focused on rural areas in Kansas, Wisconsin, Iowa, Texas, North Carolina, and Oklahoma.

Methodologies used in these studies varied and include literature reviews, econometric studies, trend analysis, surveys, and interviews. In general, effects of the implemented around-town routes were examined at three levels, including effects on overall economy, effects on businesses that were on the original roadway, and effects on traveler-oriented businesses. Traveler-oriented businesses are those that are particularly dependent on through-traffic, including gas stations, restaurants, lodging, convenience stores, and other related services.

A more detailed summary of the literature reviewed is presented in Appendix C.

4.1.2. Local Businesses Analysis

Types of local businesses that are either connected to or reliant on US 50 are identified to determine how they could be affected if the Build Alternatives are built. The types of businesses identified include agricultural operations, businesses located along the existing US 50 corridor, traveler-oriented businesses, and highway-dependent businesses. Each of these categories is described in more detail below.

- Agricultural operations are considered because local economies in the Lower Arkansas Valley depend heavily on the agricultural industry. At this Tier 1 (broad scale) analysis, it is not feasible to identify the boundaries of individual farms or ranches within the 150-mile-long project area. However, farmland and ranch lands are identified, and any effect to these lands is assumed to be an effect on agricultural operations.
- Businesses located along the existing US 50 facility are identified because of their obvious relationship via proximity to the highway. This analysis focuses on farmer's markets and businesses located in the downtown areas of the project municipalities. Farmer's markets were included because they rely heavily on pass-by traffic as their customer base. Downtown areas are a focus because most (but admittedly not all) businesses in the Lower Arkansas Valley (with the exception of farms and ranches) are located within these areas.
- Traveler-oriented businesses are identified because they are more reliant on travelers passing through the area.
- Highway-dependent businesses are those that rely on a fast, efficient transportation system that can move goods between their locations and regional or long-distance destinations. Farms and ranches also were included in this category, since most of what they produce is consumed outside the Lower Arkansas Valley, and US 50 is the primary farm-to-market route in the area.

4.2. Project Area

The project area for the US 50 Tier 1 EIS has been defined as one to four miles wide surrounding the existing US 50 facility and extending from Pueblo, Colorado, at I-25 to the Colorado-Kansas state line (Figure 1-1). The project area encompasses the study area limits, which is where the Tier 1 corridor alternatives considered by this project would be located.

The study area is 1,000 feet wide centered on the corridor alternatives, beginning on or near the existing US 50 at I-25 in Pueblo, Colorado, and extending to just east of Holly, Colorado, near the Colorado-Kansas state

line. The limits of the project were approved by the lead agencies and other project stakeholders during the US 50 Tier 1 EIS's scoping activities.

4.3. Effects

This review results in a determination of how the Build Alternatives could affect certain types of local businesses (i.e., businesses either connected to or reliant on US 50).

4.4. Mitigation Options

Specific mitigation activities will be identified during Tier 2 studies (when the roadway footprint, or alignment, is identified). These activities may include avoidance, minimization, or both.

4.5. Deliverables

This Economics Technical Memorandum is the primary deliverable being produced related to economics for the US 50 Tier 1 EIS.

5. Existing Conditions

Existing economic conditions in the project area are described in this section. This discussion has been divided into general economic conditions, conclusions from the literature, and conditions in individual project municipalities.

5.1. General Economic Conditions

The following sections discuss general economic conditions in the project area. This discussion focuses on population, income, employment, the agricultural economy, enterprise zones, and downtown retail areas.

5.1.1. Population, Income, and Employment

The project area includes nine municipalities and portions of four counties. The city of Pueblo is the largest community, and it is one of four major urban centers along Colorado's Front Range. Pueblo is an urban community of just over 105,000 residents (2010 Census). It serves as a regional center for goods and services for all of southern Colorado, including the communities east of it along US 50. Trends in Pueblo show that the city has steadily gained population since its incorporation in 1885. It also has diversified its economy away from agricultural activities in recent decades.

In contrast, the eight communities east of Pueblo are small, rural towns and cities. They developed as stops along the railroad constructed through southeastern Colorado in the late 1800s. The first residents of these localities relied on agricultural activities, which remain a central focus of economic development in the Lower Arkansas Valley. Populations in these communities range from approximately 400 people to 7,800 people (2010 Census). The population of each individual community is shown in Table 5-1.

Table 5-1. Population Change

2010 Census Geography	2000 Population	2010 Population	Difference	Percent Change 2000–2010	
				Overall	Annualized
Pueblo County	141,472	159,063	17,591	12.4%	1.2%
Pueblo	102,121	106,595	4,474	4.4%	0.4%
Otero County	20,311	18,831	-1,480	-7.3%	-0.8%
Fowler	1,206	1,182	-24	-2.0%	-0.2%
Manzanola	525	434	-91	-17.3%	-1.9%
Rocky Ford	4,286	3,957	-329	-7.7%	-0.8%
Swink	696	617	-79	-11.4%	-1.2%
La Junta	7,568	7,077	-491	-6.5%	-0.7%
Bent County	5,998	6,499	501	8.4%	0.8%
Las Animas	2,758	2,410	-348	-12.6%	-1.3%
Prowers County	14,483	12,551	-1,932	-13.3%	-1.4%
Granada	640	517	-123	-19.2%	-2.1%
Holly	1,048	802	-246	-23.5%	-2.6%
Colorado	4,301,261	5,029,196	727,935	16.9%	1.6%

Source: U.S. Census Bureau, Census 2010, Tables P001 (2000), P1 (2010): "Total Population"

Median household income data obtained from the American Community Survey (ACS) shows that household incomes in the project counties and communities are not as high as the state median income. Median household incomes range from approximately $20,833 (Holly) to $41,273 (Pueblo County), which is lower than the state median income of $57,685 (see Table 5-2).

Table 5-2. Median Household Income

2010 Census Geography	Median Household Income in the Past 12 Months (dollars)[a]
Pueblo County	$41,273
Pueblo	$34,750
Otero County	$31,246
Fowler	$31,625
Manzanola	$21,346
Rocky Ford	$24,520
Swink	$40,694
La Junta	$31,024
Bent County	$35,667
Las Animas	$31,446
Prowers County	$34,513
Granada	$33,882
Holly	$20,833
Colorado	$57,685

Source: U.S. Census Bureau, American Community Survey, 5-Year Estimates (2007–2011), Table B19013
[a]In 2011 inflation-adjusted dollars

In the communities east of Pueblo, employment figures also indicate how important agricultural activities are to the Lower Arkansas Valley. The agricultural industry provides approximately 8 percent or more of all jobs in Otero, Bent, and Prowers counties, which include both farming and ranching activities. Government is the largest employer in these three counties, followed by retail trade, and then agriculture, as shown in Table 5-3. The size of these communities does not support the types of economic development activities that require large populations (e.g., big-box stores, commercial airports, etc.). Also, the current condition of US 50 (having only two lanes in certain locations) makes the highway unattractive to businesses that require a fast, efficient transportation system to move goods from their locations to regional or long-distance destinations.

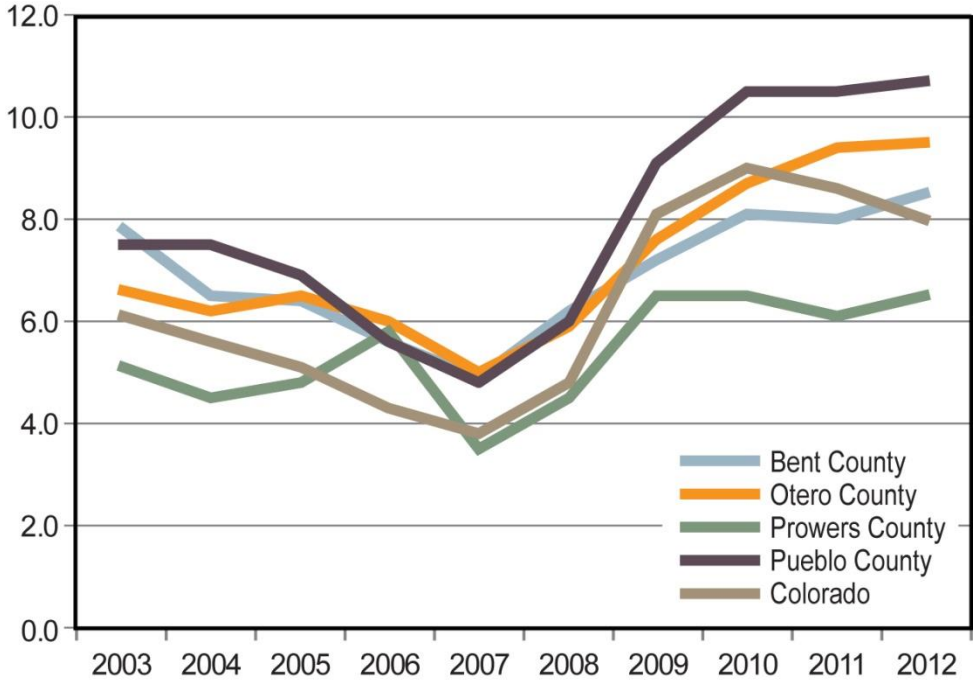
Table 5-3. Employed Civilian Labor Force by Industry Sector

Industry	Colorado	Bent County, Colorado	Otero County, Colorado	Prowers County, Colorado	Pueblo County, Colorado
Agriculture, Forestry, Fishing and Hunting, and Mining	2.3%	**16.3%**	**7.8%**	**12.7%**	1.5%
Construction	8.3%	12.0%	6.8%	7.1%	8.8%
Manufacturing	7.2%	2.2%	5.4%	4.6%	7.1%
Wholesale Trade	2.8%	0.0%	2.8%	1.3%	2.2%
Retail Trade	11.3%	6.2%	11.3%	13.0%	14.7%
Transportation and Warehousing, Utilities	4.7%	4.7%	6.2%	6.1%	3.9%
Information	3.2%	1.0%	2.1%	1.1%	2.1%
Finance and Insurance, Real Estate, Rental and Leasing	7.4%	3.4%	4.9%	5.2%	4.6%
Professional, Scientific, Management, Administrative, and Waste Management	13.0%	4.6%	3.4%	6.6%	7.7%
Educational Services and Health Care, Social Assistance	19.6%	23.2%	25.0%	20.4%	26.8%
Arts, Entertainment, and Recreation; Accommodation and Food Services	10.2%	5.2%	9.8%	8.7%	10.4%
Other Services Except Public Administration	5.1%	4.1%	6.1%	5.6%	4.0%
Public Administration	4.8%	**17.0%**	8.4%	7.8%	6.3%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Source: US Census Bureau, American Community Survey 5-Year Estimates (2007-2011), Table DP03, "Selected Economic Characteristics"

Pueblo County's more urbanized employment base is seen in the industry breakdown of jobs (see Table 5-3). Education/Health Services and Retail Trade are the top employers, with nearly 40 percent of all jobs. The fact that these figures show a higher percentage of employment in health services could be because the city of Pueblo is considered a regional center for health care services and, therefore, has more facilities than any of the other counties. The higher percentage of jobs in traveler-oriented services (i.e., accommodation and food) is likely to be the result of Pueblo's location along I-25. Agriculture comprises less than two percent of jobs in Pueblo County, reflecting that the county is less dependent on this industry than are the counties to the east.

Unemployment rates in Pueblo, Otero, and Bent counties are consistently higher than the statewide average, as shown in Figure 5-1. Fluctuations in the rates mirror changes occurring in the other portions of the project area and in the state overall.



Source: Bureau of Labor Statistics, http://data.bls.gov/timeseries/LASST08000003

Figure 5-1. Unemployment Rates in the Project Counties and the State

Area economic development officials are working to attract new businesses to the project communities. These efforts include energy-related companies, such as biodiesel and wind producers. Regional cooperative efforts among the communities also are ongoing to encourage heritage tourism along US 50 in the Lower Arkansas Valley. The area is home to several regionally significant historic sites, including Bent's Old Fort National Historic Site (northeast of La Junta), the Boggsville Historic Site (south of Las Animas), the Koshare Indian museum (in La Junta), and the Granada Relocation Center National Historic Landmark (a.k.a., Camp Amache) (west of Granada).

5.1.2. Agricultural Economy

The presence of the Arkansas River—and the man-made irrigation canals running from it—allowed the residents in the Lower Arkansas Valley to build a strong agricultural industry early in its history, and the industry has been an important part of the economy in the area for more than 100 years. These activities have provided jobs to local residents and have contributed to both the local and statewide economies.

Since 1982, farming activities along the Arkansas River have decreased due to urban demand for water, pressure from communities downstream (i.e., the state of Kansas), and shifting of water supplies to electric generation (*Pueblo Chieftain* 2007). However, even with this decline, agricultural activities remain the economic foundation of the region. According to the 2007 Census of Agriculture, farmland and ranch lands in the four project counties totalled nearly 3.5 million acres in that year (Agricultural Census 2007b). That same year, the total market value of agricultural production in the four project counties was approximately $506 million. This figure represented roughly nine percent of the value of all agricultural products produced in the state of Colorado (CO AgInsights 2007). Some of these acres also were used to graze cattle and facilitated the sale of approximately 323,000 cattle and calves in 2007. This figure represented roughly 10 percent of all the cattle and calves sold in the state of Colorado (Agricultural Census 2007a).

5.1.3. Enterprise Zones

Despite this agricultural contribution, the project counties lag behind most other Colorado counties in economic activity. Because of this condition, they are all located within Colorado Enterprise Zones (OEDIT 2009b). The state established enterprise zones in 1986 to encourage job creation and capital investment in economically depressed areas. To be designated as a Colorado Enterprise Zone, areas must have high

unemployment rates, low per capita income, and slower population growth than the state average. Additionally, three of the counties (Otero, Bent, and Prowers) also were designated as Colorado Enhanced Rural Enterprise Zones for the 2009–2010 fiscal year (OEDIT 2009a). This is a state-run program intended to support job creation in economically lagging rural counties.

5.1.4. Downtown Retail Areas

All of the project municipalities east of Pueblo have downtown areas that are directly adjacent to US 50. These areas serve as the civic, social, and commercial hubs of these municipalities. However, like many rural communities throughout the United States, these downtown areas have undergone significant changes in recent decades.

This analysis compared growth in retail sales in the project counties to the state of Colorado as a whole to determine the relative retail health of the project communities. Table 5-4 shows that between 1992 and 1997, statewide retail sales grew at an average annual growth rate of seven percent (unadjusted for inflation). The rate in Pueblo and Prowers counties grew at an average annual rate of six percent, while it grew in Otero and Bent counties at an average annual rate of five percent. Between 1997 and 2002, statewide retail sales growth slowed to five percent. During this time, Bent and Prowers counties had very little sales growth, while sales increases in Pueblo and Otero counties were slightly below that of the state at four percent.

Table 5-4. County Retail Sales (1992–2002)

Jurisdiction	Retail Sales ($000s)[a]			Average Annual Growth Rate	
	1992	1997	2002	1992–1997	1997–2002
Pueblo County	$893,566	$1,180,702	$1,430,646	6%	4%
Otero County	$108,750	$141,222	$170,666	5%	4%
Bent County	$9,030	$11,610	$11,743	5%	0%
Prowers County	$84,475	$112,850	$120,249	6%	1%
State of Colorado	$28,532,646	$40,536,034	$52,226,983	7%	5%

Sources: 1992 Economic Census, 1997 Economic Census, 2002 Economic Census
[a]Represents sales unadjusted for inflation

Growth in per capita retail sales also provides an indication of the relative health of an area's retail economy. Table 5-5 shows that between 1997 and 2002, statewide per capita sales growth had slowed. Bent County sales decreased during this time period, while Otero County per capita sales increased at a rate much higher than the other communities and the state.

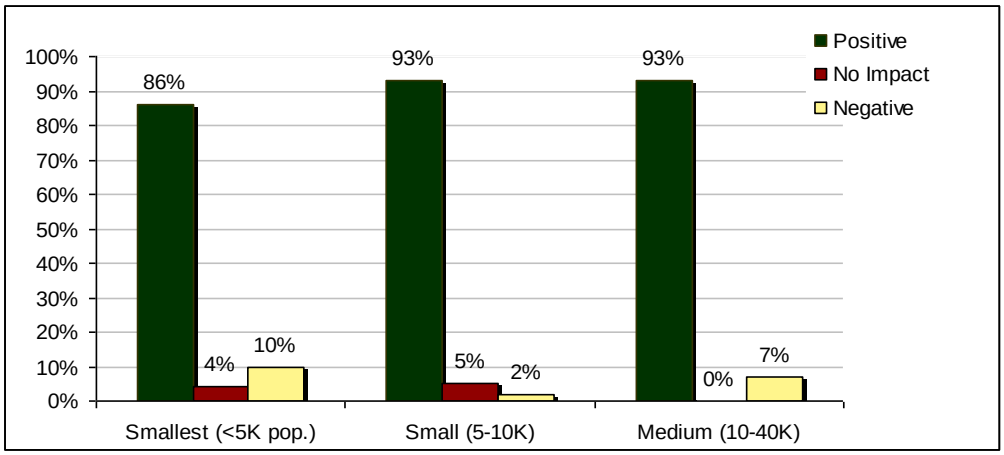
Table 5-5. Per Capita Retail Sales by County (1992–2002)

Jurisdiction	Per Capita Retail Sales			Average Annual Growth Rate	
	1992	1997	2002	1992–1997	1997–2002
Pueblo County	$7,184	$8,884	$9,729	4%	2%
Otero County	$5,423	$6,771	$8,656	5%	5%
Bent County	$1,810	$2,119	$1,934	3%	-2%
Prowers County	$6,344	$8,266	$8,480	5%	1%
State of Colorado	$8,162	$10,413	$11,550	5%	2%

Sources: 2000 Census, Department of Local Affairs (DOLA) 2007, 1992 Economic Census, 1997 Economic Census, 2002 Economic Census

5.2. Conclusions from the Literature

The literature showed that the overall economic effect of an around-town route was either positive or neutral in most of the communities included in the studies. Figure 5-2 shows the percentage of communities that experienced a positive, negative, or neutral overall economic effect from the around-town route.



Source: Liff 1996

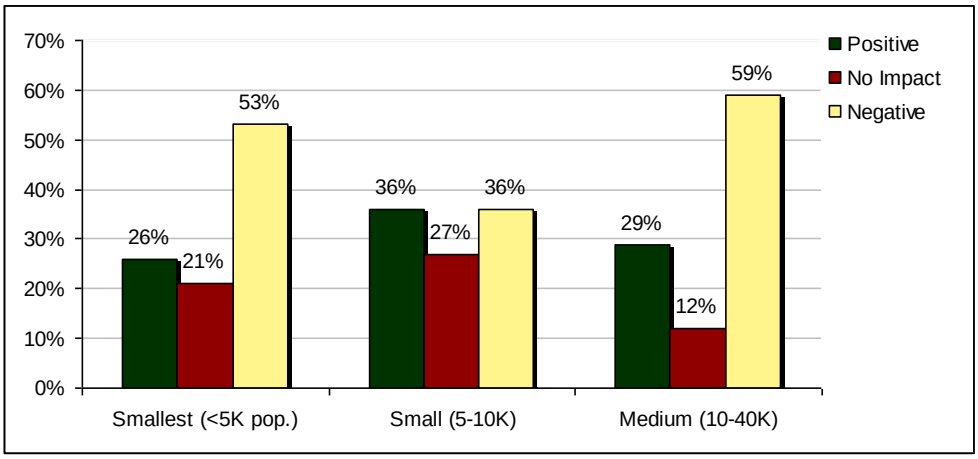
Figure 5-2. Overall Economic Effect of an Around-Town Route

Several of the studies divided up communities by size and determined that any negative business effects were seen primarily in smaller towns with populations of fewer than 5,000 people. Those studies also concluded that ongoing general economic trends were intensified by the implementation of around-town routes, meaning that around-town routes themselves did not change existing economic trends associated with a business district.

The studies concluded the following about an around-town route's effect on the businesses located on the original roadway.

- Visitor and shopping destinations tended to benefit from reduced traffic delays.
- For individual businesses, effects evened out over time.
- Older and smaller businesses often could not move, and the owners retired.
- Small local businesses were more likely to be replaced by chains.
- Communities that planned for changes weathered the change better than those communities that did not plan.

The studies also found that traveler-oriented businesses tend to be most affected, particularly in smaller towns. Figure 5-3 shows the percentage of communities that experienced a positive, negative, or neutral effect to their traveler-oriented businesses from the around-town route. Some studies showed that such businesses may lose up to 50 percent of sales initially following construction of around-town routes. Additionally, there is a perception, which is stronger among these business owners, that a new around-town route will have a negative effect on their businesses.



Source: Liff 1996

Figure 5-3. Effect of Around-Town Routes on Travel-Serving Businesses

Businesses that can be seen from the original roadway are the least likely to feel the effects of an around-town route. In general, an area along the new route competes with the downtown or commercial area on the original roadway if it is:

- Within three miles of the area
- Equipped with water and sewer
- More than five miles from the next nearest service exits

An area on the original roadway can be integrated with the downtown if it is less than two miles away and has supporting water and sewer services. An interchange from the around-town route that is close to a downtown area increases the chance of potential customers stopping at the current service areas. The connection between the two should include proper lighting and quality road surfaces. Negative effects of new around-town routes on downtown can be minimized by facilitating linkages through enhanced physical access and signage.

5.3. Conditions in Individual Project Municipalities

Economic conditions in the project municipalities are not exactly the same from one project municipality to the next. Therefore, this analysis describes the economic conditions that exist in each municipality. Because the majority of the economic activity (with the exception of farming and ranching activities) occurs within or near the municipalities along the highway, this analysis focuses on these areas. Also, because businesses that provide traveler services are more likely to be affected by the Build Alternatives, this analysis identifies these businesses in each municipality.

Because of Pueblo's status as a regional center for goods and services, economic activity in the city is more diverse than in the communities to the east. Additionally, the smaller municipalities and unincorporated areas surrounding the city (in Pueblo County) are increasingly becoming suburban communities to Pueblo. There may be some goods and services available in these communities for local residents. However, economic changes in these areas are more likely to be a result of larger changes occurring within the Pueblo regional economy.

The municipalities east of Pueblo are smaller and more rural in nature. Economic conditions in these municipalities are shown in Table 5-6.

Table 5-6. Economic Conditions in the Project Municipalities

Municipality	Population (2000)	Median Household Income[a] (2000)	Percent of State's Median Income[b] (2000)	Number of Businesses (2005)	Number of Traveler-Oriented Businesses[c] (2005)	Annual Retail Sales[d] (2002–2006)
Fowler	1,206	$25,800	55%	54	11	$12 million
Manzanola	525	$19,200	40%	13	2	$2 million
Rocky Ford	4,286	$23,400	50%	133	24	$46 million
Swink	696	$36,000	77%	15	2	$3 million
La Junta	7,568	$29,000	60%	304	20	$280 million
Las Animas	2,758	$26,000	55%	60	12	$27 million
Granada	640	$26,000	55%	7	2	$2.6 million
Holly	1,048	$25,000	53%	37	7	$15.6 million

Sources: 2000 Census, 2005 zip code business patterns data, CO DOR 2007
[a]Rounded to the nearest $100
[b]The state's median household income was roughly $47,200 in 2000
[c]Businesses that are particularly dependent on through-traffic; they include gas stations, restaurants, lodging, convenience stores, and other related services
[d]The highest retail sales figure documented between 2002 and 2006 is shown

Other conditions are listed by community.

- **Fowler**—The majority of businesses in the town are associated with the retail trade (12), construction (6), health care and social assistance (6), accommodation and food services (6), and other services (6) sectors. The traveler-oriented businesses include three gas stations, four restaurants, a lodging establishment, and three retail establishments.
- **Manzanola**—The majority of businesses in the town are associated with the retail trade (3), utilities (2), manufacturing (2), and health care and social assistance (2) sectors. The traveler-oriented businesses include a gas station and a restaurant.
- **Rocky Ford**—The majority of businesses in the city are associated with the retail trade (23), accommodations and food services (15), other services (15), wholesale trade (14), and health care and social assistance (14) sectors. Rocky Ford's downtown not only serves the local community, it also serves the surrounding towns. The downtown is home to several furniture stores, a car dealer, clothing and sporting goods stores, supermarkets, and pharmacies. The traveler-oriented businesses include six gas stations, 11 restaurants, one lodging business, and six retail businesses.
- **Swink**—Due to its proximity to La Junta, it can be considered a bedroom community to that municipality. The majority of businesses in the town are associated with the retail trade (3), accommodation and food service (3), and wholesale trade (2) sectors. The traveler-oriented businesses include a gas station and a restaurant.
- **La Junta**—The city is the county seat of Otero County and serves as a local and regional center for employment, commerce, medical services, and educational opportunities. The majority of businesses in the city are associated with the retail trade (56), other services (42), health care and social assistance (39), accommodation and food services (31), and professional, scientific, and technical services (25) sectors. La Junta is home to a Wal-Mart Supercenter, which is the only one between Pueblo and Lamar. Despite Wal-Mart's entry into the marketplace, interviews indicate that the retail establishments have learned to coexist and even thrive alongside the establishment (Klein 2007, Snider 2007, Freidenberger 2007). The Wal-Mart attracts shoppers from a wide area, including the communities along US 50 and the surrounding areas. The traveler-oriented businesses include nine gas stations (with convenience stores), six restaurants, and five lodging establishments.

- **Las Animas**—The city serves as the Bent County seat and is the primary commercial center for the county. The majority of businesses in the city are associated with the retail trade (12), accommodation and food services (10), and other services (9) sectors. The primary customer base for these businesses is local; however, they also are used by customers from the surrounding areas. The traveler-oriented businesses include six restaurants, three retail establishments, two lodging establishments, and a gas station with a convenience store.
- **Granada**—Two of these businesses were related to retail trade, and the town was home to one business in each of the following categories: utilities, wholesale trade, finance and insurance, other services, and accommodations and food services. The traveler-oriented businesses include a gas station and a restaurant.
- **Holly**—The majority of businesses in the town are associated with the retail trade (9), wholesale trade (7), and construction (4) sectors. The traveler-oriented businesses include three retail establishments, two gas stations (with convenience stores), and two restaurants.

6. Effects

The following sections discuss the potential of the No-Build Alternative and Build Alternatives to result in economic effects to local businesses in the subject area.

6.1. No-Build Alternative

Under the No-Build Alternative, only minor and isolated construction would occur. Routine maintenance and repairs would be made as necessary to keep US 50 in usable condition, including standard overlays and repairs of weather- or crash-related damage. Additionally, smaller scale improvements may be undertaken, such as short passing lanes and other minor safety improvements.

No effects to local businesses in the project area are expected. However, communities also would not have the opportunity to make improvements to their city or town. For example, widening the existing two-lane sections to four lanes and eliminating existing safety issues could attract highway-dependent businesses to the region. This could bring employers to the Lower Arkansas Valley who would not consider moving their businesses there today (due to the increased transportation costs because of the condition of the existing highway).

6.2. Build Alternatives

The Build Alternatives consist of constructing a four-lane expressway on or near the existing US 50 from I-25 in Pueblo, Colorado, to approximately one mile east of Holly, Colorado. There are a total of 30 Build Alternatives. In Pueblo, three Build Alternatives are proposed that either improve US 50 on its existing alignment and/or reroute it to the north to utilize SH 47. East of Pueblo, the remaining 27 Build Alternatives are divided into nine between-town alternatives and 18 around-town alternatives. The nine between-town alternatives improve US 50 on its current alignment, with the exception of near Fort Reynolds, where there is an alternative to realign the roadway to the south. The 18 around-town alternatives propose relocating US 50 from its current through-town route at Fowler, Manzanola, Rocky Ford, Swink, La Junta, Las Animas, Granada, and Holly. Figure 6-1 provides an overview of the Build Alternatives as proposed.

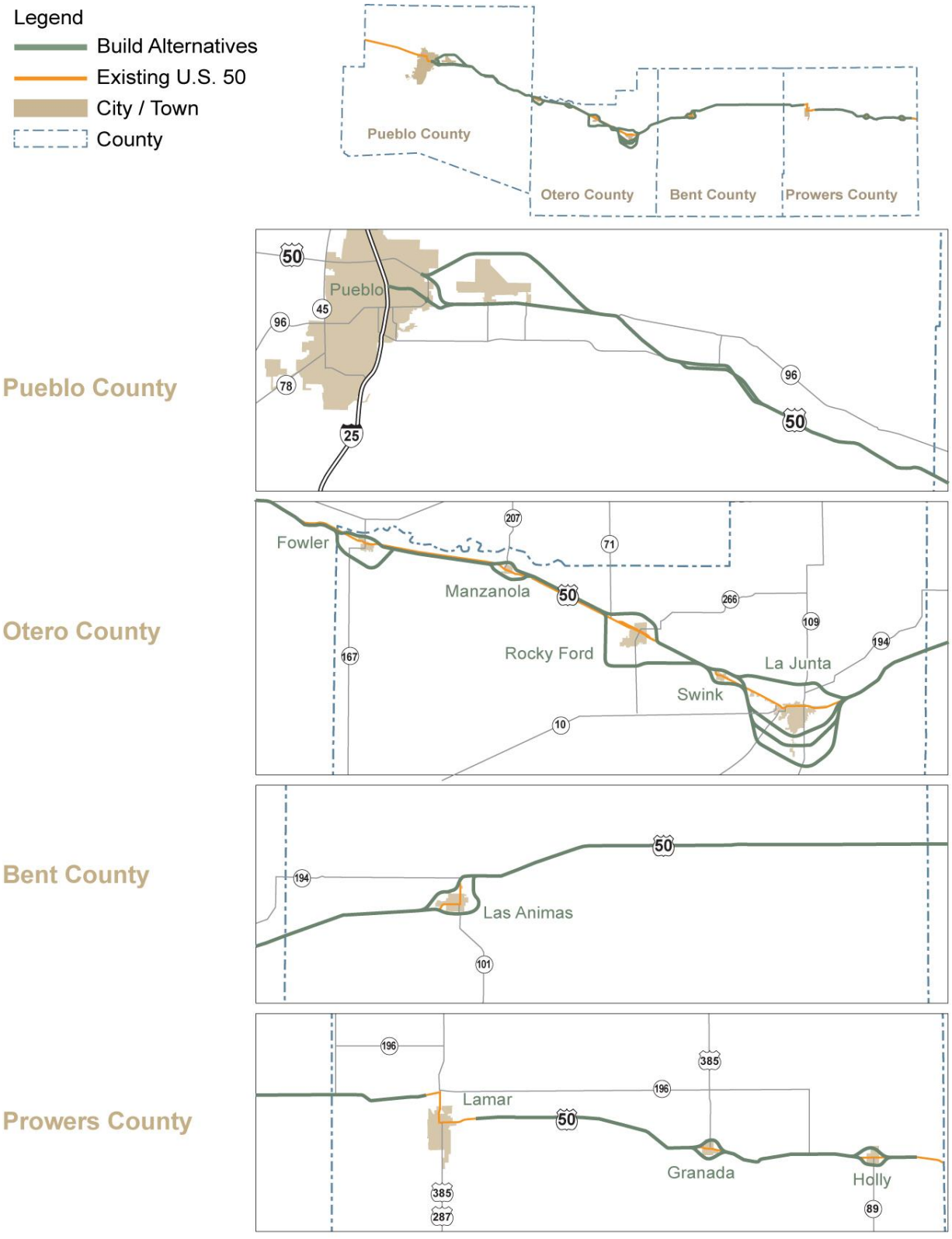


Figure 6-1. Build Alternatives Overview

6.2.1. Local Economies

Several of the studies reviewed for this analysis determined that any negative business effects were seen primarily in smaller towns with populations of fewer than 5,000 people. Those studies also concluded that ongoing general economic trends were intensified by the implementation of around-town routes, meaning that around-town routes themselves did not change existing economic trends associated with a business district. Since all the municipalities in the project area have fewer than 4,000 residents with the exception of La Junta and Pueblo (2010 Census), the Build Alternatives have the potential to cause negative effects to some businesses. However, those effects are unlikely to alter general economic trends in any particular municipality.

Rerouting a state highway from a through-town location to an around-town alignment usually would create the potential for new development, such as gas stations or other commercial activities, along the new around-town route. This is often referred to as induced growth. However, for the communities along US 50 in the Lower Arkansas Valley, this may not be the case. With the exception of Pueblo, these communities have not experienced significant economic growth in several decades. Some key factors limiting potential growth along the new around-town routes are population, traffic volumes, and development infrastructure. The reasons why these factors would limit the possibility of induced growth are discussed below.

- **Population**—While the population of the state of Colorado grew by nearly 65 percent between 1960 and 2010, the population of the communities east of Pueblo declined by 0.1 percent during that same time frame (2010 Census, Historical Census Browser 2007). The small size of the communities east of Pueblo limits the economic viability of commercial activities that rely on a large customer base, such as big-box stores, commercial airports, and other activities.
- **Traffic volumes**—Traffic volumes on US 50 east of Pueblo are relatively low (ranging from 1,700 vpd east of Holly, Colorado, to just over 10,000 vpd in La Junta, Colorado), and they are expected to remain that way well into the future (2,500 vpd east of Holly to nearly 17,000 vpd in La Junta) (Swenka 2014). This limits the amount of pass-by traffic that could support new traveler-oriented businesses, such as gas stations, restaurants, and hotels.
- **Development infrastructure**—The new around-town routes are located in areas outside the developed portions of the communities. To move from the downtown area to the new around-town route, communities would first have to extend services (water, power, etc.) to those locations. Communities along US 50 also could restrict development in the areas of the around-town alternatives by refusing to extend services or using zoning or other land use tools.

Because of these factors, the communities along US 50 are not likely to see the type of induced growth that sometimes accompanies roadway improvements in larger urban areas.

6.2.2. Agricultural Operations

Eighteen of the Build Alternatives move US 50 to around-town locations that are primarily used for farming or ranching today. Replacing agricultural land with a new around-town route for US 50 would eliminate the value of those acres for producing agricultural products. To calculate this loss, different productive values were used depending on the historic best agricultural use of the land (i.e., most productive). The analysis revealed that $1.9 million to $2.5 million in productive value (annually) could be lost, depending on which alternatives are constructed (Tranel 2008a, Tranel 2008b). Table 6-1 shows the difference in productive value that could be lost with each alternative. To put these figures into perspective, an overall loss of $2.6 million represents less than one percent of the $506 million in agricultural goods produced by the project counties in 2007 (CO AgInsights 2007).

Table 6-1. Potential Loss in Productive Value of Agricultural Lands by Build Alternatives

Section	Build Alternatives (if more than one)	Potential Loss in Productive Value (2007 dollars)
Section 1: Pueblo	Alternative 1: Pueblo Airport North	$3,208
	Alternative 2: Pueblo Existing Alignment	$1,209
	Alternative 3: Pueblo SH 47 Connection	$796
Section 2: Pueblo to Fowler	Alternative 1: Fort Reynolds Existing Alignment	$38,145
	Alternative 2: Fort Reynolds Realignment	$50,345
Section 3: Fowler	Alternative 1: Fowler North	$21,037
	Alternative 2: Fowler South	$57,775
Section 4: Fowler to Manzanola	—	$82,432
Section 5: Manzanola	Alternative 1: Manzanola North	$22,395
	Alternative 2: Manzanola South	$85,512
Section 6: Manzanola to Rocky Ford	—	$262,348
Section 7: Rocky Ford	Alternative 1: Rocky Ford North	$764,894
	Alternative 2: Rocky Ford South	$761,857
Section 8: Rocky Ford to Swink	—	$112,333
Section 9: Swink	Alternative 1: Swink North	$107,164
	Alternative 2: Swink South	$333,210
Section 10: La Junta	Alternative 1: La Junta North	$38,196
	Alternative 2: La Junta South	$177,896
	Alternative 3: La Junta South	$215,803
	Alternative 4: La Junta South	$222,850
Section 11: La Junta to Las Animas	—	$20,456
Section 12: Las Animas	Alternative 1: Las Animas North	$13,617
	Alternative 2: Las Animas South	$14,983

Section	Build Alternatives (if more than one)	Potential Loss in Productive Value (2007 dollars)
Section 13: Las Animas to Lamar	—	$196,835
Section 14: Lamar to Granada	—	$138,161
Section 15: Granada	Alternative 1: Granada North	$33,145
	Alternative 2: Granada South	$67,513
Section 16: Granada to Holly	—	$60,037
Section 17: Holly	Alternative 1: Holly North	$12,496
	Alternative 2: Holly South	$8,256
Section 18: Holly Transition	—	$17,857
Total		**$1.9 million to $2.6 million**

Sources: Tranel 2008a, Tranel 2008b

6.2.3. Businesses Along the Existing US 50

The Build Alternatives at communities east of Pueblo would relocate US 50 from downtown areas where most of the communities' economic activity takes place to new around-town locations. While this may be detrimental to traveler-oriented businesses (such as gas stations) in the old downtown areas, it provides communities with an opportunity to improve conditions for many downtown establishments. With less traffic on downtown streets, communities would be able to return the existing US 50 to its original Main-Street-district status—creating a more pedestrian-friendly commercial area. During workshops organized and facilitated by the project in August 2006, many of the communities along US 50 expressed their desire to make this change (CDOT 2006).

Effects to individual businesses will likely depend on the type of business and its location in relation to US 50. One group of businesses located directly adjacent to the existing highway are roadside produce markets. Farmers use these markets to sell their products directly to consumers. They are important businesses in the Lower Arkansas Valley because they not only add to the local economy, but many communities have expressed their desire to use them as a way to attract tourists to the region (i.e., agritourism). As their name implies, roadside produce markets depend heavily on passing travelers for their customer base. Therefore, it is essential that drivers are able to see the markets from the road and access them at the time they are spotted. Effects to these markets could be direct (taking the property) or indirect (reducing access to them by limiting access on and off US 50 at their location). Also, markets located within project municipalities may be affected by a reduction in pass-by traffic after the new around-town routes are constructed.

6.2.4. Traveler-Oriented Businesses

The analysis concluded that the following factors would influence the effects the Build Alternatives could have on traveler-oriented businesses.

- Traveler-oriented businesses tend to be impacted more than other types of businesses, particularly in smaller towns; however, the businesses that can be seen from the existing roadway are the least likely to feel the effects of a new around-town route.

- In general, the area adjacent to the new around-town route competes with the existing area if it is within three miles of the area, has water and sewer services, and is more than five miles from the next nearest service exits.
- The area adjacent to the new around-town route can be integrated with the downtown if it is less than two miles away and has supporting water and sewer services.
- An interchange from the new around-town route that is close to a downtown area increases the chance of potential customers stopping at the current service areas. Negative impacts of the new route on downtown can be minimized by connecting the two areas with access and signage.

Of all the businesses in the project area, traveler-oriented companies have the potential to be the most impacted by the Build Alternatives. In most communities, the new around-town route would be close enough to town that many existing businesses would remain visible from the new route. This could serve to lessen the effect of the new route by maintaining the businesses' pass-by customers. Also, the areas where the new around-town routes are proposed generally support agricultural activities today. Therefore, they generally lack the water and sewer services required for businesses to move into the area. This lack of services is likely to limit development in these areas, reducing the possibility of competition with the existing downtown areas. Individual businesses could experience fluctuations in activity. However, these fluctuations are likely to depend on the distance, access, and visibility of the business from the new around-town route.

6.2.5. Highway-Dependent Businesses

Officials from several communities along US 50 in the Lower Arkansas Valley have reported that current conditions on the highway hinder their efforts to retain or attract highway-dependent businesses. An example of this occurred in 2006, when the region lost two of its largest employers. In January, the Neoplan USA transit bus manufacturing plant in Lamar closed its doors, eliminating 300 jobs. Later that year, the Bay Valley Foods plant in La Junta closed, leaving nearly 150 people out of work. Local officials have stated that high transportation costs were cited by both companies as a reason for their closures. Both of these operations relied heavily on US 50 for transporting raw materials and manufactured goods into and out of the area. Improving US 50 is likely to help communities attract and retain these types of employers, providing much needed jobs in the Lower Arkansas Valley.

Additionally, the Build Alternatives recommend that US 50 be a high-speed (65 miles per hour minimum), limited-access roadway. This configuration would help farmers and ranchers along the US 50 corridor by making farm-to-market travel faster.

7. Mitigation Strategies

Since the ultimate roadway footprint would be identified during Tier 2 studies, this Tier 1 analysis cannot identify specific effects to social and economic conditions by the Build Alternatives. However, the following mitigation strategies have been developed to ensure that negative effects to these conditions are minimized during Tier 2 studies.

- CDOT would assist communities with their efforts to preserve right of way around their communities for a preferred alternative (once selected).
- CDOT should work with communities to ensure that travelers on US 50 are advised of the services and other amenities available in communities along the highway.
- To minimize negative effects to permanent roadside produce markets (i.e., markets housed in permanent structures), Tier 2 highway footprints should be routed in a manner that avoids acquisition of those properties or disruption of their access to US 50 where possible. If the routing of the Tier 2 alignment cannot avoid the acquisition of a market, the owners will receive reasonable compensation under state and federal law.
- Agricultural activities require the ability to move goods to market. Since US 50 is the primary east-west route through the Lower Arkansas Valley, the highway is frequently used for this purpose. Construction activities should, when possible, be scheduled to minimize disruptions (including closures) to key portions of US 50 that are heavily used for farm-to-market travel activities, especially during harvest times.
- Continue public involvement activities and community outreach during all phases of the tiered EIS process.

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Appendices

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Appendix A. Resource Methodology Overview for Economics

This resource methodology overview is attached to this technical memorandum for reference only (Table A-1). The lead agencies for the US 50 Tier 1 EIS (CDOT and FHWA) drafted resource methodology overviews to identify and document which resource evaluation activities would be completed during the Tier 1 EIS, and which would be completed during Tier 2 studies. These overviews were intended to be guidelines to ensure that the Tier 1 EIS remained a broad-based analysis, while clarifying (to the public and resource agencies) when particular data and decisions would be addressed in the tiered process. These overviews were approved by the lead agencies, and they were agreed upon by the resource agencies during the project's scoping process. They were subsequently used by the project's resource specialists as guidelines to ensure that their activities were relevant to the Tier 1 (corridor location) decision.

Table A-1. Resource Methodology Overview for Economics

Methodology Overview	Economics	
	Tier 1	**Tier 2**
Relevant Data/ Information Sources	• Current economic information/data obtained from community records • DOLA • U.S. Census Bureau • Studies developed by departments of transportation and other organizations that have studied impacts of transportation improvements including bypasses	• Review and update Tier 1 data • Search for and collect additional data required to complete the appropriate Tier 2 analysis
Collection and/or Analysis Methodology	• Collect and characterize applicable highway-related economic studies detailing economic effects that have previously occurred in small, medium, or large communities elsewhere in the United States. • Perform a DOLA Base Industry Analysis. This analysis is an integral part of DOLA's economic forecasting for Colorado counties and identifies economic functions and services that are "basic" to a county's economy. • Identify broad ongoing economic trends and influences (i.e., presence of large retail stores) within each community, taking into account community size. • Use 2030 county population and employment projections as a baseline to determine indirect impacts on growth and economics from project alternatives. • Determine if effects described in literature are likely to occur to study area communities. • Because of the vast numbers of comparable economic studies of post transportation improvements, specific economic modeling is not proposed.	Update Tier 1 analysis sufficiently for standard NEPA documentation.

Methodology Overview	Economics	
	Tier 1	**Tier 2**
Project Area	One to four miles wide surrounding the existing US 50 facility beginning at I-25 in Pueblo to the Colorado-Kansas state line	Communities adjacent to Tier 2 specific sections SIU corridor boundaries
Impacts	Estimated range or order of magnitude of potential short- and long-term economic effects to each study area community focusing on: • Impacts to traveler services and related businesses, such as gasoline stations, motels and restaurants/bars • Potential effects of relief routes on downtown businesses, including construction • Effects of a safer facility and reduced travel time	Update Tier 1 impact analysis as appropriate for specific Tier 2 SIUs level of NEPA documentation
Mitigation Options	Identify potential mitigation strategies in terms of the types of CDOT/FHWA actions appropriate at the Tier 2 study level and at the policy level (e.g., actions outside of CDOT authority) to maximize potential benefits and minimize negative impacts of transportation improvements	Revise and implement Tier 1 strategies where applicable
Deliverables	Economics Technical Memorandum, including Tier 2 strategies	Economic Assessment Report documenting data and implementation of identified strategies as appropriate for Tier 2 SIUs level of NEPA documentation
Regulatory Guidance/ Requirements	FHWA Technical Advisory 6640.84	

Appendix B. Abbreviations and Acronyms

ACS	American Community Survey
CDOT	Colorado Department of Transportation
CEQ	Council on Environmental Equality
CFR	Code of Federal Regulations
CR	County Road
DOLA	Department of Local Affairs
EA	Environmental Assessment
EIS	Environmental Impact Statement
FHWA	Federal Highway Administration
FONSI	Finding of No Significant Impact
I-25	Interstate 25
MAP-21	Moving Ahead for Progress in the 21st Century Act
NEPA	National Environmental Policy Act of 1969
SH	State Highway
SIU	Section of independent utility
US 287	U.S. Highway 287
US 50	U.S. Highway 50
US 50 Tier 1 EIS	U.S. Highway 50 Tier 1 Environmental Impact Statement
USC	United States Code

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Appendix C. Economic Literature Review

There is an extensive body of literature examining and analyzing the economic effects of implementing new around-town routes on communities. A review of this literature was conducted as part of the US 50 Tier 1 EIS economic analysis to examine the long-term effects of new around-town routes on similar communities and to ascertain whether these effects could be expected in the communities along US 50. Some of the studies examined communities over several decades, which is helpful in analyzing the long-term effect of transportation changes on businesses, as well as on larger economies.

Ten studies were selected for review. They were all conducted in the 1990s and early 2000s. The studies selected focus primarily on small towns and rural communities in Kansas, Wisconsin, Iowa, Texas, North Carolina, and Oklahoma. One of the studies, focusing on rural communities and small urban areas, was especially comprehensive in providing an overview of studies conducted in 47 U.S. states and 6 Canadian provinces where new around-town routes were implemented. The studies reviewed are listed below in the order in which they are summarized.

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10. Comer, J., Finchum, G. Business impacts of highway bypasses. Oklahoma State University: Department of Geography; 2001.

The following review summarizes the purposes, scopes, methodologies, and conclusions of the studies listed above (in the order in which they are listed).

1. Wisconsin Department of Transportation (WisDOT). Economic impacts of highway bypasses on Wisconsin communities. Madison, WI: Wisconsin Department of Transportation (WisDOT); Jan 1998.

Purpose

The purpose of this study was to help the Wisconsin Department of Transportation realize the full benefit of future new around-town routes while minimizing the potential for adverse effects.

Scope and Methodology

Seventeen communities with new around-town routes were compared to 14 control communities (i.e., without new around-town routes). All of the communities were located in Wisconsin. Communities were grouped into three sizes, including:

- Small communities—less than 2,000 people
- Medium communities—2,000 to 5,000 people
- Large communities—more than 5,000 people

New around-town routes were built in the 17 communities between 1983 and 1995. The study included data collection and interviews, focus groups, site visits, and origin-destination surveys on the original highways in the communities where new routes were implemented.

It is important to note that some of the communities involved in this study made planning and zoning decisions that enabled them to control development near the interchanges of the new around-town routes. Additionally, the Wisconsin Department of Transportation imposed access restrictions on the new routes and on other related routes, which limited opportunity for new development. Also, most of the communities where new routes were implemented had significant economic growth occurring before the new routes were constructed.

Synopsis of Conclusions

This study found the following related to the overall economic climate of the communities where new around-town routes were implemented:

- The new around-town routes had little adverse effects on the overall economic activity of the communities.
- The economies of the small communities had greater potential to be adversely affected.
- Over the long term, average traffic levels on the old routes in the medium and large communities were close to, or higher than, levels before the new around-town route was opened.
- No significant change occurred in population, employment, or retail trade trends in most of the communities after a new around-town route was opened.
- Economic growth generally exceeded trends in the control communities.
- Traffic levels on some new around-town routes were not high enough to support many businesses.
- The cost and feasibility for some communities to provide municipal services to the areas near the new around-town route interchanges outweighed the potential revenues of new development.
- Very little retail flight occurred.
- Medium and large communities already represented “destinations” for the region; thus, they continued to grow.
- Many new traffic-oriented businesses were not built in close proximity to the new around-town routes.
- Markets for retail were primarily local with a majority of customers coming from local areas.
- The new around-town routes were not seen as different from any other market changes that affected businesses in the communities.

2. Wisconsin Department of Transportation (WisDOT) and Economic Development Research Group. Summary of highway bypass studies. Boston, MA; Wisconsin Department of Transportation (WisDOT) and Economic Development Research Group; Dec 2000.

Purpose, Scope, and Methodology

This study summarizes existing literature on the economic development effect of new around-town highway routes in Wisconsin, Kansas, Iowa, Texas, and North Carolina.

Synopsis of Conclusions

This study found the following related to the overall economic climate of the communities where new around-town routes were implemented:

- Businesses serving the local trade area and those dependent on repeat customers are likely to benefit from an improved downtown shopping environment.
- New around-town routes are seldom either economically devastating or the savior of a community business district. The locational shift in traffic can cause existing businesses to turn over or relocate, but net effects usually are relatively small.
- The way in which a community responds to a new around-town route is complex and involves the interaction of several factors.
- New around-town routes probably did not have transitory negative effects on all travel-related businesses, including restaurants, bars, motels and service stations. However, individual companies were affected in different ways.
- Econometric models showed that a new around-town route generally brought a small but statistically significant decrease in business volume in the circumvented city.
- While some companies may choose to go out of business rather than adjust to changing circumstances, those companies often were replaced by others.
- Benefits of an improved traffic flow from new around-town routes do not appear to be offset by losses of retail sales.
- Communities and business districts that have strong identities as visitor or shopping destinations are more likely to be strengthened due to reduction in traffic delays through their centers.

3. Liff, S. Transportation Research Board (TRB). Effects of highway bypasses on rural communities and small urban areas. Washington, D.C.: TRB; May 1996.

Purpose

The purpose of this study was to review the state of knowledge about effects of new around-town highway routes on communities of less than 50,000 in population.

Scope and Methodology

A survey questionnaire was sent to 47 U.S. state departments of transportation, and 6 Canadian provincial departments of transportation. The survey asked questions regarding the effects of new around-town highway routes on communities of less than 50,000 people. Additionally, 190 previous studies on this subject were reviewed. In these studies, methods used to study effects ranged from interviews to sophisticated statistical analysis.

The average length of new around-town routes for which case study information was available from this information was nearly six miles. The average distance between the old and new routes was about 1.3 miles. Additionally, most of the old through-town routes were two-lane roads while the new around-town routes were four lanes. Additionally, impact mitigation measures taken by the communities discussed in the studies included signage, access improvements, and planning activities.

Synopsis of Conclusions

This study found the following related to the overall economic climate of communities and small urban areas where new around-town routes were implemented:

- When new around-town routes were opened, average daily traffic levels on the older routes had declined, on average, by approximately 50 percent to 70 percent.

- Population change is not a good indicator of a community's susceptibility to effect from construction of a new around-town route.
- A community's overall business activity, as measured by gross annual sales, grows more rapidly where new around-town routes have been constructed.
- The amount of land in commercial or industrial use areas generally increased and land values increased after new around-town routes were constructed.
- Many of the cases where areas experienced declining sales or other indicators of adverse effects are attributable to broad demographic and economic trends, not the new around-town route itself.
- Adverse effects on businesses on the original roadway appeared to be largely recouped by improved ambiance for patrons and residents, although the effects to individual businesses vary. In some instances, the combined effect of lost sales by several businesses in a community where new around-town routes are implemented may signal a broader decline in the older "main street" business district. In such cases, competition from other communities and general changes in economic conditions make it difficult to identify the new route as the sole cause of the decline.
- Generally, the top five effects are improved traffic circulation, traffic safety, increased access to the town, new investment and development, and new home construction.

4. Kansas Department of Transportation (K-TRAN). Impacts of highway bypasses on Kansas towns. University of Kansas: Kansas Department of Transportation (K-TRAN); Oct 1996. Report #226.

Purpose

The purpose of this study is to provide a description of effects in certain Kansas towns where new around-town routes were implemented, and to develop a guide regarding what is likely to happen in the future to those communities.

Scope and Methodology

This study involved a literature review of previous studies, a detailed origin-destination model of Kansas, and multiple regression models focusing on retail sales taking into account population, income, and the presence or absence of a new around-town route.

Synopsis of Conclusions

This study found the following related to the overall economic climate of the communities where new around-town routes were implemented:

- The effect of the new around-town route on sales is so small that it is not an important concern.
- New around-town routes have small positive effects in larger counties and small negative effects in smaller counties.
- New around-town routes in Kansas typically have not had significant negative effects on the local economy. In fact, many counties and towns have enjoyed some long-term benefits from the construction of such routes.
- During and shortly after (i.e., two to three years) the new around-town route is constructed, Kansas communities generally did not see negative effects from the route.
- Average effects of new around-town routes are small, but variation is large, implying that many factors other than the routes affect the economy of small towns as well as individual companies.
- Routes around small towns in Kansas have been highly beneficial to through-traffic.
- New around-town routes did not have an appreciable effect on aggregate employment and payrolls of small towns in Kansas.
- A typical new around-town route in Kansas does not cause substantial harm to the aggregate work force of towns where such routes were implemented. For non-retail companies, the new route is probably helpful, and in the short and long term, it is helpful for the non-retail economic base.

- New around-town routes have had transitory negative effects on selected companies, which tend to be travel-oriented businesses, including restaurants, bars, motels, and service stations. However, not all travel-oriented companies were negatively affected.

5. Babcock, M., Davalos, J. Case Studies of the economic impact of highway bypasses in Kansas. Journal of the Transportation Research Forum. Spring 2004; 43(1).

Purpose

The purpose of this study was to determine the effects on towns after new around-town routes had been constructed.

Scope and Methodology

Regression analysis was applied to employment in areas where new around-town routes were implemented to determine the relationship between the new route and employment. A literature review was also conducted. Also, restaurants, convenience stores, auto and truck repair shops, and motels were surveyed to collect information about the economic effects of the new routes.

Synopsis of Conclusions

This study found the following related to the overall economic climate of the communities where new around-town routes were implemented:

- A majority of the businesses reported that there was no effect on their employment, and a large majority of company representatives thought the new around-town route had no major effect on labor cost per employee.
- Of those individuals surveyed, 55 percent said their sales decreased, 26 percent said they had increased, and 19 percent said there was no change after the new around-town route was implemented.

6. Handy, S., Kubly, A., Oden, M. Economic impacts of highway relief routes on small communities. University of Texas at Austin: Transportation Research Record; 2002. Report #1792.

Purpose

The purpose of this study was for the Texas Department of Transportation to identify and understand the various factors that influence the economic effects of new around-town routes on small communities.

Scope and Methodology

Fourteen case studies of communities in Texas were reviewed. Ten of these communities had new around-town routes implemented, and four had not. The cases included communities with geographic diversity (i.e., they were located across the state) and a range of sizes (from 5,000 to 50,000 residents). The communities were either rural or exurban. Econometric modeling techniques were used to estimate the effects of the new around-town route on sales and establishments in the communities. Additionally, interviews were conducted to obtain information regarding the effects of the new around-town routes.

Synopsis of Conclusions

This study found the following related to the overall economic climate of the communities where new around-town routes were implemented:

- Four of the communities experienced a net decline in highway-related businesses after construction of the new around-town routes, but the other communities (where around-town routes were not implemented) experienced similar declines.
- The greater the shift in traffic from the old route to the new (around-town) route, the greater the negative effect on the local economy, all else being equal.
- The smaller the city, the larger the effect.
- A new around-town route is one of many factors influencing the economic climate of a community.
- New development was primarily concentrated at interchanges and was typically in the form of businesses new to the community (i.e., chains).
- Downtown effects were not straightforward. Retail businesses either declined or shifted to a service orientation. Businesses targeting tourists (rather than locals) moved to the downtown area. These changes would have occurred without the new around-town route being implemented, but the new route magnified the changes.
- Location is a factor regardless of the new around-town route.

The broader factors that affect communities are:

- structural trends (i.e., trends in the national economy and demographic patterns)
- technical innovations that reduce the number of employees needed for certain jobs
- retail changes (i.e., a Wal-Mart moving to town)
- local factors (i.e., the geography of the community and its proximity to larger communities)

7. Srinivasan, S., Kockelman, K. The impacts of bypasses on small and medium-sized communities: An econometric analysis. University of Texas at Austin: Bureau of Transportation Statistics; 1992.

Purpose

The purpose of this study was to obtain information about how new around-town routes affect small and medium-sized communities.

Scope and Methodology

The study reviewed 23 Texas cities where new around-town routes were implemented and that ranged in size from 2,500 to 50,000 people, and another 19 cities that did not have new around-town routes implemented (i.e., control cities). Data between 1954 and 1992 were collected related to these communities. Per capita sales in four different industrial sectors were identified as indicators of the local economy in these cities, including retail, gas service stations, eating and drinking establishments, and service industries.

Synopsis of Conclusions

This study found the following related to the overall economic climate of the communities where new around-town routes were implemented:

- Higher traffic levels can sustain the local economy, even if a fraction of traffic is removed from the old route.
- Proximity of a new around-town route to a large city offers conflicting effects. It increases sales, but it also increases traffic.
- The longer the city has had an around-town route, the greater the estimated traffic split between the old and new routes. However, the positive effect of increased traffic tapers with time.
- Where traffic diversion exceeds a critical value, the overall effect is negative.
- The effect of a new around-town route is most negative on the per capita sales in gasoline service stations and the least negative on service industries.
- The greater amount of traffic diverted, the greater the effect.

8. Handy, S., Kockelman, K., Kubly, S., Srinivasan, S., Jarrett, J., Oden, M., Mahmassani, H. The impacts of highway relief routes on small towns in Texas. University of Texas at Austin: Center for Transportation Research; Oct 2001. Report #1843-S.

Purpose

The purpose of the study was to identify and understand the various factors that influence the economic effects of new around-town routes on small- and medium-sized communities.

Scope and Methodology

This study reviewed 23 small- or medium-sized communities in Texas with new around-town routes, plus a sample of 19 cities without such routes. The study involved a literature review, identification of issues, econometric models, case studies, and an overview of strategies to maximize the potential positive effects and minimize the potential negative effects of the new routes on communities.

Synopsis of Conclusions

This study found the following related to the overall economic climate of the communities where new around-town routes were implemented:

- Effects of new around-town routes depend on community characteristics, the new route, and larger economic and industry trends.
- New around-town routes tend to amplify trends.
- New around-town routes have both positive and negative effects.
- The net result is not an increase in retail activity but a shift of activity from downtown (i.e., along the old route) to the new route, as well as a shift from local businesses to chains.
- Geographic factors have the most significant effect.

9. Iowa Department of Transportation (IowaDOT). Primary road bypass study literature review of selected Iowa communities. Iowa Department of Transportation (IowaDOT); 1999.

Purpose

The purpose of this study, which was commissioned by the Iowa Department of Transportation, was to review the effect of new around-town routes on communities in their state.

Scope and Methodology

The study included a literature review and case studies of communities where new around-town routes have been implemented and communities that were programmed for such routes. Effects were compared across community types.

Synopsis of Conclusions

This study found the following related to the overall economic climate of the communities where new around-town routes were implemented:

- Every community reviewed thought a new around-town route had been beneficial, especially for removing trucks and other through-traffic and for improving the safety and quality of the roadway.
- Population is not negatively affected.
- Retail sales are not generally affected, although individual businesses may experience positive or negative effects.

- The cities that benefited the most had planned for the changes.
- Working with the Iowa Department of Transportation regarding the facility orientation was beneficial to the communities that did so.
- Traffic on the old route increased.
- Retail sales and city valuations were not generally negatively affected.
- Safety and noise-related issues improved.
- New around-town routes play a small role in overall economic vitality, but other factors are a bigger influence, such as the regional economy, community characteristics, urbanization, and access.
- There was no indication that new around-town routes cause population loss or decrease in economic activity.
- Larger communities were able to draw outside employees to industrial jobs, taking advantage of improved travel times.
- Residents of smaller communities were better able to commute to these communities.
- New around-town routes have had transitory negative effects on selected companies, such as restaurants, bars, motels, and service stations. However, there is variation across towns and companies regarding effects.

10. Comer, J., Finchum, G. Business impacts of highway bypasses. Oklahoma State University: Department of Geography; 2001.

Purpose

The purpose of this study was to analyze changes that had occurred in small Oklahoma communities as a result of past around-town routes to anticipate changes with new around-town routes in other communities.

Scope and Methodology

This study involved a literature review, case studies, and analysis of effects to businesses (by type) and sales tax revenue. The effects discussed in the literature focused on permanent effects to businesses and industries, tax revenues, and the regional economic climate. The case studies involved a comparison of 14 communities where new around-town routes had been implemented and eight “target” communities where such routes were being planned. These communities were divided into three categories, including:

- Small communities—less than 2,500 people
- Medium communities—2,500 to 7,500 people
- Large communities—more than 7,500 people

The business analysis made predictions about effects by business type for the target communities based on the experiences of the communities where new around-town routes had been implemented. Additionally, the analysis reviewed overall sales tax collections five years before the new around-town route opened and five years after (standardized to 1998 dollars) to identify effects.

Synopsis of Conclusions

This study found the following related to the overall economic climate of the communities where new around-town routes had been implemented:

- Most of the communities surveyed stated that the overall business climate improved by alleviating traffic congestion.
- Many downtown businesses were able to restructure or repackage their merchandise and services for a new customer base.
- New around-town routes speed up the decline in some communities, although they are not the sole cause of the decline.

- Medium-sized communities grew robustly before and immediately after the new around-town routes were opened, although the average increase in growth dropped after the new routes were implemented.
- Fieldwork indicated that older residents of the small communities keep the local economy alive by frequenting businesses that cater largely to local clientele.

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