

# Appendices

## Appendix A: Analysis

### Safe Communities

#### Crime Prevention

Research into criminal behavior shows that offenders will be influenced more by the perceived risk of being caught than by reward or ease of entry. Consistent with this research, Crime Prevention through Environmental Design (CPTED)-based strategies emphasize enhancing the perceived risk of detection and apprehension.

Crime Prevention through Environmental Design can be used by planners and land use decision-makers to influence the safety of neighborhoods. The National Crime Prevention Institute defines Crime Prevention through Environmental Design as “the proper design and effective use of the built environment which may lead to a reduction in the fear and incidence of crime, and an improvement of the quality of life.”

#### Public Health and Environment

When evaluating a land use proposal, consideration regarding public health, safety, and welfare occurs. By example, planning staff reviews cases for environmental hazards created by a potential use, effect on water quality and quantity, effect on air quality, and location of amenities to decrease the impacts of natural hazards on a development. Review of cases by Jefferson County Public Health focuses on assuring conditions where people can be healthy.

There are many resource tools and processes that promote public health through land use planning, including one of the new tools, a Health Impact Assessments (HIA). These health impact assessments, or other relevant tools or processes, are used to objectively evaluate the potential health effects of a project or policy before it is built or implemented. For example, if a development shows many pedestrian paths and linkages from residential to Commercial areas, schools, and parks, the health impact assessment can evaluate the value of pedestrian paths promoting public health because paths promote walking and walking decreases obesity and obesity related disease, such as Type II diabetes and heart disease.

### Economic Development

Jefferson County Median Household Income, Family Income and Per Capita income 2006 - 2010

	2010 Estimate	2009 Estimate	2008 Estimate	2007 Estimate	2006 Estimate
Median Household Income	\$63,826	\$67,164	\$67,019	\$67,638	\$65,470
Median Family Income	\$78,162	\$82,327	83,485	\$82,316	\$78,422
Per Capita Income	\$33,000	\$34,573	\$36,042	\$35,212	\$33,885

Source: US Census, 2010 American Community Survey 1 year Estimate

#### Employment

- The Denver Metro region gained approximately 3,600 wage and salary positions from the second quarter 2009 through the second quarter of 2010. Construction, Transportation and Warehousing

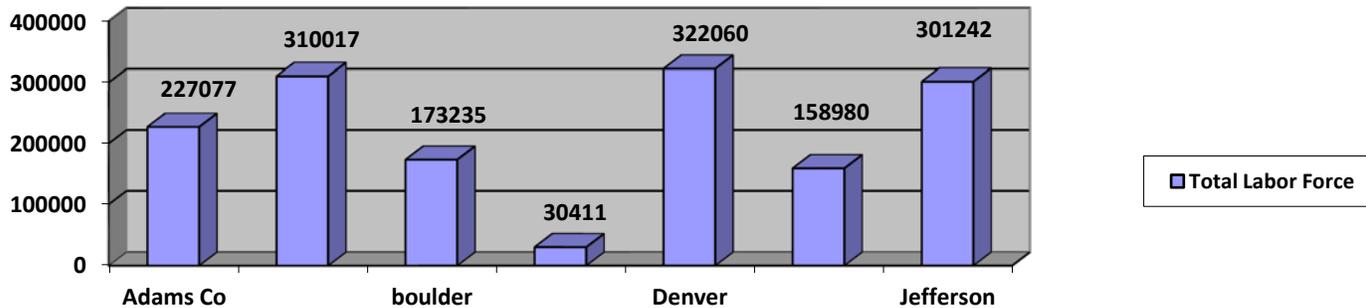
experience the largest losses, while Educational Services, Health Care, and Social Assistance saw the largest increases.

**Labor Force Statistics as of 2010**

Year	County	Total Labor Force	Total Employed	Total Unemployed	Unemployment Rate
2010	Adams	227,077	203,876	23,201	10.2%
	Arapahoe	310,017	282,724	27,293	8.8%
	Boulder	173,235	160,965	12,269	7.1%
	Broomfield	30,411	28,018	2,393	7.9%
	Denver	322,060	290,731	31,329	9.7%
	Douglas	158,980	147,684	11,295	7.1%
	Jefferson	301,242	275,345	25,897	8.6%
Total		<b>1,523,021</b>	<b>1,389,343</b>	<b>133,678</b>	<b>8.8%</b>

- For Colorado, Baby Boomers are about 37% of the total labor force (2010). They will tend to want to stay longer in the workplace and will also need to stay in the workplace longer.
- For 2020, 6.7% the Colorado Labor Force Participation Rate (LFPR) will be people ages 65 years and older, compared to 3.4% in 2010.

**Denver Metro Counties Total Labor Force**



Source: Census, 2010 American Community Survey

**Jefferson County Enterprise Zones**

State income tax credits for businesses located in an enterprise Zone

- Investment tax credit 3.0%
- Research/development tax credit 3% of increased expenditures
- New employee tax credit \$500/employee
- New employee Health & Insurance Tax Credit \$200/net new employee for the first 2 years
- Rehabilitate vacant building 25%
- Job training income tax credit 10%
- Contributions tax credit 12.5-25%
- Commercial Vehicle Investment tax credit 1.5% of the commercial vehicle purchase

### Cost Of Living Index (Denver)

Grocery Items	102.9
Housing	109.3
Utilities	92.5
Transportation	95.4
Healthcare	108.5
Composite	92.1

100.0 = National average for all cities.

Source: American Chamber of Commerce Researchers Association, 1st Quarter 2008.

### City Taxes

Sales Taxes	State <sup>1</sup>	City	County <sup>2</sup>	RTD/CD/FD <sup>3</sup>	Total
Arvada*	2.9	3.46	0.5	1.2	8.06
Edgewater*	2.9	3.50	0.5	1.2	8.1
Golden*	2.9	3.00	0.5	1.2	7.6
Lakeside	2.9	2.10	0.5	1.2	6.7
Lakewood*	2.9	3.00	0.5	1.2	7.6
Littleton	2.9	3.00	0.5	1.2	7.6
Morrison	2.9	3.00	0.5	1.2	7.6
Mountain View	2.9	4.00	0.5	1.2	8.6
Westminster*	2.9	3.85	0.5	1.2	8.45
Wheat Ridge*	2.9	3.00	0.5	1.2	7.6
Unincorporated	2.9	N/A	0.5	1.2	4.6

There is no occupational head tax in Jefferson County.

1. Machinery & tools used in manufacturing that are valued at over \$500 are exempt from State sales tax.

2. Funds used for acquisition and maintenance of open space.

3. Regional Transportation District/Cultural Facilities District/Football Stadium District.

\* Home Rule City. State does not collect local sales tax.

### State Income Tax

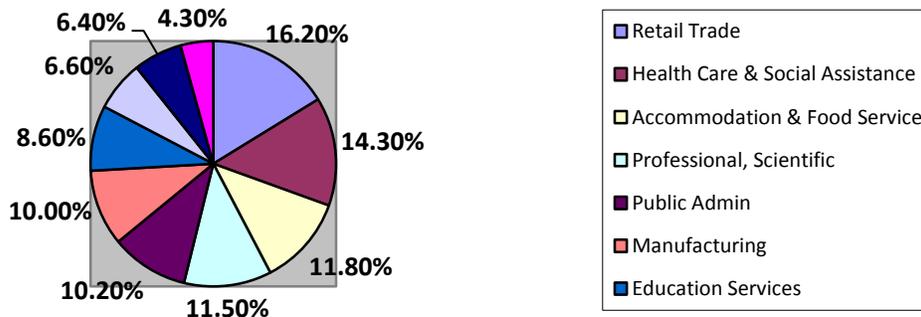
Personal Income Tax	4.63%
Corporate Income Tax on Net Income	4.63%
Unemployment Compensation Rate	1.52% of the first \$10,000
Real & corporate personal property are assessed at	29%

### Top Primary Employers in Jefferson County

Employer	Product/Service	Employees
Denver Federal Center	Federal Government	6,200
Lockheed Martin Space Systems	Aerospace & Defense Systems	5,390
Exempla Lutheran Medical Center	Healthcare	2,440
Miller/Coors	Beverages	2,230

St. Anthony Hospital	Healthcare	2,200
National Renewable Energy Laboratory	Research laboratory	1,650
Terumo BCT	Medical Devices and Technology	1,620
Ball Corporation	Aerospace & Containers	1,180
Coors Tek	Ceramic Components	1,050
FirstBank Holding Co. of Colorado	Financial Services	1,030
HomeAdvisor	Contract Referrals	880
Kaiser Permanente	Healthcare	690
Integer Group	Marketing Services	620

### Jefferson County Employment Distribution



Source: Colorado Department of Labor and Employment, 3<sup>rd</sup> Q 2011

### Occupational Employment Distribution for Colorado

Occupation Group	2010 Estimated Employment	2020 Projected Employment	2010 – 2020 Annual % Change
Office and Administrative Support	372,753	402,822	0.8%
Sales	268,856	288,537	0.7%
Food Preparation and Serving	210,589	234,248	1.1%
Business and financial Operations	142,527	167,538	1.8%
Education, Training and Library	133,291	167,449	2.6%
Healthcare Practitioners and Technical	119,964	156,639	3.1%
Construction and Extraction	130,511	148,590	1.4%
Transportation and Material Moving	126,326	130,991	0.4%
Management Occupations	118,341	127,033	0.7%
Installation, Maintenance and Repair	93,141	101,559	0.9%

Source: Colorado Department of Labor and Employment

### Occupations with the Highest Estimated Annual Openings in Colorado

Occupation Group	2010 Estimated Employment	2020 Projected Employment	2010 – 2020 Annual % Change	Estimated Annual Openings
Registered Nurses	42,912	58,840	3.2%	1,593
Combined Food Prep and Servers	54,078	62,961	1.5%	888
Customer Service Representatives	40,568	48,018	1.7%	745
Retail Salespersons	76,091	83,360	0.9%	727
Elementary School Teachers	22,912	29,315	2.5%	640
Home Health Aides	10,318	16,615	4.9%	630
Accountants and Auditors	31,674	37,949	1.8%	628
Personal and Home Care Aides	10,727	16,844	4.6%	612
Nursing Aides, Orderlies and Attendants	19,249	24,961	2.6%	571
Business Operations Specialists,	36,844	41,572	1.2%	473

Source: Colorado Department of Labor and Employment, Occupational Employment Statistics and Wages Program

### Employment by Industry

- The number, types and location of jobs will greatly influence the characteristics of our population and the demand for services.
- For Colorado economic drivers, tourism and retiree driven jobs are encouraging, oil and gas production and agriculture are mixed, and investment and wealth driven jobs are weaker.

### Covered Employment by Major Industry Annual Average for 2010

Industry Description	Adams	Arapahoe	Boulder	Broomfield	Denver	Douglas	Jefferson	Metro Total	Larimer	Weld
Agriculture	893	108	382	N/A	145	81	306	**	613	3,314
Mining	272	1,105	545	21	6,301	270	402	8,916	308	3,133
Utilities	646	230	261	N/A	1,779	N/A	857	**	240	240
Construction	13,577	13,916	4,044	1,388	14,080	6,213	10,733	63,951	7,219	7,219
Manufacturing	10,739	7,018	15,202	4,701	18,954	2,216	17,339	76,169	10,582	10,582
Wholesale trade	13,210	12,924	4,884	1,085	24,383	3,007	6,610	66,103	2,890	2,890
Retail trade	16,607	29,659	15,181	5,041	25,832	14,865	28,047	135,232	16,528	7,531
Transportation & warehousing	12,651	2,779	1,130	73	21,391	720	2,244	40,988	2,031	2,035
Information	1,992	17,636	8,692	2,651	13,788	4,917	3,641	53,317	2,514	901
Finance & insurance	2,673	24,425	4,864	877	23,586	5,433	7,767	69,625	3,177	3,134

Real estate, rental & leasing	2,596	5,488	2,056	476	9,745	1,216	3,470	25,047	2,177	929
Professional & technical services	4,879	25,358	21,059	4,019	37,038	8,487	19,480	120,320	8,792	1,927
Management of companies	1,653	5,860	923	1,642	9,440	2,385	2,581	24,484	508	1,085
Administrative & waste services	9,574	22,952	5,830	1,244	31,050	3,690	10,970	85,310	8,191	3,795
Educational services	1,856	3,445	1,867	314	9,275	1,572	2,733	21,062	1,121	363
Health care & social assistance	14,644	31,893	17,605	1,405	43,532	7,568	22,142	138,789	16,257	7,819
Arts, entertainment & recreation	933	3,125	2,737	308	7,207	3,111	2,718	20,139	2,034	712
Accommodation & food services	12,011	20,396	14,259	2,910	39,069	9,872	19,335	117,852	14,223	14,223
Other services	4,459	7,420	4,429	536	14,152	2,865	6,157	40,018	3,452	3,452
Government	22,114	34,589	26,156	N/A	69,822	11,144	35,024	198,849	23,767	23,767
<b>Total All Industries</b>	<b>147,987</b>	<b>270,342</b>	<b>152,116</b>	<b>29,919</b>	<b>420,592</b>	<b>89,824</b>	<b>202,559</b>	<b>1,313,339</b>	<b>126,658</b>	<b>78,655</b>

Source: Colorado Department of Labor and Employment, Labor Market Information

## Jobs

The County supports the creation of primary jobs. A “primary” job produces goods and/or Services for customers generally residing outside the community. Primary jobs are important because they create new “outside” dollars for the community. Once an employer is paid for the products and/or Services, they distribute that wealth in the community through wages paid to employees and through suppliers.

Limitations on Commercial and Industrial zoned land influence the number of primary jobs. However, the economy seems to be the most determining factor on whether there will be primary jobs. The Planning and Zoning Division can help assure enough land to accommodate jobs through land use management, but it cannot ensure that all Office buildings will be filled when the economy suffers.

## Comparison of firms located in Denver Metro Counties

	Total Number of firms	% of state	Headquarters	% of state	Single Location Firms	% of state
Colorado	231,575	N/A	631	N/A	200,297	N/A
Jefferson County	22,011	9.5%	64	10.1%	18,805	9.4%
Adams County	12,290	5.3%	21	3.3%	10,258	5.1%

Arapahoe County	23,514	10.2%	112	17.7%	19,662	9.8%
Boulder County	16,578	7.2%	37	5.9%	14,657	7.3%
City & County of Broomfield	3,284	1.4%	18	2.9%	2,536	1.3%
City and County of Denver	33,785	14.6%	248	39.3%	29,536	14.7%
Douglas County	8,286	3.6%	17	2.7%	6,866	3.4%

Source: Colorado Department of Labor and Employment

Jefferson County contains about 10 percent of the total number of employers in the State. The Denver Regional Council of Governments (DRCOG) projects over 110,000 new jobs will be created in Jefferson County between 2005 and 2035. This represents a 44 percent increase. A limited supply of land suitable for large Office/Industrial complexes remains in the County, so the County needs to focus on retention of existing businesses and maximizing the capacity of existing Commercial and Industrial sites.

### Jobs-Housing Balance

In 2003, the American Planning Association created a report titled "Jobs-Housing Balance". A jobs-housing balance can reduce road congestion, Vehicle Miles Traveled (VMT), travel time, personal transportation costs, tailpipe emission which leads to better air quality, and slow the increase of housing costs. Debate exists on whether providing the appropriate priced housing mix next to higher earning jobs will motivate workers to live closer to work.

Some economists say that a large number of people will still cross-commute because households consider many other factors besides proximity to job sites when selecting a home. In 2007 in the US, 32 percent of people that moved during the last year listed convenience to job as one of the reasons they chose their present neighborhood, and 20 percent of people listed it as their main reason for choosing their neighborhood. In both cases, convenience to job received the highest number of responses. However, striving for a jobs-housing balance to allow people the option to live close to where they work remains important.

Mixed-Use Development may be the most promising option today for providing a jobs-housing balance. Mixing Commercial uses, such as restaurants and shops, with employment centers and housing provide the opportunity to reduce the number of trips and Vehicle Miles Traveled. Mixed-Use Development can reduce trip generation by 20 to 25 percent when compared to stand-alone, single-use development (Stover, Vergil G., and Frank J. Koepke. 1988. Transportation and Land Development. Englewood Cliffs, N.J.: Prentice-Hall for Institute of Transportation Engineers.).

### Jefferson County Jobs-Housing Balance

	Jobs	Total Housing Units	Labor Force	Population
Jefferson County	213,621 <sup>1</sup>	230,629 <sup>2</sup>	310,559 <sup>4</sup>	543,068 <sup>2</sup>
Unincorporated Jefferson County	60,381 <sup>3</sup>	76,539 <sup>2</sup>	115,101 <sup>5</sup>	188,691 <sup>2</sup>

Sources

1 – Colorado Department of Labor and Employment, 2007

2 – Colorado State Demographer, 2008

3 – Staff's estimate based on one job per 0.32% of Population

4 – Colorado Department of Labor and Employment, 2009

5 – Staff's estimate based on 0.61% of Population in the Labor Force

## Jefferson County Job Ratios

	Jobs-Housing Units Ratio	Jobs-Labor Force Ratio	Jobs-Population Ratio
Jefferson County	1:1	0.67:1	0.41:1
Unincorporated Jefferson County	0.87:1	0.57:1	0.32:1
Recommended Ratio (APA 2003)	1.5:1	1:1	0.65:1

Some areas that are very out of balance have a jobs-housing units ratio of 3.5:1 or higher. Jefferson County as a whole is not as out of balance; there are many jobs in the County. However, in the unincorporated areas of Jefferson County a 2:1 ratio of workers to jobs exists. Part of this could be due to topography, given the fact that 82 percent of the land area is mountainous. (342,113 acres of the 419,008 total unincorporated acres). In the Mountain Areas constraints related to availability of water and sanitation, steep slopes, and road network capacity make economic development on a large scale difficult.

There are 25,126 people that both live and work in unincorporated Jefferson County. (*Source: DRCOG, US Census 2000*)

The jobs-housing balance will also vary by the community within unincorporated parts of the County. Depending upon the type of jobs-housing imbalance, strategies may vary. For example, in one part of the County there may be a high number of more expensive homes and not enough high-wage jobs, in another area there may be too few affordable homes and too many low-wage jobs. In either of these scenarios, people would not be able to live in the same community where they work because the housing type does not match the job type.

### Efficient use of land

The County has 1,700 acres of vacant land that are zoned for Commercial/Industrial use. The 1,700 acres is split between 159 parcels throughout the County, with the majority of the acreage located in the North Plains area of the County.

The County has a large number of big box retail developments. This type of development can result in land to building size ratios around 5 to 1. (A 400,000 square foot, or 9+ acre lot, typically results in a building of about 80,000 square feet and a large parking lot.) Juxtaposed, an Office building typically contains multiple stories and has a land to building ratio of around 3 to 1. This means that an 80,000 square foot Office building can typically be sited on a 240,000 square foot lot. This is approximately 60 percent of the size a retail use would need.

Retail development does not generate sales tax revenue for the County, since the County does not collect sales tax (except for a county-wide Open Space tax and the South Jefferson County Local Improvement District road tax) the economic return to the County compared to other Commercial uses remains small. Big box retail generates about \$0.10 per square foot of lot size, compared to \$0.24 per square foot of lot size for Office uses. The biggest reason for this discrepancy appears to be footprint size of the buildings and parking lot size.

A 10 acre site developed as big box retail would typically have one building of approximately 87,000 square foot, and generate \$43,560 in property tax to the County. The same 10 acre site developed as Office may have two or three buildings totaling 145,000 square feet and generate \$104,500 in property tax to the County. In terms of employment, retail uses typically have 25 jobs/acre while Office uses have 46 jobs/acre (North Plains Community Plan). So, big box would generate 250 jobs, the majority of which are non-primary jobs and the Office use would generate 460 jobs, with most being primary jobs.

## **Land Use and the Economy**

Zoning for Commercial/Industrial development has been in place in several areas for many years, but development has yet to occur. Property with Commercial or Industrial zoning can be found in areas throughout unincorporated Jefferson County. The overall state of the economy and the location of the property play a significant role in their development. These sites have access to Arterial level streets or higher. However, none of these sites have Utilities (water, sewer, natural gas) in place. Many of the more recent Commercial properties that have been rezoned and been built upon have utilized Public Improvement Districts to finance this Infrastructure. Additionally, individual land owners cannot effectively compete with coordinated business efforts by other agencies in the metropolitan region. Therefore, partnering with businesses and business organizations, such as the Jefferson County Economic Development Corporation, is essential to bringing businesses to these areas.

## **Opportunities/Attractors/Jeffco Strengths**

### **Rocky Mountain Metropolitan Airport**

The Rocky Mountain Metropolitan Airport is situated between downtown Denver and Boulder on US Interstate 36, making it the closest airport to both cities. Located just minutes away from the Front Range's major business parks, universities, sport and concert venues, and outdoor Recreation, the airport provides a vital link to business activities.

### **Recreation and Tourism**

With over 260 square miles of open space, Jefferson County provides a great place for outdoor Recreation. In Colorado, outdoor Recreation contributes over \$10 billion annually to the economy and supports 107,000 jobs. The four most popular outdoor Recreation activities include trail use, bicycling, Wildlife viewing, and camping. (Outdoor Industry Foundation, "The Active Outdoor Recreation Economy", April 16, 2007, viewed October 25, 2012, <http://www.outdoorfoundation.org/pdf/ResearchRecreationEconomyStateColorado.pdf>.)

The Denver Metro area increased its number of visitors by four percent from 2006 to 2007. A record 12.2 million people visited the area in 2007, spending \$2.9 billion while they were visiting. In Jefferson County, the Colorado Mills Shopping District was the 4th most popular sight, attraction, or event in the region. Of the top ten popular paid attractions, three are located in Jefferson County. They include Red Rocks Amphitheatre, Buffalo Bill's Grave and Museum, and the Colorado Railroad Museum. (Grant, Rich. "Denver Breaks Tourism Records Again in 2007". June 17, 2008)

### **National Renewable Energy Laboratory**

The National Renewable Energy Laboratory (NREL), located in Golden, is the nation's primary laboratory for renewable energy and energy efficiency research and development.

NREL's mission and strategy focus on advancing the US Department of Energy's and the nation's energy goals. The laboratory's scientists and researchers support critical market objectives to accelerate research from scientific innovations to market-viable alternative energy solutions. At the core of this strategic direction are NREL's research and technology development areas. These areas focus on renewable resources for energy, to the conversion of these resources to renewable electricity and fuels, and ultimately to the use of renewable electricity and fuels in homes, Commercial buildings, and vehicles. The laboratory contributes directly to the nation's goal for finding new renewable ways to power our homes, businesses, and cars. (National Renewable Energy Laboratory, last updated August 22, 2012, viewed October 25, 2012, <http://www.nrel.gov/overview/>)

## National Wind Technology Center

The National Wind Technology Center (NWTC), located at the foot of the Rocky Mountains in north Jefferson County, near the Boulder County line is a world-class research facility managed by the National Renewable Energy Laboratory for the US Department of Energy. National Wind Technology Center researchers work with members of the wind energy industry to advance wind power technologies that lower the cost of wind energy through research and development of state-of-the-art wind turbine designs. The facility's location is ideal for research and development testing of wind turbines because it experiences distinct wind patterns. (National Renewable Energy Laboratory, last updated May 22, 2012, viewed October 25, 2012, [http://www.nrel.gov/visiting\\_nrel/nwtc.html](http://www.nrel.gov/visiting_nrel/nwtc.html))

## Streamlining the regulatory environment

Jefferson County Planning & Zoning works continuously to improve our regulations to make sure that they minimize bureaucracy. Timelines have been established for each land use process to make processing consistent and expeditious.

## Partnering with businesses and business organizations

Jefferson County currently partners with the Jefferson County Economic Development Corporation (Jeffco EDC). Jeffco EDC's mission is to strengthen the economic vitality of Jefferson County, Colorado through the creation, retention and expansion of primary jobs. ("About Jeffco EDC", Jefferson County Economic Development Corporation, last update unknown, viewed October 25, 2012, <http://www.jeffco.org/about.asp>) By forming a relationship with Jeffco EDC and other Jeffco EDC investors the ability to affect economic vitality and growth, individually and collectively is accomplished.

# Transportation

## Transportation Demographics

A variety of transportation modes exist in Jefferson County. These modes include highways, Roads and Streets, air travel, freight rail, public transit by means of bus, and regional and Local Trails for equestrians, bicyclists, and pedestrians. Light rail will soon be available as another public transit option.

## Air Service

### Denver International Airport (DIA)

This \$4.2 billion facility sits on 53 square miles. It is the only major airport to be built in the US in the last 25 years.

Runways:	5 x 12,000 ft., and 1 x 16,000 ft.
Concourses:	3
Gates:	95 + 16 regional jet facility gates
Passenger Airlines:	29
Departures/Arrivals and contact with control tower in 2008:	625,844

Passengers in 2008: 51.2 million

(City and County of Denver, CO Municipal Airport System Annual Financial Report, December 31, 2008 and 2007, Denver International Airport web site, last update unknown, last viewed November 4, 2009, <http://www.flydenver.com/diabiz/stats/financials/reports.asp> and the DIA Public Information office.)

Rocky Mountain Metropolitan Airport

Fixed Base Operators: 2  
 Departures, Arrivals, Fly-overs, and touch and goes in 2008: 151,736  
 Runways: 3 (3,601, 7000, and 9,000 ft.)

U. S. Customs Office in Terminal Building

*(Rocky Mountain Metropolitan Airport web site, last updated October 6, 2009, last viewed November 4, 2009, http://jeffco.us/airport/)*

Rail Services

Passenger: Amtrak  
 Freight: Burlington Northern/Santa Fe, and Union Pacific  
 Light Rail: FasTracks

The FasTracks metro-wide mass transit project was approved by Denver metropolitan voters in 2004. Jefferson County will benefit from two light rail lines, one commuter rail line and one bus rapid transit line. The West Corridor Line will provide direct access to Lakewood and Golden, running from the Jefferson County Administration and Courts building to downtown Denver, while the Gold Line will provide access to Wheat Ridge and Arvada. The US 36 bus rapid transit line and commuter rail will provide direct access to Westminster. Currently, the Southwest Light Rail Line provides service to the southern suburbs of Jefferson County.

Truck Service

Over 160 freight companies provide trucking services in the area.

Bus Services

Inter-city Commercial Bus Companies: 7  
 Regional Transportation District (RTD) - Intra-City

*SOURCE: Colorado Department of Labor and Employment.*

Road Miles

Total Road Miles: 2,982  
 County Maintained Road Miles: 1,244

**Transportation Statistics**

Jefferson County	2000	1990	Annual Growth
Vehicle Registrations	438,373	351,850	2.2%
Road Miles	2,982	2,518	1.7%
Injuries and Fatalities	4,527	--	--
Avg. Commuter Travel Time (Min)	27.4	24.1	1.3%
Unincorporated Jeffco	2000	1990	Annual Growth
Vehicle Registrations	166,274	123,847	3%
Road Miles	1,796	1,445	2.2%
Injuries and Fatalities	1,262	--	--
Avg. Commuter Travel Time (Min)	27.3	--	--

*Source: DRCOG 2006 Community Profile*

## **Link with Land Use and Economic Development**

Transportation Facilities often influence development patterns of urban, suburban, and rural areas. For example, Industrial uses benefit from close proximity to freight rail, and often locate near a rail line, where this may be a negative attribute near residential uses. Retail uses will locate in areas that have high visibility, such as the intersection of two major roads.

In turn, the operation of the transportation network is influenced by the form and Intensity of land development. Failure to coordinate land use and transportation may result in excessive travel times, increased congestion, increased public and private costs, limited travel opportunities, inconvenience, hazards, and wasted energy.

Development of the highway system encouraged suburbanization and decentralization of businesses; Jefferson County's suburbanization has helped its economic base. Prior to highways, most businesses conglomerated in central business districts, such as downtown Denver. As highways and roads developed, businesses found it more cost effective to locate at the fringes of the city. In medium sized cities, such as those in Jefferson County, estimates show that close to half of the employment is dispersed along highways, Arterial streets or in smaller employment subcenters. The other half is located in the Central Business Districts and in large subcenters. (Terry Moore and Paul Thorsnes, with Bruce Appleyard. *The Transportation/Land Use Connection* p. 41)

The County has several major highways that run through it. Interstate 70, US Highway 285, State Highway 58, and US Hwy 6 generally move traffic east and west. C470 and State Highway 93 generally move traffic north and south. These highways have encouraged major development along their corridors. In particular, I-70 and US Highway 285 have promoted more intense development in the mountains than in the mountainous areas of other Front Range counties.

These days businesses want proximity to airports. The Rocky Mountain Metropolitan Airport is located in the northern part of Jefferson County and provides general aviation. Jefferson County exists minutes away from an international commercial airport, Denver International Airport. Both the Rocky Mountain Metropolitan Airport and the Denver International Airport benefit the economic development of the County.

The expansion of light rail and future commuter rail in the County leads to another phase in land development patterns. These rail lines will promote opportunities for infill development and redevelopment of properties around rail stations. Many cities plan for Transit Oriented Development around stations in their jurisdictions. Transit Oriented Development mix residential, retail, Office, and public uses in a Walkable environment, making it convenient for residents and employees to travel by transit, bicycle, foot, or car. Walkable neighborhoods typically have higher property values and tend to retain their values.

While the majority of these stations will be within incorporated areas, the Ward Road station on the Gold Line and Red Rocks Station on the West Corridor are close to properties in unincorporated Jefferson County. In these areas, the County has the opportunity to plan for New Development.

Existing and potential businesses in the County can indirectly benefit from Infrastructure improvements. Specifically, transportation improvements can lead to better access to markets and may expand production possibilities and increase access for workers and clients. The County's Capital Improvement Program can be a powerful tool to support both Commercial/Industrial and residential growth. (An Economic Development Toolbox: Strategies and Methods; APA PAS Report # 541; p. 52, 58; 2006)

## **Commuting**

Eighty-three percent of people going to work travel alone in a vehicle, 10 percent carpool and four percent use transit. (Source: US Census American Community Survey, 2010)

Fifty-seven percent of people that work in Jefferson County commute from outside the County. This represents a jobs-housing imbalance of approximately 50,000 jobs. (That is, there are 50,000 less jobs in the County

compared to the number of workers who live in the County.)



\*Data from US Census, 2010.

### Level of Service

Level of Service (LOS) provides a method to estimate congestion on roadways. The categories range from A to F with LOS A being free flowing traffic and LOS F being complete congestion. The Policy and Technical Committee that worked on the 1998 Countywide Transportation Plan established LOS D or better as a goal for maximum congestion during peak hours on all Jefferson County roadways which are classified as Arterial or greater.

The Countywide Transportation Plan evaluates what would need to be done to provide a Transportation System that offers travel choices while limiting congestion on its roadways to approximately 1995 levels. The Countywide Transportation Plan outlines a Needs Based Plan, which looks at what should be done to limit congestion in the future and a Fiscally Constrained Plan, which limits improvements to those areas where projected funding exists. The Needs Based Plan projects 80 percent of roadways will be LOS D or better by 2015. The Fiscally Constrained Plan projects that 68 percent of the roadways will be LOS D or better by 2015.

Some of the roads that would be at a Level of Service E, F or F+ in the Fiscally Constrained Plan, but not in the Needs Based Plan include:

- State Highway 93, north of State Hwy 58 and US 6.
- Indiana Street between 82nd Avenue and State Highway 128
- West Colfax between Kipling Street and Indiana Street
- C-470 between Morrison Road and West Alameda Avenue
- C-470 between Wadsworth Boulevard and the eastern county line

To complete the County Arterial roadway network in the southeastern part of the County, in 2001, voters extended the South Jefferson County Local Improvement District half-cent sales tax. Using money from this taxing district, the County has been improving many roads in the southeast part of Jefferson County.

### Capacity

Road capacity is evaluated with each New Development proposal. If needed, appropriate road improvements occur at the time a development is constructed.

Road congestion generally encourages transit use. When roads exceed their capacity, people start looking for

alternatives to get to their destinations. This may involve taking different roads, but it may also include riding transit or carpooling.

The 12.1 mile West Corridor Light Rail Line is projected to be completed in 2013 and by 2025 projections show average weekday light rail ridership of 31,100 people. By comparison, RTD's existing 8.7-mile Southwest Corridor Light Rail Line has observed daily ridership of 17,900, equating to 2,050 riders per mile of track. Thus, the West Corridor should carry 13,200 more daily riders and 500 more riders per mile than the Southwest Corridor line currently experiences. (West Corridor Final Environmental Impact Statement, October 2003, 4.3.1)

The Gold Line will also be an alternative to congested roads and would improve travel times. The Gold Line is an 11.2 mile corridor transit line. The travel time for the Preferred Alternative will be 19 minutes from Denver Union Station to Ward Road while the projected auto travel time would be 27 minutes (2030). The Gold Line is projected to service 20,100 riders (average weekday) by 2030. (Gold Line Corridor, Draft Environmental Impact Statement, July 2008, Chapter 4)

### **Jefferson Parkway**

The Jefferson Parkway represents a potential 20-mile plus long corridor connecting Golden to Broomfield, which would complete a beltway around the Denver Metro area. The Colorado Department of Transportation started the Northwest Corridor Environmental Impact Statement (NWEIS) process in 2003.

Due to declining funding and a lack of consensus, the Colorado Department of Transportation decided to not complete the Northwest Corridor Environmental Impact Statement. Instead, data collected has been used to create a new *Northwest Corridor Transportation Planning and Environmental Study* that is available to the public and can be used by a governmental agency or the private sector should an entity decide to move forward with a future project that does not involve federal funding. (Source: Colorado Department of Transportation, Northwest Corridor EIS, updated May 11, 2010, viewed October 25, 2012, <http://www.dot.state.co.us/northwestcorridoreis/>)

The Study identifies a No Action Alternative and four build alternatives: Freeway Alternative, Tollway Alternative, Regional Arterial Alternative, and Combined Alternative. The Combined Alternative has been identified as the recommended alternative.

The Combined Alternative is a merged and packaged alternative with three different roadway classifications; toll way, major regional Arterial, and Principal Arterial. From the Northwest Parkway to State Highway 128, the facility is classified as a major regional Arterial. From State Highway 128 to just south of 64th Parkway, the facility is classified as a toll way. From this point south to C-470, the facility is classified as a major regional arterial. This alignment is packaged with a 7.5-mile Principal Arterial alignment on Indiana Street and McIntyre Street. A regional bike trail will be provided along the alignment of the Combined Alternative. The total probable cost for this alternative, including both construction and right-of-way costs, is \$922 Million in 2005 dollars. (Source: Colorado Department of Transportation, Northwest Corridor, A Transportation Environmental Study, Executive Summary, updated January 29, 2010, viewed October 25, 2012, [http://www.coloradodot.info/library/studies/northwest-corridor-eis/chapter\\_00\\_executive\\_summary\\_teps.pdf/view](http://www.coloradodot.info/library/studies/northwest-corridor-eis/chapter_00_executive_summary_teps.pdf/view))

The Jefferson Parkway Public Highway Authority was established in 2008 with the purpose of financing, constructing, operating, and/or maintaining the Jefferson Parkway. Jurisdictions involved in the Authority include Jefferson County, City of Arvada and City and County of Broomfield. More information about the Authority and the most current proposed alignment can be found at [www.jppha.org](http://www.jppha.org).

# Natural Resources

Jefferson County has many natural resources that contribute to the overall quality of life in the County. These resources include open space, Wildlife, views, scenic corridors, and the Front Range Mountain Backdrop/Foreground.

## Open Space

Unincorporated Jefferson County contains approximately 260 square miles of parks and open space. This equals approximately 40 percent of the County's land area. These areas include Jefferson County Open Space Parks, Denver Mountain Parks, United States Forest Service land, Colorado State Parks, and parkland owned by a variety of Park and Recreation Districts.

The Jefferson County Open Space Program began in 1972 by a vote of the Jefferson County citizens. As of December 2012, the County had acquired approximately 53,000 acres of Open Space either through fee, conservation easement, or lease. Twenty-nine Jefferson County Open Space parks attract 1.9 million visitors per year. These Open Space parks are a valuable amenity to both visitors and residents of the County.

The Open Space Division develops a 5-Year Master Plan which identifies their Goals, Objectives, and Acquisition Values. Specific areas that are of interest for preservation include the Front Range Mountain Backdrop/Foreground preservation areas and properties within the Natural Areas Plan.

## Trails

Trails are an important amenity to residents and can be used for Recreational purposes, transportation purposes, or both. The County has 198.6 miles of trails.

Many potential regional trail corridors still need to be completed. The Jefferson County 5-Year Open Space Master Plan shows some of the needed connections.

## Wildlife

Wildlife and unique habitat provide aesthetic, economic, and environmental assets to Jefferson County. They contribute to the well-being of the residents and are a major part of the quality of life in the County. They contribute to the County's economy by providing and enhancing Recreational activities, such as hunting, fishing, camping, hiking, etc. They are also valuable indicators of environmental quality because they are sensitive to change, especially environmental deterioration.

Problems for Wildlife in developed and developing areas usually come under several categories. First and foremost, the loss of critical habitats needed for nesting, calving, wintering, migrating, and breeding. Second, we see a conflict with Wildlife/human interaction that occurs when humans and Wildlife share the same space. Third, we see the loss of prime Wildlife movement corridors. The needs of most Wildlife species can be met by protecting several habitat types and prime habitat areas. The size of residential parcels remains very important, as does the value of strategically located blocks of open space in public or private ownership. In addition, a network of public and private Open Land and natural trails should be developed to direct and control Recreation and provide areas where the public can view Wildlife without disturbing these important habitats.

The preservation of Wildlife can also result in considerable economic benefits to the State and County. Hunting and fishing provides a sizable portion of Colorado's tourism economy. Hunters and anglers spent an estimated \$797 million on trip expenses and sporting equipment in Colorado during 2002. In general, non-resident hunters and anglers spent more money per day on average, than residents did. Estimates indicate that the total economic impact of hunting and fishing in the State is just over \$1.5 billion. This level of activity supports an estimated 20,000 full-time jobs in Colorado. (The Economic Impacts of Hunting, Fishing, and Wildlife Watching in Colorado, 2008, Executive Summary p. 1-2)

In Jefferson County, total expenditures related to hunting and fishing were over \$116 million in 2007. Total

expenditures include the money spent on the trip and equipment, Colorado Division of Wildlife expenditures in support of these activities, and secondary spending by businesses and households. This spending created approximately 1,420 jobs in the County. (The Economic Impacts of Hunting, Fishing, and Wildlife Watching in Colorado, 2008, Section IV p. 16)

The Gold Medal Fishery along the South Platte River between Cheesman Reservoir and Strontia Springs Reservoir attracts many anglers to Jefferson County. Gold Medal Water is defined by the Colorado Division of Wildlife as "A lake or stream that supports a trout standing stock of at least 60 pounds per acre, and contains an average of at least 12 quality trout per acre." A Gold Medal Water designation can only be applied to waters of the State that are accessible for fishing by the general angling public. (Colorado Wildlife Commission Policy, Wild and Gold Medal Trout Management Effective Date: September 18, 1992, Revised Date: June 12, 2008) Considered some of the best rainbow and brown trout fisheries in the nation, the Gold Medal Fishery continues to flourish in the County.

Wildlife does not need to be shot or caught to be a valuable resource. Americans spend \$18 billion a year to watch Wildlife, triple what they spend on movies or sporting events. (Source: The Conservation Fund's American Greenways Program Fact sheets) In Colorado alone, estimates show that Wildlife watching yielded a total economic impact in the State of \$1.8 billion. This level of spending supports approximately 21,000 jobs in Colorado's economy. (The Economic Impacts of Hunting, Fishing, and Wildlife Watching in Colorado, 2008, Executive Summary p. 1-2)

While hunting and fishing still bring in more revenue to the State than Wildlife watching, there was a dramatic increase in expenditures for Wildlife watching between 2002 and 2006.

The Rocky Flats National Wildlife Refuge, a 6,240 acre site located in the northeast part of the County will also attract Wildlife watchers. This former nuclear defense facility operated by the US Department of Energy (DOE) contains areas that have remained relatively undisturbed for the last 30 to 50 years, allowing them to retain diverse habitat and associated Wildlife. The refuge contains the rare Xeric short and tall grass prairie plant communities, tall upland shrubland, and habitat for the threatened Prebles Meadow Jumping Mouse. A resident herd of about 160 deer inhabit the site and elk can occasionally be spotted. Visitor use facilities will include about 16 miles of trails, a seasonally staffed visitor contact station, trailheads with parking, and developed overlooks. (Rocky Flats National Wildlife Refuge Final Comprehensive Conservation Plan and Environmental Impact Statement, Summary, September 2004, viewed October 25, 2012, <http://www.fws.gov/rockyflats/Documents/FEIS/Summary.pdf>)

## Predictable Growth & Development

### Land uses in Jefferson County

Jefferson County contains 72 percent mountainous area overall and 82 percent mountainous when looking at just unincorporated portions. Of the 419,000 acres of land in unincorporated Jefferson County, nearly 10 percent are protected by the Jefferson County Open Space Division either by outright purchase, or as a conservation easement. The National Forest controls another 25 percent, State Parks control two percent, Denver Mountain Parks owns two percent, and various park and recreation districts own another one percent. In summary, approximately 40 percent of the land in unincorporated Jefferson County falls within protected open space.

Of the 8,087 parcels zoned Agricultural-Two (A-2) (the County's rural large-lot zone district with a minimum lot size of 10 acres), 5,258 are smaller than 10 acres. Another 1,250 are less than 20 acres, so they cannot be subdivided unless they were rezoned. Five parcels in private ownership are larger than 1,000 acres. The A-2 zone district occurs predominately in the Mountain Areas of the County. If every A-2 parcel that could be

subdivided did so, there would be an additional 8,000 A-2 parcels. However, limitations due to topography, water, access, and other requirements may reduce the amount of development that can occur.

**Housing Demographics**

In 2005, Jefferson County had a total of 225,123 housing units, and 74,434 housing units in unincorporated Jefferson County. The vacancy rate was 7.73 percent for the entire County, and 8.41 percent for the unincorporated portion of the County. In 2000, the vacancy rate was just over three percent. Of the total housing units, 75 percent were in single-family units, 24 percent were multi-family structures, and one percent was mobile homes. Approximately 25 percent of the housing stock has been built since 1990.

**Housing Structure Type**

	Total Units	% of Single Family Units	% Multi-Family Units	% Other Units
Jefferson County	225,123	75.2%	23.8%	1.0%
Unincorporated	74,434	89.3%	9.6%	1.1%
Region	984,642	67.5%	30.1%	2.4%
State	1,808,037	68.4%	25.7%	5.9%

*Source: DRCOG Community Profile 2006*

In 2005, Jefferson County had 207,720 occupied housing units and 68,175 in unincorporated portions of the County. Approximately 75 percent were owner-occupied and 25 percent renter-occupied.

About 42 percent of the households had two vehicles, with 24 percent having three or more vehicles.

**Housing Affordability**

According to the 2012 National Low Income Housing Coalition, in Jefferson County, the Fair Market Rent for a two-bedroom apartment is \$893. In order to afford rent and Utilities, without paying more than 30 percent of gross income on housing, a household must earn \$35,720 annually. Assuming a 40-hour work week this level of income translates into a Housing Wage of \$17.17. (A unit is considered affordable if it costs no more than 30 percent of the renter's income.)

In Jefferson County, a minimum wage worker earns an hourly wage of \$7.64. For a person with a full-time job paying the minimum wage, affordable rent would be \$397 per month. In order to afford the Fair Market Rent for a two-bedroom apartment, a minimum wage earner must work 90 hours per week, 52 weeks per year, or, a household must include 2.2 minimum wage earner(s) working 40 hours per week.

Monthly Supplemental Security Income payments for an individual are \$698 in the County. If Supplemental Security Income represents an individual's sole source of income, \$209 in monthly rent is affordable, while the Fair Market Rent for a one-bedroom is \$705. ("Out of Reach 2012", National Low Income Housing Coalition, Last updated unknown, Viewed October 25, 2012, <http://nlihc.org/oor/2012/CO>)

**Limiting factors**

Many factors need to be considered when trying to achieve sustainable development. These include natural features and human-provided services. Natural features that can limit development include water availability, Geologic Hazards, Wildfire hazards, Wildlife, and visibility. Human-provided services that can limit development include Streets/Roads, public water and sanitation, schools, emergency services, law enforcement, and fire protection.

The availability of adequate water remains the single largest limiting factor facing development in Jefferson County. The second most significant limiting factor involves the road networks in the plains, and hazards (geologic and Wildfire) in the mountainous areas.

**Water** - Within the Mountain Ground Water Overlay District (M-G), approximately 16,500 parcels exist that are

not served by a Special District that provides water. Of these, 4,200 remain vacant and 12,250 have a house. Of the 4,200 vacant lots, half are smaller than one acre. It can be concluded that these 12,250 houses are served by wells. Of these parcels, 2,300 have wells on properties of less than one acre and another 6,300 are on lots less than 3.5 acres. Overall, 70 percent of houses served by wells in the Mountain Ground Water Overlay District are on lots smaller than what would be allowed under current regulations for well and Individual Sewage Disposal Systems (ISDS). The vast majority of these houses exist in subdivisions that were approved prior to 1972.

It is important to understand that surface water and ground water resources cannot be guaranteed and are subject to fluctuations in climate conditions and precipitation. In times of drought it may be necessary to manage water use so that there will be enough water for human health and environmental quality. The sustainability of local ground water and surface water resources may depend on recharge from on-site and central wastewater treatment facilities.

**Hazards** - Hazards in Jefferson County can represent a significant challenge to developers. Hazards are conditions which pose a threat to health, life, limb, or property. Hazards can include Floodplains, Geologic Hazards, Wildfire hazards, and hazards resulting from human activities such as abandoned mines and landfills. The County has assessed the relative risk of each hazard and then grouped the hazards into classes. The most limiting hazards are classified as high risk or moderate risk areas. Minimum lot sizes are suggested depending on the level of the risk – the higher the risk, the larger the lot size.

Environmental hazards that exist in Jefferson County include:

- Dipping Bedrock
- Subsidence
- Rockfall
- Landslides and Slope Failure
- Methane Gas
- Wildfire
- Post Wildfire flooding and mud flow area
- Floodplains
- Potentially Unstable Slopes
- Highly Erodible Soils
- High swelling/expansive soils and bedrock
- Highly Sensitive Soils
- Naturally occurring radiation

### **Our Future**

Jefferson County must recognize its role as an urbanized county in the Denver Metropolitan Area. The County relies on property tax as the primary funding source for county services. In 1982, the Gallagher Amendment mandated that residential properties pay 45 percent of all property taxes on a statewide level, and that all other property types (Commercial, agricultural, vacant etc...) would pay 55 percent. The assessment ratio (the amount of the property value that can be taxed) is adjusted every two years to maintain this ratio. Non-residential properties are fixed at 29 percent, and residential floats to maintain the 45/55 ratio. Currently, residential properties make up more than 75 percent of the real estate value in the State. When Gallagher first passed, the residential assessment ratio was 29 percent. Today it is at 7.96 percent.

Even with the passage of the Gallagher Amendment, property taxes were considered a stable funding source, since mill levies could be adjusted up or down to maintain a steady revenue stream. However, in 1992, the Taxpayer's Bill of Rights (TABOR) Amendment passed. This limits the ability of counties to raise mill levies without approval of the voters in the County. TABOR also limits the amount of revenue that governments can keep. The net result of these two amendments means that revenue for the County fluctuates. If a county has a

rapid rise in taxable value (due to growth or market forces), then it may be forced to lower its mill levy to keep revenue in line with the limitations of TABOR. Lowering the mill levy has left some to interpret that TABOR does not allow it to be raised without voter approval. So, a sharp drop in home prices could substantially affect the County's revenues unless voters approve a mill levy increase. Local governments have started to rely more on user charges and permit fees than sales and property taxes. With slower growth in new construction, local governments face tighter revenue limits due to TABOR restrictions. Many cities have become increasingly reliant on sales taxes. In 1992, \$3.84 of sales tax was collected for each \$1 of property tax. In 1997, sales tax collection rose to \$4.74 per \$1 of property tax. (Center for Colorado Policy Studies, Tom Brown, PhD, 1997) This has led cities to compete with each other over shopping centers with regional draw.

Jefferson County remains an anomaly among urban counties in that a large portion of the County has developed at a density and Intensity equal to that of many suburban cities, but does not collect sales taxes (except one-half percent for Open Space county-wide, and one-half percent for road improvements in the southern unincorporated urban area of the County). Jefferson County has been focused on improving the jobs/housing balance rather than actively recruiting shopping malls. The more diverse the tax base, the more resilient the County will be to economic downturns.

### **Operating with Long-Term Master Planning**

The Jefferson County Comprehensive Master Plan applies to applications for rezoning to ensure conformance with Plan polices. Rezoning in substantial conformance with the Plan recommendations receive a planning staff recommendation for approval to the Planning Commission and the Board of County Commissioners. In 78.7 percent of the cases, rezonings match the recommendations in the area or community plans. Exceptions to the Plan recommendations may be approved under certain conditions.

By having a high level of compliance with the recommendations in the Plan, citizens as well as developers have a sense of predictability in the land uses around their property.

## **Appendix B: Land Use**

Appendices B-E discuss in more detail many of the concepts promoted throughout the Comprehensive Master Plan. Topics have been broken into categories to reflect the Plan elements found in the document.

### **I. Housing**

#### **a. Benefits of jointly developing properties**

- Shared cost of application fee, engineering costs, and consultant costs
- Ability to provide a more cohesive access and circulation plan
- Better site design
- Potentially, more density or more intense non-residential development because lots/buildings can be more creatively arranged
- Shared cost of extending water/sanitation lines
- Shared cost of any required transportation improvements

#### **b. Benefits of Clustering**

The benefits of Clustering housing include:

- Increased open space conservation
- More efficient use of Utilities and Infrastructure

- Preserved Wildlife Habitat and corridors
- Preserve existing view corridors
- Ability to avoid natural hazard areas
- Conserve water resources

**c. Reasons for staying off 30% or greater slopes**

Adverse impacts of development on steeply sloping property include:

- Increased Wildfire danger
- Increased clearing for Defensible Space
- Increased incidence of Geologic Hazards
- Difficulty in drilling wells
- Difficulty in siting septic systems
- Difficulty in meeting county driveway and road standards
- Increased erosion
- Increased visual impact of hillside cuts
- Building design constraints
- Increased engineering expense

**d. Ways to encourage construction of affordable units**

These are possible options, but other options may also be available.

- Provide tax incentives, i.e. a rebate of 100 percent of sales and use tax for materials used for the construction of Activity Centers units
- Waive or defer fees on Activity Centers
- “Fast track” permitting – to accelerate the process for affordable units
- Rezone specific lands to allow higher density development
- Provide flexible design standards (i.e. reduced parking requirements, reduced street widths, flexible sidewalk standards, such as only on one side of the street),
- Expansion of the qualifications of the first-time homebuyer’s down payment assistance program
- Sliding scale bonus with greater density for greater set aside of affordable units

## **II. Economic Development**

**a. Primary Jobs**

Primary jobs in the County include:

- Aviation
- Aerospace
- Bioscience
- Energy
- Enabling Technologies
- Beverage Production

- Health Care
- New technologies that could create primary jobs include biomass and nanotechnology.

#### **b. Federal Facilities**

There are numerous federal facilities in Jefferson County, including the National Renewable Energy Laboratory (NREL) and the Federal Center. The operational integrity of these facilities may be protected by promoting compatible adjoining land uses.

#### **c. Tools and Incentives**

Economic development tools and incentives, include, but should not be limited to:

- Workforce assistance
- Funding resources
- State and Federal assistance (i.e. Brownfield grants, Community Development Block Grants)
- Financing
- Enterprise Zones
- Density Bonuses
- Economic Demographics and Statistics
- Land Banking
- Reduce or waive some or all application and impact fees

#### **d. Communication Infrastructure**

Current communication infrastructure examples:

- Personal wireless phone service
- Fiber optic cable
- Fixed and mobile wireless phone service
- Fixed and mobile wireless internet access
- Wireless Fidelity (Wi-Fi) applications

Examples of industries that would benefit from improved communication infrastructure:

- Home Industries
- Higher Education
- High-Tech Industries
- National Renewable Energy Laboratory

e. Employment densities

### **III. Open Space, Open Land, Parks, & Trails**

#### **a. Stewardship of Protected Properties**

- Support forest thinning and utilize wood as a beneficial use where fire Mitigation must be done, i.e. pellets for a wood stove or other energy creation.
- Promote stream restoration to reduce sedimentation and other pollutants, and to maintain drainageways.

#### **b. Site Design Techniques to Enhance Compatibility with Public and Private Open Spaces**

- Large buffers
- Open style fencing
- Lower density/Intensity land uses

**c. Open Space Five Year Master Plan Goals (Adopted December 16, 2008)**

- Acquire lands to preserve resources and provide for future Recreational opportunities.
- Manage Open Space lands to preserve and enhance natural and Cultural Resources.
- Provide for quality visitor experiences in a manner that protects natural and Cultural Resources.
- Foster awareness and appreciation for natural and Cultural Resources and the ethic of resource stewardship.
- Strengthen and build partnerships for community parks, Recreation, open space and trails.
- Ensure the viability of Jefferson County Open Space for future generations.

**Mission of Jefferson County Open Space**

To preserve open space lands and natural and Cultural Resources, and to provide for quality park and Recreational experiences.

**d. Educational Information**

Educational information about benefits of preserving open space can be found at Jefferson County Parks.

**e. Conservation Techniques**

Possible land conservation techniques include conservation easements, rural clusters and downzoning.

## **IV. Renewable and Alternative Energy**

**a. County efforts**

In 2008, the Board of County Commissioners adopted the Energy Resource Conservation Policy to establish guidelines for cost-efficient and sustainable energy resource usage and allow County Departments to implement Board-approved decisions. The efficient use of energy and resources are essential to modeling good citizenship, accountability, and service. Jefferson County has a responsibility to be a leader in energy efficiency in the workplace. The employees of Jefferson County are encouraged to be well-educated and participate in the efficient use of energy.

In 2012, Jefferson County utilized grant funding to purchase solar photovoltaic arrays and two Skystream wind turbines. As of October 2012, the combined output of these systems equate to 828,000 kilowatt hours (kWh) produced, which is equivalent to the energy required to power 150 single family homes.

The County also upgraded lighting systems throughout the Jefferson County government buildings.

## **V. Coordination of Jurisdictions**

**a. Specific Plans or Projects to Coordinate on**

- Open Space 5-Year Master Plan – Jefferson County Open Space
- Consolidated Plan – Jefferson County Community Development
- Community Health Assessment – Jefferson County Public Health
- Public Health Improvement Plan – Jefferson County Public Health

# Appendix C: Environmental

## I. Water Resources

### a. Best Management Practices for Stormwater Quality

The Urban Drainage Manual should be consulted to select Best Management Practices to address stormwater quality. Developments should be required to employ the four steps outlined in the manual: (1) employ runoff reduction practices, (2) provide Water Quality Capture Volume, (3) stabilize drainage ways, (4) employ commercial and Industrial best management practices.

### b. Surface Water Resources

Surface water resources include lakes, streams, Wetlands, reservoirs, irrigation ditches, and drainageways.

### c. Best Management Practices for the Keeping of Livestock

The Jefferson County Planning & Zoning Large Animals Resources Brochure contains contact information for organizations that have information about management practices. This brochure can be found at [http://jeffco.us/jeffco/planning\\_uploads/guides/la\\_handout\\_resources\\_w.pdf](http://jeffco.us/jeffco/planning_uploads/guides/la_handout_resources_w.pdf)

### d. Buffers, Infiltration and Stormwater Quality

Buffers improve storm water quality by controlling soil erosion and removing sediment, fertilizers, pesticides, and other potential contaminants from runoff.

Infiltration techniques include, but are not limited to, porous landscape design, porous pavement, etc.

### e. Low Cost Water Conservation Techniques

Low-flow toilets and shower heads, Xeric landscaping, and sensor-based sprinkler systems.

f. Daily Water Usage Estimates	
Types of Establishments	Gallons Per day
Airports (per passenger)	3-5
Apartments, multiple family (per resident)	60
Bath houses (per bather)	10
Camps: Construction, semi-permanent (per worker)	50
Camps: Day, with no meals served (per camper)	15
Camps: Luxury (per camper)	100 - 150
Camps: Resorts, day and night, with limited plumbing (per camper)	50
Camps: Tourist, with central bath and toilet facilities (per person)	35
Camps: Cottages, with seasonal occupancy (per resident)	50
Camps: Courts, tourist with individual bath units (per person)	50
Clubs: Country (per resident member)	100
Clubs: Country (per nonresident member present)	25
Dwellings: Boardinghouses (per boarder)	50
Dwellings: Additional kitchen requirements for nonresident boarders	10
Dwellings: Luxury (per person)	100 - 150
Dwellings: Multiple-family apartments (per resident)	40
Dwellings: Rooming houses (per resident)	60

<b>f. Daily Water Usage Estimates</b>	
<b>Types of Establishments</b>	<b>Gallons Per day</b>
Dwellings: Single family (per resident)	50 - 75
Dwellings: Estates (per resident)	100 - 150
Factories (gallons per person per shift)	15 - 35
Highway rest area (per person)	5
Hotels with private baths (2 per persons per room)	60
Hotels without private baths (per person)	50
Institutions other than hospitals (per person)	75 - 125
Hospitals (per bed)	250 - 400
Laundries, self-service (gallons per washing, i.e., per customer)	50
Livestock: Cattle (drinking per animal))	12
Livestock: Dairy (drinking and servicing per animal)	35
Livestock: Goat (drinking per animal)	2
Livestock: Hog (drinking per animal)	4
Livestock: Horse (drinking per animal)	12
Livestock: Mule (drinking per animal)	12
Livestock: Sheep (drinking per animal)	2
Livestock: Steer (drinking per animal)	12
Motels: With bath, toilet, and kitchen facilities (per bed space)	50
Motels: With bed and toilet (per bed space)	40
Parks: Overnight with flush toilets (per camper)	25
Parks: Trailers with individual bath units, no sewer connection (per trailer)	25
Parks: Trailers with individual baths, connected to sewer (per person)	50
Picnic: With bathhouses, showers, and flush toilets (per picnicker)	20
Picnic: With toilet facilities only (gallons per picnicker)	10
Poultry: Chickens (per 100)	5 - 10
Poultry: Turkeys (per 100)	10 - 18
Restaurant: With toilet facilities (per person)	7-10
Restaurant: Without toilet facilities (per patron)	2½ - 3
Restaurant: With bars and cocktail lounge (additional per patron)	2
Schools: Boarding (per pupil)	75 - 100
Schools: Day with cafeteria, gymnasiums, and showers (per pupil)	25
Schools: Day with cafeteria but no gymnasiums or showers (per pupil)	20
Schools: Day without cafeteria, gymnasiums or showers (per pupil)	15
Service Stations (per vehicle)	10
Stores (per toilet room)	400
Swimming pools (per swimmer)	10
Theaters: Drive-in (per car space)	5
Theaters: Movie (per auditorium seat)	5

<b>f. Daily Water Usage Estimates</b>	
<b>Types of Establishments</b>	<b>Gallons Per day</b>
Workers: Construction (per person per shift)	50
Workers: Day (school or offices per person per shift)	15

**g. Ways to minimize water used by landscaping:**

- a) Utilizing native or xeric species;
- b) Blending with native vegetation using existing On-Site trees and vegetation;
- c) Minimizing high-water-consuming turf;
- d) Limiting the size and location of irrigated landscapes; and
- e) Grouping plant materials based on water consumption.

## **II. Hazards**

**a. Wildfire Hazards:**

Jefferson County Emergency Management has developed the "Jefferson County Multi-Jurisdictional Multi-Hazard Mitigation Plan" and "Community Wildfire Protection Plans (CWPP)" to address hazards in the County.

Wildfire hazards include risk to structures and risk from structures to the forests and brush lands. The magnitude of this hazard is affected by vegetation density, type, and other characteristics, slope steepness, slope aspect, atmospheric conditions, and the presence of special terrain conditions such as saddles, gullies, or fire chimneys which cause a draft much like a fireplace flue. This hazard is rated as low, moderate, or severe, as defined in the Glossary:

**Resources**

For more information regarding forest management, Wildfire Mitigation, and Defensible Space the following documents can be obtained through the Colorado State Forest Service. Some of these publications may also be available on the Colorado State University Cooperative Extension Natural Resources Web site ([http://www.ext.colostate.edu/menu\\_natr.html](http://www.ext.colostate.edu/menu_natr.html)).

- Creating Wildfire-Defensible Zones, no. 6.302
- Fire-Resistant Landscaping, no. 6.303
- Forest Home Fire Safety, no. 6.304 – an overview.
- FireWise Plant Materials, no. 6.305
- Grass Seed Mixes to Reduce Wildfire Hazard, no. 6.306
- Fire Line Intensity Map
- Native Trees for Colorado Landscapes, no. 7.421
- Native Shrubs for Colorado Landscapes, no. 7.422
- Fuelbreak Guidelines for Forested Subdivisions, Frank C. Dennis
- Landowner Guide to Thinning
- FireWise Construction, Design and Materials, Peter Slack

**b. Development in Floodplains**

For more information about designing development in floodplains consult the information provided by the

National Flood Insurance Program (NFIP). (<http://www.fema.gov/national-flood-insurance-program>)

### **III. Air, Light, Odor, & Noise**

#### **a. Dark Sky Practices**

Examples of dark sky practices may be found through the International Dark Sky Association at <http://darksky.org>.

### **IV. Historic, Cultural, Archaeological, & Paleontological Resources**

#### **a. Historic Preservation Techniques**

- Preservation easement
- Landmark Program
- Historic District
- Historic District Design Guidelines
- Section 106, Area of Potential Effect

#### **b. Site Design Techniques to Enhance Compatibility with Cultural/Historic Resources**

- Large buffers
- Transition areas
- Architectural context

#### **c. Educational Information**

Educational information about benefits of preserving Historic Resources can be found at the Colorado Historical Society, Office of Archaeology and Historic Preservation.

#### **d. National Natural Landmark**

The National Park Service administers the National Natural Landmarks Program, which recognizes and encourages the conservation of outstanding examples of our country's natural history. It is the only natural areas program of national scope that identifies and recognizes the best examples of biological and geological features in both public and private ownership. National Natural Landmarks (NNLs) are designated by the Secretary of the Interior, with the owner's concurrence. To date, fewer than 600 sites have been designated.

Dinosaur Ridge is part of the Morrison-Golden Fossil Area National Natural Landmark area, designated in 1973. In the late 1800's, the Morrison Fossil Area was the site of the first major discovery of giant dinosaur fossil bones in North America. Fossils from nine species of dinosaur were recovered, seven of which were newly discovered species.

More information is available about the National Natural Landmark program at <http://www.nature.nps.gov/nnl/>.

#### **e. Supporting Links/Referral Documents**

- The Antiquities Act of 1906 – 2006
- The National Historic Preservation Act / National Register
- The National Environmental Policy Act
- The State Antiquities Act
- Historic Monuments Act

- Local Government Land Use Control Enabling Act
- Colorado House Bill 1041 (HB 74-1041)
- Model Land Use Regulations
- Jefferson County Open Space Program
- Federal Historic Preservation Tax Incentives

#### **f. Archeological Resources:**

- Archaeology is the study of material remains of past human life or activities that are at least 100 years of age. Rock shelters, camps, and Artifacts scatter the hogback country from southern Wyoming to northern New Mexico. The Dakota Hogback is rich in evidence of peoples past. Examples of these resources include places of early human occupation, areas where evidence of farming or hunting and gathering is found, burial and other funeral remains, aboriginal Artifacts, and structures dating from Prehistoric periods. The State of Colorado archaeologist has responsibility for Archeological Resources. The opportunity to excavate archaeological sites is important and ensures a continuing link to information about this area's past inhabitants and geological condition. Please note that Archeological Resources are exempt from the Freedom of Information Act and therefore are not shown on the Historic Locations map.

#### **g. Paleontological Resources:**

- Paleontology is the study of fossils. "Body fossils" are the skeletal remains, shell and impressions of organisms which indicate where they died or were buried. "Trace fossils" are tracks, trails and traces of organism activity.
- Dinosaur Ridge is Jefferson County's most famous dinosaur fossil localities. Bone fossils representing life 150 million years ago in the Late Jurassic Epoch can be found on the Morrison Formation (west side of the Dakota Hogback), which crosses a large part of the Rocky Mountain region. Track fossils representing life 100 million years ago in the Cretaceous Period can be found on the east side of the Dinosaur Ridge/Dakota Hogback. These extensive track bearing beds can be traced along the entire Colorado Front Range and reveal the shoreline sediments of an ancient seaway that might have been a dinosaur migration route ("Dinosaur Freeway").
- Please note that Paleontological Resources are exempt from the Freedom of Information Act and therefore are not shown on the Historic Locations map.

#### **h. Geological Resources**

- The Front Range and the Hogback are major geological features that reveal Earth's changing landscape dating back over one-and-a-half billion years. The Hogback is composed of various kinds of sedimentary rock formed when materials (sediments) such as sand or mud were deposited in layers at the bottom of lakes, seas, or other low lying areas.
- The dynamic surface of the Earth caused movement and pressures that fractured and displaced these rock layers – uplifting them to the west so that they now tilt or dip to the east (tectonic activity during the Laramide orogeny, 72-40 million years ago). Wind and water then eroded the soft layers, leaving the harder layers in the sharp relief of a ridge known as the Hogback.

#### **i. Local museums**

- Dinosaur Ridge (Dinosaur Tracks), [www.dinoridge.org](http://www.dinoridge.org)
- Morrison Natural History Museum, <http://www.mnhm.org/>
- Littleton Historical Museum, [www.littletongov.org/museum](http://www.littletongov.org/museum)
- Hiwan Homestead Museum in Evergreen (repository of Jefferson County's historical documents), [http://jeffco.us/openspace/openspace\\_T56\\_R10.htm](http://jeffco.us/openspace/openspace_T56_R10.htm).
- Humphrey Memorial Park and Museum, [www.hmpm.org](http://www.hmpm.org)
- Buffalo Bill Museum & Grave, [www.buffalobill.org](http://www.buffalobill.org)

- Boettcher Mansion, [jeffco.us/boettcher](http://jeffco.us/boettcher)
- Colorado School of Mines Geology Museum, [www.mines.edu/Geology\\_Museum](http://www.mines.edu/Geology_Museum)
- Rocky Mountain Quilt Museum, [www.rmqm.org](http://www.rmqm.org)
- Golden History Center, [www.goldenhistory.org](http://www.goldenhistory.org)
- Astor House Museum, [www.goldenhistory.org](http://www.goldenhistory.org)
- Clear Creek History Park, [www.goldenhistory.org](http://www.goldenhistory.org)

#### **j. Local historical societies**

- Arvada Historical Society, [arvadahistory.org](http://arvadahistory.org)
- Friends of Dinosaur Ridge, [www.dinoridge.org](http://www.dinoridge.org)
- Jefferson County Historical Society (JCHS), [www.jchscolorado.org](http://www.jchscolorado.org)
- Ken-Caryl Ranch Historical Society, [www.ken-carylranh.org](http://www.ken-carylranh.org)
- Lakewood Historical Society, [lakewoodhistory.org](http://lakewoodhistory.org)
- Westminster Historical Society
- Wheat Ridge Historical Society, [www.wheatridgehistoricalsociety.org](http://www.wheatridgehistoricalsociety.org)

## **V. Visual Resources**

### **a. Supporting/Referral Documents**

Front Range Mountain Backdrop Technical Report – A Cooperative Effort of Boulder, Douglas, El Paso, Jefferson, and Larimer Counties - December 1996.

### **b. Visual Resource Protection Techniques:**

- Purchase by Jefferson County Open Space or land conservation group, from a willing seller.
- Transfer of densities
- Downzoning
- Conservation easements and tax incentives

### **c. Site Design Techniques**

- Use dark receding colors and natural materials
- Use low contrast, high quality, architecture
- Maintain a low level of site disturbance/high level of screening
- Use shielded, downcast lighting to minimize Glare Off-Site
- Site buildings appropriately
- Graduate or reduce building heights
- Create separations between structures
- Base density on ability to screen, reduce density accordingly
- Avoid a dominant silhouette on the top of the ridge
- Integrate buildings into the site through the use of landscaping, earthwork, or natural materials
- Blend buildings with surrounding environment

# Appendix D: Services & Utilities

## I. Transportation

### a. Complete Streets

A term coined by the Complete Streets Coalition. The definition can be found in the Glossary. More information can be found at <http://www.smartgrowthamerica.org/complete-streets>.

### b. Transportation Infrastructure

Transportation infrastructure includes, but is not limited to roads, light rail lines, bus stops, trails, wide shoulders, and park-n-Rides.

### c. Studies available through Jefferson County Transportation & Engineering

- Major Drainage Planning – Massey Draw and North Tributaries, SJCD (South) 6200 & Tributaries – July 1979; revision complete end of 2005
- Major Drainage Planning – Dutch Creek, Lilley Gulch, Coon Creek Drainage Basin Area – August 1979; revision complete mid-2007
- Major Drainage Planning – Henry’s Lake Drainageway – December 1983

## II. Services, Special Districts, Facilities, & Utilities

### a. On-Site Water Supplies

On-Site water supplies for fire-fighting include ponds, cisterns, or hydrants, as applicable.

### b. Site Design Techniques to Address Police Protection Issues

- Create landscape designs that provide surveillance, especially around points of entry
- Use fencing appropriate for the situation
- Ensure the site is appropriately lit
- Use low thorny bushes beneath ground-level windows
- Provide trees in residential areas
- Place amenities in common areas to attract larger numbers of desired users

### c. Aging Well in Jefferson County

A strategic plan that identifies the trends for the projected senior population in Jefferson County. The Vision Statement for Aging Well in Jefferson County is: “Jefferson County: A thriving community for aging well.” This statement expresses the envisioned future. Vision statements are “design-oriented.” The Mission Statement for the project is: “To develop and implement strategies creating inclusive, livable communities through sustained partnerships and integrated Services.” This statement specifies the purpose of the project. Mission statements are “execution oriented” and they support the overarching vision.

### d. Waste Reduction Methods

- Source reduction
- Reuse
- Recycling
  - Including recycling construction waste, encouraging waste disposal companies to facilitate recycling by

their customers, and by recycling within the operations of Jefferson County government.

- Composting
  - Including by siting compost centers in neighborhoods where appropriate, by encouraging composting at commercial and agricultural locations or exploring public/private partnerships for regional commercial compost facilities.
- Buying recycled products

#### **e. Joint Use of Facilities Examples**

- Utility corridors
- Co-location of cellular communication towers

#### **f. Fleet and maintenance recommendations**

- Support the purchase and use of hybrid and alternative or clean fuel vehicles for fleets.
- When replacing existing road sweepers, explore purchasing units that reduce dust generation and facilitate sand recycling.
- Encourage recycling of sand uses for snow and ice control, where economically viable.
- Continue to explore the use of environmentally-friendly deicers, as appropriate.

## **Appendix E: Recreation & Tourism**

### **I. Recreation & Tourism**

#### **a. Local Recreational and Tourism Organizations**

- Denver Mountain Parks, [denvermountainparks.wordpress.com](http://denvermountainparks.wordpress.com)
- Lariat Loop Heritage Alliance
- Golden Cultural Alliance, [www.goldenculturalalliance.org](http://www.goldenculturalalliance.org)
- Friends of Dinosaur Ridge, [www.dinoridge.org](http://www.dinoridge.org)
- Other similar groups