

# TRANSPORTATION

## SECTION 6

Like many growing western counties, Douglas County focuses on one of the most integral elements in land use planning - transportation. The primary purpose of a transportation network is for the movement of people and goods. Transportation also provides access to resources, places, and events that fulfill the daily needs and plays a large role in the quality of our individual and collective lives.

An inseparable relationship exists between transportation and land use. For instance, in rural areas with little development, a new regional road provides safer, convenient access to urban services and employment. In urban areas, transportation demands are derived from, and must support, specific land uses and their associated activities.

### VISION FOR TRANSPORTATION PLANNING

A transportation network comprised of diverse types of transportation facilities supports improved access and mobility; it shapes the way we travel and the development of our communities. The integration of the transportation network and land use provides important benefits, including:

- Improved travel choices and options.
- Reduced road network demands, vehicle miles traveled, and time spent driving.

- Improved community health and active living.
- Improved economic vitality.
- Improved air quality.
- Energy and natural resource conservation.

The transportation network is a vital community investment in economic development and sustainability. As the transportation network reflects and supports balanced land use policies, it also assists in the preservation and creation of a sense of place while conserving energy resources.

### RELATIONSHIP TO OTHER ELEMENTS OF THE PLAN AND COUNTY REGULATIONS

The CMP establishes the community's vision regarding transportation for consideration through land use review and other decision-making processes. The County develops and adopts a separate element, the Douglas County Transportation Master Plan (DCTMP), which is incorporated herein by reference. The DCTMP is revised and adopted on a regular basis.

The DCTMP augments policies and values as established by this Plan. It is intended to identify and support potential transit opportunities such as regional bus service (Bustang), light rail, and future bus rapid



transit (BRT) corridors. Bicycle and pedestrian mobility are also critical in reducing demands in automobile roadways and meeting needs of a significant portion of the population. The 2040 DCTMP will also integrate and support land use policies as established by this Plan.

While the following goals, objectives, and policies reflect the County's general interest in how and where road and other transportation facilities are designed, the CMP is not intended as a technical guide. For detailed technical guidance on road design and other engineering-related issues, refer to the adopted DCTMP, Douglas County Roadway Design and Construction Standards, and the Douglas County Storm Drainage Design and Technical Criteria Manual.

## ROAD NETWORK

An efficient and safe road network is essential to address increasing demands from local and regional growth and development. Roadway network improvements anticipate and respond to the varying land use demands and transportation infrastructure of different areas within the county.

The development of the road network faces physical, funding, and programming constraints. These include the often diverse physical characteristics of the county, such as varying topography, historic transportation corridor alignments, and established settlement patterns.

Funding sources for federal and state highway improvements are limited and must be maximized. Collaboration with other county and non-county jurisdictions must be pursued, even as different priorities and programs drive decision making. Non-county jurisdictions may have enormous impacts on the road network if their land use policies direct vehicle trips into relatively sparsely populated areas within the county or onto portions of the road network which were not intended as regional facilities.

Technological developments, including autonomous vehicles, car sharing, and on-demand services, will increasingly characterize the road network. Anticipated to

offer cost savings and convenience, a long-term shift in transportation infrastructure and travel behaviors is predicted. Projected benefits include improvements to the efficiency and safety of the transportation system, a potential reduction in traffic volumes, and reduced car ownership rates. Changes to the built environment could include changes to the demand for traditional parking lots as vehicle storage gives way to drop-off and pick-up experiences. Improved delivery capabilities could bring more passengers directly to their final destinations, significantly improving mobility choices for transit-dependent citizens. The full impact of this change will occur over the next few decades. As such, traditional transportation systems will require investments even as new transportation designs and solutions are implemented.

## PAYING FOR ROAD CONSTRUCTION AND MAINTENANCE

The CMP directs that development pay its fair share of required road improvements, including those internal and adjacent to the development. In some cases, off-site road improvements are also required. Development proposals are reviewed for existing road capacity as well as road capacity at project buildout and at a long-range horizon year. As established in the Douglas County Roadway Design and Construction Standards, proposed new developments must demonstrate that road capacity is available, or alternately, identify viable improvements to increase roadway capacity. It may be necessary for a development proposal to construct, fund or partially fund an adjacent or off-site roadway project to mitigate traffic impacts. A development proposal may be phased, deferred, or recommended for denial if these requirements cannot be met.

Road network capacity is described under the term "Level of Service" (LOS), which generally describes relative traffic movement or congestion in an identified timeframe, as measured at intersections. LOS characterizes

the operational conditions of an intersection's traffic flow, ranging from LOS A (indicating very good, free-flow operations) to LOS F (indicating congested and sometimes oversaturated conditions). Reference Appendix B of the Douglas County Roadway Design and Construction Standards for LOS design objectives.

Douglas County supports road development and construction programs, in part, through revenues received through voter-approved sales and use tax initiatives. This revenue source supports construction of new roads, safety improvements, road widening, intersection improvements and signalization, and paving of gravel roads.

## TRANSIT

Transit is defined as any vehicle or transportation system, public or private, used for the mass transport of people. The provision of transit facilities is often feasible only in areas where there is a high concentration of people. Population in the county is mostly concentrated in its northern tier, and within the municipalities of Lone Tree, Castle Rock, Parker, and Castle Pines, as well as the Separated Urban Areas of Roxborough and The Pinery.

County transportation demand is based, in part, on commuting patterns to and between the major employment centers of Denver and Colorado Springs. Continued reliance on the automobile is anticipated. Demand for access to public transportation for older adults, people with disabilities, youths, and non-driving residents will continue.



Transit opportunities and needs must continue to inform land use decisions by Douglas County and its constituent jurisdictions. Light rail service within the City of Lone Tree and future service in the western and central portions of Highlands Ranch provide strong opportunities to guide land use decisions, and to integrate other transit opportunities, including automobiles, buses, bicycles, and pedestrians. One example of the integration of land use and transit is Transit-Oriented Development (TOD), which establishes a higher density and intensity of land use, as well as a variety of different uses, in proximity to transit centers. Additionally, commuter rail on the existing Union Pacific and Burlington Northern Santa Fe Railroad corridors, continues to provide opportunities for future regional transit solutions within existing transportation corridors.

## CURRENT SERVICE PROVIDERS

- The Regional Transportation District (RTD) operates light rail service on the I-25 corridor; Access-a-Ride, an on-demand service for people with disabilities; and bus service to the northern tier of the county. Its Call-n-Ride service is available in Parker, Lone Tree, and Meridian.
- The Southeast Public Improvement Metropolitan District (SPIMD) is a special district that provides shuttle services and enhancements to light rail facilities.
- Other service providers offer countywide transportation to special populations, including older adults, the disabled, and income-eligible residents.

## TRANSPORTATION PLANNING AND LAND USE

The coordination of transportation planning and land use planning enables effective utilization of transportation resources and helps to create and preserve desirable living environments. Such coordination provides multiple benefits:

- Road network demand can be reduced at the scale of both urban and rural densities. Opportunities for non-vehicular transportation and recreation can be realized within urban and rural settings.
- Savings are realized by individuals as investments in automobile transportation are redirected towards less expensive, alternative transportation choices.

The continued investment of financial and physical resources in our automobile-dominant transportation system has become increasingly expensive, damaging to air quality, discourages physical activity, and is a factor in world-wide resource depletion and climate change. While the primacy of the automobile is likely to continue, land use decisions can alleviate the demand for road network improvements, while helping to create and sustain communities that function effectively under a more balanced transportation program.

Coordinated land use and transportation planning provide a comprehensive approach to reducing automobile use through community design, as well as through programs and policies that support a wider variety of transportation choices. For example, a reduction in road network demand can be effectively supported through development, which creates walkable communities designed to support bicycle, bus, pedestrian and other travel options.

This Plan supports the provision of travel facilities for all potential users within transportation corridors. Multi-use transportation corridors can positively affect community and personal interaction, reduce time spent driving, and increase access opportunities for non-drivers like young people and older adults.

The methods, programs and strategies to reduce peak automobile travel demands within a road network are referred to as Transportation Demand Management (TDM). These are implemented at the individual and institutional level, and include focused concepts such as telecommuting and parking management practices.

## AIRPORTS

Centennial Airport is owned and operated by the Arapahoe County Public Airport Authority. Located on the Douglas-Arapahoe County line, approximately one-half mile east of I-25, the facility serves general aviation aircraft. The airport provides regionally significant access and transportation services for major businesses and employers within the southern portion of the metropolitan area and is therefore an important asset in attracting and retaining major employers.

As general aviation travel demands are anticipated to grow, noise and safety issues associated with airport operations must be considered through the land use review process. Douglas County has adopted regulations known as the Centennial Airport Review Area-Overlay District (CARA). The CARA ensures improved land use compatibility through the establishment of noise and safety-zone restrictions. These zone districts generally direct residential uses away from airport operations, while permitting nonresidential and open space uses in proximity to the facility. Noise mitigation strategies are implemented for residential development within identified noise impact areas.

## RAILROADS

Two major rail corridors, the Union Pacific Railroad and the Burlington Northern Santa Fe Railway Company, provide freight and coal transport services along the Front Range. In Douglas County, these corridors are located along the US Highway 85 and I-25 corridors.



As some of the earliest transportation infrastructure within Douglas County, these facilities were instrumental in the creation of many communities. As a result, they are often located within the center of our communities and developed areas, as well as in proximity to riparian corridors.

These facilities are a significant resource for light industrial and industrial users. Again, challenges are presented by noise, safety, vibration, and air quality impacts. The use of train warning whistles creates significant disturbance within affected communities. “Quiet zones” have been established based upon the installation of improved safety features at select, major roadways. Existing at-grade crossings pose threats to automobile passengers, disrupt vehicular movement, and potentially impact emergency service providers. Grade-separated crossings are desirable where they can be developed without significant disruption to existing communities. However, such facilities require an extensive lead time for planning, as well as substantial funding resources.

Local communities should be closely involved in any planning process to identify future grade-separated crossing improvements. Owing to the significant impacts of railroad operations, major land use applications should be carefully reviewed for compatibility.

## GOAL 6-1

DEVELOP AN EFFICIENT, MULTIFUNCTIONAL TRANSPORTATION NETWORK DESIGNED TO ENSURE SAFETY, PROMOTE USER ACCESS, AND FACILITATE COST-EFFECTIVE OPERATIONS AND MAINTENANCE.

### OBJECTIVE 6-1A

ENSURE CONSISTENCY BETWEEN THE TRANSPORTATION MASTER PLAN AND LOCAL AND REGIONAL TRANSPORTATION PLANS.

### POLICY 6-1A.1

Coordinate planning and development review efforts with municipalities and other agencies to ensure integration and continuity of the transportation network.

### POLICY 6-1A.2

Support partnerships at the local and regional level, and between the public and private sector, to improve the transportation network.

### OBJECTIVE 6-1B

INTEGRATE ALL APPROPRIATE MODES OF TRAVEL WITHIN THE TRANSPORTATION MASTER PLAN.

### POLICY 6-1B.1

Provide a comprehensive multi-modal transportation network plan and prioritization framework within the Transportation Master Plan.

### OBJECTIVE 6-1C

CONSIDER SAFETY A MAJOR ELEMENT OF TRANSPORTATION IMPROVEMENTS IN THE COUNTY.

### POLICY 6-1C.1

Design transportation corridors that are safe for all users and sensitive to the community context.

### POLICY 6-1C.2

Encourage design solutions to enhance both vehicular and non-vehicular user safety, including, but not limited to pedestrian, bicycle, and wildlife corridor grade-separated crossings, and roundabouts, where feasible, as an alternative to traffic lights.

## GOAL 6-2

DEVELOP AND MAINTAIN AN EFFICIENT AND SAFE ROAD NETWORK IN HARMONY WITH NATURAL FEATURES AND EXISTING NEIGHBORHOODS.

### OBJECTIVE 6-2A

PLAN AND CONSTRUCT AN EFFICIENT ROAD NETWORK.

**POLICY 6-2A.1**

Through the design process, ensure that collector and arterial road rights-of-way are wide enough to accommodate all identified street users and functions. These may include vehicles, transit, pedestrian facilities, bike lanes, off-street shared use trails, landscaping and roundabouts. Traffic calming features should be included to improve safety and increase pedestrian and bicyclist safety.

**POLICY 6-2A.2**

Promote connectivity and continuity in local, collector and regional roads between adjacent neighborhoods, commercial and employment areas to minimize unnecessary driving.

**POLICY 6-2A.3**

Prior to road widening as a means to improve capacity, evaluate the costs and benefits of alternative capacity enhancement strategies.

**OBJECTIVE 6-2B**

ENSURE NEW DEVELOPMENT PAYS ITS FAIR SHARE.

**POLICY 6-2B.1**

Ensure development-generated road construction is consistent with the Douglas County Capital Improvements Plan.

**POLICY 6-2B.2**

Ensure that developers cause construction of, or provide fair-share financial contributions to, development-required public capital improvements and facilities.

**POLICY 6-2B.3**

Ensure developers contribute to, and mitigate, impacts to off-site transportation infrastructure. Studies should account for off-site conditions and impacts.

**OBJECTIVE 6-2C**

PROVIDE ADEQUATE PRIMARY, SECONDARY, AND EMERGENCY CONNECTIONS FOR SUBDIVISIONS.

**POLICY 6-2C.1**

Provide connections between residential neighborhoods with collector and local roads, and future road connections, where appropriate, to support alternative travel routes.

**POLICY 6-2C.2**

Ensure road layouts and connections support desired response requirements for emergency services and efficient school bus service.

**POLICY 6-2C.3**

Plan major new roads to minimize negative impacts on existing neighborhoods.

**POLICY 6-2C.4**

Evaluate requests for right-of-way vacation in light of current and future transportation needs, which may include road network modifications, multi-use trail corridors, and other public purposes.

**OBJECTIVE 6-2D**

DESIGN LOCAL ROADS TO SERVE THE PURPOSE AND SCALE OF THE NEIGHBORHOOD OR LOCAL ENVIRONMENT.

**POLICY 6-2D.1**

Support local road designs that encourage walkable environments and foster sense of place.

**POLICY 6-2D.2**

Design neighborhood streets to calm traffic and discourage traffic volumes in excess of adopted standards.

**POLICY 6-2D.3**

Ensure that land area is provided to allow adequate berming for visual relief and noise abatement, outside of the right-of-way, as necessary.

**POLICY 6-2D.4**

Road designs should complement and minimize impacts to natural features and landscapes.

**POLICY 6-2D.5**

Design transportation corridor improvements to carefully minimize impacts to and allow coexistence with significant open space, riparian areas, and wildlife movement corridors.

**GOAL 6-3**

SUPPORT ENHANCED PUBLIC TRANSIT IN DOUGLAS COUNTY.

**OBJECTIVE 6-3A**

FACILITATE AN INTEGRATED TRANSIT PLAN AS A COMPONENT OF THE DCTMP.

**POLICY 6-3A.1**

Coordinate and support existing and future transportation services provided by other agencies to fulfill service demands of County residents, including older adults and people with disabilities.

**OBJECTIVE 6-3B**

INCORPORATE TRANSIT FACILITIES WITHIN DEVELOPMENT IN URBAN AREAS.

**POLICY 6-3B.1**

Support land development patterns and practices that strengthen and create multi-modal transportation options and TOD within the Primary Urban Area, and in the Separated Urban Areas, as appropriate.

**GOAL 6-4**

COORDINATE TRANSPORTATION AND LAND USE PLANNING DESIGN, PROGRAMS, AND POLICIES TO REDUCE TRAFFIC CONGESTION, PROVIDE ALTERNATIVES TO AUTOMOBILE USE, IMPROVE AIR QUALITY, AND CREATE HEALTHY, DESIRABLE LIVING ENVIRONMENTS.

**OBJECTIVE 6-4A**

REDUCE TRAFFIC CONGESTION THROUGH IMPLEMENTATION OF TDM AND LAND PLANNING PRINCIPLES.

**POLICY 6-4A.1**

Encourage employers to establish programs that include the use of staggered work hours that support off-peak travel, four-day work weeks, telecommuting, nontypical work shifts, formal van pool or company ridesharing programs, and transit passes.

**POLICY 6-4A.2**

Provide incentives to businesses to reduce employee commuting and automobile use, if supported by adopted TDM policies or programs, as described in the Transportation Master Plan.

**OBJECTIVE 6-4B**

USE LAND USE PLANNING TO REDUCE TRAVEL BY AUTOMOBILE AND IMPROVE ACCESS TO COMMUNITY RESOURCES.

**POLICY 6-4B.1**

Ensure all new development and redevelopment projects incorporate bicycle and pedestrian facilities that connect community uses and destinations, including employment centers, residential areas, shopping, parks, transit facilities, schools and other community activity centers, where possible.

**POLICY 6-4B.2**

Encourage mixed-use development, with appropriate scale and pattern of uses, that supports a variety of travel options and connects community uses and destinations.

**POLICY 6-4B.3**

Coordinate and provide multi-modal links with the County's regional trail system.

**POLICY 6-4B.4**

Ensure new and existing developments promote connectivity through road and off-street path design to reduce trip lengths, provide multiple alternative travel routes between community uses and destinations, and provide alternatives to automobile use.

**GOAL 6-5**

REFINE LAND USE COMPATIBILITY WITHIN THE CARA TO ENSURE AIR AND GROUND SAFETY.

**OBJECTIVE 6-5A**

ACHIEVE CONSISTENCY IN LAND USE PLANNING WITHIN THE CARA.

**POLICY 6-5A.1**

Apply CARA land use regulations, where applicable, in addition to underlying zoning regulations, to ensure the future operation of Centennial Airport.

**POLICY 6-5A.2**

Coordinate land use planning with the Arapahoe County Public Airport Authority and apply principles established in the DRCOG Airport Compatible Land Use Design Handbook, where appropriate.

**OBJECTIVE 6-5B**

COORDINATE LAND USE PLANNING ACTIVITIES WITH OTHER JURISDICTIONS ADJACENT TO THE CARA.

**POLICY 6-5B.1**

Develop a regional framework, achieved through consensus, regarding future land use planning surrounding Centennial Airport.

**GOAL 6-6**

ACHIEVE COMPATIBILITY BETWEEN THE RAILWAYS, OTHER TRANSPORTATION CORRIDORS, AND SURROUNDING LAND USES.

**OBJECTIVE 6-6A**

REDUCE AT-GRADE CROSSINGS INVOLVING PUBLIC ROADS AS WELL AS PRIVATE ROADS, WHERE POSSIBLE.

**POLICY 6-6A.1**

Encourage grade-separated crossings for both new and existing development to enhance public safety and efficiency.

**OBJECTIVE 6-6B**

ACHIEVE LAND USE COMPATIBILITY BETWEEN THE RAILWAYS AND ADJOINING LAND USES.

**POLICY 6-6B.1**

Ensure all new land uses located in the vicinity of rail lines are compatible with railway noise, air quality, visual, fire, and access impacts.

**POLICY 6-6B.2**

Recognize the need for rail-related uses in the county and allow them to make effective use of rail facilities.

**OBJECTIVE 6-6C**

CONTINUE TO PURSUE COMMUTER RAIL SERVICE.

**POLICY 6-6C.1**

Support commuter rail that connects the County with other areas in the Front Range.

