DRCOG

Denver Regional Council Of Governments

METRO VISION 2035 PLAN

Denver Regional Council of Governments

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Adopted December 19, 2007

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ABSTRACT

Title: Metro Vision 2035 Plan

Author: Denver Regional Council of Governments (DRCOG)

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Abstract: Metro Vision 2035 is a long-range plan to manage growth within the Denver area. It addresses development, transportation needs and environmental quality. Bringing communities together to enhance the region's quality of life is the plan's most important goal.

Regional plan certification:
Pursuant to Sections 30-28-105 through 30-28-110, C.R.S., the Denver Regional Council of Governments (DRCOG) adopted by Resolution No. 33, 2007 (Dec. 19, 2007), this Metro Vision 2035 Plan for the area described in the plan. The plan is part of DRCOG's regional master plan for the Denver region. The plan, as so adopted, supersedes any regional master plan for said area previously adopted by DRCOG.

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INTRODUCTION

What is Metro Vision…and Why Does it Matter?

For more than 50 years, the Denver Regional Council of Governments (DRCOG) has championed a regional perspective on key issues facing our metropolitan area and identified solutions through cooperative local government action. Metro Vision, DRCOG's long-range plan for our future growth and development, is the latest example of this regional approach.

Metro Vision's goal is very simple and important – to protect the quality of life that makes our region such an attractive place to live, work, play and raise a family. The Denver region is one of the nation's most desirable metropolitan areas. Our success as a region has produced some basic quality of life challenges:

- severe traffic congestion that can impede economic development,
- concerns about air and water quality and water supply,
- the burden on taxpayers of paying for the new facilities and services (such as roads, water and sewer, drainage, schools, and police and fire protection) that must accompany new growth and
- the preservation of adequate parks and open space for current and future generations.

Responding to these challenges, local elected officials, and business, environmental and civic leaders worked together to craft Metro Vision in the mid-1990s. The DRCOG Board of Directors, representing the region's municipalities and counties, adopted the first Metro Vision plan (Metro Vision 2020) in 1997. A 2005 update extended the planning period from 2020 to 2030. This most recent Metro Vision plan now extends the planning timeframe to 2035. It outlines long-term goals for our region in three key areas: growth and development, transportation and the environment.

Key Principles

Six key principles have guided Metro Vision's development.

Metro Vision protects and enhances the region's quality of life.
Metro Vision's most basic purpose is to safeguard for future generations the region's many desirable qualities, including beautiful landscapes, interesting and livable communities, cultural and entertainment facilities, and employment and educational opportunities.

Metro Vision is long-range and regional in focus.
Metro Vision's planning period extends to 2035 to help the region address future concerns, but current issues are priorities too. The plan expresses a regional perspective.

Metro Vision provides direction.
Local governments can use Metro Vision as they make decisions about land use planning and development. Metro Vision also helps local governments coordinate their efforts with one another and with other organizations.

What is Metro Vision 2035?
Metro Vision 2035 is a long-range plan to manage growth within the Denver area. It addresses development, transportation needs and ways to preserve environmental quality. Bringing communities together for regional cooperation is the plan's most important goal.

Metro Vision respects local plans.
The region's local governments developed Metro Vision, working collaboratively through DRCOG. The plan doesn't replace the vision of any individual community; it is a framework for addressing common issues. Metro Vision is sensitive to the decisions local governments make in determining when and where growth will occur. Metro Vision also recognizes that each community has its own view of growth.

Metro Vision encourages communities to work together.
The impacts of growth don't recognize jurisdictional boundaries and it is important for jurisdictions to address growth collaboratively. Metro Vision provides the framework for doing that; DRCOG provides the forum.

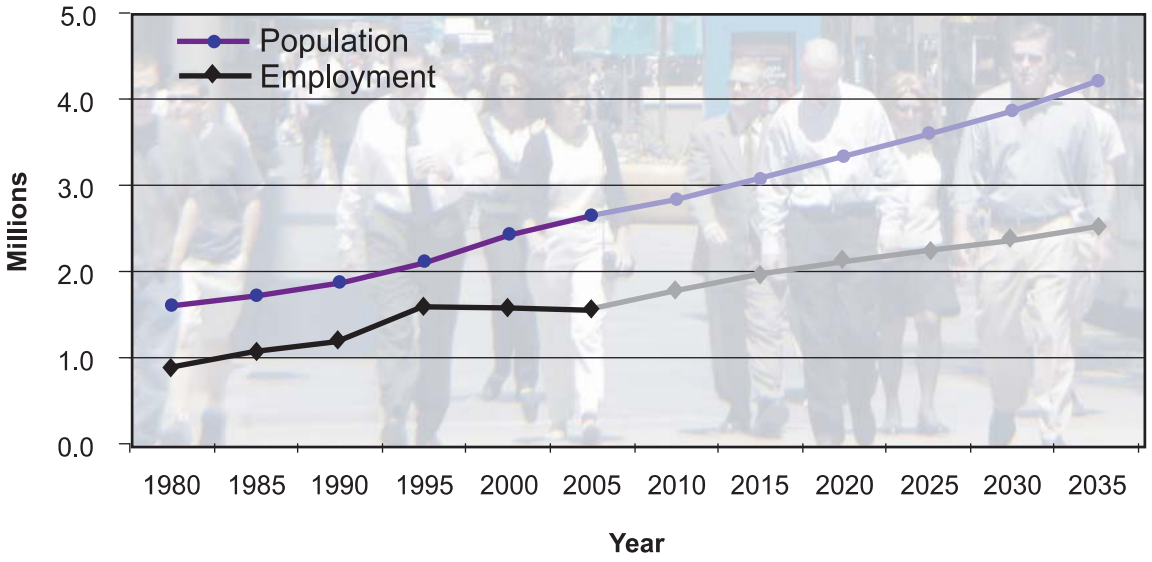
Metro Vision is dynamic and flexible.
Metro Vision reflects contemporary perspectives on the future of the region and is updated as conditions and priorities change. The DRCOG Board makes minor revisions to the plan annually and major updates occur every four years.

Where We Are and What's Ahead

The Denver region has earned distinction as one of the nation's fastest-growing metropolitan areas. More than 2.7 million people currently live in the region. By 2035, DRCOG forecasts show 4.2 million people will call the

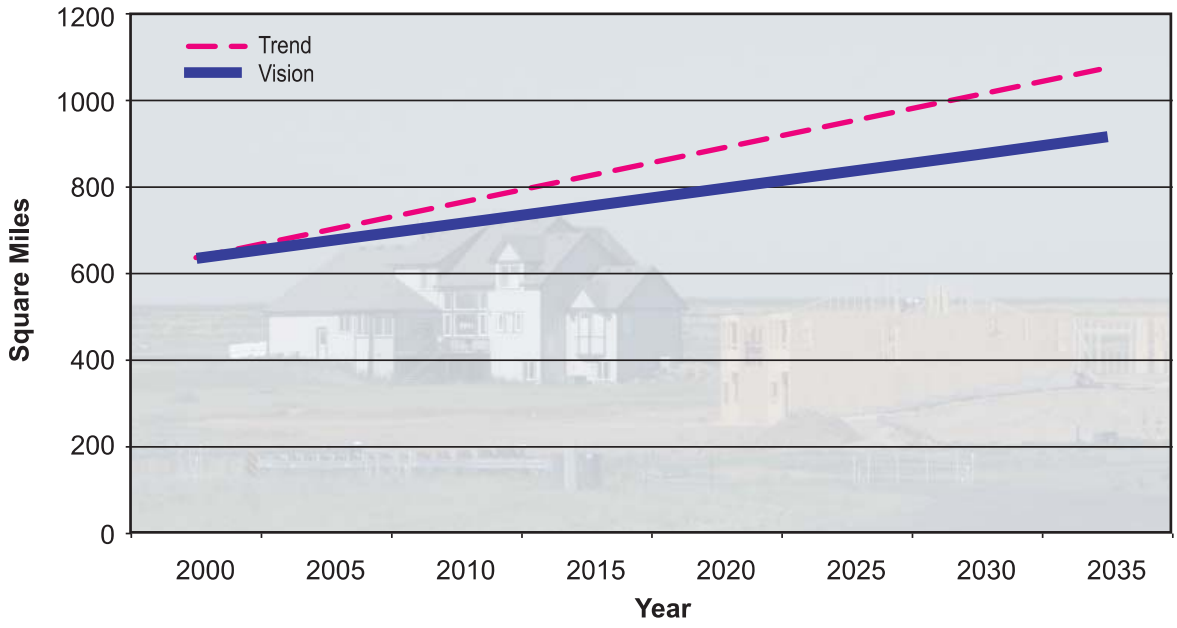
Denver region home and more than 920,000 new jobs will be created (Figure 1). The region's population will become older too. The number of metro residents who are 60 or older is expected to more than double over the next 25 years, comprising 23 percent of the population.

Figure 1
Population and Employment



The region's growing population has spread development outward, increasing the region's urbanized area (Figure 2). This development pattern requires people to travel farther and local governments and others to provide more infrastructure. The Denver region can be proud that it has avoided a trend seen in other parts of the nation – consuming land faster than the population is increasing.

Figure 2
Expansion of the Urbanized Area



Because the region's development pattern has generally separated residential and employment land uses, the number of vehicle miles each of us travels, commute times and traffic congestion have increased over time. People also travel more often than they used to – there are more two wage-earner households and more trips are made for purposes other than work. As a result, our region's vehicle miles of travel increased faster (53 percent) than population growth (30 percent) in the 1990s (Figure 3). Many of us see the effects daily as we travel congested roads (Figure 4).

Unfortunately, the situation may only become worse because there is not enough money for needed transportation improvements. Most of the region's transportation dollars go toward operating, maintaining and repairing the current system. Except for the voter-approved FasTracks transit system expansion and short-term Referendum C statewide transportation project funding, limited dollars are available to expand the region's transportation system. Plus, transportation funding has just not kept pace with the continued growth in travel demand or the recent dramatic increase in transportation construction costs.

Figure 3

Vehicle Miles Traveled and Population in the Denver Region

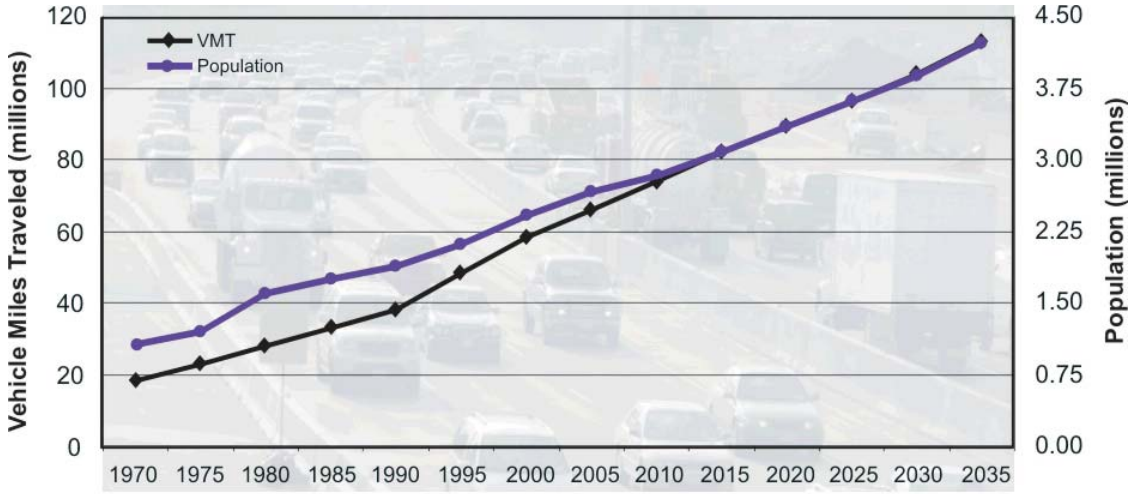
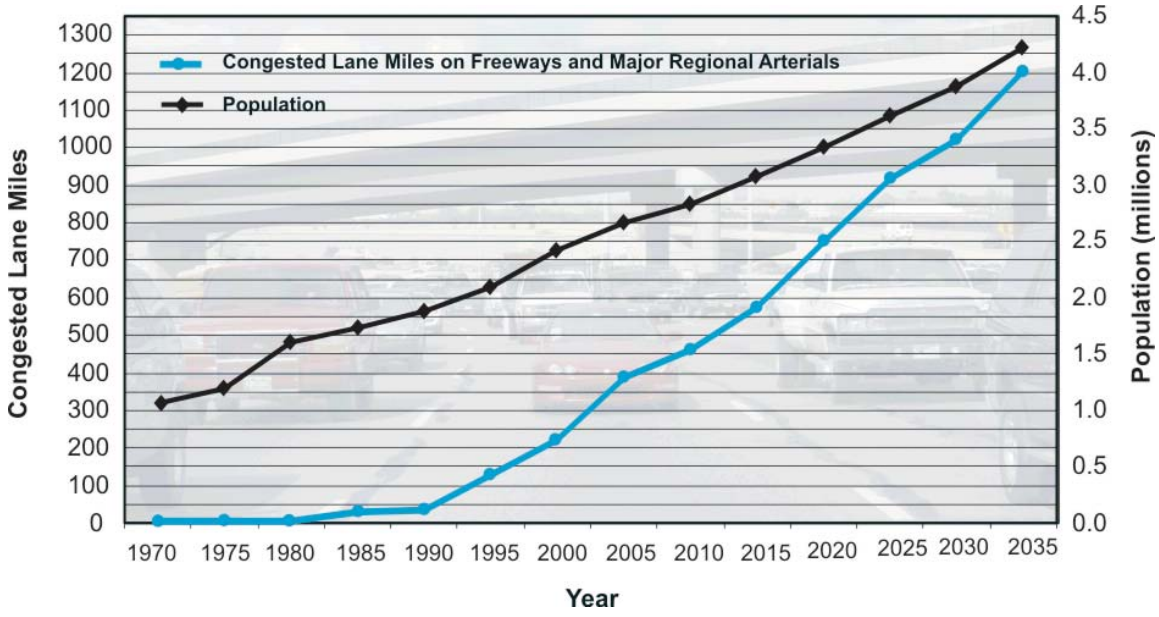


Figure 4

Congestion vs. Population



Development has other costs beyond transportation. The farther development spreads, the more it costs our communities to provide new facilities and services, including roads, water and sewer, drainage, schools, police and fire protection, and public transit. Recent budget cutbacks and tax limitations compound the financial shortfall and there is little prospect of major federal or state funding increases.

Colorado's current tax structure is also a factor in growth decisions. Municipalities across the region rely heavily on sales tax for the bulk of their revenues. This creates competition for sales tax revenue, which can influence local land use decisions. This competition works against regional cooperation and results in patterns of development that may not be consistent with the policies and goals of Metro Vision.

Even with its rapid growth, our region has done well in protecting the environment. Overall, air quality has improved despite rising automobile use. Implementation of wood-burning bans, enhanced auto inspection and pollution control maintenance programs, oxygenated fuel requirements during winter, reduced winter street sanding and increased street sweeping, and automotive technology improvements have all contributed to air quality improvements. Ozone pollution is a problem the region must confront quickly. The region violated the 8-hour ozone standards set by the U.S. Environmental Protection Agency and was designated as non-attainment by EPA in November 2007. The region must focus on avoiding future ozone violations and growth adds to that challenge.

What is the Vision for the Denver Region?

In 2035, the Denver region will be a dynamic mixture of distinct pedestrian-friendly urban and suburban communities within a limited area. It will be distinguished by a transportation system that includes sidewalks, bike paths, bus service, rail transit and roads; plentiful parks and open space; and clean air and water.

In the water quality realm, wastewater treatment facilities continue to meet state and federal water quality standards and discharge less pollution. More focus on stormwater runoff prevention and control is also improving water quality. Nevertheless, the Colorado Water Quality Control Commission still classifies many of the region's streams as impaired, limiting their uses. In the years ahead, the region faces renewed water quality and water supply challenges.

With sustained population growth expected over the next 25 years, the region needs to continue its commitments to protect our air and water quality.

How Metro Vision Responds

Metro Vision presents a vision for the future with quality of life as its primary goal. It is an integrated plan and individual plan elements reinforce that goal and complement each other, as shown in Figure 5. How we as a region can achieve Metro Vision's goal is addressed in three general areas:

- Growth and development
- Transportation
- Environmental quality

Each of these topics is discussed in a separate chapter. The final chapter reviews the implementation principles and specific actions that decision makers across the region can take to achieve Metro Vision's future. The chapters include the following.

Overview: Chapter 1

Growth and Development – This chapter includes policies that influence the shape and characteristics of the urban area.

Extent of Urban Development – defines a 921-square-mile urban growth boundary/area to guide development and achieve a reasonable increase in the region's density.
Large-Lot Development – establishes policies to address low-density, large-lot development activity occurring outside the urban growth boundary/area.
Urban Centers – identifies guidelines for about 85 high-density, mixed-use, pedestrian- and transit-oriented activity nodes.
Freestanding Communities – focuses on four satellite communities beyond the larger urban area that have the potential to become self-sufficient and thereby reduce travel within the region.
Rural Town Centers – examines the role of smaller, outlying communities in the region's rural areas.
Senior-Friendly Development – provides guidelines for meeting the housing, transportation and service needs of the region's older population.

Overview: Chapter 2

Transportation System – This chapter focuses on the transportation policies that support Metro Vision's growth and development policies.

General – defines the transportation system, including roadways and rapid transit, and provides a policy statement regarding the bus system, bicycle and pedestrian facilities, and other components; establishes policies to preserve and enhance the system.
Vision Concepts – describes several general categories of transportation facilities and conceptual themes.
Metro Vision Transportation System – presents the specific components of the region's preferred system.
Multimodal Corridor Visions – explains how individual components are presented in a coordinated, geographically focused fashion.
Fiscally Constrained Transportation Element – discusses the transportation system that the region can fund from reasonably expected revenues.

Overview: Chapter 3

Environmental Quality—This chapter covers Metro Vision's environmental goals and shows the interrelationship with growth and development, and transportation.

Parks and Open Space – explains different types of open space, establishes policies for protecting open space and identifies areas on which to focus preservation efforts.
Water Quality – establishes general policies for managing wastewater treatment at the regional level, describes the Metro Vision Clean Water Plan and briefly discusses the relationship between water quality management and water supply.

Air Quality – establishes general policies for achieving and maintaining air quality standards.
Noise – outlines policies for minimizing exposure to excessive noise levels.

Overview: Chapter 4

Implementing Metro Vision – The various strategies and actions the region needs to take to achieve Metro Vision are discussed in this chapter.

Looking Ahead

In planning for the years ahead, the region's residents and policy makers face many questions.

- Where and how will people live and work?
- How will increased traffic congestion, resulting from increased population and vehicle use, affect travel patterns, road conditions and congestion levels?
- How much new infrastructure will our region need to accommodate growth and how will we pay for it?
- What impact will development have on open space, air quality and water quality?
- How will changes in demographics, including a larger population of seniors, affect our region?

Metro Vision offers a vision for the future. An active commitment from political, business and civic leaders and residents throughout our region to *implement* Metro Vision helps ensure metropolitan Denver retains the very qualities that we value – natural beauty, economic vitality, cultural heritage, optimism and a sense of opportunity.

Figure 5

Metro Vision 2035 Plan Summary

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CHAPTER 1

Growth and Development

In Metro Vision, growth and development refers to the region's extent and pattern of physical land development on both infill and vacant land. The term also refers to the planning activities that influence this pattern. Metro Vision does not address development activity occurring on specific parcels of land; that is the responsibility of local jurisdictions.

Metro Vision's goals and policies aim to influence the direction, shape, size and other characteristics of the region's built environment. The plan places special emphasis on reinforcing the interrelationships between development and transportation. The urban growth boundary/area, discussed in this chapter, directs development to areas where local governments and the region can provide infrastructure more efficiently, stimulates infill and redevelopment activity, and increases overall regional density. Focusing development in this way makes it easier to use existing transportation infrastructure and reduces the need to build new infrastructure.

Urban centers are another example of this important interrelationship. These areas of concentrated mixed–use development, many of which are located near future transit stations, contain significant population that can more easily use the rapid transit system. At the same time, investments in transportation facilities that serve urban centers can help stimulate urban center development.

This chapter discusses and provides policy direction on six key types of development that will help the region accommodate anticipated population growth.

Extent of Urban Development

Vision:

A defined urban growth boundary/area (UGB/A) will promote an orderly, compact and efficient pattern of future development within the region. Focusing development within the growth boundary/area will prevent the unnecessary and inefficient extension of roads, transit services, water and wastewater treatment plants. It will reduce regional vehicle travel, help achieve greater density, conserve open land outside the boundary/area and separate communities. The urban growth boundary/area is shown in Figure 6.

Goal: Ensure that urban development occurs within a defined urban growth boundary/area to promote an orderly, compact and efficient pattern of future development.

Policies

1. **Growth Boundary/Area.** The urban growth boundary/area defines where urban development will take place in the region over the next 25 years. The boundary/area encompasses 921 square miles of urban development, which is intended to achieve at least a 10 percent increase in the region's overall density between 2000 and 2035.

2. **Growth Allocation.** The DRCOG Board of Directors allocates growth areas to each community, based on historical development trends and future projections. Working with DRCOG, each community determines the specific geographic location of this growth allocation.

3. **Flexibility.** Communities have the flexibility to postpone committing their allocated urban growth area until specific development plans are in place. These communities will be referred to as urban growth area (UGA) communities.

4. **Compact Development.** Metro Vision promotes smaller lot sizes and multifamily housing to achieve a more compact development pattern. At the same time, it is recognized that density doesn't need to increase everywhere within the urban area and that there is a need to accommodate varied housing opportunities, such as multifamily and single-family detached residential.

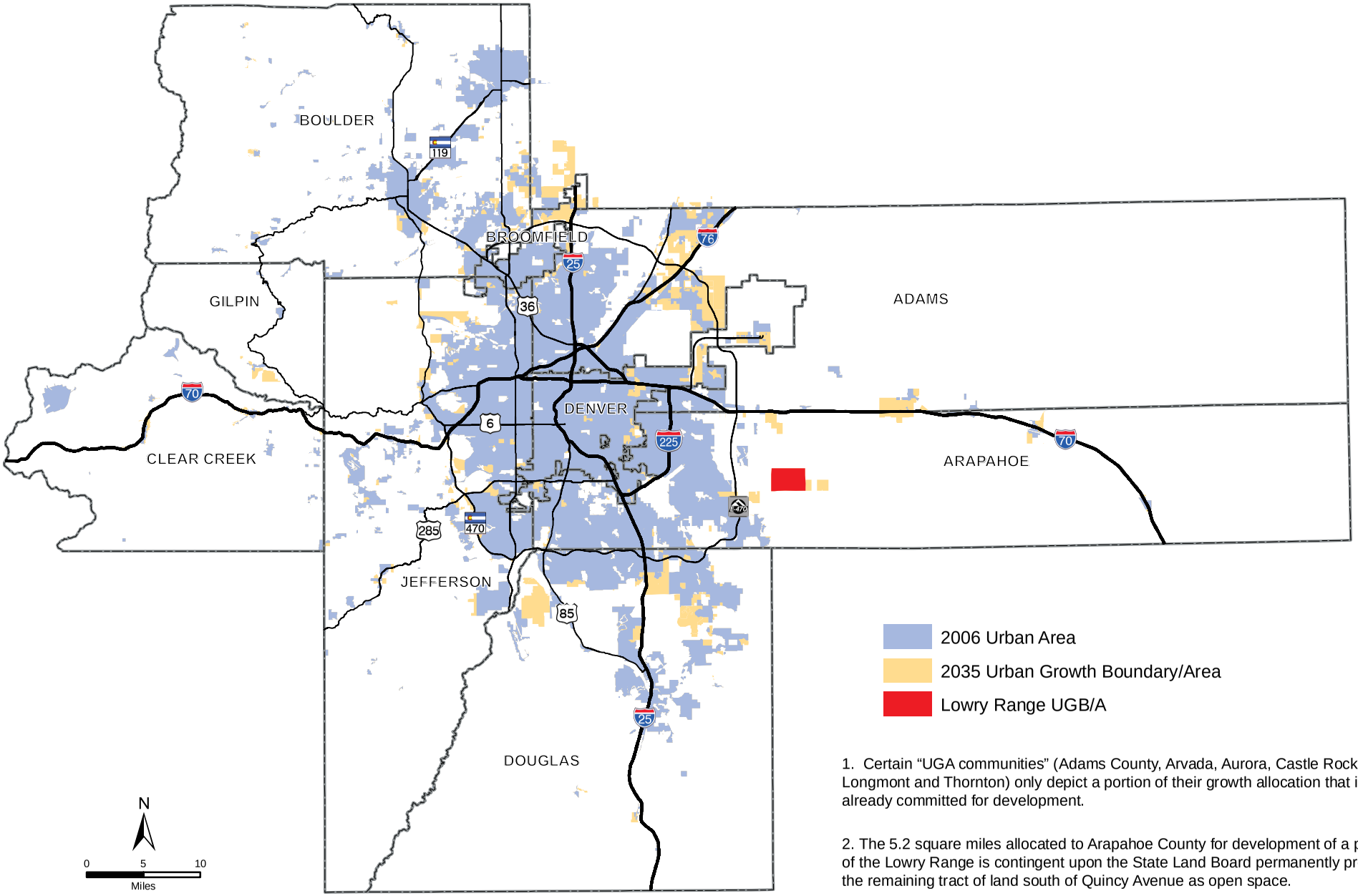
5. **Infill and Redevelopment.** Metro Vision encourages local governments to use overlooked vacant parcels and under-developed parcels for infill and redevelopment. Infill and redevelopment can absorb significant population growth and use existing infrastructure more efficiently.

6. **Outlying Areas.** Growth will be strategically designated to conserve appropriate areas for urban development beyond 2035 to maintain separation between the larger urban area and smaller outlying communities and avoid open spaces and environmentally sensitive areas.

7. **Infrastructure.** Metro Vision seeks to direct future urban growth within the urban growth boundary area into areas where infrastructure already exists. In newly urbanized areas, development will be planned to provide infrastructure and services efficiently and cost-effectively. Regional transportation systems should be provided in a way that will most effectively encourage the desired future development.

FIGURE 6

2035 URBAN GROWTH BOUNDARY/AREA AND 2006 URBAN AREA



1. Certain "UGA communities" (Adams County, Arvada, Aurora, Castle Rock, Longmont and Thornton) only depict a portion of their growth allocation that is already committed for development.

2. The 5.2 square miles allocated to Arapahoe County for development of a portion of the Lowry Range is contingent upon the State Land Board permanently protecting the remaining tract of land south of Quincy Avenue as open space.

8. **Intergovernmental Coordination**. Metro Vision encourages local governments to establish intergovernmental agreements to address planning and service delivery issues in areas of mutual interest.

9. **Annexation.** Metro Vision encourages the annexation of unincorporated areas within the urban growth boundary/area, consistent with local comprehensive plans and annexation procedures. Annexation should be a logical extension of a municipality's boundaries so the local government can provide urban services to the annexed area at a level equal to what is provided to the existing municipality. In that way, annexation will not significantly affect the ability of surrounding jurisdictions to continue providing necessary services.

10. **Regional Facilities.** Facilities such as airports, solid waste disposal sites and major cultural facilities will be located to maximize their regional benefit and minimize their impact on existing and future development. Once these facilities are planned and constructed, however, future development should not occur if it conflicts with or could affect their sustainability.

11. **Water Supply.** Metro Vision calls for urban development only in areas where long-term water service can be established or where adequate service is available from an existing water supply system. Conservation of water resources through innovative design, reuse, landscaping and education will be encouraged and considered in making service provision decisions. Water conservation measures will be incorporated in specific service plans. Overall, the regional increase in water consumption should be proportionally less than the population increase.

12. **Mining Activity.** Development is discouraged in areas with commercially viable deposits of sand, gravel and quarry aggregate until these deposits are extracted or the mining causes serious, adverse impacts on the environment or existing development. The extraction of coal deposits will be allowed where mining will not have significant environmental impacts and where it will not be incompatible with surrounding land uses.

Why Do We Need Metro Vision?

By 2035, 1.5 million more people are expected to live in our region—enough people to make a new Denver, Arapahoe County and Jefferson County combined. Cooperation between the area's cities and counties will prevent unplanned growth and environmental damage. Implementing Metro Vision will ensure that our region evolves in a way that promotes the economy, manages growth and preserves open space.

Issues and Opportunities

Historically, development on the perimeter of urban areas throughout the nation occurred in uncoordinated and lower-density patterns. Many communities and regions now realize that this development pattern is undesirable. Uncoordinated, low-density development is difficult to plan for and more expensive to serve. In addition, it increases travel distance and consumes large amounts of land.

It is important for the region to know where development will occur so infrastructure and services can be planned for and financed in advance. Development should also be reasonably compact. Low-density development is generally more expensive to serve because of the proportionally larger distances (per household served) to extend and maintain roadways, water and sewer lines, and other infrastructure. It is also more expensive to provide police and fire protection, schools, transportation and other services.

Low-density development also affects air and water quality. For example, a greater travel distance means more vehicle emissions. Contaminants from motor oil and brake linings collect on roadway surfaces, running into nearby streams and affecting water quality.

The Metro Vision Urban Growth Boundary/Area

An urban growth boundary (UGB) is a planning strategy that defines where future urban development is intended to occur so infrastructure can be planned and constructed more cost-effectively. An urban growth boundary also encourages a more compact development pattern by directing growth inward, stimulating infill and redevelopment activity, capitalizing on the use of existing infrastructure. The Denver region's 2035 urban growth boundary encompasses a future urbanized area of 921 square miles. This target is based on an analysis of historical development and projections, and reflects the Metro Vision policy goal of achieving at least a 10 percent increase in overall density.

DRCOG and its member governments recently reviewed the definitions of urban development[1] and agreed on a new definition that uses subdivision plats as the basic unit of analysis rather than interpretation of aerial photography. The new definition includes platted but undeveloped lots and most urban open space (e.g., parks and golf courses less than 80 acres in size).[2] This change has increased the estimate of existing urban land in the region (in 2006) from 547 square miles to 717 square miles. The new 2035 urban growth boundary/area of 921 square miles provides approximately 203 square miles of new urban land to accommodate the 1.5 million additional people anticipated through 2035. The 750 square miles in the 2030 UGB/A would be equivalent to an 899-square-mile UGB/A using the new definition of urban. Therefore, the region will accommodate the growth from 2030 to 2035 through infill in the 2030 UGB/A plus an additional 22 square miles of new urban development.

Although 921 square miles is expected to accommodate regional growth, some communities may need additional growth area. The DRCOG Board established a UGB/A reserve or "bank" for this purpose. The Board has adopted a process to consider requests for additional urban growth boundary/area, although it has yet to determine the size of such a reserve for 2035. The Board has formed a special committee to address UGB/A, including the need for a reserve.

Encouraging Density in Targeted Areas

The urban growth boundary/area's size is designed to achieve at least a 10 percent increase in the region's overall density. It does not mean that density will increase everywhere in the region, or that housing options will diminish. Metro Vision recognizes the need to accommodate a variety of development types.

Much of the region's anticipated population and employment increase can be absorbed through infill and redevelopment. Infill and redevelopment of currently vacant or underused parcels within the existing urbanized

area accommodates growth without consuming new land, and increases overall density. Significant growth is also expected in certain planned, higher-density activity areas called urban centers, discussed later in this chapter.

A Flexible Approach

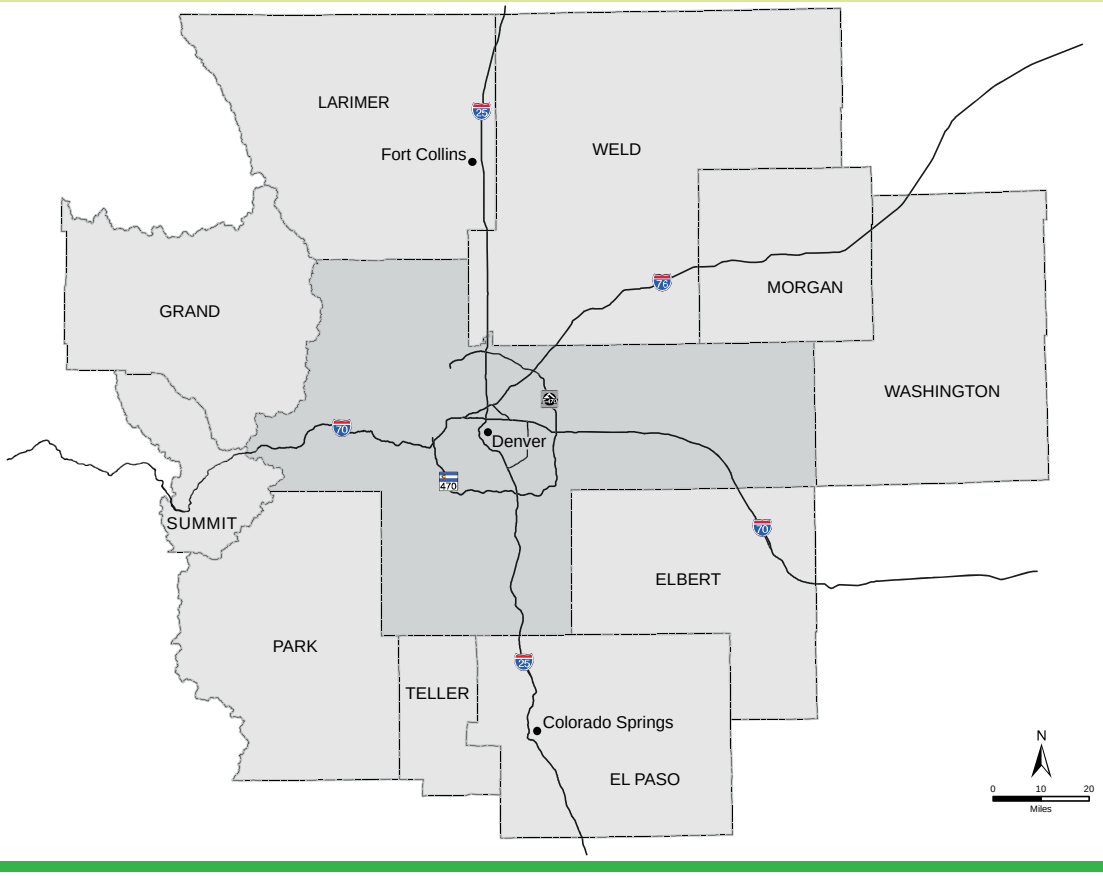
The DRCOG Board established the urban growth boundary/area collaboratively to accommodate the anticipated growth and development that will occur across the region within each community. The Board allocated to each local jurisdiction its own growth area and each community has flexibility in determining when and where it will be used.

Communities can postpone committing their allocated urban growth area until after specific development plans are more clearly understood. The growth area can also be reconfigured after it is committed, as long as there is no net increase in size. This approach to administering an urban growth boundary is relatively unique to the Denver region.

Coordinating with Other Regions

Efforts to manage urban growth within the urban growth boundary/area are complicated by development activity occurring outside the DRCOG region. Communities near our region's edge are particularly affected by growth in Weld, Elbert and Park counties. The DRCOG region as a whole also feels the effect of this growth, especially in terms of air quality and roadway congestion. DRCOG is working with jurisdictions outside the DRCOG region to better coordinate planning efforts (see Figure 7).

FIGURE 7 **ADJACENT COUNTIES**



Large-Lot Development

Vision:

A limited amount of low-density large-lot development will continue to occur beyond the urban growth boundary/area, contributing to the region's diversity of land uses. Careful planning will minimize its financial, environmental and visual impacts. Special care will avoid developing in potential future open space areas. Semi-urban development, in particular, will be planned to avoid interfering with the urban area's logical future expansion beyond 2035.

Goal: Manage the extent of low-density, large-lot development occurring on the periphery of the urban area consistent with Metro Vision's stated policies.

Policies

1. **Regional Growth Target**. Limit the total amount of semi-urban development in 2035 to a proportion that does not exceed the current (2006) proportion of semi-urban households, which is estimated to be approximately 3 percent.

2. **Discouraged in Urbanized Areas.** New large-lot development is specifically discouraged within the urban growth boundary/area or other areas defining where future urban development will occur.

3. **Urban Reserves.** Cities and counties are encouraged to work cooperatively in establishing intergovernmental agreements that identify joint planning areas where future contiguous urban development beyond 2035 will occur.

4. **Open Space.** Large-lot development will avoid potential future open space areas as identified in the Regional Open Space Plan and other sensitive environmental areas, unless mitigated through creative subdivision and site design.

5. **Planning Tools.** Local governments are encouraged to adopt and use innovative planning tools to manage large-lot development.

6. **Infrastructure Investment.** The priority for investing regional funds in transportation infrastructure and other services is the urbanized area within the urban growth boundary/area. Regional funds should, in general, not be expended to serve large-lot development.

7. **Financial Accountability.** To the extent practical, local jurisdictions should ensure that large-lot development, like all development, pays its own way.

8. **Water and Wastewater Provisions.** It is preferred that development occur in areas where central water and wastewater treatment can be provided. However, it is recognized that large-lot development is often served by either decentralized or on-site systems. Regardless of the technology, in areas where large-lot development is planned, it must be ensured that adequate water supply and wastewater treatment can be provided.

9. **Mining Claims.** Limited development currently occurs on historic mining parcels, but these parcels represent a significant inventory of the region's undeveloped land. Local jurisdictions should discourage development on mining claims that do not meet the development standards of the jurisdiction, especially access and setback requirements.

Issues and Opportunities

There are two categories of large-lot development. Semi-urban development is residential development with an average residential lot size between one and 10 acres (i.e., 1.0-9.9). Development with an average residential lot size between 10 and 35 acres (i.e., 10.0-34.9) is considered semi-rural. Development with an average residential lot size of 35 acres or more is considered rural. The policies outlined above are generally intended to apply to both semi-urban and semi-rural development, unless specifically noted. Figure 8 shows the geographic distribution of existing semi-urban and semi-rural areas.

Large-lot development is often located on the urban area's fringe and has only limited commercial activity. It generally depends on the urban portion of the region for employment, shopping and services. Parcels associated with this type of development are not large enough to support commercial ranching and farming.

Large-lot development offers a low-density residential lifestyle. When creatively designed, this type of development can also provide a way to integrate residential uses in environmentally sensitive areas. Large-lot development, however, can also adversely affect local governments and the region as a whole in several ways. For example, it is generally more expensive to provide infrastructure to large-lot development because there are proportionally larger distances (per household served) to extend roadways and other utilities. It is also more expensive to provide emergency services, school bus service and animal control, for example.

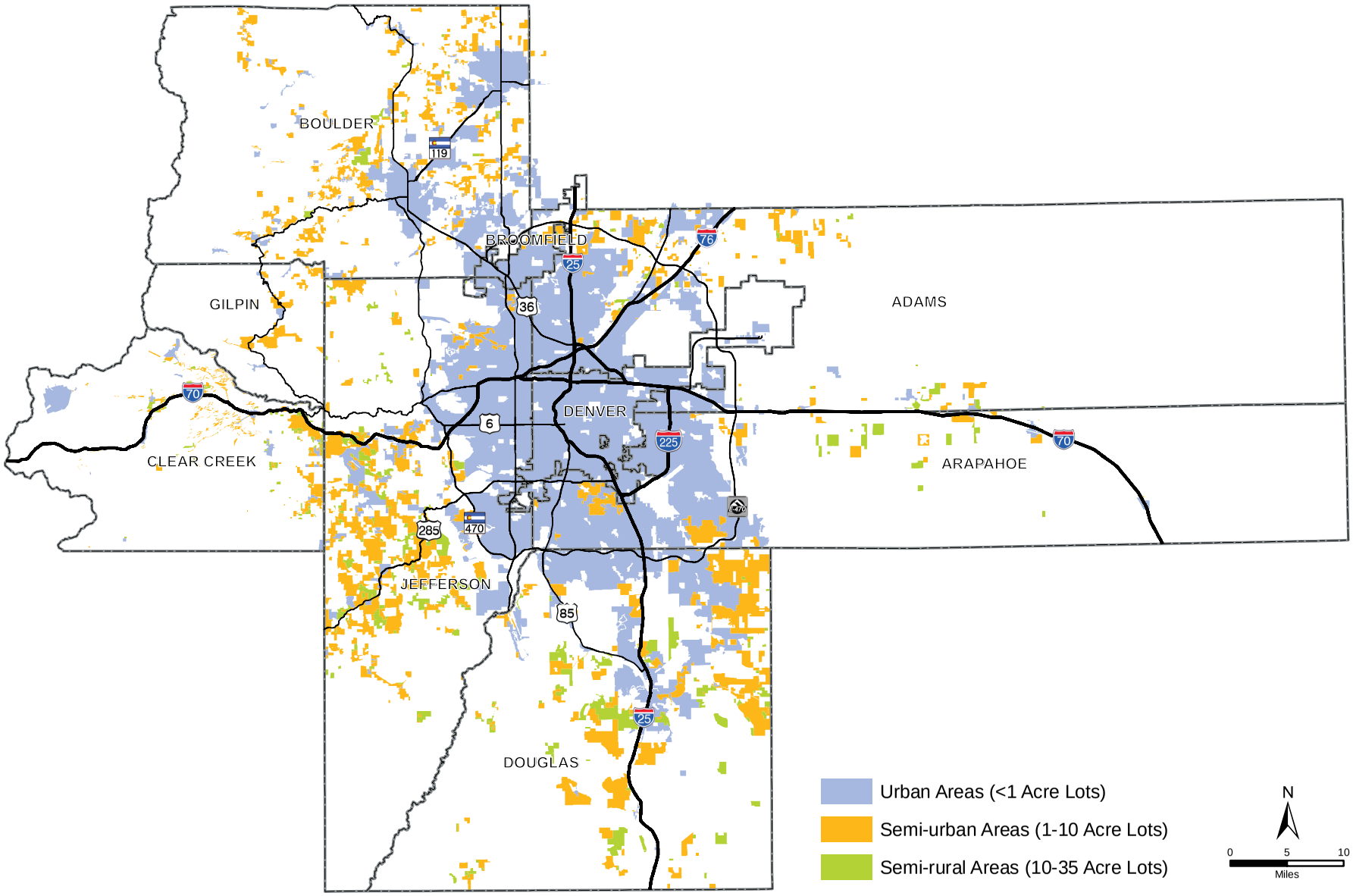
In the plains area, large-lot development consumes viable agricultural land. In mountainous areas, wildfire hazard makes this type of development a special burden to service providers and a risk to inhabitants. In addition, it is more expensive to maintain the gravel roadways that often serve large-lot development.

Large-lot development typically relies on wells and septic systems for water supply and wastewater treatment. Properly designed, installed and maintained, these systems provide adequate service. Groundwater quality and quantity may be adversely affected, however, when these systems are not working properly.

Large-lot development also uses land inefficiently. In 2006, it occupied more than 350 square miles -- about half as much land as the region's entire urbanized area -- but contained only 3 percent of the households.[3] As higher-density urban development extends outward, it is forced to "leapfrog" over existing large-lot development, especially the smaller semi-urban parcels that are less likely to be further subdivided and redeveloped. This results in non-contiguous urbanized areas, complicating logical and cost-effective provision of infrastructure and services. It also increases the distances commuters must travel to work, affecting regional air quality.

FIGURE 8

2006 SEMI-URBAN AND SEMI-RURAL AREAS



Finally, large-lot development can negatively affect potential future open space areas, including significant agricultural lands, geographic features/strategic scenic areas, river corridors and wildlife habitat. Rural development (i.e., average lot size 35 acres or larger) can contribute to the sense of open space within our region. Semi-urban and semi-rural development is not perceived visually in the same way. Unless it is creatively designed (e.g., clustering parcels and buildings together), agricultural use, wildlife habitat and scenic values are diminished.

Management Strategy

Although all large-lot development presents concerns from a regional perspective, Metro Vision is especially focused on semi-urban development. As described, smaller semi-urban parcels are less likely to further develop to urban-level densities, thereby interfering with the future expansion of the urbanized area. Also, 95 percent of all large-lot parcels are in the smaller semi-urban category.

Policy 1 in this element of the plan establishes a specific regional target for semi-urban development. It is anticipated that individual jurisdictions will manage this type of development carefully so the region as a whole can stay within this target. DRCOG will work with individual jurisdictions to help ensure that the regional target is achieved and other established policies are considered.

The strategy for managing semi-rural development is less formal. Counties are encouraged to consider the general policies that have been established for managing large-lot development, most of which apply to both semi-urban and semi-rural development. Counties are also encouraged to consider the planning tools and general location criteria described in the Metro Vision Growth and Development Supplement.

Sustainable Development and Livable Communities

Sustainable development seeks to meet the needs of the present without compromising the ability of future generations to meet their own needs. Sustainable development encompasses three general regional policy frameworks: economic development, environmental protection and social equity.

Sustainable growth and development manifests itself through compact development and the implementation of building practices that aim to preserve agricultural land and open space; conserve and reclaim water resources; prevent water quality degradation; protect wetlands; conserve energy; minimize traffic congestion and air pollution; reduce the impacts of greenhouse gases; and maintain economic viability.

"Livable communities" is a design concept that considers the architectural and urban design elements of the built environment and how they affect people's quality of life. Specifically, the livable communities concept seeks to: promote compact, human-scale, pedestrian-friendly communities; provide varied housing, shopping, recreation, transportation and employment choices; encourage integrated mixed-use development; preserve, restore, revitalize and refill urban centers; give people the option of walking, biking and using public transit, in addition to driving; provide well-defined public places; create a neighborhood identity; protect environmental resources; and conserve open space, farms and wildlife habitat.

As the region's planning organization, DRCOG, through the Metro Vision 2035 Plan, seeks to encourage appropriate stewardship of the region's natural and built environments by working with local communities to implement concepts of sustainable development and livable communities in their current and long-range planning activities.

The Metro Vision 2035 Plan contains many goals and policies that either directly or indirectly promote **sustainable development** and **livable communities**. These include:

- managing the extent of urban development with an urban growth boundary;
- developing higher-density, mixed use, transit- and pedestrian-oriented urban centers;
- recognizing freestanding communities and rural town centers;
- minimizing semi-urban development;
- encouraging senior-friendly development;
- supporting a vital economy;
- providing safe, environmentally sensitive and efficient mobility choices for people and goods;
- establishing an integrated and permanent parks and open space system;
- restoring and maintaining the chemical and physical integrity of the region's waters;
- achieving and maintaining ambient air quality standards; and
- minimizing exposure to excessive noise associated with land use and transportation activities.

Urban Centers

Vision:

Urban centers -- concentrated urban areas more dense and mixed-in-use than surrounding areas -- will be developed across our region. Urban centers will be active, pedestrian- and bicycle-friendly places, with employment, housing and services nearby. Urban centers will be served by transit, either rapid transit or bus, and also will support transit by providing riders and pedestrian-oriented environments. Some people will even live and work within the same urban center, avoiding entirely the need to use a car or transit.

Goal: Encourage the development of higher-density, mixed-use, transit and pedestrian-oriented urban centers throughout the Denver region.

Policies

1. **Location.** Metro Vision encourages the development of urban centers throughout the metro area, while recognizing the unique significance of the Denver central business district.

2. **Regional Growth.** A significant portion of future regional population and employment growth will occur within recognized urban centers.

3. **Infrastructure Investment.** Metro Vision supports the development of urban centers by focusing infrastructure investment in related roadway, transit and pedestrian facilities.

4. **Design.** Innovative planning, zoning and urban design strategies are encouraged to promote mixed-use development and pedestrian activity within urban centers, increasing the likelihood that they will develop successfully and achieve other policy objectives.

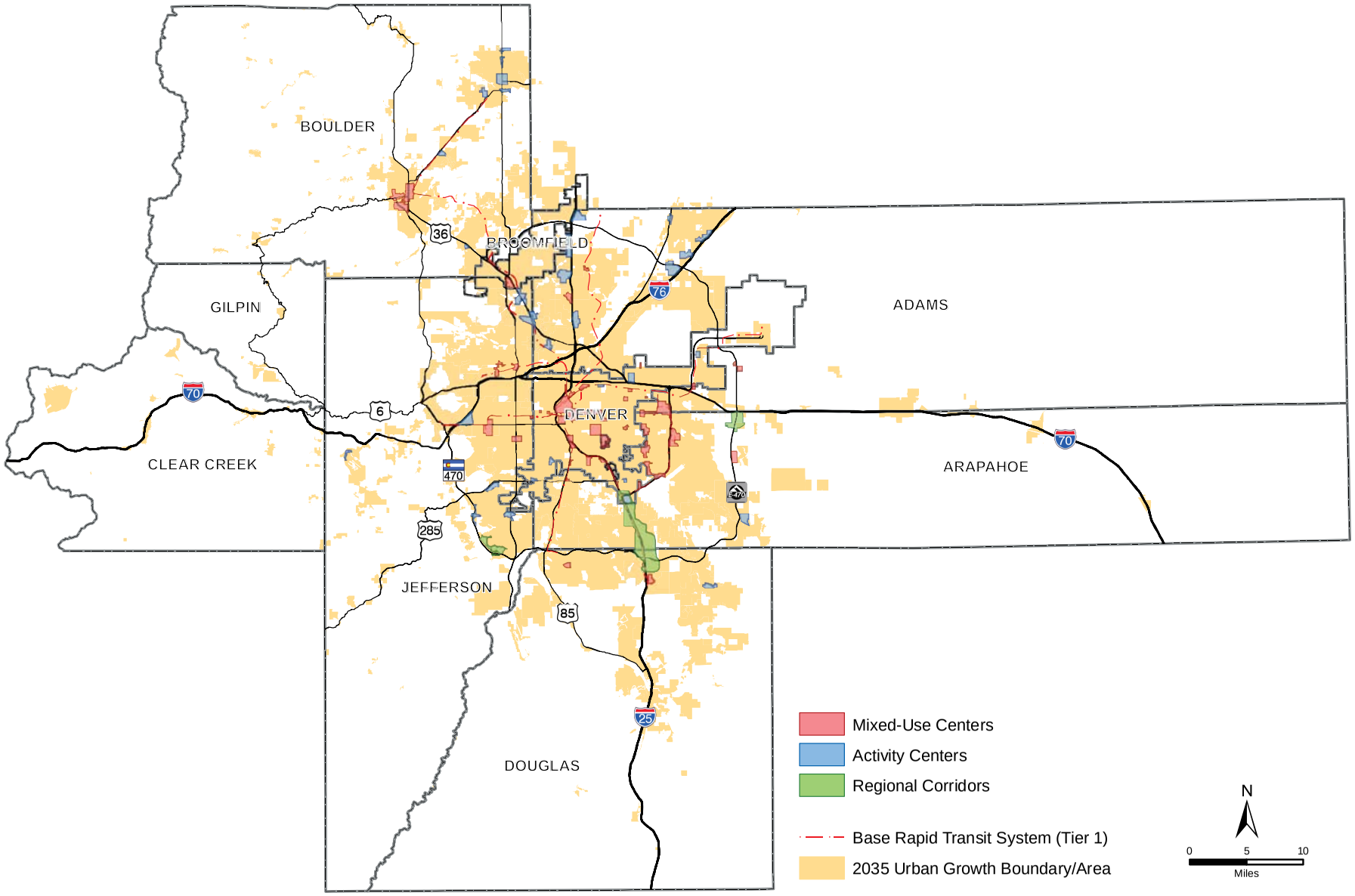
Issues and Opportunities

Many areas within the region have developed in a way that separates residential, employment and retail activities. This development pattern requires that people rely on automobiles. Dependence on cars increases air pollution, traffic congestion, and commuting times and distances. It also diminishes opportunities for people to walk and stay physically active, an increasingly significant public health concern.

The relatively low urban density that accompanies this pattern of development also increases land consumption on the perimeter of the urban area, resulting in the loss of agricultural lands and open space. Low-density development also makes it difficult for pedestrians to walk to destinations and to use transit.

In contrast, urban centers are concentrations of high-density, pedestrian- and bicycle-oriented, mixed-use activity. They are specifically intended to accommodate new population and employment growth within the urban area, thereby reducing land consumption and maximizing the use of existing infrastructure. They also support transit. Figure 9 illustrates the region's urban centers.

FIGURE 9 URBAN CENTERS



There are strategic locations in our urban area where it is desirable to encourage development that has greater residential and employment density than the surrounding area. These locations are strategic primarily because they have good access to major roadways and transit. Developing these "nodes" with a mix of land uses provides opportunities for people to live near where they work, reducing the need for some people to commute at all.

Metro Vision refers to these areas of higher residential and employment density as "urban centers." Urban center is a general term applied to three specific types of centers: mixed-use centers, activity centers and regional corridors. The three centers vary in degree, but all are envisioned as high-density/intensity, pedestrian- and bicycle-oriented, mixed-use locations providing a range of retail, business, civic, cultural and residential opportunities for surrounding trade areas.

The most prominent example of an existing urban center within the metropolitan area is the Denver central business district. Other examples of designated urban centers that are significantly developed include downtown Boulder (mixed-use center), the Denver West/Colorado Mills development (activity center) and the Denver Tech Center (regional corridor). [4]

Urban centers develop at locations where transportation infrastructure and other market conditions can support more intense development activity. Many centers are still in the planning phase, depicted only on local zoning and future land use plan maps. Examples of these designated future/planned urban centers include the Stapleton North Town Center (mixed-use center), the Superior Town Center (activity center) and the E-470/I-70 Center (a regional corridor).

The development of urban centers is complex, often requiring both public and private investment, and taking many years to approach their full potential, even in the best of economic circumstances. Redevelopment may even occur within the "life-cycle" of an urban center.

A majority of the currently designated urban centers are located in the region's more urban and central suburban areas, and in many cases strategically located along major transportation corridors. Between 2008 and 2035, 56 percent of employment growth and 26 percent of population growth in the region is expected to occur within already designated urban centers.

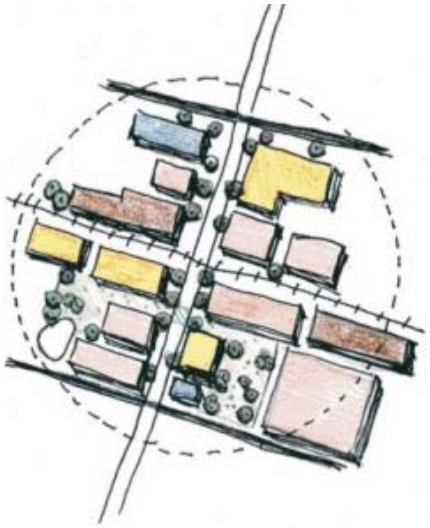
Transit-Oriented Development

Many of the characteristics and benefits of urban centers are also found and encouraged in smaller-scale development. Transit-oriented development is a general term describing concentrated, mixed-use pedestrian-oriented development that supports and is supported by transit facilities and service. Certain designated urban centers, such as the Englewood Civic Center, have a significant transit-oriented development component. However, some transit station areas will not be developed as regional-scale urban centers. They may be developed as smaller-scale centers that stimulate significant transit ridership and economic activity.

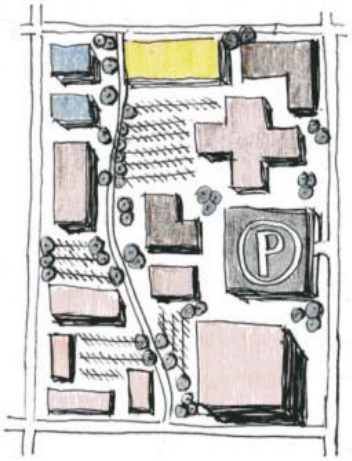
Mixed-use transit-oriented development offers many benefits. It can reduce land consumption and the amount of vehicles miles traveled within our region as a whole. Transit-oriented development better balances jobs and housing, both locally and within the region. It increases access to shopping and services, promotes pedestrian and bicycle activity, and creates a sense of place and community identity. Transit-oriented development also provides housing and transportation options for seniors.

Three Types of Urban Centers

The three types of urban centers – **mixed-use centers, activity centers** and **regional corridors** – differ slightly in terms of shape, total area and specific function. Differences also exist in the mix of households and employment, associated densities and infrastructure support. Other characteristics are common to all three, especially the reliance on transit and other transportation connections to stimulate and focus development activity. Metro Vision establishes specific criteria to distinguish the three centers and to identify where they will be located within the region.



- **Mixed-use centers** are envisioned as high-intensity, pedestrian-oriented, mixed-use locations providing a range of retail, business, civic and residential opportunities for the surrounding trade area.



- **Activity centers** are similar, but focused mostly on employment. They may not contain the same mix of uses, particularly residential.

- **Regional corridors** have some residential component, but are distinguished by their larger size, linear characteristics and adjacency to major transportation corridors. Regional corridors can be thought of as a series of interconnected urban centers.

(Refer to the Growth and Development Supplement regarding the specific designation criteria for each type of urban center.)

Freestanding Communities

Vision:

The outlying communities of Boulder, Brighton, Castle Rock and Longmont will continue to be distinguished by their historic town centers, their separation from the larger urban area, and their capacity to absorb future population and employment growth. These communities will continue to develop in a way that enhances their self-sufficiency. Each will remain separate from the larger urban area -- surrounded by an open space or rural buffer -- and have an adequate mix of jobs and housing, an internal transportation system with regional transportation connections, and a town center at its core.

Goal: Maintain Boulder, Brighton, Castle Rock and Longmont as distinct and self-sufficient communities, separate from the larger urban area.

Policies

1. **Regional Growth**. Metro Vision encourages a significant portion of future regional population growth within recognized freestanding communities.

2. **Self-Sufficiency.** Freestanding communities encourage a balance between employment and population so people can live and work in the same community. It is a Metro Vision goal that a diversity of housing types be provided for a variety of income levels.

3. **Physical Separation.** Freestanding communities will establish a permanent open space or rural buffer to maintain physical separation from the larger urban area and retain a sense of community identity. Highway interchanges or transit stations will be located away from buffer areas to avoid development pressure.

4. **Town Centers.** Each freestanding community will maintain a viable mixed-use town center to preserve community identity.

5. **Transportation.** Multimodal transportation systems will be developed in each freestanding community. These systems include pedestrian and bicycle facilities, and internal and external transit services. Communities will be linked to the larger metropolitan area with rapid transit and highway facilities.

Issues and Opportunities

The region has many communities that are separate from the larger urban area. Some of these communities primarily provide housing for workers who commute into the city. Others are more self-sufficient, providing employment and services for people who live there and in the surrounding area.

Self-sufficiency is important from a regional perspective. Residents working in the same community where they live reduce the vehicle miles traveled within the region. This preserves air quality and reduces congestion and travel times for others. It is also beneficial in terms of reducing roadway maintenance costs, and avoiding the need to improve existing roadways or construct new ones.

The communities of Boulder, Brighton, Castle Rock and Longmont are identified in Metro Vision as “freestanding communities” because they either are already self-sufficient or expected to become self-sufficient. Figure 10 shows the freestanding communities.

Achieving and maintaining self-sufficiency is a challenge for all of these communities since a jobs/housing balance is difficult to achieve at the community level. These communities can absorb a significant amount of the region’s expected population and employment growth. All are also still relatively separate from the larger urban area.

Freestanding communities are urban places. As such, the extent of urban development policies described previously also apply to the four freestanding communities. Average density within these communities will be greater than one dwelling unit per acre. However, because Metro Vision recognizes a diversity of development patterns, these communities are not necessarily expected to be as densely developed as other places within the urban area.

Physical separation has aesthetic benefits. Maintaining some freestanding communities within the region provides relief from what would otherwise become a single, homogeneous urbanized area. This separation is becoming more difficult to maintain as the region continues to develop.

Capacity to Absorb New Residents

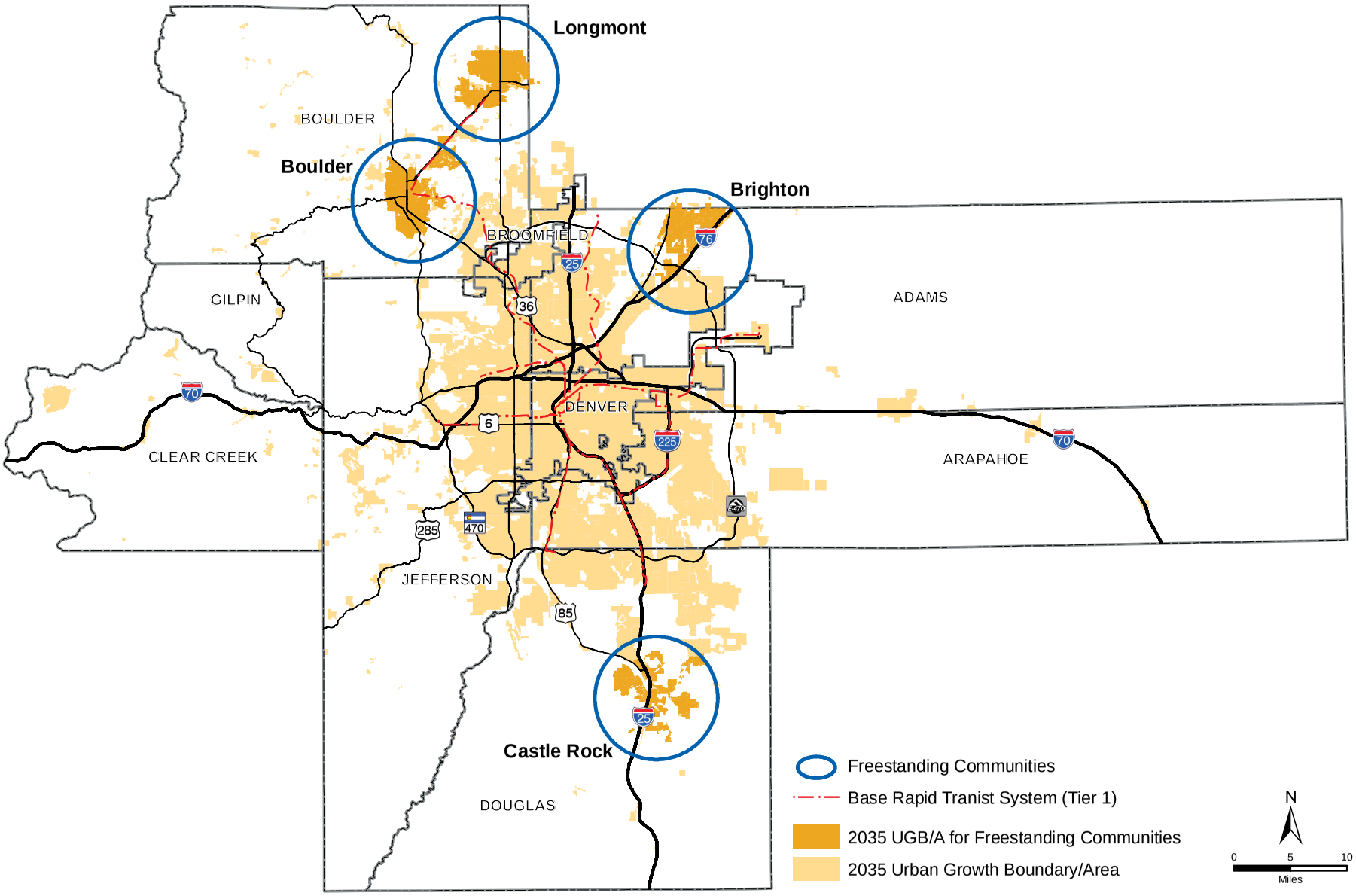
Self-sufficiency will be enhanced as these communities grow in population and diversity. This will help prevent the extension of the urban growth boundary/area far into undeveloped portions of the region. This benefits the region by reducing the need to extend infrastructure, and by protecting rural and open space areas.

Community Self-Sufficiency

People working in the same community where they live don’t need to commute into the larger urban area. This reduces the number of vehicle miles traveled within the region. Employment also helps a community maintain its economic viability. Employment, however, must match the labor skills of residents. Otherwise, a “reverse commute” phenomenon could occur, and vehicle miles traveled could increase. This could also happen if housing costs don’t match workers’ income levels.

Communities typically require a diverse workforce to meet the demands of a variety of employers. To achieve self-sufficiency, it is necessary to provide an equally wide variety of housing types. If a complementary mix of retail and service-oriented businesses is conveniently provided, a larger portion of consumer spending will stay in the community. Providing these options can reduce the number of regional trips, and provide convenience for residents.

FIGURE 10 FREESTANDING COMMUNITIES



Each freestanding community has a historic town center that defines its character and serves as the focus for a mix of civic, economic, residential and transportation activity. Town centers enhance community identity and can serve as a focus for local and regional transit services. Town centers can also be attractive places for seniors because they have a mix of uses nearby with good access.

Multimodal Transportation

Another important factor in achieving self-sufficiency is providing efficient transportation to people within the community. This includes both transit service and roadways, as well as bicycle and pedestrian pathways. Freestanding communities are also connected to the larger urban area with rapid transit and highway facilities. Transit stations and highway interchanges should not be located within the community's buffer area.

Open Space Buffer

The presence of an established open space or rural buffer is a defining characteristic of a freestanding community. Maintaining this buffer helps to preserve separation from the larger urban area and strengthens community character and identity. Proactive steps by the region to acquire and preserve open space will be necessary to achieve this vision.

Rural Town Centers

Vision:

Small, established towns and villages found in rural places beyond the region's urban area will provide services, employment and entertainment for residents of the surrounding trade area, and tourists and travelers. Although they will serve the rural area, the communities themselves will be relatively compact, each with a town center, small lots and a street grid. They also will have the infrastructure to accommodate population growth.

Goal: Recognize the small communities located in the rural and semi-urban areas of our region and more clearly define and support their regional role.

Policies

1. **Regional Growth.** New development in the rural portion of the region is encouraged to occur within rural town centers where necessary infrastructure, including central water and sewer, can be provided more efficiently.

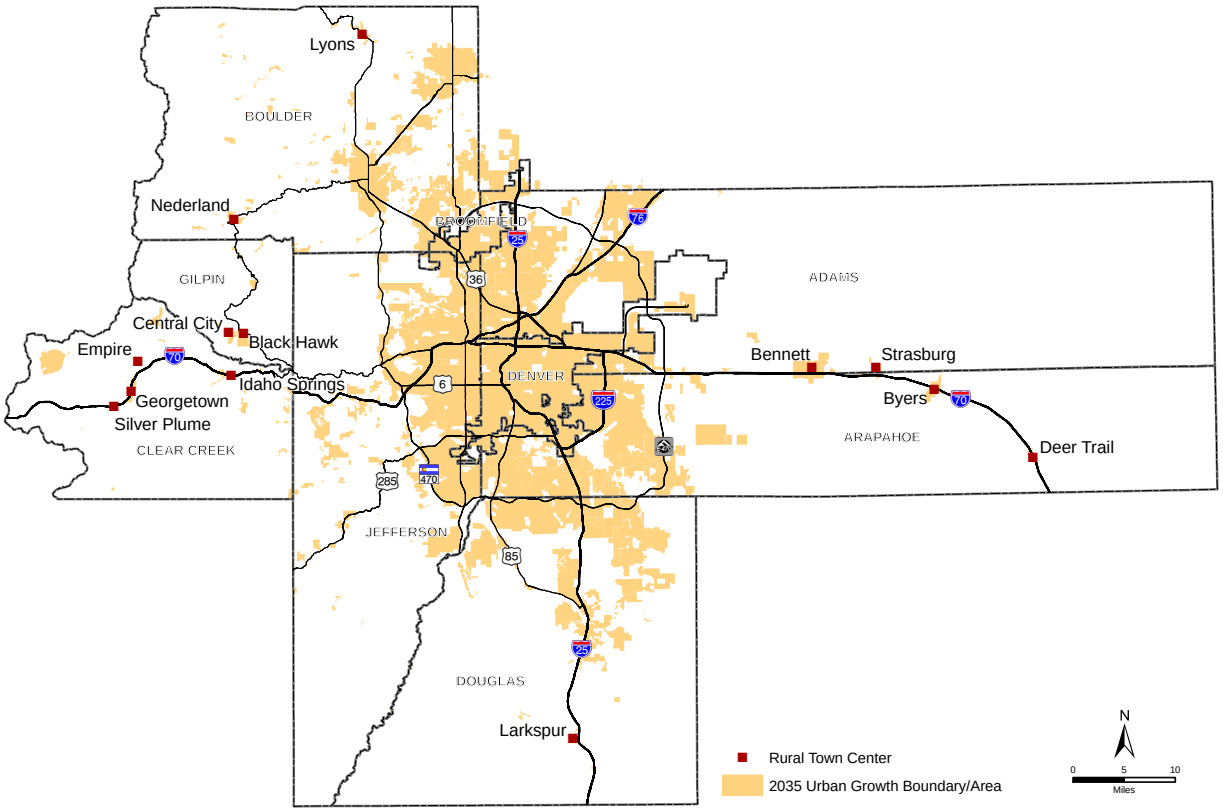
2. **Development Pattern.** New development within rural town centers is encouraged to be compact, so the infrastructure necessary to serve the new development can be provided cost-effectively. Compact development also helps differentiate between developed and undeveloped areas, provides for pedestrian accessibility and maintains community identity. Rural town centers are encouraged to promote infill and redevelopment activity within their existing boundaries for compact development and the use of existing infrastructure.

3. **Self-sufficiency.** Where appropriate, rural town centers will encourage economic development to improve the balance between employment and population. An appropriate mix of zoning designations will ensure that necessary services and employment generators are provided for so the community can become more self-sufficient. Other communities have an abundance of employment (Black Hawk, Central City), but limited workforce housing. These rural town centers will encourage the development of affordable housing options and accessibility to jobs.

Issues and Opportunities

A number of small, rural communities in the region provide services and act as cultural "focal points" for their surrounding areas. While physically separate from the urban area, these communities are an essential part of our region's urban fabric.

Depicted in Figure 11, these communities are locally and regionally significant because of the role they play in serving the region's rural and semi-urban areas. At a smaller scale they share many of the characteristics of freestanding communities. They provide options for individuals who want to live in a rural area. Recognition



of rural town centers is consistent with Metro Vision's general approach to address significant forms of development and provide the region with a more comprehensive plan for the future.

These communities have the potential to absorb population growth, but the provision of necessary infrastructure is a major challenge. Many rural town centers are historic communities established before the turn of the century. Much of their public infrastructure, including water supply and wastewater treatment facilities, roads, sidewalks and trails, needs repair or replacement.

Identifying Rural Town Centers

Working with the planning staff from these small communities, DRCOG has developed an initial list of rural town centers, evaluating their existing physical characteristics, future development plans, location and trade area.

Not all small communities that lie outside the larger contiguous urban area are considered rural town centers. Evergreen and Conifer, for instance, are considered non-contiguous extensions of the urban area. Being an incorporated municipality is also not an absolute criterion. Most of the identified rural town centers are incorporated, but a few (Strasburg and Byers) are not.

Rural town center policies, definitions and criteria will continue to be refined as work to implement Metro Vision proceeds. The list of identified rural town centers may also be refined.

Senior-Friendly Development

Vision:

The housing, transportation, social, health, recreational and service needs of a growing senior population will be accommodated in the future by improved development patterns and community design sensitivities. Local governments wanting to create communities that provide for their citizens throughout their lifespans will embrace these changes.

Goal: Create senior-friendly communities by promoting development patterns and community design features that meet the needs of residents as they age.

Guidelines for Local Governments

1. **Housing Options.** Allow and encourage a diversity of housing types and a mix of housing densities that range from single-family homes to apartments to assisted living facilities. Encourage rehabilitation, modification and maintenance of existing housing stock. Consider the adaptive reuse of schools, historic and other buildings as senior housing opportunities.

2. **Housing Location.** Locate a variety of senior housing types near senior-supportive land uses such as senior centers and other recreational facilities, social and emergency service providers, public facilities, medical offices and shopping areas to reduce feelings of isolation and to enhance a sense of independence. In addition, senior housing should be located adjacent to pedestrian-friendly environments so as to maximize access to employment, volunteer and educational opportunities, restaurants, and entertainment and cultural venues.

3. **Housing Affordability and Suitability.** Increase the access to and availability of affordable and suitable rental and for-sale units in order to meet present and future housing demands of seniors and other populations in the region.

4. **Development Patterns.** Encourage compact mixed-use neighborhoods and multi-use developments to reduce seniors' reliance on the automobile, if they so choose. Provide alternative transportation mode options by building senior communities near rail stations and major bus routes. Consider the physical and cognitive limitations of seniors in planning new development (e.g., a grid-based street pattern is easier to navigate than winding streets and cul-de-sacs).[5]

5. **Pedestrian-Friendly Environments.** Enhance community walkability by providing sidewalks, narrowed street crossings, manageable curb cuts, increased crosswalk signal timing, medians as midway stopping points, traffic-calming measures, pedestrian-friendly access to transit facilities, and improved greenway and trail systems. Surfaces should be pedestrian-friendly (non-slip and non-glare) and should be properly maintained.[6]

6. **Transportation Networks and Services.** To better meet the mobility needs of seniors and other populations, consider transportation improvements such as increased transit access, enhanced local bus routes, expanded

paratransit, ridesharing and other specialized transit services, bus shelters, subsidized taxi service, on-street bicycle lanes and the pedestrian connections described previously.[7]

7. **Building and Site Design.** Encourage commercial and public building design that incorporates a variety of textures, colors and distinct architectural features to help seniors differentiate between buildings and improve navigation within buildings. Ensure that buildings comply with established adaptability and accessibility requirements and universal design and "visitability" tenets (e.g., hallway width, hand railings, hazard-free walking surfaces, etc.). Minimize the use of steps and provide larger elevators.

8. **Parks Facilities.** Design parks that are easier for seniors to use. Avoid abrupt elevation changes and make pathways hard-surfaced. Use easily identifiable signs and equipment, and provide street furniture, bathrooms and other facilities to ensure comfort and encourage interaction.

9. **Safety and Security.** Ensure that walkways and public spaces are well lit to enhance safety and security while respecting local governments' "dark skies" policies. Apply defensible space strategies and employ techniques like Crime Prevention through Environmental Design to reduce seniors' exposure to crime. Be aware of the impacts excessive noise has on seniors' feelings of security.

10. **Wayfinding.** Directional and informational signs should be provided throughout the community, especially near transit stations. Large letters with contrasting colors and enhanced illumination improve readability. Reduce visual clutter.

Dramatic Demographic Shifts

Approximately 13 percent of the nine-county DRCOG region's current population is 60 years of age or older. This proportion is projected to increase dramatically to 23 percent by 2035, as Figure 12 shows. This demographic phenomenon will create challenges in terms of providing human services. It will also create challenges in accommodating changing housing, transportation and recreational needs.

"Baby Boomers," or those born between 1946 and 1964, are beginning to reach traditional retirement age. As they retire, some will leave their existing communities, looking for alternative housing or lifestyle options. Others will stay, wanting to preserve their existing lifestyle or explore new options. This generation represents a large portion of the population, so the movement and change have significant implications for local governments and private developers.

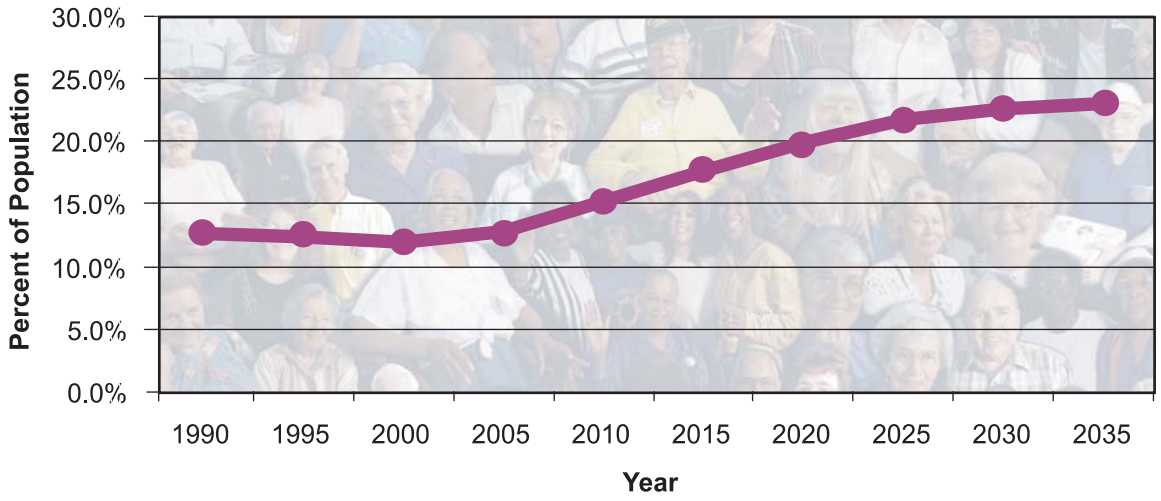
Today, there are more seniors and they are living longer, due to medical advances and other factors. In fact, the number of people over the age of 100 is growing faster than any other population segment. More individuals are also working beyond the age of 65. Despite these advancements, seniors will continue to experience a higher incidence of cognitive and physical disabilities, be more susceptible to air pollution, and require significant services and resources.

Issues and Opportunities

Planning for a maturing population requires an understanding of the normal physical changes associated with the aging process and how these changes eventually affect everyone's ability to negotiate the community's

Figure 12

The Graying of the Region



environment. Mid-life brings many of these changes – they can start to affect a person's quality of life long before one is considered a "senior." Seniors and other populations are able to maintain a sense of well-being and independence when their community environment is effective in meeting their needs in three subenvironments (see Figure 13):

- a built or physical subenvironment consisting of land use mix, the transportation network, housing and healthy/safe community design;
- a socioeconomic subenvironment including the support network of individuals (e.g., family, friends and neighbors), institutions and community organizations; and
- a service subenvironment relating to the availability of and access to retail and commercial services, homecare providers, community and public agencies, and medical service providers.

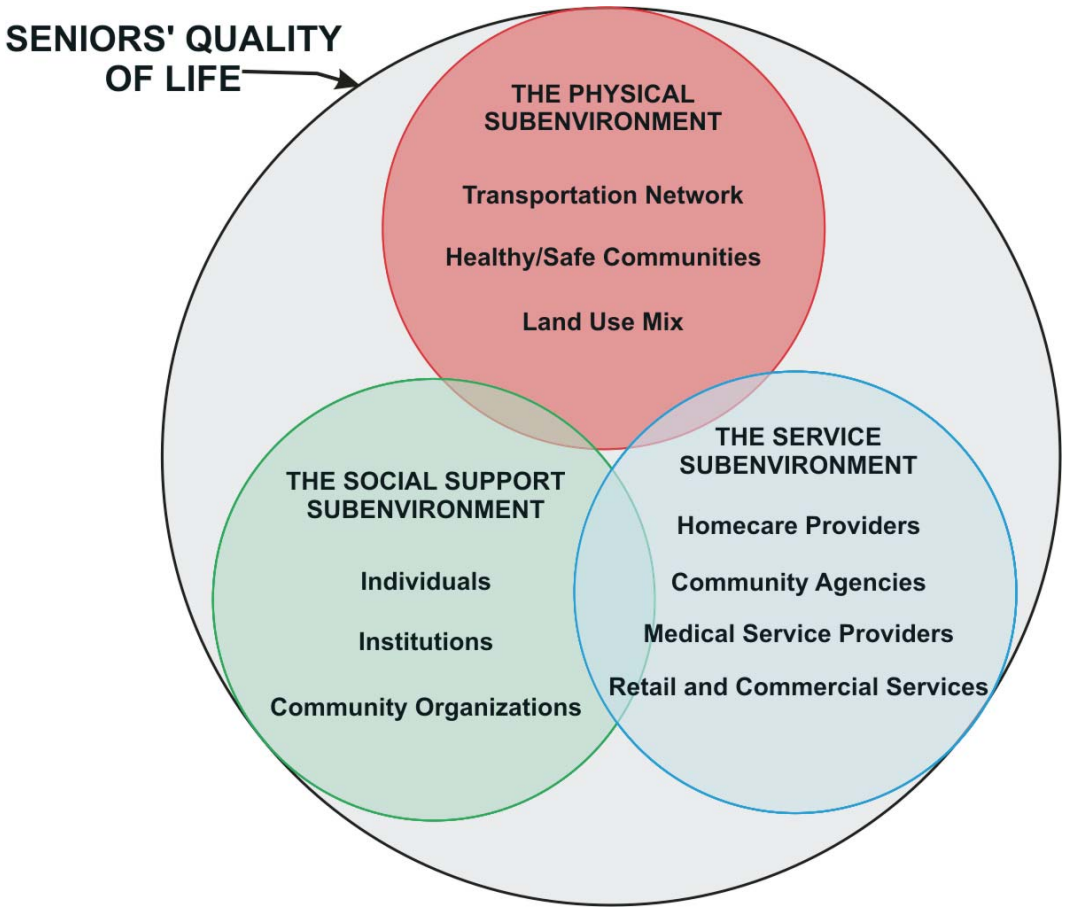
While the Senior-Friendly Development element focuses on the built environment, the socioeconomic and service subenvironments must be considered when planning and constructing housing, transportation networks, public facilities and supportive infrastructure likely to be used by seniors. The effective and efficient provision of these three subenvironments leads to improved quality of life for seniors and other populations.

Taking care of the elderly is a community effort. Jurisdictions should consider housing alternatives including, but not limited to, home sharing, Accessory Dwelling Units (ADUs), Elder Cottage Housing Opportunities (ECHO), Continuing Care Retirement Communities (CCRCs), adult homes, nursing homes, and independent and assisted living facilities. Comprehensive service delivery should be considered in association with retirement communities, especially in areas where Naturally Occurring Residential Communities (NORCs) appear. These communities were not designed as retirement or senior-specific communities, but are populated by a significant number of seniors.

A variety of housing types should become a part of the landscape of a neighborhood. To accomplish this goal, jurisdictions need to remove zoning and building code barriers to encourage a diversity of land uses, housing options and increased density. This could include re-evaluating the definition of "family," setting narrower street standards and adopting universal design and visitability standards, among others.

Figure 13

Seniors' Quality of Life Subenvironments



Local communities should consider offering incentives to developers that ensure a wide range of non-market housing and affordable supportive housing is built in their communities. Inclusionary zoning techniques are often cited as a viable option. By offering a wide choice of housing options, an individual can stay within his/her community despite experiencing adverse changes in financial, health or mobility status. Currently, the paradigm is shifting from the narrow concept of "aging in place," where the emphasis is on the housing unit, to the broader perspective of "aging in the community," where the emphasis is on connecting the person and housing unit to the community, for those who desire such a connection.

It is important that local communities coordinate their land use and transportation planning efforts. Seniors may be able to drive, but they may not always want to drive. Making a community or neighborhood more walkable contributes to ease of mobility and personal health and well-being of seniors. Transit-oriented development, increased street connectivity and enhanced sidewalk treatments can all contribute to seniors' quality of life.

Buildings and other structures should be designed to be sensitive to individuals with physical and cognitive limitations. Senior-sensitive site design (e.g., devoid of abrupt grade changes and having hand railings where appropriate), especially at public facilities like parks and other public spaces, is necessary for seniors to feel comfortable using these facilities.

Local governments in the Denver region can prepare for the aging of the population by considering development patterns and specific land uses being planned. The single-use, low-density, auto-oriented patterns of development

prevalent in much of the region today may not adequately provide for the needs of seniors. Because transit services aren't often provided to this type of development, seniors can be physically isolated from services and recreational opportunities.

More compact, mixed-use development patterns – which Metro Vision encourages – may appeal to an aging population that wants alternative housing and transportation options. The architectural and design characteristics outlined in the policies at the beginning of this section can enhance the development of senior-friendly communities.

Paying particular attention to the impact of the built environment on seniors benefits all populations. Making a community more livable for the elderly benefits all ages and abilities.

Area Agency on Aging

DRCOG serves as the region's Area Agency on Aging, planning and coordinating a continuum of services available to older adults living in the Denver metropolitan area (excluding Boulder County).

DRCOG assesses the needs of the region's seniors and develops strategies to meet them through its four-year plan. The plan lays out how the Area Agency on Aging will translate its passionate commitment to improve aging in the community to action and specific services. DRCOG staff provide support to the Advisory Committee on Aging, which focuses on issues that pertain to the region's older adults. The Livable Communities Subcommittee of the Advisory Committee on Aging provides guidance on built-environment issues related to seniors.

End Notes:

[1] Metro Vision defines urban as more than one house per acre.

[2] Please refer to detailed information included in Metro Vision's companion document, the Growth and Development Supplement.

[3] The urbanized area contains 96 percent of the region's households; the rural area 1 percent.

[4] It is not intended that these other existing centers, or future developing centers, compete with the Denver Central Business District. As the region's overall physical and cultural center, it is important that Denver maintain a strong downtown area for our overall economic stability.

[5] Additional policies and strategies regarding development patterns are noted throughout in Chapter 1-- Growth and Development, and in the Growth and Development Supplement to Metro Vision.

[6] Additional policies and action strategies related to the pedestrian environment are contained in the Pedestrian and Bicycle Element of the 2030 Metro Vision Regional Transportation Plan.

[7] Additional regional transportation policies and action strategies are contained in the 2035 Metro Vision Regional Transportation Plan and its associated elements. Additional regional transit-related policies and strategies are contained in the Transit Element of the 2030 Metro Vision Regional Transportation Plan.

CHAPTER 2

Transportation System

The transportation system *serves* the growth and development elements of Metro Vision and is *affected* by growth and development activity. The system can also *influence* the location and type of development that occurs.

Vision:
A balanced multimodal transportation system will include rapid transit, a regional bus system, a regional roadway system, local streets, bicycle and pedestrian facilities, and associated system and travel demand management services. This system will provide reliable mobility choices to all of its users: residents and visitors of all ages, incomes and physical abilities, as well as businesses that provide services and produce or sell goods. Users will find the transportation system easy to access, safe and secure, and it will permit efficient state and nationwide connections for people and freight.

Goals: Provide safe, environmentally sensitive and efficient mobility choices for people and goods; and integrate with and support the social, economic and physical land use development of the region and state.

To achieve these goals, the transportation system must be well-maintained and the region's agencies and governmental bodies must work cooperatively to develop strategies for obtaining sufficient funding.

Policies

1. **System Preservation.** Assure the preservation and maintenance of existing facilities.

2. **Transit.** Provide increased transit service and facilities that stimulate travel by means other than the single-occupant motor vehicle, encourage transit-oriented developments and provide mobility options.

3. **Roadways.** Expand capacity of existing roadways in the most critically congested corridors and at key traffic bottlenecks and encourage access controls to maintain capacity.

4. **Rights-of-Way Preservation.** Reserve adequate rights-of-way in newly developing and redeveloping areas for pedestrian, bicycle, transit and roadway facilities.

5. **Denver Central Business District**. Improve and maintain transportation access to downtown Denver.

6. **Safety.** Develop and maintain a safe transportation system for all of its users.

7. **Security.** Develop and maintain a transportation system that provides increased security for all of its users.

8. **Management and Operations.** Make the best use of existing transportation facilities by implementing measures that actively manage and integrate systems, improve traffic operations and safety, provide accurate real-time information and reduce the demand for single-occupant motor vehicle travel.

9. **Bicycle and Pedestrian.** Provide bicycle and pedestrian access through and between developments and provide links to transit facilities.

10. **Interconnections.** Improve interconnection of the transportation system within modes, between different modes, and between the metropolitan area and the rest of the state and nation.

11. **Transportation-Efficient Housing and Business Developments.** Design new developments to allow the efficient movement of pedestrians, bicyclists, buses and motor vehicles within, to and through the area.

12. **Land Use Integration.** Implement transportation system components that support Metro Vision's urban growth boundary/area, urban centers, open space and associated concepts.

13. **Transportation for the Disadvantaged.** Provide a transportation system that considers the needs of and impacts on minority, low-income, elderly and disabled persons.

14. **Environmental Quality.** Develop a transportation system that protects and enhances the environment.

Our regional roadway and rapid transit systems shown in Figures 14 and 15 have a significant impact in shaping future development patterns by supporting the development of urban center locations and helping guide growth with the urban growth boundary/area. They also respond to our growth challenges. This chapter outlines the needed transportation system for the year 2035. A companion document, the 2035 Metro Vision Regional

Figure14

Proposed 2035 Metro Vision Regional Roadway

(9-County Region)

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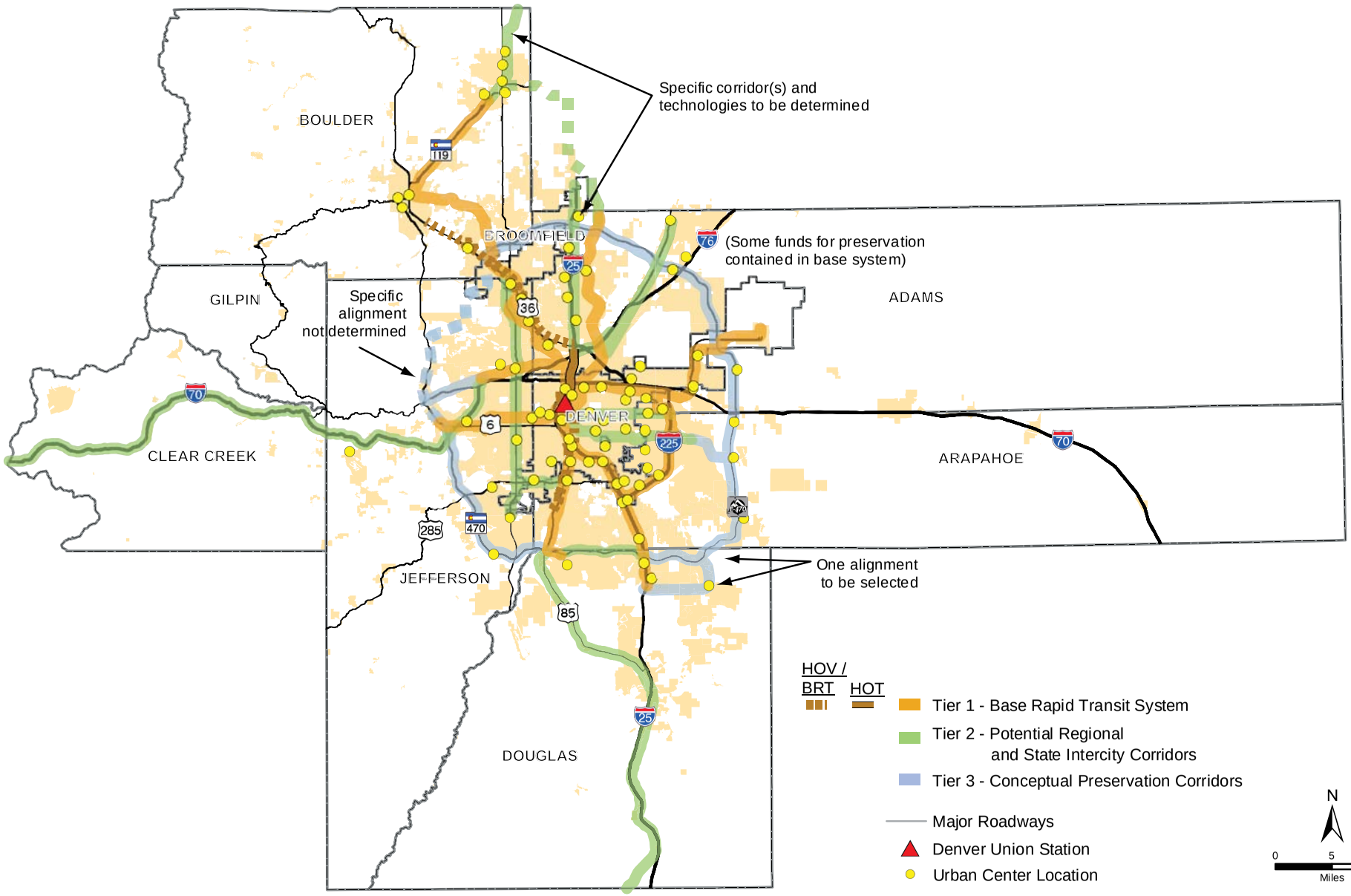
FIGURE 15

2035 METRO VISION RAPID TRANSIT SYSTEM



Transportation Plan, provides greater detail about the subjects covered in this chapter and also identifies the projects for which funding is expected to be available by 2035.

Issues and Opportunities

The additional 1.5 million people expected to be living in the region by 2035 will place greater demands on our transportation system, impacting the ease and efficiency of travel. Travel on the region's roadway system will increase, as will use of the regional transit system and other alternative modes of travel. As the population increases, particularly the age group over 60, demand for specialized transit services for the elderly and non-driving populations will grow substantially. The lower-income segment of the population will need access to jobs, health care and education by alternative modes to driving a car. Population and employment growth in neighboring counties outside the Denver region will further impact the regional system.

People need transportation systems to get to work, health facilities, schools, shopping, recreation and cultural events. Businesses depend on transportation systems to deliver raw materials and goods in a timely manner, ship finished products and bring in customers. And everyone depends on the delivery of coal from mines to power plants and gasoline from refineries to supply gas stations. The transportation system must provide mobility and accessibility to necessary goods and services for all the region's businesses, residents and visitors, including all economic levels, ages, physical conditions, and racial and ethnic groups.

An effective, safe and well-maintained transportation system provides the mechanism for residents and visitors to conduct business, interact with others, access different parts of the region and travel to other parts of Colorado and the nation. It unites the region as a community and provides the circulation system necessary for our region to participate and compete in national and global economies. It increases the quality of life and strengthens the regional economy.

The interrelationship between transportation and land use will continue to shape the landscape of our region into the future. New transportation facilities will encourage more intense land use activity; that in turn will create a demand for more transportation. Therefore, it is important that the regional and local transportation systems are provided in a way that will most effectively influence the desired future development. Likewise, existing and future development patterns in certain locations will influence the types of transportation improvements that are feasible. The design of local neighborhoods and local streets, while not discussed in detail as part of the regional roadway system, influence traffic on the regional system. Designs that encourage travel by alternative modes can help reduce demand on the regional system.

To provide desired quality of life, the negative impacts of transportation facilities on our region's residents will need to be minimized. Low-income and minority residents should not be unfairly burdened by such negative impacts.

One of the most significant transportation challenges is congestion. Construction of transportation facilities has not kept

up with travel growth for the past two decades. Present-day motorists experience, in total, nearly 250,000 vehicle hours of delay on an average weekday. This will more than quadruple to an estimated 1.1 million vehicle hours of delay daily in 2035 if funding for transportation is not increased. Congestion has been increasing not only in severity, but also in the duration of time that it occurs. If the highway that a person uses to commute to and from work is currently congested for three hours every day, it may be congested for five or six hours per day in 2035. The increase in the duration of congestion will negatively affect delivery and service vehicles, school trips and health care trips that previously were made in uncongested midday traffic. Additional consequences of severe congestion include increased air pollution and fuel use. Widening congested roadways is not always desirable, especially in established urban core areas where widening is not possible without substantial community disruption and, hence, large social and implementation costs.

Conversely, businesses throughout the state will be increasingly dependent on just-in-time deliveries of raw materials, packages and information. Reliable travel times in the Denver region for trucks, cargo vans, and freight trains on the region's transportation system are essential to the economic success of Colorado's companies.

Of course, transportation facilities are of limited value if they are not maintained, repaired or replaced to keep the system in adequate condition. Many major facilities in our area were constructed more than 30 years ago and are showing their age. Buses, trains and transit stations must also be kept in good condition so that passengers are not discouraged from using public transit.

Insufficient funding poses a critical challenge to the region in providing a transportation system to meet future needs. Costs of building, operating and maintaining the needed facilities shown in Figures 14 and 15 far exceed expected revenues. Consequently, many of the important components of the system cannot reasonably be expected to be implemented until far beyond 2035, and the condition of current facilities will deteriorate. The region must address this challenge to provide the efficient transportation system our citizens and businesses require.

Vision Concepts

The Metro Vision transportation system is a balanced, multimodal system that includes physical facilities such as roadways, sidewalks, multipurpose trails and rapid transit lines, as well as the supporting services and activities to serve mobility needs. The following conceptual themes provide the foundation for the system.

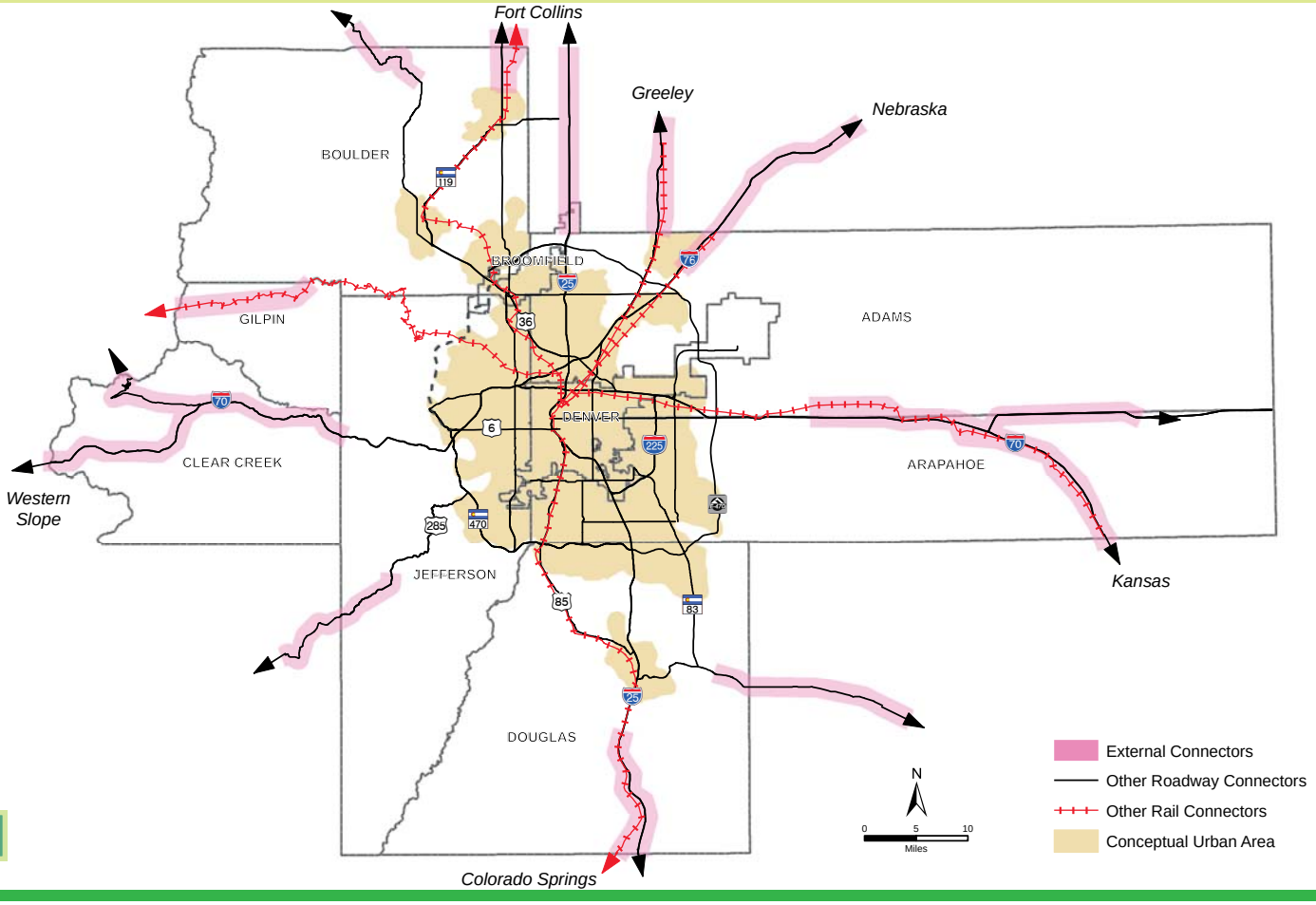
Major Travel Corridors

The regional transportation system comprises three types of travel corridors:

- statewide connectors,
- intraregional corridors, and
- regional accessibility facilities.

Figure 16 displays the key statewide roadway and rail connectors for personal and commercial travel between our region, the rest of Colorado and the nation.

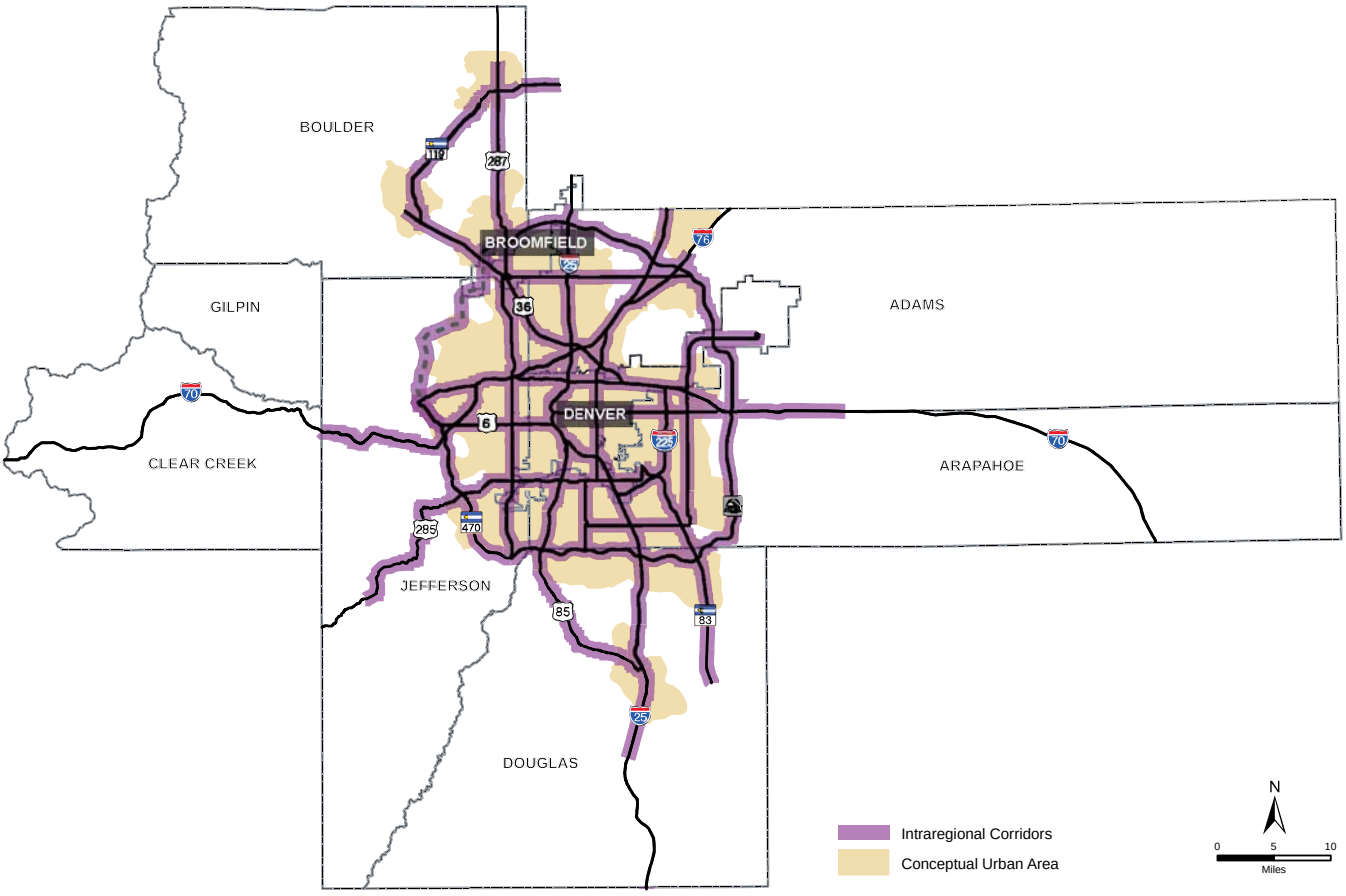
FIGURE 16 **STATEWIDE CONNECTORS**



In addition to providing connections to the region, the roadways shown in Figure 16 facilitate travel through the Denver region. A significant amount of traffic on the highlighted segments begins or ends outside the Denver region, thus they are called external connectors. The non-highlighted segments, while also serving as important routes for through traffic, will primarily carry traffic that begins and ends within the region.

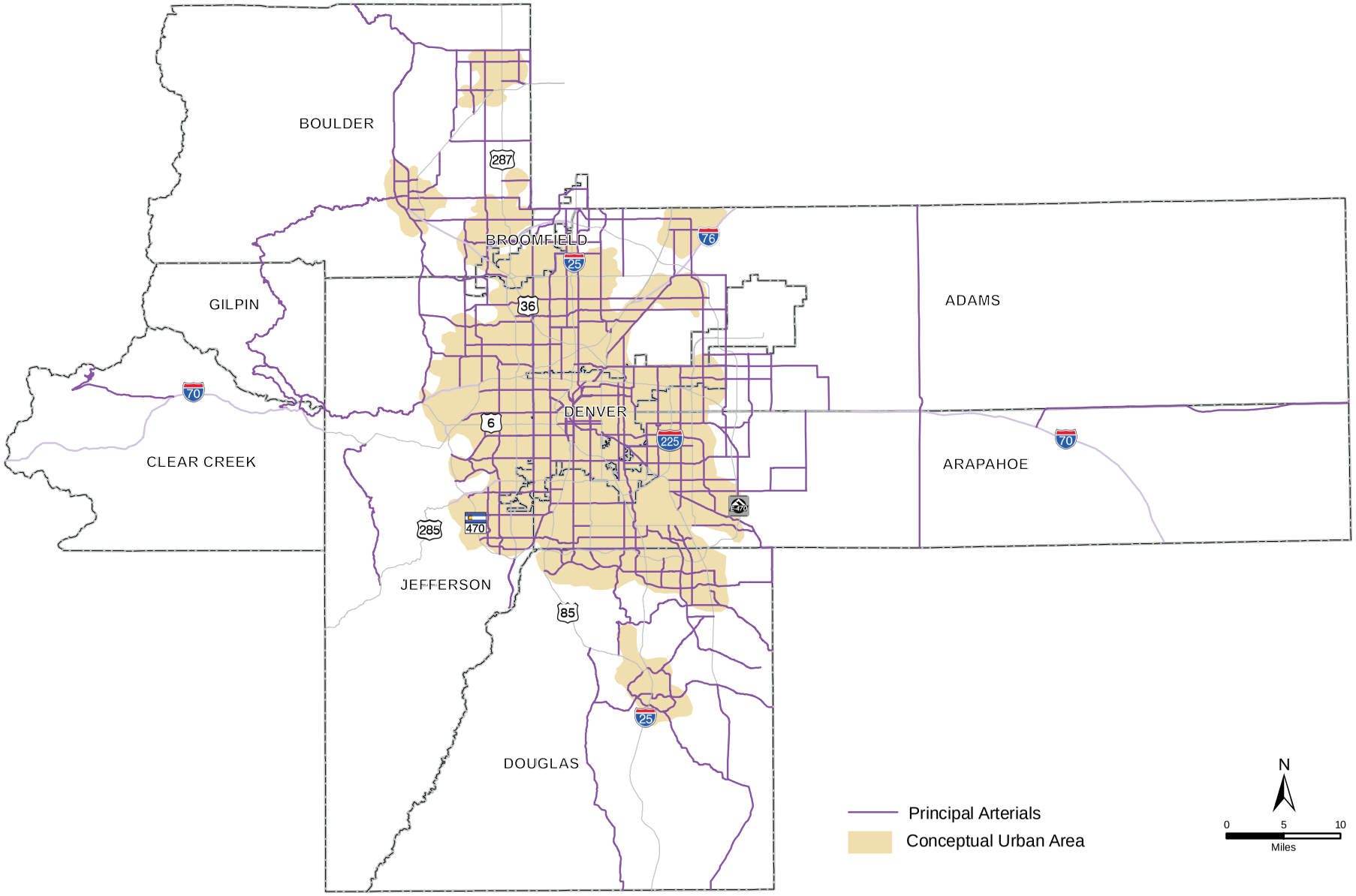
Within the region, the majority of long-distance trips are made on the backbone system of intraregional corridors. This backbone system includes the rapid transit lines shown in Figure 15, and the freeways and major regional arterials displayed in Figure 17. These roadways will carry the highest volumes of people and goods across the region and to the major employment and activity centers, such as the Denver central business district and Denver International Airport. These facilities connect urban centers to each other and to freestanding communities.

FIGURE 17 **INTRAREGIONAL CORRIDORS**



Regional accessibility facilities include principal arterials and extensive bus service that provide further access to other key points throughout the region (see Figure 18).

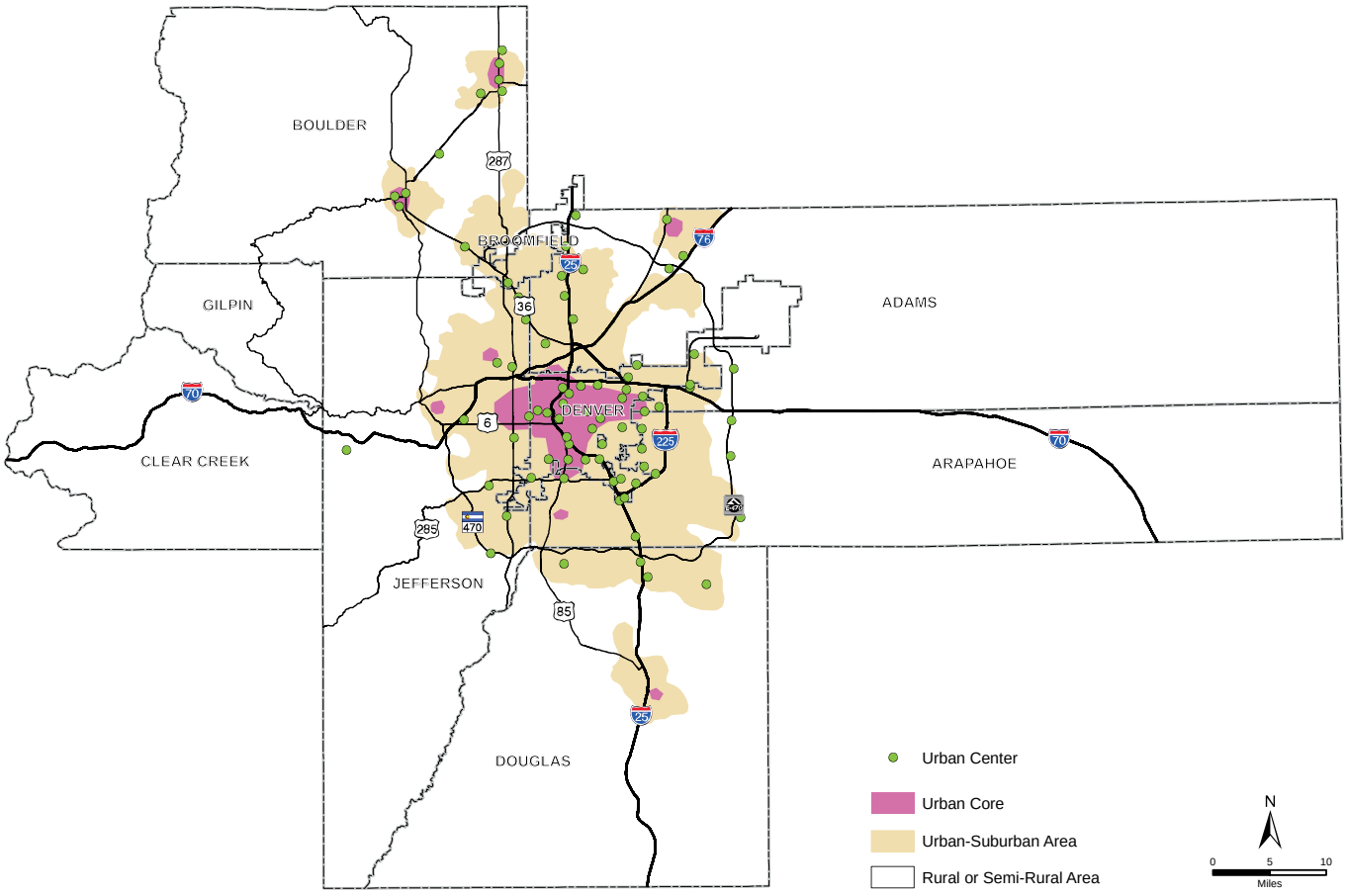
FIGURE 18 REGIONAL ACCESSIBILITY ROADWAYS



Defining Development Patterns and Transportation Facilities

Planned transportation improvements will be designed to fit in with the adjacent surroundings and have minimal negative impacts. The Denver region generally exhibits three types of development patterns as sketched in Figure 19 and described below.

FIGURE 19 **CONCEPTUAL REGIONAL DEVELOPMENT PATTERN AREAS**



Pre-World War II Urban Cores and Central Business Districts

These areas include the central business districts of cities such as Denver, Boulder, Longmont and other communities that formed before World War II. These are more densely developed areas with concentrations of mixed-use activities. Many arterials in these areas were streetcar lines in the early 1900s and still retain a strong pedestrian or transit focus. Examples include Colfax Avenue, Broadway (Denver and Boulder) and Main Street in Longmont.

Because widening such streets would result in significant adverse impacts to the community, greater levels of congestion may be tolerated within these areas, with future transportation improvement efforts focused on pedestrian, transit, bicycle and street operational improvements. Likewise, it is challenging and very costly to widen freeways within the urban core.

Post-World War II Urban/Suburban Areas

In the 1950s, most new development started occurring in segregated land use patterns. Residential, commercial and office activities were rarely mixed. This post-war development is often oriented within a one-mile arterial grid system with commercial activity at the corners or along strips and the majority of residences located on curving streets away from arterials. Sidewalks were often provided. Widening some of these arterials is possible, and parallel, off-street and on-street bicycle facilities, increased transit service and operational improvements can often be added. At the most severely congested arterial intersections, grade-separated interchanges will be constructed, if feasible.

Many freeways within the urban and suburban areas of the Denver region are multi-laned facilities that serve local residents and businesses as well as statewide travelers. I-25, I-70, US-6 and US-36 (Boulder Turnpike) were built from the 1950s through the 1970s, when social and environmental impacts received less consideration than today. Right-of-way along some existing congested suburban freeways may be available or obtainable to allow the construction of additional lanes or rapid transit lines. Operational and management improvements will also have a beneficial impact.

Rural and Semi-Urban Areas

These areas are characterized by low-density development, ranches, public lands and small rural communities. The roadways are still rural in nature, but they provide key connections between the built-up Denver urban area and outlying communities. Highways that provide connections between Denver and the four major freestanding communities (Boulder, Longmont, Brighton and Castle Rock) are often greatly affected by peak direction rush hour commuter traffic. Examples include SH-119 (Longmont Diagonal) and US-85 north of Castle Rock.

Weekend recreational traffic often affects roadways that pass through rural areas to other parts of the state causing increased congestion and vehicle crashes. Improved driver information and increased incident management efforts by public safety and emergency response agencies will be very important because of the lack of adjacent alternative routes.

Highways and roads on the plains may be able to be widened to accommodate increasing traffic, while roads in the mountains have more physical constraints. Widening will be considered only in the most critical locations that provide connections to freestanding communities and the remainder of the state and will be done in an environmentally conscious way. Transit service improvements will be important to provide alternative modes of travel to and from the Denver area.

Metro Vision Transportation System

Regional Roadway System

The Metro Vision regional roadway system depicted in Figure 14 reflects new roadways and interchanges, widened roadways and improvements to existing interchanges throughout the region. An increase from about 6,300 regional system lane-miles in 2005 to about 8,600 lane miles in 2035 is desired. If the plan is implemented, most new roadways and freeway interchanges will be located in fast-growing suburban areas. Examples include the Northwest Corridor, I-70 East Corridor in Denver and Aurora, E-470, and I-25 in Adams and Broomfield counties.

Another important type of improvement is the elimination of selected at-grade railroad crossings on major roadways. These crossings presently cause significant delays and pose safety hazards. An example is the railroad crossing on Wadsworth Boulevard in Arvada (see picture), where a grade separation is currently being constructed.

Source: City of Arvada KATV

Existing state statutes allow new roadways or added travel lanes on existing freeways to be funded by tolls. Currently E-470 and the Northwest Parkway are the only entirely tolled highways in the region. Tolls will be considered as an element of new "managed lanes" that are added to existing freeways (e.g., a free travel lane for buses and carpools, but tolls are collected for single-occupant vehicle drivers). The toll amount would also vary by time of day, depending on the level of congestion. Managed lanes are currently operated along I-25 north of downtown Denver (the bus/high-occupancy vehicle lanes were converted to allow toll-paying drivers of single-occupant vehicles). Specific locations for future toll facilities have not yet been determined, but will be the subject of upcoming studies by the Colorado Tolling Enterprise.

Regional Rapid Transit Rail and State Intercity Corridors

Light rail transit has proven to be a viable and popular mode for travelers in the Denver region since the first line opened in 1994. The Metro Vision Plan builds on the current light rail transit lines by identifying fixed-guideway rapid transit corridors (see Figure 15) in three system tiers.

Tier 1: Base Rapid Transit System – This system includes light rail, commuter rail, freeway bus rapid transit facilities and bus/high-occupancy vehicle corridors that are currently operating or were included in the Regional Transportation District (RTD) FasTracks Plan that the region's voters approved in November 2004. Denver Union Station will become a major multimodal passenger hub for the Tier 1 system. Rapid transit stations will stimulate adjacent transit-oriented development. This system will serve the region's most densely developed parts, including at least 41 urban centers. The number of residents that can reach Downtown Denver's cultural and recreational facilities and employment opportunities within a 55-minute transit trip will be increased by more than 60 percent. Tier 1 will

improve transit accessibility to jobs for all residents, and especially for residents of low-income and minority areas as more than 80 percent of those areas will be within a 55-minute transit trip of at least 100,000 jobs.

Tier 2: Potential Regional and State Intercity Corridors – Several other potential corridors traverse major developed areas within the region and/or provide service to and from other parts of the state. Formal ridership examinations and detailed design have not been completed for the Tier 2 corridors, but consideration will be given to applicable corridors when designing adjacent roadway improvements so as not to prohibit future rapid transit construction.

Tier 3: Conceptual Preservation Corridors – These future rapid transit corridors are located along, or leading to, major circumferential roadways. Rights-of-way will be preserved to the extent possible in these corridors for potential rapid transit use in the future.

Bus and Other Transit Services

Our region will provide a variety of other transit services. In particular, there will be a greater need for alternative demand-responsive services for the growing elderly population and people with disabilities. Categories of bus and other services include:

- **Fixed-Route Bus Service** – RTD plans to expand its fixed-route public bus service extensively. This service includes regional, express and local routes. Rail transit will replace some of the current bus routes as those corridors are implemented. RTD will adjust many bus routes to serve as feeders to rapid transit stations. Suburb-to-suburb crosstown bus service will expand significantly. Outside the RTD service area, Castle Rock and Black Hawk/Central City operate municipal systems and are expected to continue to do so.

- **Bus Rapid Transit** – The term Bus Rapid Transit refers to a system of improvements that provides faster operating speeds, greater service reliability and increased convenience than traditional fixed-route bus service. On freeways in the Denver region, Bus Rapid Transit means buses traveling in exclusive or partly-exclusive lanes, with on-line stations or segregated access ramps, coupled with additional management improvements that allow buses to load and travel quickly and efficiently. Figure 15 envisions Bus Rapid Transit service along US-36 from Boulder tying into the managed lanes on I-25 north of downtown Denver. On arterials, Bus Rapid Transit typically involves bus operational improvements at intersections (e.g., queue jump lanes or bus signal priority) and key bus stops, and enhanced station-like treatments for passengers at those key locations. Figure 15 does not specifically depict arterial Bus Rapid Transit, but it is possible that ridership studies and detailed design considerations for some of the Tier 2 corridors may conclude that interim (or even ultimate) deployment of Bus Rapid Transit is appropriate. Bus Rapid Transit

treatments on other arterial corridors is likely (for example, extension of the US-36 freeway Bus Rapid Transit into Boulder along 28th Street and Broadway).

- **park-n-Ride Lots and Transfer Point**s – Parking capacity at existing park-n-Ride lots will be expanded as appropriate and new lots will be established, particularly along rapid transit corridors and in newly developed areas. RTD will provide a system of timed transfer points known as FastConnects that will enable convenient bus-to-bus, bus-to-rail and rail-to-bus transfers.

- **call-n-Ride Service** – RTD will continue to provide call-n-Ride transit service door-to-door with smaller buses in suburban areas and freestanding communities that do not have sufficient demand to warrant fixed-route service and door-to-station to serve the rapid transit system.

- **Specialized Transit Service for the Elderly and People with Disabilities** – RTD provides Americans with Disabilities Act service through its access-a-Ride program. All fixed-route buses are wheelchair lift-equipped and trains will be wheelchair accessible. Private non-profit agencies and local government-sponsored providers will provide additional service. Senior centers and churches will also provide many trips.

- **Rural and Intercity Service** – Service to areas outside the RTD boundaries will be available through specialized providers. Improved intercity bus service may be an interim step in some of Figure 15's intercity corridors.

- **Private Service** – Private bus and van service will continue to be important for workers and visitors to the gaming establishments in Central City and Black Hawk as well as for skiers and visitors traveling between Denver International Airport and the mountain resort communities. Private intercity carriers such as Greyhound and the Texas, New Mexico and Oklahoma bus company are anticipated to provide intercity passenger service and other companies also will provide service between Denver and Mexico.

Pedestrian and Bicycle Facilities

The continued construction of pedestrian and bicycle facilities--combined with efficient land development design--can reduce the growth of motor vehicle travel and lead to reductions in air pollutant emissions and energy consumption. Such facilities are key to implementing urban centers and improving access to transit stations. They can also help residents incorporate healthy physical activities into their daily travel routines. The following types of facilities for non-motorized travel will be provided with a primary focus on travel for work, personal trips, business and shopping:

- Continuous sidewalks
- Appropriate intersection treatments including crosswalk markings, pedestrian signal indicators, signal actuation and road narrowing techniques
- Multipurpose trails (off-street "bike paths")
- Bicycle lanes--exclusive on-street and bicycle signal actuation
- Paved shoulders and wide curb lanes
- Key connections such as cul-de-sac cut-through paths and straightforward connections through developments to building entrances
- Overpasses and underpasses

A system of regional and community bicycle corridors is detailed in the Pedestrian and Bicycle Element of the Regional Transportation Plan, which also lists specific pedestrian and bicycle policies adopted by DRCOG. Supporting amenities such as bicycle racks on buses, parking racks and lockers, and trail and route guide signs will help encourage greater bicycle use.

Multimodal Passenger Facilities

The regional transportation system is composed of a number of parts (different modes, passenger and commercial facilities, surface and air transportation, etc.) that together make up a system serving the Denver region and connecting it to other parts of the state, the nation and the world. Denver International Airport will be the most important transfer point in the state for air passenger traffic, providing connections to national and international destinations. Ground connections between Denver International Airport and the Denver region and state are important.

Denver Union Station will become a major intermodal passenger terminal serving regional as well as state and national passenger service. Commuter rail, light rail, intercity rail, Amtrak, RTD buses, intercity buses, cars, taxis, trucks, bicyclists and pedestrians will all converge at Denver Union Station.

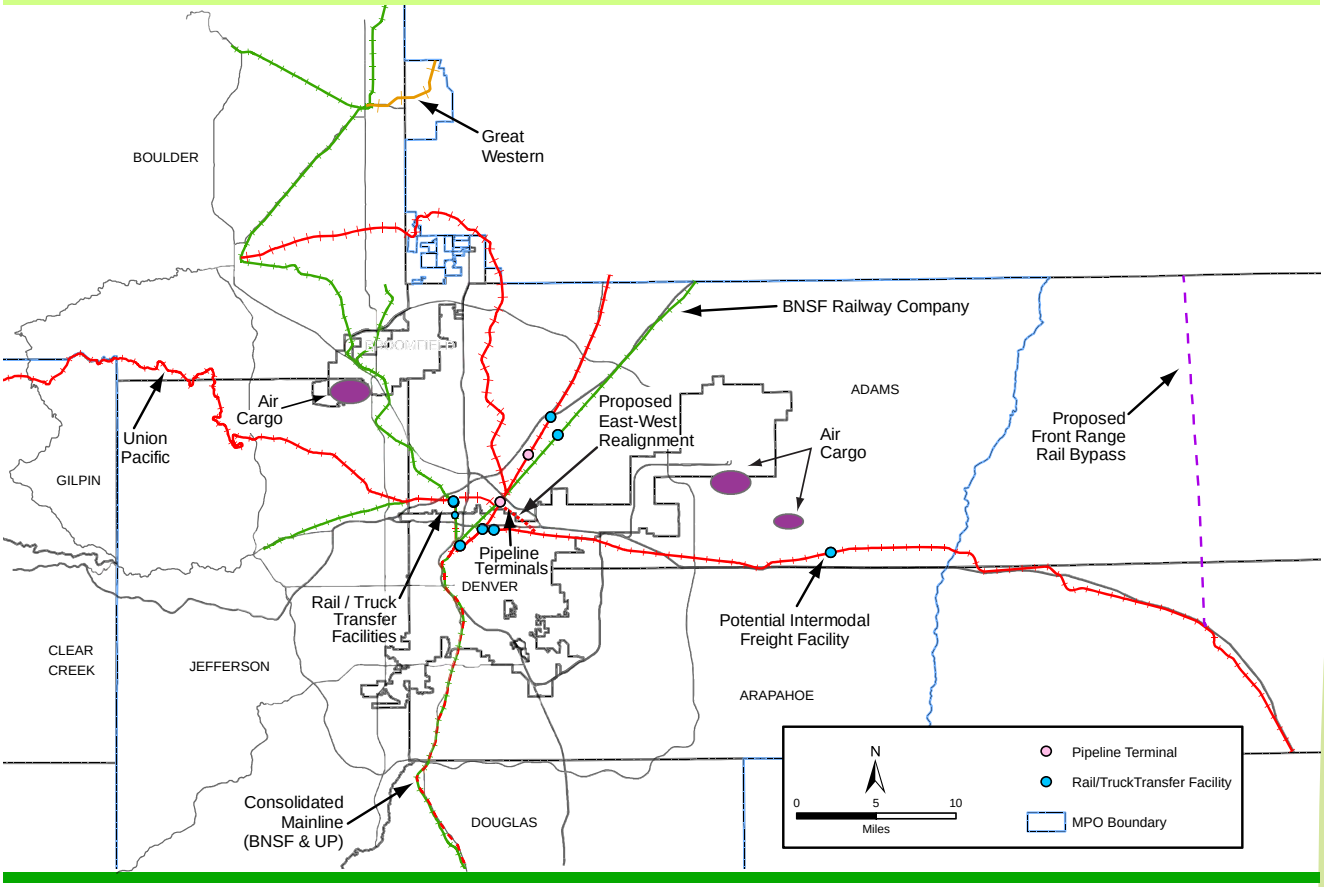
As previously mentioned, there will be numerous transit stations and park-n-Ride lots for people to reach RTD trains and buses via their personal vehicles, by bicycle or on foot. Carpool lots such as the one recently expanded at I-70 and Hogback Road will allow people to park a vehicle and carpool to and from work, activities or trips to the mountain resorts.

Metro Vision 2035 will improve our region's quality of life.
Metro Vision 2035 will encourage economic growth and job creation by planning for a state-of-the-art transportation system while preserving and creating open space and protecting our air and water. These benefits make the region desirable to new or relocating businesses while encouraging local businesses to stay and reinvest in their communities.

Freight Railroads

Historically, the Denver region grew up in the late 1800s around the railroad lines. Only two major railroad companies serve Colorado today, the Union Pacific Railroad and BNSF, but they carry an enormous amount of freight to, from and through the Denver region. Several dozen freight trains serve or pass through the region daily. Figure 20 shows the freight railroad facilities. Train crossings create major problems with safety and traffic congestion. New railroad grade-separations (bridges) are under construction and others will be built in the future.

FIGURE 20 FREIGHT RAILROAD FACILITIES



The construction of a new freight railroad line to the east of Denver is envisioned that would divert a significant number of north-south trains out of communities such as Castle Rock, Littleton, Denver, Commerce City and Brighton. This may permit use of some existing freight lines for commuter or inter-city passenger rail service. The costs and benefits of this railroad relocation have been identified and arrangements are being completed to undertake the next planning phase for this effort. There is strong interest from several affected parties, including local communities, in pursuing this idea. The Union Pacific Railroad is also pursuing east-west realignments to improve operational efficiency through Denver.

Intermodal Freight Facilities

The movement of freight, goods and packages to, from and within the Denver region is extremely important to Colorado's economic vitality. Major intermodal freight terminals transfer large amounts of cargo between rail cars and trucks at the railroad intermodal terminals in Denver. Additionally, many new automobiles arrive in Colorado via train and are transferred to trucks at intermodal terminals in Commerce City. Thousands of packages and containers are transferred daily between airplanes and delivery trucks and vans at air cargo terminals adjacent to Denver International Airport. In addition, Front Range Airport is envisioned to become a freight terminal and Rocky Mountain Metropolitan Airport anticipates a moderate increase in air cargo activity of the type that currently utilizes the facility.

Relocation of key rail-truck intermodal facilities from the central urban core will occur as rail right-of-way is obtained to build certain of the Tier 1 rapid transit corridors. The railroads are currently reviewing opportunities for relocating existing facilities. Potential locations for new rail-truck intermodal facilities are east of E-470 near Front Range Airport and north of the DRCOG region between Brighton and Fort Lupton.

System Management and Operations

Actions to actively manage the transportation system and improve efficiency are especially important as congestion worsens. Technology and commitment of personnel to operate, troubleshoot and monitor devices to make real-time system changes and disseminate information to the public will achieve significant benefits to traffic and transit operations. Actions that will be implemented include:

- Traffic signal system improvements
- Site-specific operational improvements (e.g., intersection turn lanes, acceleration/deceleration lanes and slow-moving vehicle lanes)
- Bus operation improvements and passenger information systems (signs announcing bus arrival times)
- Driver information systems such as variable message signs
- Incident management such as courtesy patrols, highway shoulders for disabled vehicles, and coordinated incident management plans and procedures
- Intelligent Transportation System improvements
- Access management on major regional and principal arterials and on freeways (i.e. ramp metering)

Most of these actions and systems are described in greater detail in a companion document, the Regional Intelligent Transportation System Strategic Plan.

Travel Demand Management

The goal of travel demand management strategies is to reduce the demand for single-occupant vehicle travel, either by eliminating trips, shortening trips, changing the mode of travel or changing the time of day the trip is made. Such travel reductions aid in improving air quality and reducing congestion. The Regional Travel Demand Management Strategic Plan includes strategies and activities that will be implemented such as:

- Enhanced and geographically focused carpool/vanpool and schoolpool marketing and facilitation
- Encouragement of teleworking
- Efforts to encourage employers to shift to variable work schedules
- Promotion of and availability of alternative travel modes (walking, bicycling, transit)
- Promotion of development design principles that encourage alternative travel modes.

Safety

About 240 people die and about 27,000 are injured in more than 75,000 traffic crashes in the Denver region each year. Motor vehicle crashes are the number one cause of death for persons aged 1-35. These events dramatically impact the region's quality of life. Related impacts of crashes such as traffic congestion also have an economic impact on citizens and businesses. Planning, traffic engineering, and vehicle designs will not eliminate all crashes since human behavior is the primary cause of 80 percent of crashes. However, these efforts can potentially reduce the likelihood of a crash occurring or can reduce the severity of crashes at certain locations. Measures such as fencing along railroad and light rail lines will be considered where the need for enhanced pedestrian safety exists. Safety issues will be strongly considered when specific projects are evaluated, programmed, designed and constructed. Support will be given to legislation that aims to cost-effectively improve the safety of all transportation users.

Security

A transportation system that is secure in terms of the infrastructure itself and for its many users requires the collaborative and coordinated efforts of many departments of local, regional, state and federal agencies. Vulnerabilities of the multimodal transportation system and potential threats will be evaluated and appropriate responses formulated and implemented. How transportation facilities and services are expected to be used to respond to homeland security incidents and natural disasters will be defined. Projects, strategies and procedures that aid in the efficient movement of people during such incidents will be implemented. Airports will maintain strict security measures for employees, passengers and freight.

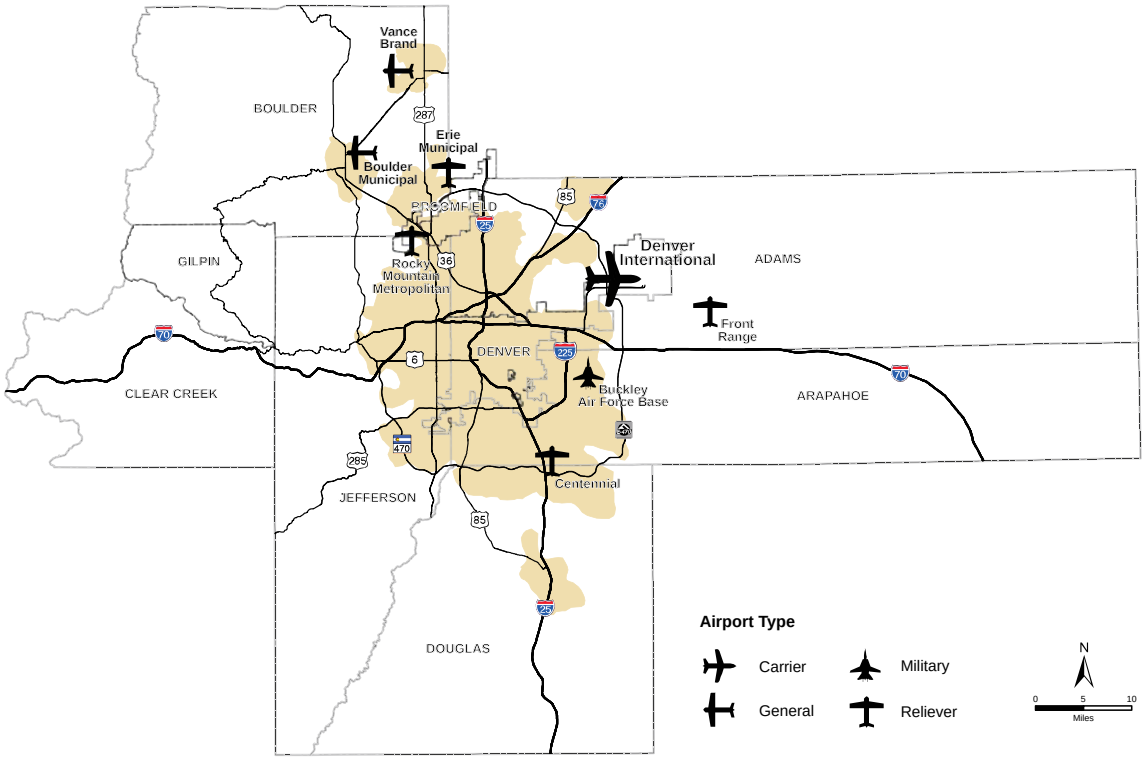
System Preservation

It is extremely important for the region to preserve and maintain the existing system of major capital facilities such as sidewalks, bicycle facilities, rapid transit guideways, transit vehicles, roadways, bridges and other facilities. Maintaining systems management infrastructure such as traffic signals, traveler information systems, pavement markings and signs is equally important. As new transportation facilities are proposed for construction, the cost for future maintenance will be considered.

Aviation

Air transportation is an important element of the regional transportation system. The existing airports - Denver International, Boulder, Centennial, Front Range, Rocky Mountain Metropolitan (formerly Jefferson County), Erie Municipal and Vance Brand – will continue to serve the region into the future (Figure 21). No

FIGURE 21 **AIRPORTS SERVING THE DENVER REGION**



additional airports are envisioned. In addition to these facilities, Buckley Air Force Base in Aurora is included in the region's aviation system for air traffic control and to ensure cooperation with the impacted local governments.

The function of each airport will ensure that all general aviation needs are addressed. Denver International Airport will serve as the region's air passenger carrier airport. Boulder, Vance Brand and Erie Municipal airports are basic general aviation airports. They will primarily serve smaller aircraft for recreational and business purposes. Centennial, Rocky Mountain Metropolitan and Front Range airports are general aviation facilities that will serve high volumes of business aircraft. Front Range Airport is envisioned to become a major air cargo facility. Rocky Mountain Metropolitan Airport anticipates a moderate increase in air cargo activity of the type that currently uses the facility.

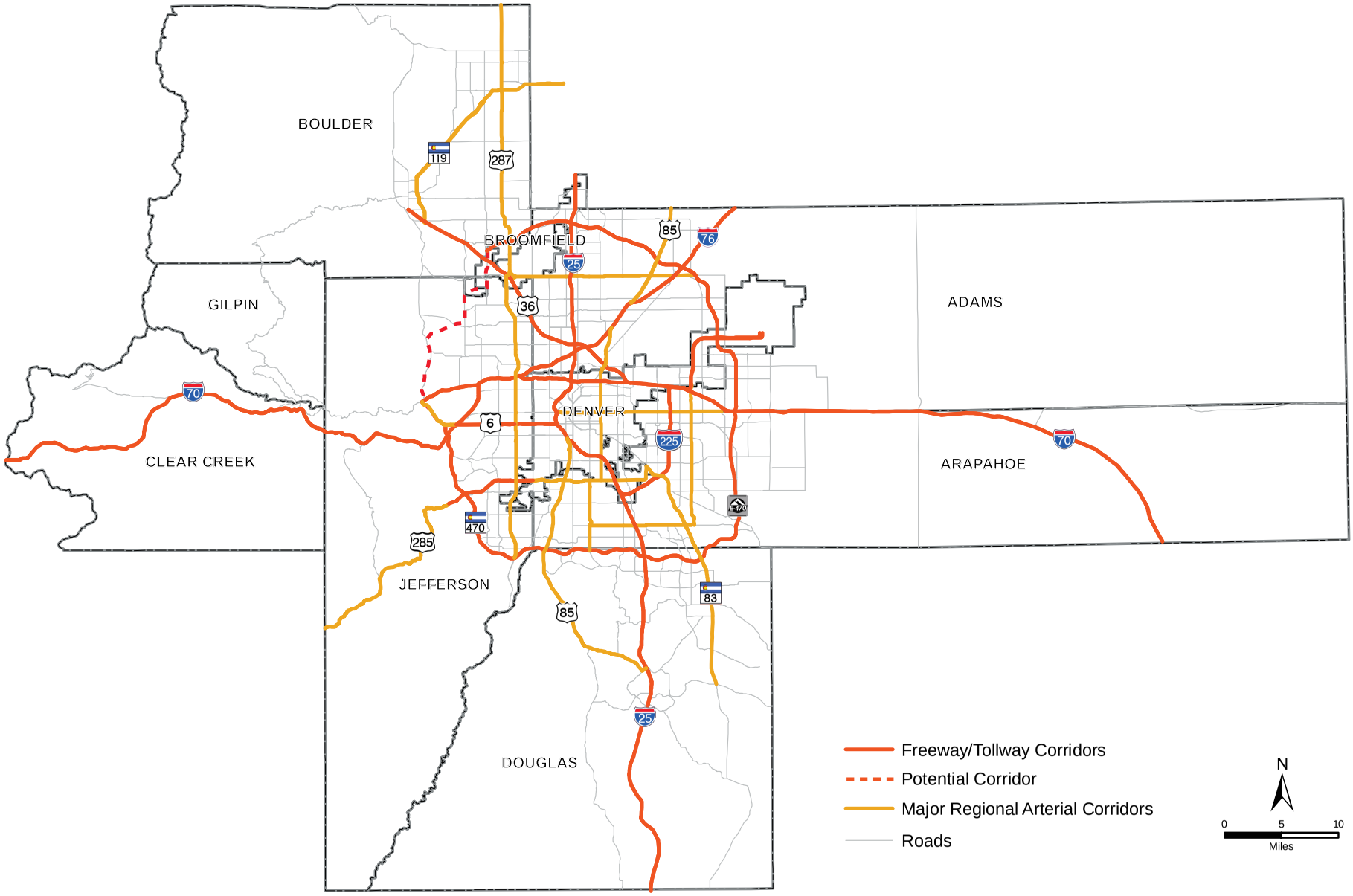
As business travel continues to grow in Colorado, the role of general aviation airports as "reliever" facilities becomes increasingly significant, providing alternatives to Denver International Airport for private and corporate flights. Increased business travel at these airports may in turn stimulate airport-related and other development activity on adjacent land and in the surrounding communities, providing jobs in aviation-supporting industries as well as other industries.

Airports are important to the region's economy and are a limited resource. Good access will be provided to them. Responsible land use regulation to protect airports from encroachment of incompatible development is essential. At the same time, airport operations will be sensitive to noise impacts on adjacent land uses. Metro Vision strongly encourages airport operators and affected local governments to collaborate in addressing potential conflicts between increased airport operations and surrounding land uses. To assist, DRCOG has developed guidelines for land use planning around airports (refer to the "Airport Compatible Land Use Design Handbook").

Multimodal Corridor Visions

To better portray the individual components of the regional transportation system in a coordinated, comprehensive, geographically focused fashion, along with relevant growth and development expectations and environmental concerns, the 2035 Metro Vision Regional Transportation Plan presents detailed "corridor visions" for the multimodal corridors depicted in Figure 22. The corridor visions present the unconstrained visions for transportation facilities and services deemed necessary to influence and respond to future growth. The corridor visions include:

- a statement of the vision for the corridor
- primary goals/objectives of the corridor
- relevant, recent transportation studies within the corridor
- corridor context in terms of current conditions and expectations of growth and development through 2035
- overview of selected environmental resources
- presentation of the roadway capacity, transit and pedestrian/bicycle facilities desired in the corridor
- needed corridor systems management, travel demand management, safety and preservation strategies and actions.


BOULDER
BROOMFIELD
GILPIN
ADAMS
DENVER
CLEAR CREEK
ARAPAHOE
JEFFERSON
DOUGLAS
119
287
85
76
25
36
70
6
225
470
285
83
Freeway/Tollway Corridors
Potential Corridor
Major Regional Arterial Corridors
Roads
N
0
5
10
Miles

Fiscally Constrained Transportation Element

DRCOG estimates the total cost to implement, operate and maintain the entire Metro Vision 2035 transportation system, as presented in this plan, is about $128 billion. However, the current estimate of reasonably expected revenues through 2035 is only $88 billion. This includes approximately $4 billion voters approved for RTD to implement the FasTracks transit plan. Federal law requires DRCOG to prepare a fiscally constrained transportation plan that assumes only reasonably expected revenues. The fiscally constrained plan must be shown to conform to the State Implementation Plan for air quality, and also pass regional budget tests for the emission of pollutants from motor vehicle sources. The Fiscally Constrained 2035 Regional Transportation Plan is detailed in the 2035 Metro Vision Regional Transportation Plan, a companion document to the Metro Vision Plan.