



# THE DENVER REGIONAL EQUITY ATLAS

Mapping Access to Opportunity at a Regional Scale



MileHighConnects

# Acknowledgements Page

## About The Atlas

The Denver Regional Equity Atlas is a product of Mile High Connects (MHC), which came together in 2011 to ensure that the region's significant investment in new rail and bus service will provide greater access to opportunity and a higher quality of life for all of the region's residents, but especially for economically disadvantaged populations who would benefit the most from safe, convenient transit service. The Atlas visually documents the Metro Denver region's demographic, educational, employment, health and housing characteristics in relation to transit, with the goal of identifying areas of opportunity as well as challenges to creating and preserving quality communities near transit.

## Primary Authors

The Atlas is a collaborative effort between two MHC members, the Piton Foundation and Reconnecting America. Additional support was provided by MHC's Research and Evaluation steering committee.

### ***Reconnecting America***

Reconnecting America is a national nonprofit that works to better communities – places where transportation choices make it easy to get from place to place, where businesses flourish, and where people from all walks of life can afford to live, work and visit. Reconnecting America conducts research, provides technical assistance, advocates for public policy, builds on-the-ground partnerships, and convenes the players necessary to accelerate decision-making. Reconnecting America is the managing partner of the Center for Transit-Oriented Development, the only national nonprofit effort dedicated to providing best practices, research and tools to support market-based transit-oriented development.

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### ***Piton Foundation***

The Piton Foundation provides opportunities for children and their families to move from poverty and dependence to self-reliance. The Foundation's Children's Corridor initiative, which overlaps significantly with the East Line transit corridor, aims to focus community resources, energy and ideas on more effective, accessible health and education services that help children grow into self-reliant and successful members of society.

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## About Mile High Connects

### What We Are

Mile High Connects is an emerging collaborative of nonprofit and philanthropic organizations working together to ensure that the creation of the region's \$6.7 billion FasTracks transit system benefits all communities in the region, including low-income populations.

### Our Vision

Mile High Connects ensures that the Metro Denver regional transit system fosters communities that offer *all* residents the opportunity for a high quality of life.

### Who We Are

Mile High Connects includes the following partners:

- Anschutz Family Foundation
- The Denver Foundation
- First Bank
- FRESC: Good Jobs, Strong Communities
- Housing & Homelessness Funders' Collaborative
- Kaiser Permanente
- Linda D. Campbell Fund
- Piton Foundation
- Rose Community Foundation
- Urban Land Conservancy
- Wells Fargo Bank
- The Colorado Health Foundation
- Enterprise Community Partners
- The Ford Foundation
- Gates Family Foundation
- J.P. Morgan Chase Foundation
- L.P. Brown Foundation
- Living Cities
- Reconnecting America
- Surdna Foundation
- U.S. Bank

As MHC evolves we will continue to build partnerships with private- and public-sector entities as well as other nonprofit and philanthropic organizations.

### What We Do

Our primary goal is to ensure that the creation of FasTracks improves accessibility to affordable housing, good-paying jobs, essential services, educational opportunities, improved health, and other elements of a high quality of life for all of Metro Denver's residents, especially those with lower incomes. To do this, we are:

- Providing a vision and roadmap for FasTracks and the development around FasTracks stations to help improve opportunities for all communities, including low-income neighborhoods.
- Working across city and county lines to create a shared vision and build a movement for people throughout the eight-county Metro Denver area to improve the quality of life across the region.
- Convening private, public, and nonprofit leaders and community groups that have a stake in the build-out of the FasTracks system to ensure all communities, including lower income, benefit from its construction.
- Investing in various projects around the region that are designed to ensure equitable outcomes in the FasTracks build-out process.

### Who Supports Us

Our work is made possible by the generous contributions of our members and by contributions from the Ford Foundation's Metropolitan Opportunity initiative, the Surdna Foundation, and Living Cities.

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## Executive Summary

### Introduction

The Metro Denver region has embarked on one of the most ambitious and extensive investments in new rail and bus service in the United States. This investment has the potential to expand the reach of opportunity for many people, providing better connections among housing, jobs and other essential destinations. New service will provide more transportation options to parts of the region where congestion and its effects have become costly and time-consuming. Other regions are watching closely to see how the network is built out and if transit can spur new development and redevelopment in station areas. In anticipation of transit service, many of the region's cities and counties have prepared land-use plans for new stations, with transit-oriented development (TOD) as the key outcome. Within walking distance of most transit stations, communities hope to build a mix of housing, office, shopping and other essential community resources to create a unique sense of place and to reduce reliance on automobiles.

Improving access to opportunity via transit is especially important to households with lower incomes, who spend a greater proportion of their income on housing and transportation. Ensuring that transit-oriented communities remain affordable and inclusive is a major concern for those segments of the population who rely on transit the most. Moreover, making the connection between transit and important issues such as education, health and economic development requires significant capacity building and collaboration to help stakeholders and decisionmakers understand how better transit service combined with TOD can benefit the entire Metro Denver region.

To help visualize the connections between the places people need to go and the transportation options available to them, Mile High Connects has created this Regional Equity Atlas, which maps the region's major origins and destinations in relation to the current and future transit network, emphasizing the enhanced access to opportunity that transit will provide. The goal of this document is to help raise awareness about the benefits and opportunities that a robust public transportation network can create, including how issues such as housing, jobs, education and health are integrally linked to transportation. The Atlas will also establish a baseline for measuring equitable outcomes as the transit network is built out. Finally, it will further build the case for why the Metro Denver region needs to focus on creating and enhancing access to opportunities through affordable transportation options and development oriented around these new transit lines.



RACTOD on Flickr.com / Creative Commons

The following five topics form the organizational structure for the atlas:

1. Population and Demographic Characteristics of the Region
2. Access to Affordable, Quality Housing Options
3. Access to Jobs and Economic Development Opportunities
4. Access to Educational Opportunities
5. Access to Health Care, Healthy Foods, and Recreational Facilities

Data was collected for seven counties in the Metro Denver region – Adams, Arapahoe, Boulder, Broomfield, Denver and Jefferson – and analyzed down to the lowest geography available. Geographic information system (GIS) software was used to spatially analyze the data and produce maps illustrating the findings. Each map shows the existing and proposed transit network.

This executive summary includes several maps per issue area that explore the relationship to transit in greater detail. Separate reports are available for each issue area that contain the full set of maps and further analysis.

## Key Findings

The maps convey the following overarching messages for the Denver region:

### ***The region has a tremendous opportunity to increase transportation options through transit expansion***

When built out, the transit network will better connect people to jobs, health care providers, schools, grocery stores, parks and other essential destinations. Moreover, the enhanced transit connections will increase the number of walking and bicycling trips as people walk or bike to their nearest transit station, which will in turn connect them to even more destinations.



Denver Regional Transportation District

### ***Last-mile connections are essential to make transit a viable transportation alternative***

Many important destinations lie outside a comfortable walking distance from transit stations. Many people may still choose to drive if they cannot safely and conveniently take public transportation to work, school, the grocery store and other essential destinations. Communities need to invest in pedestrian and bicycle infrastructure that will connect people to the places they need to go within the station area and farther afield.

### ***The region is interdependent***

Opportunities and resources in the region are dispersed, and people need quality transportation infrastructure in order to access these goods and services. New rail and bus services will not by themselves connect everyone to every place they need to go, but they will improve access to many important destinations.

### ***Many low-income and other economically disadvantaged populations cannot currently take advantage of affordable transit choices***

Poverty is a regional problem, not a just central-city issue. Pockets of poverty in suburban communities lack adequate access to jobs, schools, and essential services. These areas, along with more urban, centralized communities, would benefit from better access to public transportation, as well as more supportive environments for walking and bicycling. Living near transit and in pedestrian- and bike-friendly neighborhoods can help low-income families keep costs down by reducing their reliance on automobiles. Driving less often can also lead to improved health outcomes.

### ***Completion of the regional transit network will improve access to opportunities for low-income populations***

The existing and future transit lines run through many neighborhoods with lower household incomes and lower levels of educational attainment, yet they also run through major employment and retail centers, many of which contain hospitals, grocery stores, schools, and other places that provide essential goods and services. Therefore, many of these economically disadvantaged groups will be better connected to jobs and other places of importance as the transit network grows.

### ***Many of the region's affordable housing units are located near current or future transit stations, but increased demand for living near transit may cause gentrification and displacement pressures***

The demand for housing near transit across the country is expected to grow exponentially in the coming decades. As a result, the cost to live in these neighborhoods is expected to rise. The region already has several mechanisms for this but more will be needed as the transit network expands.

### ***This is a once-in-a-lifetime opportunity for the region***

Unlike cities with long-established transit systems, Denver's system is still in its infancy. With major construction under way, now is the time to leverage this massive investment. Land-use decisions should align with the transportation plans to co-locate the elements of a prosperous, equitable, and sustainable region: affordable housing, job centers, educational institutions, quality-of-life amenities and community resources such as day care, markets, health centers, and commercial districts. Local transportation planning must also facilitate connections between different modes of transportation to make it safe and convenient for people to reach destinations by a means other than a personal automobile.

## Connecting Dots Between Transit And Other Regional Priorities

The maps in this Atlas paint a picture of where people currently live and where the opportunities and challenges are to improving their quality of life. The maps also provide a vision of what the region might look like as new transit lines open and communities become better connected within the region. Thus the maps provide both a current and future look at access to opportunity. This document starts with a brief overview of public transportation, then discusses the issue areas in the following order: population and demographics, housing, jobs, education and health.

## Public Transportation in Denver: Why Does It Matter?

**Map EXS-1: Overview of Denver Region Transit System** shows current and future transit network. It includes fixed-guideway transit – light rail, BRT and commuter rail – and high-frequency bus service, which is defined as having 10 to 15 minute frequencies during peak hours.

Effective transit networks reduce traffic congestion and air pollution and offer a cost-effective alternative to owning and maintaining an automobile. According to the American Public Transportation Association, the average driver in Denver could save \$834 a month by switching to transit, or about \$10,000 per year.<sup>1</sup> This is especially critical for lower income households, who often spend a disproportionate percentage of their income on their combined housing and transportation costs. For low-income households who already utilize public transit regularly, the expanded service can improve their access to education, jobs and other essential destinations. Public transportation also has health benefits derived from increased daily exercise as transit riders walk and bike to and from stops.

## Population and Demographics

### **Maps in this section:**

- Distribution of Race & Ethnicity in Denver Region
- Concentration of Low-Income Households in the Denver Region
- Distribution of Denver Residents Who Are 55 and Older

Overlaying population and demographic data with the transit network identifies locations of high and low access to opportunity. Often there is a mismatch between places with good transit service and those that need it most. This is especially true with lower income neighborhoods and communities of color.

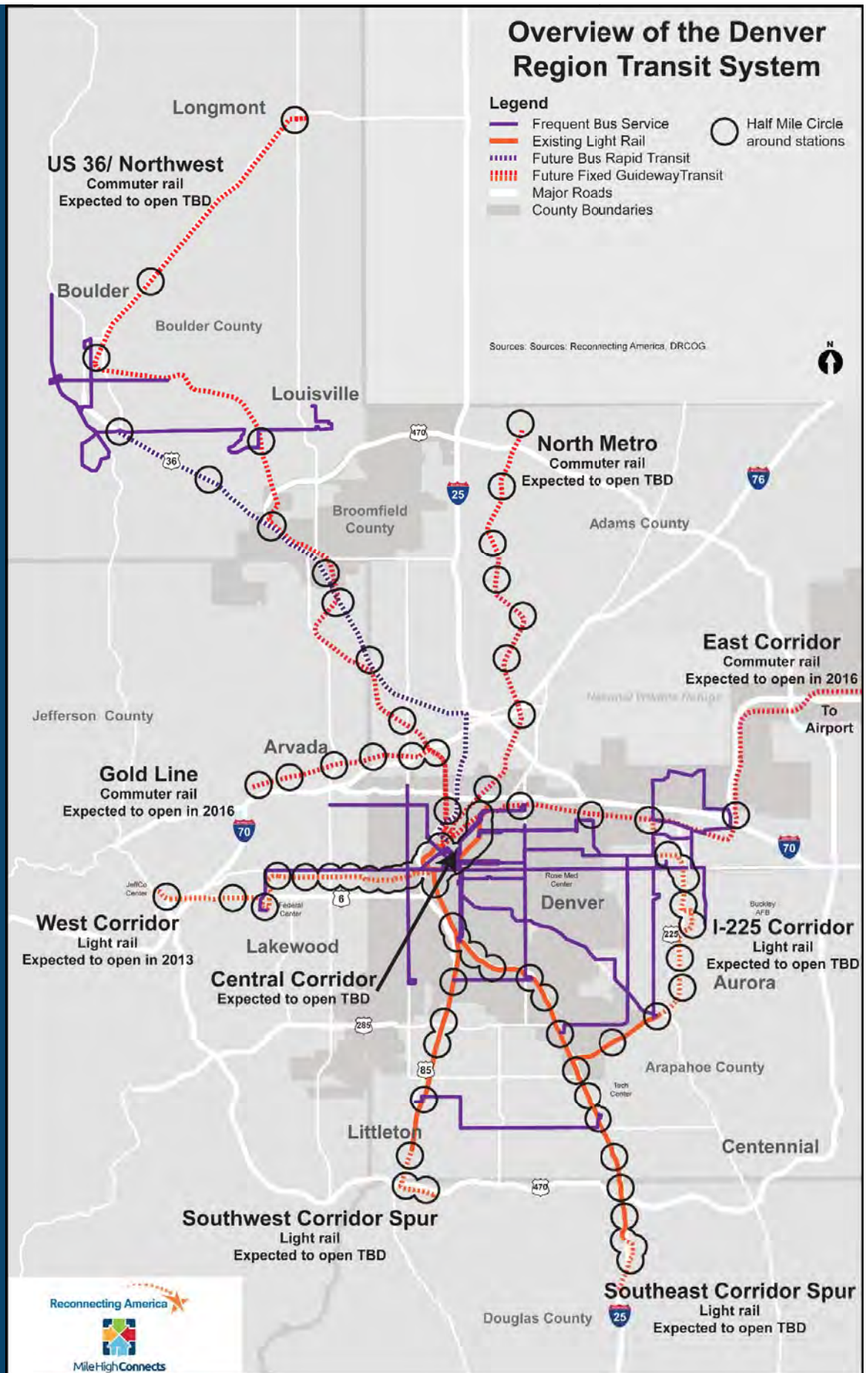
The following key findings describe some of the major population and demographic characteristics of the Metro Denver region:



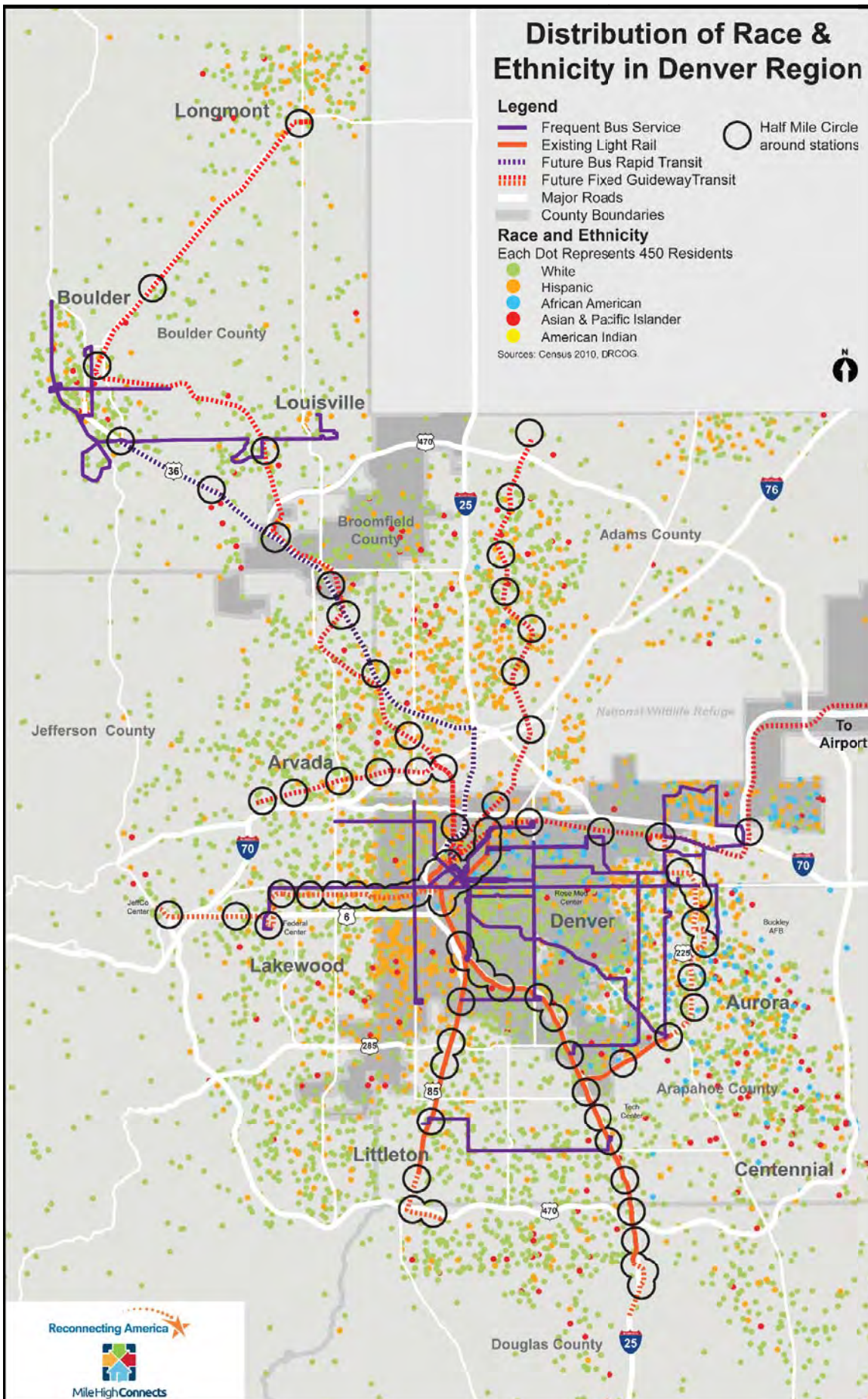
James Roy II / Creative Commons

### ***The Metro Denver region's racial and ethnic populations are highly concentrated***

**Map EXS-2: Distribution of Race & Ethnicity in Denver Region** illustrates the racial and ethnic breakdown of the Metro Denver region. The Hispanic population is most prevalent in western Denver and Lakewood, and the African American population is concentrated in Denver's northeast neighborhoods and northwest Aurora. There is also a large Hispanic population in



Map EXS-1:  
Overview of  
Denver Region  
Transit System



Map EXS-2:  
Distribution of  
Race & Ethnicity  
in Denver Region



the northern part of the region between the two planned rail lines, as well as in Aurora along the I-225 Corridor.

***New transit service will provide better connections to the north, east, and west, but not to the southwest***

Because many of the planned transit stations are extensions to the suburbs, the neighborhoods with more nonwhite residents may not benefit from direct connections to the fixed guideway system. While many of these neighborhoods do have high-frequency bus service connecting them to the regional transit network, the future rail and bus rapid transit network as a whole skips over many communities of color. Improving connections to stations will be critical to ensuring access to opportunities.

***Many planned transit lines will traverse low-income neighborhoods, better connecting them to opportunity but also potentially disrupting them***

Spatial income patterns often reflect racial and ethnic concentrations. **Map EXS-3: Concentration of Low-Income Households in the Denver Region** shows where low-income households are concentrated. Low-income households are defined as those earning 80% or less of the area median income (AMI), which is \$47,968.<sup>2</sup> The majority of transit station areas are in low-income neighborhoods, especially along the West Corridor, Gold Line, and I-225 Corridor. Longmont and Boulder also have a high percentage of low-income households. Completion of the system will provide greater access to opportunity for these residents, but it also raises concerns about gentrification and displacement as demand for housing near transit grows beyond the supply and puts pressure on housing costs.

***Even at full build-out, many lower income neighborhoods will remain too far from frequent transit***

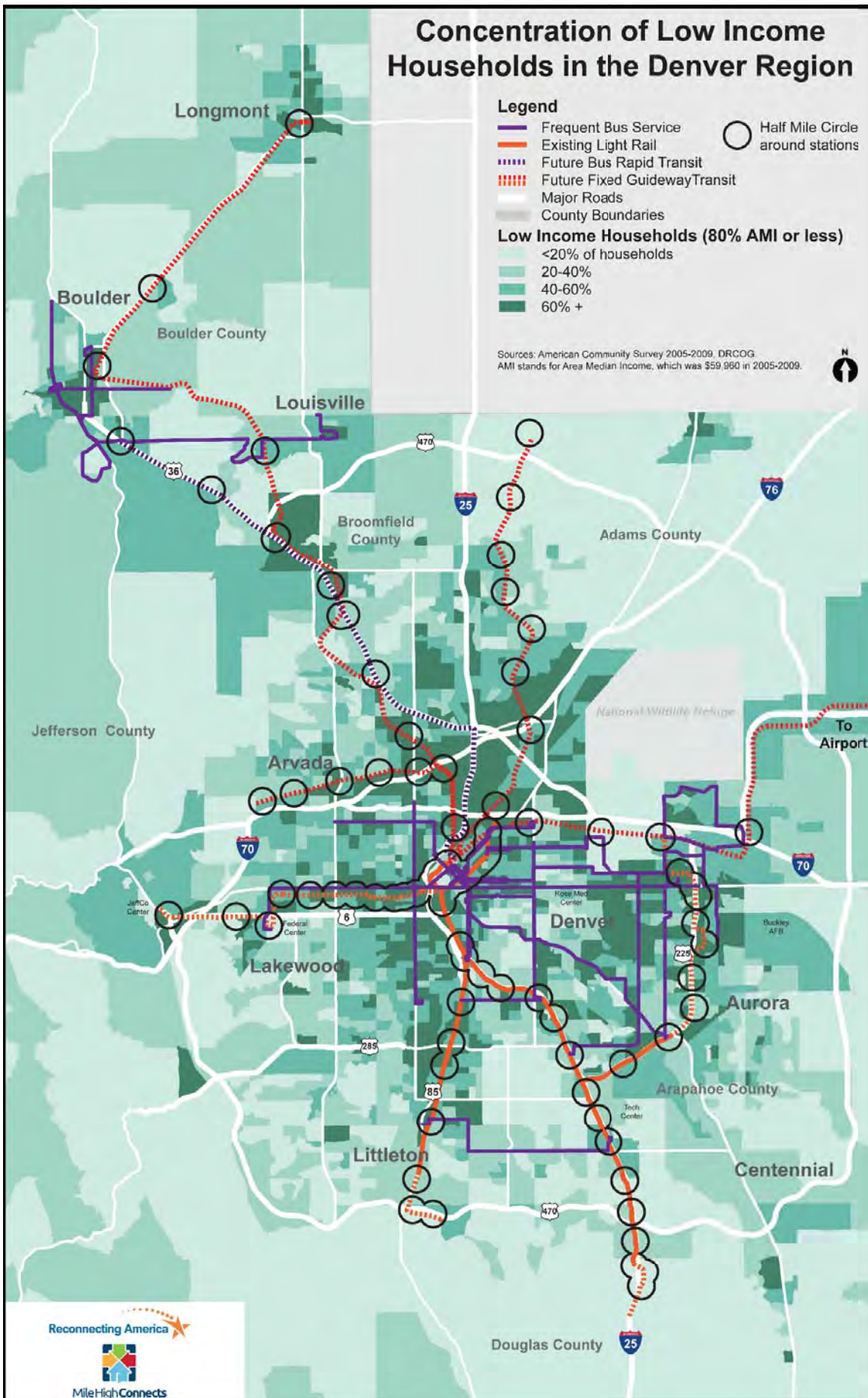
Many low-income neighborhoods in southwestern Denver and Aurora will still be far from quality transit service. While many low-income neighborhoods have high-frequency bus routes nearby, they will need stronger connections to light rail to be able to take advantage of the expanded network. These neighborhoods also need better pedestrian and bicycle connections to stations, as many neighborhoods lack sidewalks and bike lanes. Another area of concern is North Denver, where the Globeville and Elyria-Swansea neighborhoods are split by interstate highways. The presence of the highways and other busy roads will make access to the new stations difficult.

***Poverty in Denver is a regional issue. It is not concentrated within Denver and Aurora***

In the last decade, the poverty rate in Denver's suburbs rose 96.4%.<sup>3</sup> This is a national trend that is a cause for concern, since communities that lack access to regional opportunities are likely to decline. In 1999, large U.S. cities and their suburbs had roughly equal numbers of poor residents, but by 2008 the number of suburban poor exceeded the poor in central cities by 1.5 million.<sup>4</sup> Poverty rates are still higher in central cities (18.2% vs. 9.5% in 2008), but poverty rates are increasing at a quicker pace in suburban areas.

***The region's aging population is growing in suburban areas that lack quality access to transit***

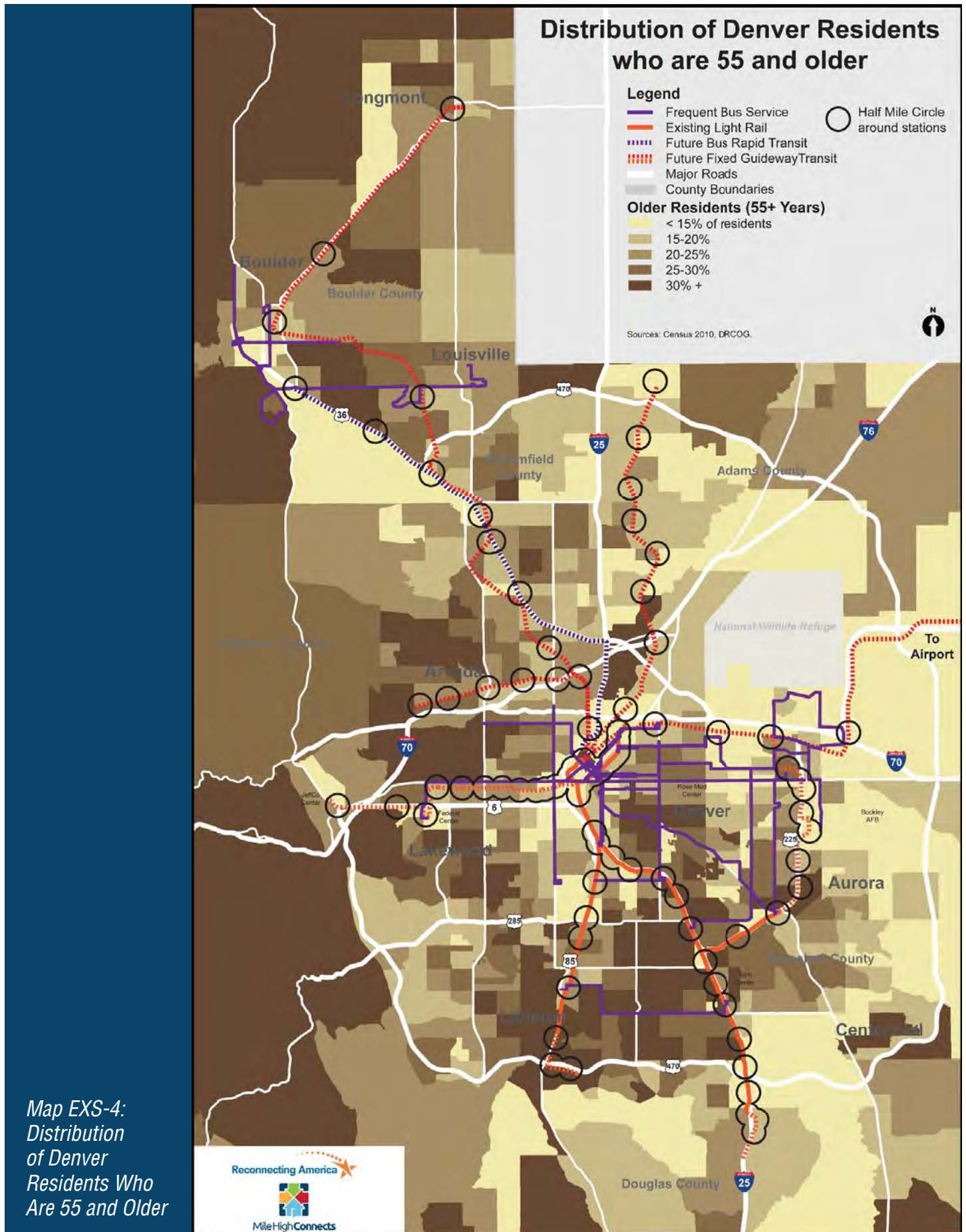
**Map EXS-4: Distribution of Denver Residents Who Are 55 and Older** shows where Metro Denver's residents age 55 and older live. There are high numbers of these along the Southwest and Southeast corridors, which are already in service. Station areas along these lines may present opportunities for senior housing. There are also large numbers of older adults between the West and Gold Lines and in northern Denver on the North Metro Corridor. While connections to job opportunities are not as critical to this age cohort, service to health care centers, recreational options, and food and retail stores are important considerations. These areas will need a combination of connections to the regional transit network and neighborhood improvements making it safe for walking and accessing transit. The aging of the population will continue to be a challenge for the region and the state. Over the next five years, the number of Colorado residents 60 years and older will grow by 30%, rising to more than 1 million. By 2035, one of every four residents in the Denver region will be 60 years old or older.<sup>5</sup>



*Map EXS-3:  
 Concentration  
 of Low-Income  
 Households  
 in the Denver  
 Region*







# Housing

## Maps in this section:

- Distribution of Federally Assisted Housing in the Denver Region
- Overview of Denver Region’s Supply of Affordable Housing

Historically, housing has been considered affordable if it constitutes no more than 30% of a household’s annual income.<sup>6</sup> However, with the rise of transportation costs over the last 100 years, experts today agree that the combined cost of housing and transportation is a better measure. The combined cost gives a better sense for what a housing choice really means for a family. The amount of money a household spends on transportation is directly connected to the location of their home. When transportation costs are added to the cost of renting or owning a home, many places that seemed affordable are shown to be more expensive. Instead of using the metric of less than 30% income for housing, a better measure of affordability is that the combined housing and transportation cost constitutes no more than 45% of a household’s income.<sup>7</sup>

While almost seven out of ten communities in the United States (69%) meet the 30% affordable housing cost threshold, only four out of ten (39%) meet the 45% affordable housing and transportation cost threshold. The Center for Neighborhood Technology estimates that for every dollar a working family saves on housing, it spends 77 cents more on transportation (as of 2006).<sup>8</sup> This is especially true of places far from regional employment centers and local amenities – where driving long distances is the only way to get around.

One outcome of Metro Denver’s transit investment will be new development in areas surrounding stations. This will help lower housing and transportation costs for people who choose to live there. Transit-oriented development (TOD) is generally defined as higher-density, mixed-use development within walking distance – a half-mile – of transit stations. But TOD is also about creating attractive, walkable, sustainable communities that allow residents to have housing and transportation choices and to live convenient, affordable, pleasant lives – with places to raise a family and retire comfortably.

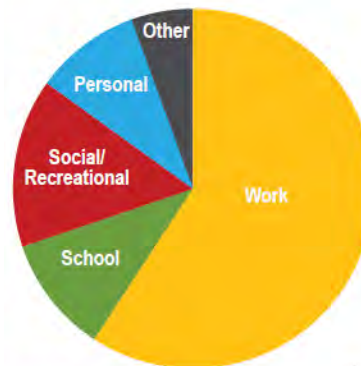
In the Metro Denver region, demand for housing near transit could grow to 155,000 households by 2030, up from 45,000 in 2006.<sup>9</sup> The Center for Transit-Oriented Development (CTOD) estimates that at least 40% of the demand for TOD in the Denver region will come from those making less than 80% of the area median income, which was \$51,600 for a family of three in 2006.<sup>10</sup> The high demand for housing near transit may push the price of housing too high for those who would benefit financially from living in a compact, transit-oriented community. The potential for rents to rise as transit station areas are redeveloped poses displacement concerns for lower income residents who could be forced to move.

The following key findings describe some of the major opportunities and challenges related to housing and transit.

### **Affordable housing is plentiful near transit, but major gaps remain**

**Map EXS-5: Distribution of Federally Assisted Housing in the Denver Region** displays the locations of federally subsidized affordable housing<sup>11</sup> within the Metro Denver region. A majority of this housing is close to existing or planned fixed-guideway transit, or along bus routes with frequent service, such as Parker Road and Colfax Avenue. A few outlying developments in

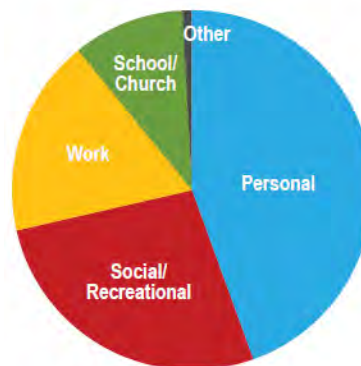
**FIGURE 1** Trip Purpose - Transit Trips



Transit Trip Purpose	% Of Trips
Work	59.2
School	10.6
Social/ Recreational	15.3
Personal	9.3
Other	5.7

Source: 2007 APTA Transit Factbook

**FIGURE 2** Trip Purpose - All Modes



Trip Purpose	% Of Trips
Personal	44.5
Social/ Recreational	26.9
Work	17.8
School/Church	9.8
Other	0.9

Source: Commuting in America III

SOURCE: Center for Transit-Oriented Development, 2008. Transit and Employment.

places such as Golden, Brighton, Centennial and Thornton would benefit from better transit connectivity. The I-225 Corridor presents a major opportunity to connect low-income households to transit. There are numerous affordable housing units in Aurora, Glendale and southeast Denver that are within two to three miles of the planned light rail line, and enhanced bus service could provide necessary connections. This area also has a high concentration of jobs at either end – Fitzsimmons and the airport to the north and the Tech Center to the south – so it will also improve connections for people living along other corridors.

***Affordable housing is available in more places than people realize, but the majority of it is not near transit***

**Map EXS-6: Overview of Denver Region’s Supply of Affordable Housing** shows the location of all types of affordable housing throughout the region. This includes:<sup>12</sup>

- Multifamily apartments with income restrictions or subsidized rents (via HUD’s Section 8 vouchers and Low-Income Housing Tax Credits).
- Deed-restricted single-family homes available for ownership at reduced rates.
- Unrestricted market-rate units available for rent or for sale that are considered affordable to:
  - Rentals: Those making less than 60% of the area median income.
  - For-Sale: Those making less than 100% of the area median income for a family of four on for-sale units.

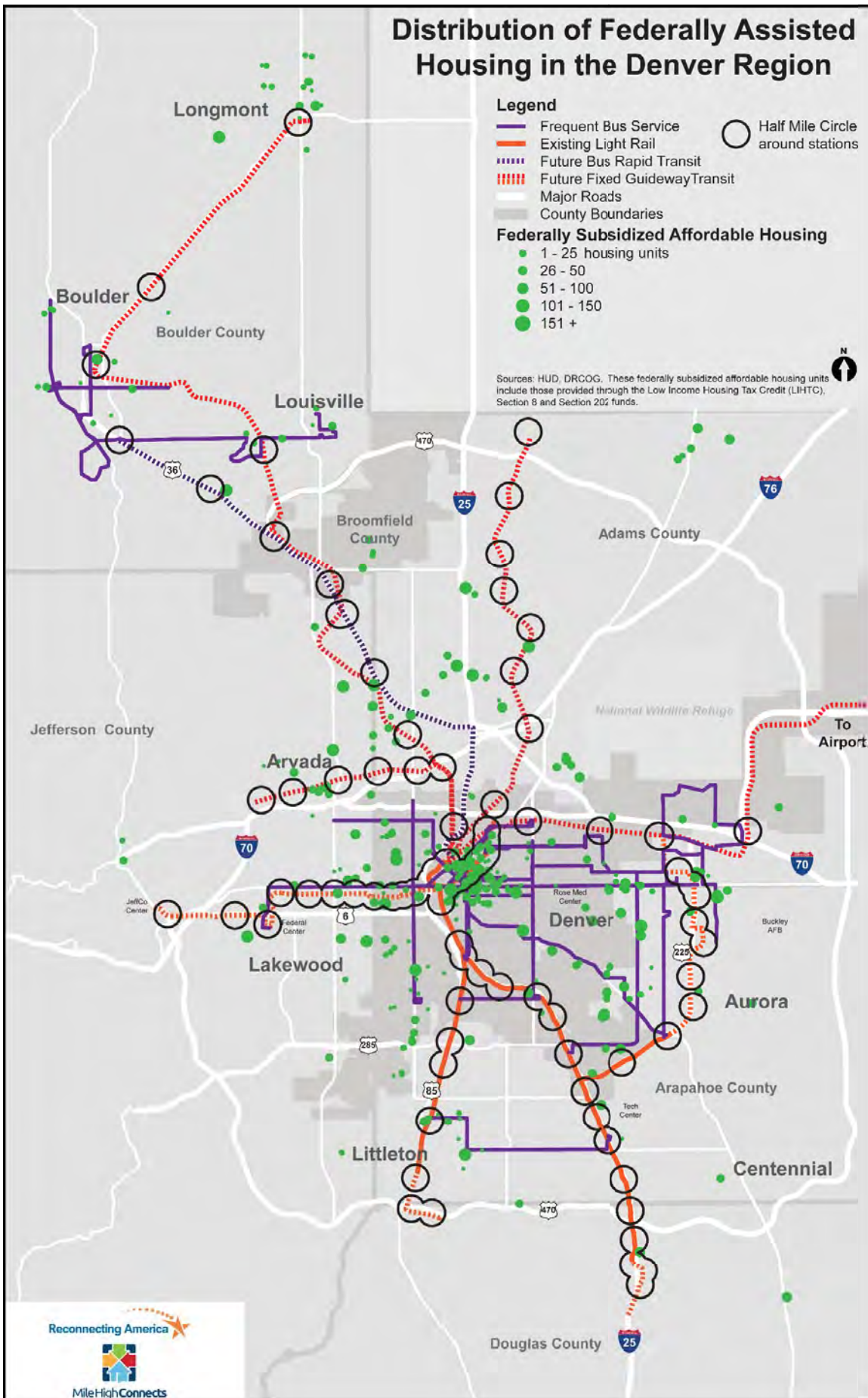
Some parts of the region have a good balance of affordable and market-rate housing, but many are largely unbalanced toward either extreme. Significant pockets of the region’s affordable market-rate housing – particularly to the southwest, north, and southeast (Aurora) – are critically underserved by transit. Overall, while most federally subsidized affordable housing is near transit, the majority of affordable housing units are not. Rental units scattered across the region are far from quality transit service, especially in the southeastern and southwestern parts of the region. It is particularly evident that much of the affordable market-rate ownership housing is located well-outside of the transit system, with large pockets around the periphery. Many of the families who live in these outlying areas “drove ‘til they qualified” when buying these homes, not taking into account the substantial transportation cost they would incur. These households need enhanced bus service to connect them to the transit network.



RACTOD on Flickr.com / Creative Commons

***Preservation and creation of affordable housing opportunities near transit stations is a critical issue***

Many rental units near transit stations are inherently affordable. Increases in demand for living near transit may create displacement and gentrification pressures. Ensuring that affordable and mixed-income housing remain near transit is essential to improving the health and quality-of-life of the Denver region’s residents. A study by Enterprise Community Partners and Reconnecting America found that approximately 75% of the region’s privately owned, federally subsidized affordable housing stock is located within a half-mile of an existing or proposed quality transit station.<sup>13 14</sup> Denver developers pay an average of 25% more for properties within a quarter-mile of an existing or planned light rail station than for properties farther from transit.<sup>15</sup> Many of the subsidized housing units are not permanently affordable. If owners do not take steps to renew the subsidies, they will expire and these affordable units could be turned into market-rate housing. Several mechanisms already exist to protect affordable housing, including Denver’s “Early Warning System,” but more work is needed to ensure that what has happened in other regions does not happen in Denver.



*Map EXS-5: Distribution of Federally Assisted Housing in the Denver Region*



# Overview of Denver Region's Supply of Affordable Housing

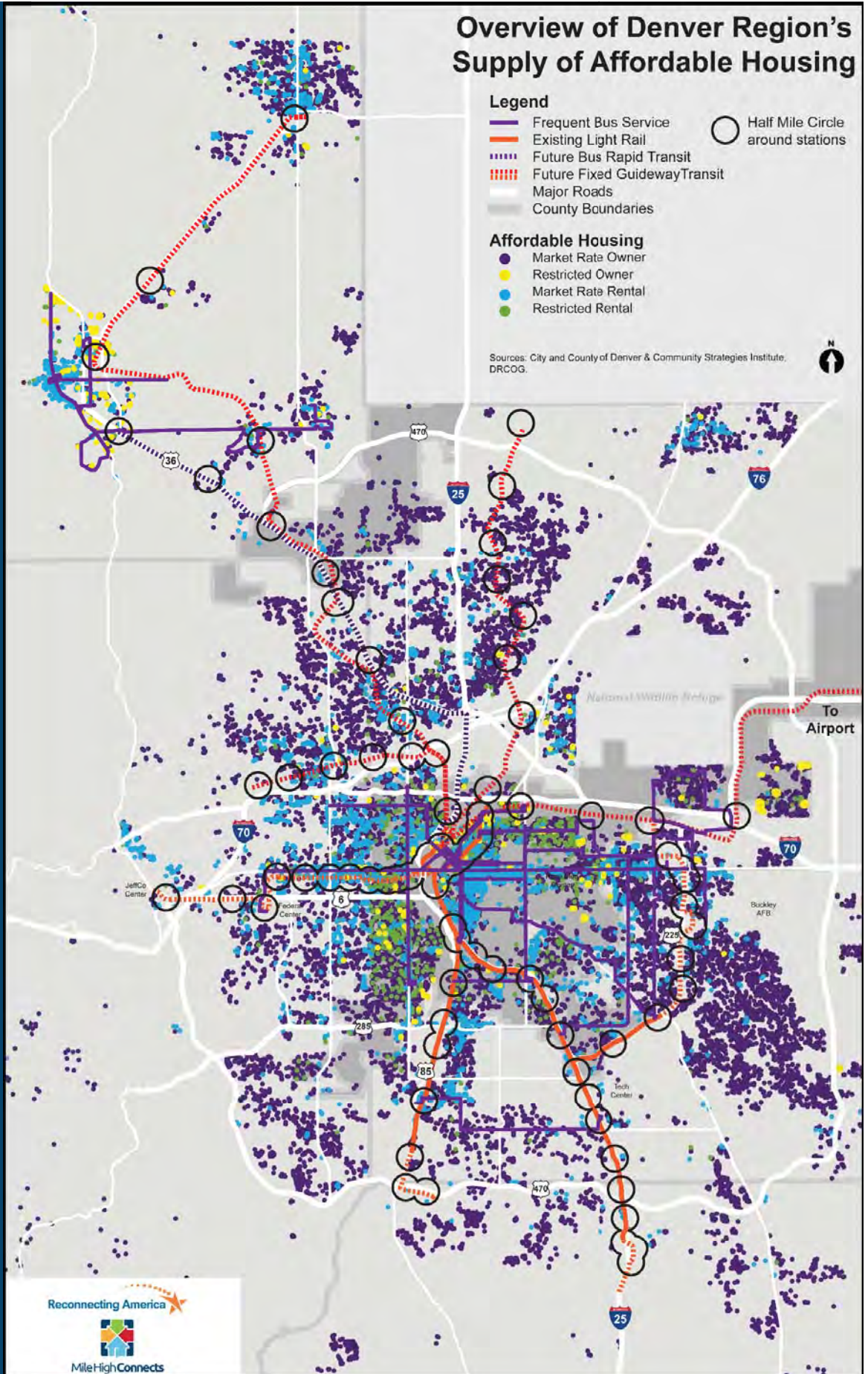
## Legend

- Frequent Bus Service
- Existing Light Rail
- Future Bus Rapid Transit
- Future Fixed Guideway Transit
- Major Roads
- County Boundaries
- Half Mile Circle around stations

## Affordable Housing

- Market Rate Owner
- Restricted Owner
- Market Rate Rental
- Restricted Rental

Sources: City and County of Denver & Community Strategies Institute, DRCOG.



Map EXS-6:  
Overview of  
Denver Region's  
Supply of  
Affordable  
Housing



## Jobs & Economic Development

### Maps in this section:

- Distribution of Subsidized Housing & Employment in the Denver Region
- Overview of Employment Clusters in Metro Denver
- Relationship of Educational Attainment to Employment Centers

The majority of trips by public transportation are job-related—59% of total transit trips are people commuting to and from work.<sup>16</sup> This percentage is three times higher than the percentage of work trips taken by all modes of transportation.

Reaching jobs by public transportation is a major challenge in many metropolitan areas. A recent Brookings Institution report found that only about 30% of jobs are reachable within 90 minutes via public transportation.<sup>17</sup> The percentage is even lower for less-skilled workers (25%). While Denver ranked sixth out of the 100 largest metro regions for job access via public transportation, major geographic, income and skill disparities still exist within the region.

The following key findings describe the Metro Denver employment characteristics in relation to transit.

### ***There is a mismatch between major job centers and affordable housing***

**Map EXS-7: Distribution of Subsidized Housing & Employment in the Denver Region** looks at the proximity of federally assisted housing units to the region's dense employment clusters. Outside of downtown Denver, a spatial mismatch exists between major job centers and the location of affordable housing, especially in the Denver Tech Center. The I-225 Corridor emerges as a critical link between jobs and affordable housing in the eastern part of the region, and the West Corridor will provide better connections for those in the western part of the region. Jobs and housing are more dispersed in the northern part of the region, but the transit lines will provide better connections between origins and destinations. The mismatch may grow over time. Many of today's affordable units are not permanently affordable, and the contracts that make these units affordable will expire over the next five years. As well-connected units become more attractive for market-rate development, property owners may choose not to renew their contracts.



Jefferson County administration center  
Rick Kimpel / Creative Commons

### ***FasTracks will improve connections between housing and jobs, especially for many low-income households***

A recent report by Reconnecting America<sup>18</sup> found that 17.6% (216,406) of the Metro Denver region's jobs are near fixed-guideway transit. FasTracks has the potential to increase this percentage to 26.2% (341,025), a 57.6% increase in jobs near fixed-guideway transit. **Map EXS-8: Overview of Employment Clusters in Metro Denver** shows how future lines will connect some of the region's largest job centers to the neighborhoods most in need of enhanced transit service. While new lines will not touch all low-income neighborhoods, they will improve the current situation. Last-mile connections will be needed to provide better access to opportunity for those in outlying areas.

### ***Jobs for low- and middle-skill workers often far from where they live***

**Map EXS-9: Relationship of Educational Attainment to Employment Centers** shows the difference between the location of jobs and the educational attainment of residents. Areas with low educational attainment tend to be farther from major job centers. These residents are often lower income and are more likely to rely on public transportation. Denver's western and northern sides have the lowest levels of educational attainment in the region and very few jobs compared with nearby areas. The northern part of Aurora also lacks many job opportunities for its less-educated residents. Educational attainment is higher outside of

Denver. It is highest in Broomfield, Boulder, and Douglas counties and lowest in Denver and Adams. The Southeast Corridor is one of the few places where jobs and educational attainment match, but these are primarily higher income, higher skill jobs requiring advanced degrees. The East Line will significantly improve access to opportunities for many Denver and Aurora residents, but southwestern Denver and parts of Thornton will remain without quality transit access even after all the lines open.

## Education



John M. Cropper / Creative Commons

### Maps in this section:

- Change in School Free & Reduced Price Lunch by School District
- Access to Quality Schools for School Aged Children in the Denver Region
- Access to Quality Preschools for Children Under 5 in Metro Denver

As with employment, families must consider distance and transportation options when choosing early childhood and K-12 education for their children. Quality educational programming is not equally distributed across the Metro Denver region. In many cases, parents are forced either to settle for a less-than-optimal educational setting nearby or to make the sacrifices necessary to reach distant schools. Meanwhile, the student-age population in Metro Denver suburbs is diversifying, bringing new opportunities and challenges to creating a supportive education environment for all children.

### ***Transportation presents significant barriers to school choice***

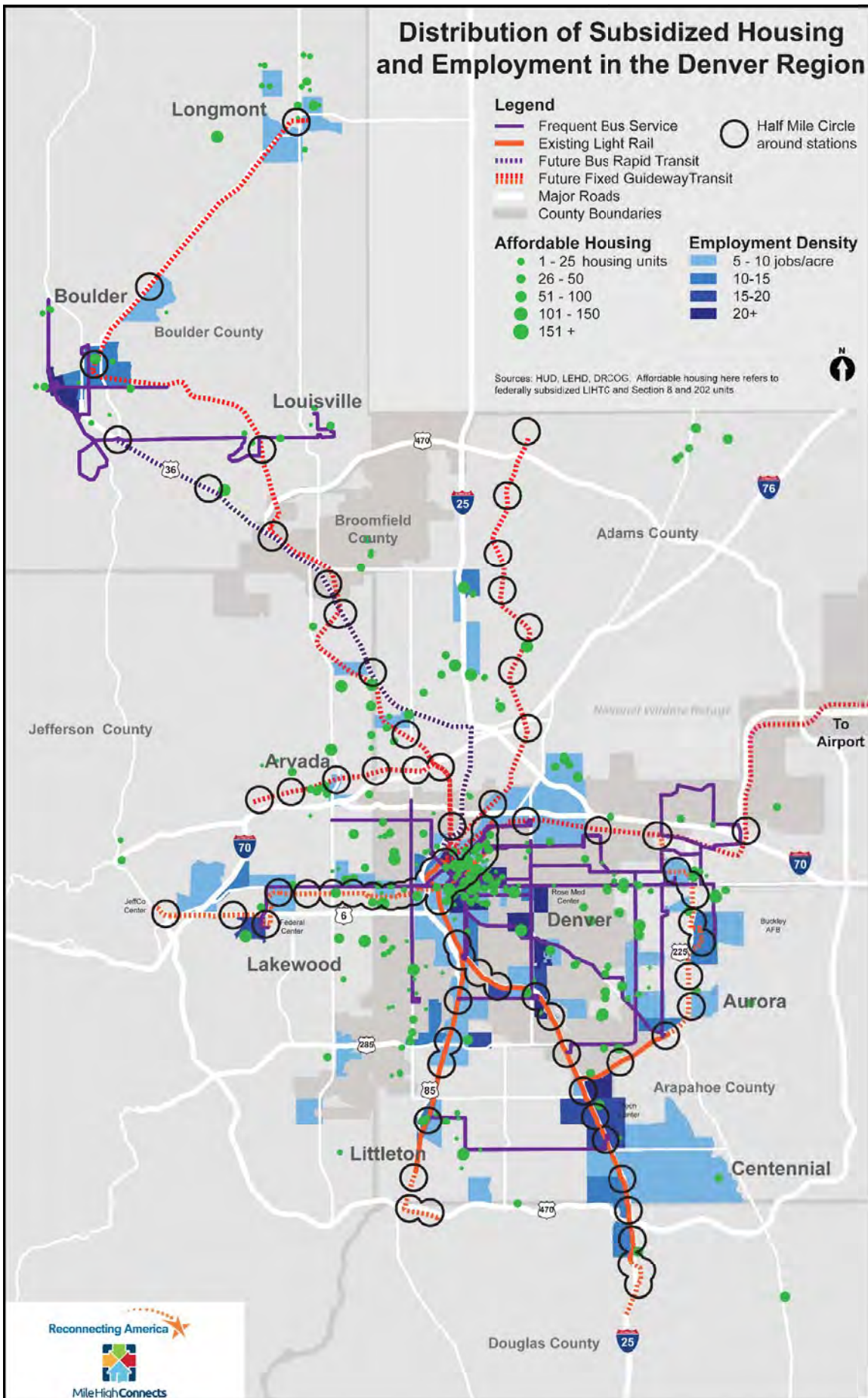
The Public Schools of Choice Act of 1990 allowed students in Colorado to choose to attend a school outside of their neighborhood school attendance boundaries, either in their school district of residence or another Colorado public school district. On the surface, increasing school choice opens the door for more equitable access to high quality schools. However, a major barrier for low-income families is the cost of transportation associated with choosing schools far from their homes. A 2009 report “Drivers of Choice: Parents Transportation, and School Choice”<sup>19</sup> issued by the University of Colorado’s Center on Reinventing Public Education found that transportation created a significant barrier for families earning less than \$20,000 annually.

### ***Increasing participation in free and reduced price school lunch program reflects suburbanization of poverty***

**Map EXS-10: Change in School Free & Reduced Price Lunch by School District** shows the change in FRL participation for each metro school district since 2001. As Denver’s inner suburbs have diversified over the past decade, many inner suburban school districts have experienced significant increases in free and reduced price lunch participation. While Denver Public Schools, at 73%, still has one of the highest FRL participation rates in the region, districts in Mapleton, Englewood and Aurora are rapidly catching up. Inner suburban school districts in Westminster, Commerce City and Sheridan all have higher FRL participation rates than Denver. With respect to transit service, many areas with a high percentage of FRL students lack adequate service. There is a large void in transit service in the southwestern part of the region near the Denver-Lakewood border. This area has one of the highest percentages of FRL participation in the entire region. Longmont also has a high percentage of FRL students.

### ***Many of the region’s highest quality schools are not located near frequent transit***

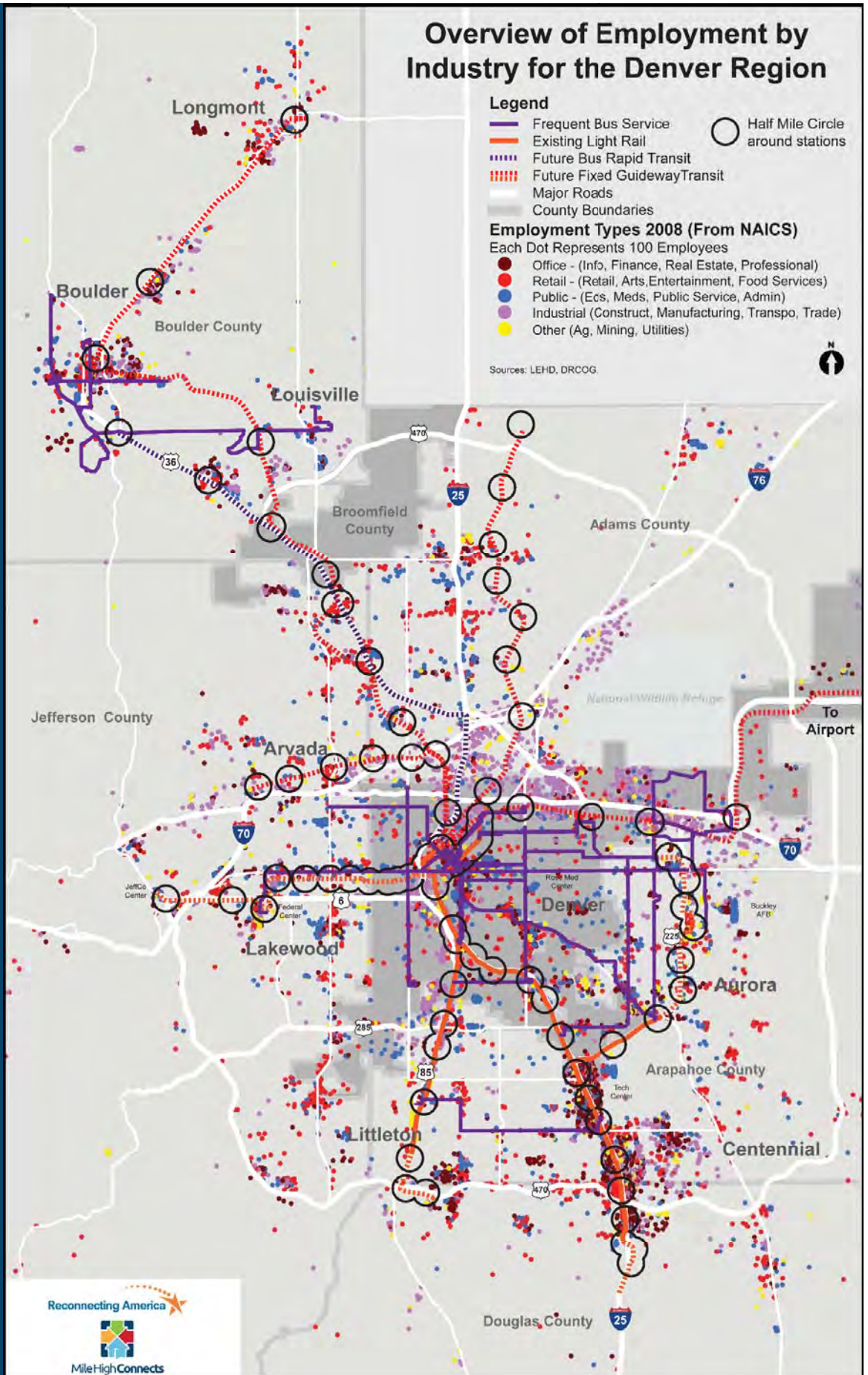
Of the 787 public schools in the Metro Denver region, 24.5% are located within a mile of existing or planned FasTracks



*Map EXS-7:  
Distribution  
of Subsidized  
Housing &  
Employment  
in the Denver  
Region*

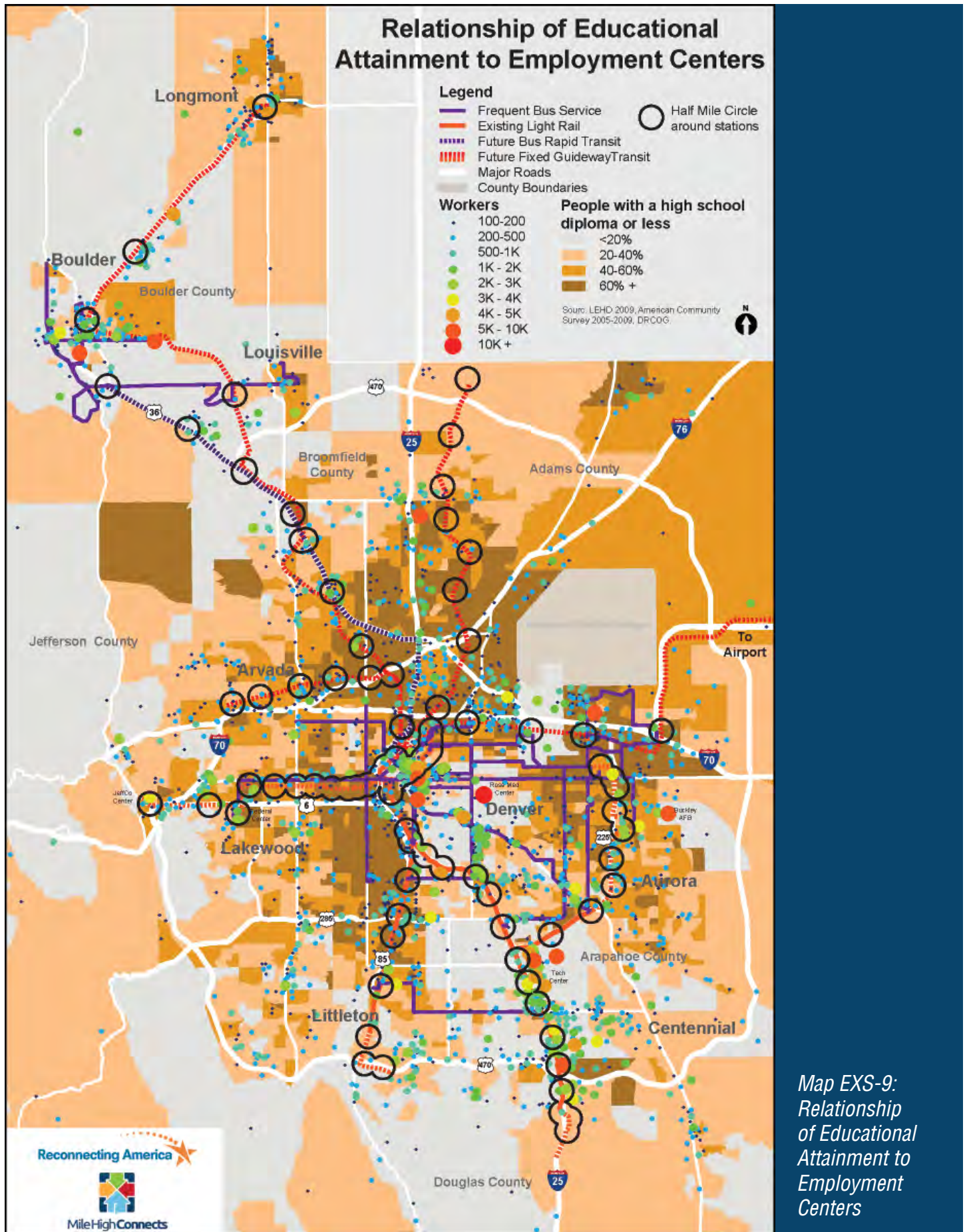


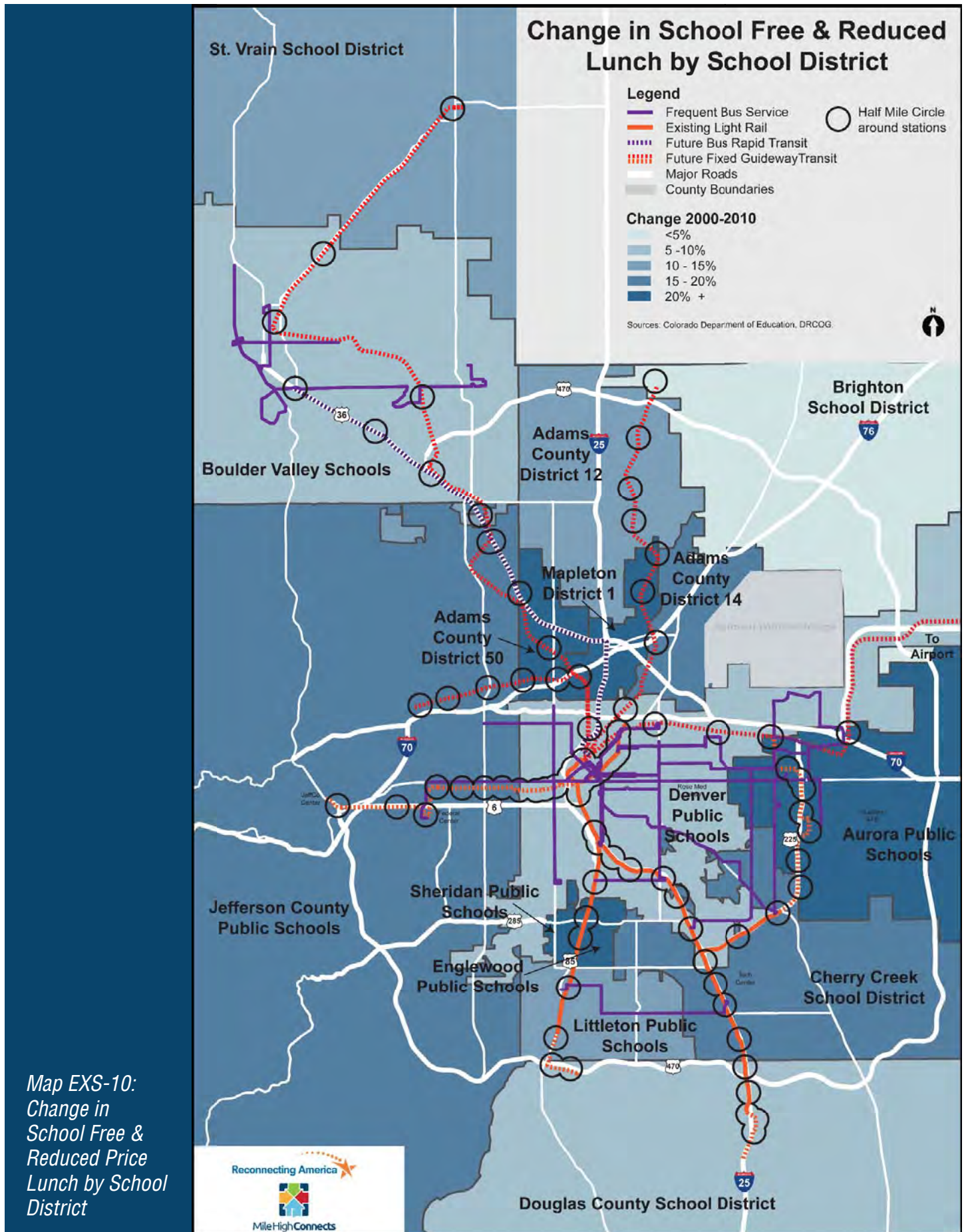
### Overview of Employment by Industry for the Denver Region



Map EXS-8:  
Overview of  
Employment  
Clusters in Metro  
Denver







stations. But the quality of those schools as measured by the state’s School Performance Framework (SPF) is generally lower than the region as a whole:

- For all public schools, 85.4% are rated as “Performance” or “Improvement,” the two highest categories in the SPF. But for schools within one mile of stations, only 76% are in the top two categories.
- Among the top quarter of schools, only 15.4% are within a mile of stations.

**Map EXS-11: Access to Quality Schools for School Aged Children in the Denver Region** shows that school quality is not uniform across the Metro Denver region. Outer suburbs have a large number of schools receiving high ratings, while inner suburbs have a high concentration of low-performing schools. Adams County, which contains northwest Aurora and Thornton, has an average SPF score of 57.1%. Outlying Boulder County, however, has an average score of 70%. In the central city, Denver’s higher performing schools are located in the southeastern portion of the district, while Northeast and Southwest – which have the city’s densest youth population – have struggling schools. While transit cannot directly impact school performance, increasing access to schools via active transportation options can make it easier for students to get to school and for parents to drop them off. School performance also affects the location decisions of parents. Areas with better-performing schools will be preferable, and often these are areas in the suburbs far from transit. Many transit station areas will be less attractive to families because of the quality of nearby schools, and this could lead to underinvestment in those station areas.

### ***Few preschools or other early childhood care centers are located near transit***

Less than 10% of the Metro Denver region’s 5,251 preschools are located within a mile of planned or existing FasTracks stations. Fewer than 3% are within a half-mile. For parents with young children who rely on public transit to commute to work, accessing preschools far from transit service created significant challenges. While preschools are dispersed evenly across the region, **Map EXS-12: Access to Quality Preschools for Children Under 5 in Metro Denver** shows very few preschools, and virtually no Qualistar-rated three- or four-star preschools<sup>20</sup>, are within a half-mile radius of existing and planned FasTracks stations. In the southwestern part of the region near Federal Boulevard, an area with a significant number of low-income residents and a high number of small children attending preschool, this disparity is especially striking.

## Health

### **Maps in this section:**

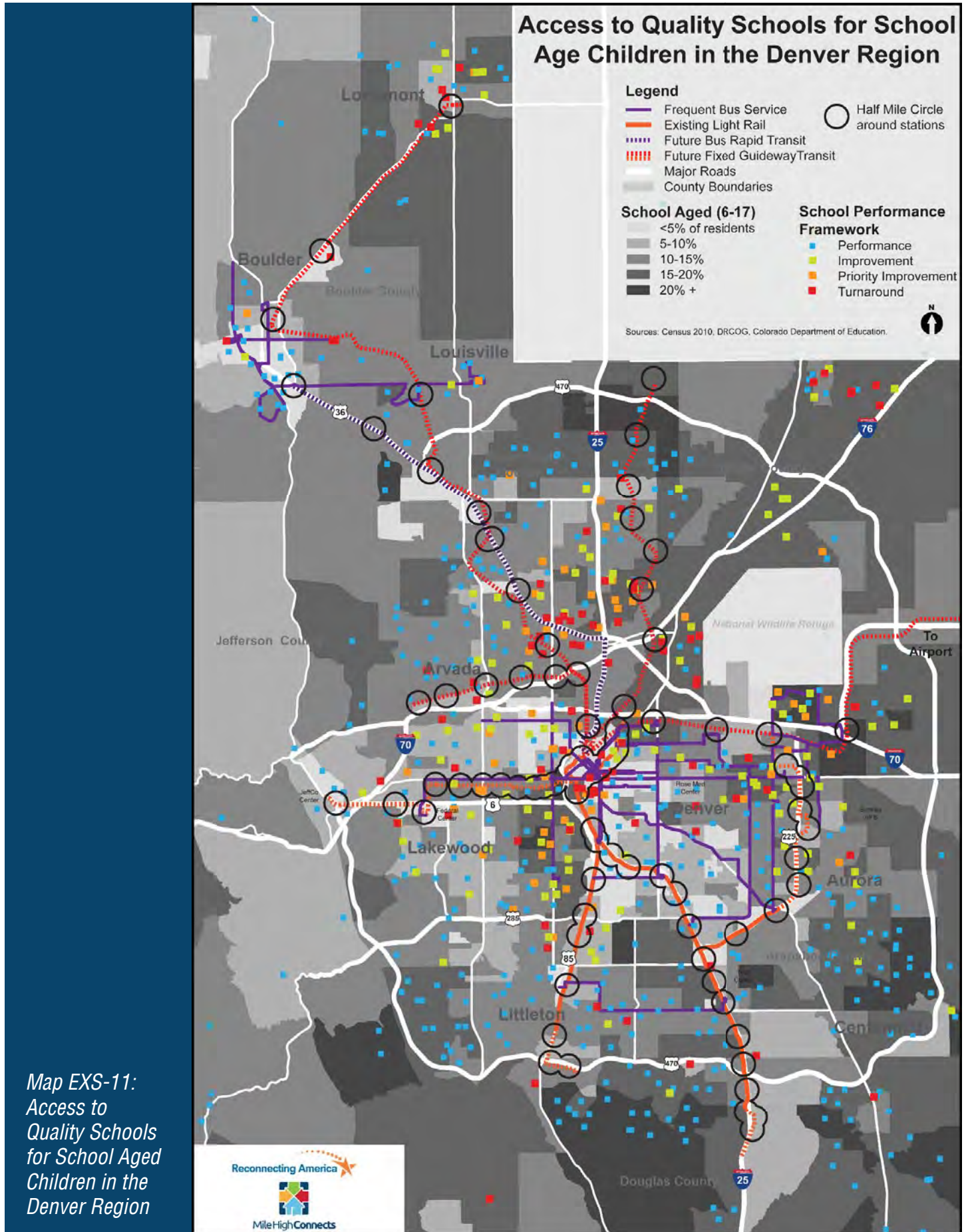
- Major Hospitals & Health Centers in the Denver Region
- Access to Healthy Food for Residents of Subsidized Housing

Expansion of Metro Denver’s transit system has the potential to promote the health of all residents living in the region and to help reduce the burden of chronic disease. Colorado has the lowest adult obesity rate in the country, but about one in five adults is obese. The state’s childhood obesity rate is among the fastest growing in the nation; Colorado fell from 3<sup>rd</sup> lowest to 23<sup>rd</sup> lowest in the past three years. The burden of obesity varies across counties in the Metro Denver area, and there are significant disparities by race and income.

The health benefits of using public transportation are well-documented. Using public transportation promotes physical activity in a number of research studies. Transit users on average take 21% to 30% more steps per day than people who drive to work. They are also more likely to be physically active and maintain a healthy weight.<sup>21 22 23</sup> Transit riders walk more since they travel on foot to and from transit stops. Using U.S. National Household Travel Survey data, researchers found 29% of public transit users walked more than 30 minutes per day just getting to and from the station, thereby meeting the government’s recommended levels of daily physical activity.<sup>24</sup>



Kaiser Permanente



A recent study also found that people can lose weight by switching from driving to transit. Charlotte light rail riders lost an average 6.45 pounds after switching from driving to transit for a year.<sup>25</sup>

Moreover, living in a walkable neighborhood allows traveling to more places by bike or on foot, and thus reduces the stress associated with commuting from place to place by car. Twice as many people in walkable environments engage in moderate amounts of physical activity compared to those in less walkable communities. In addition, an increased use of transit can help reduce adverse health outcomes associated with asthma and other chronic diseases by reducing driving and greenhouse gas emissions. This in turn can improve air quality for those engaging in walking, biking and other outdoor physical activity.

The following are key health findings for the region as they relate to transit.

### ***Many major health care centers are located near frequent transit***

**Map EXS-13: Major Hospitals & Health Centers in the Denver Region** displays the location of major hospitals, trauma centers, and community health care facilities in the Metro Denver region. Expansion of the regional transit system has the potential to improve access to health care services for many residents. Major health centers such as Anschutz Medical Campus, Medical Center of Aurora, Sky Ridge Medical Center and the new St. Anthony's Hospital in Lakewood are close to planned light rail corridors. The Swedish Medical Center and North Suburban Medical Center are not along rail lines, but coordinated bus service could make those facilities more accessible. A range of health care services may be located in these major centers, including primary, specialty and tertiary care, pediatric care, mental health and other services.

### ***Smaller health care centers are not as well-connected to transit***

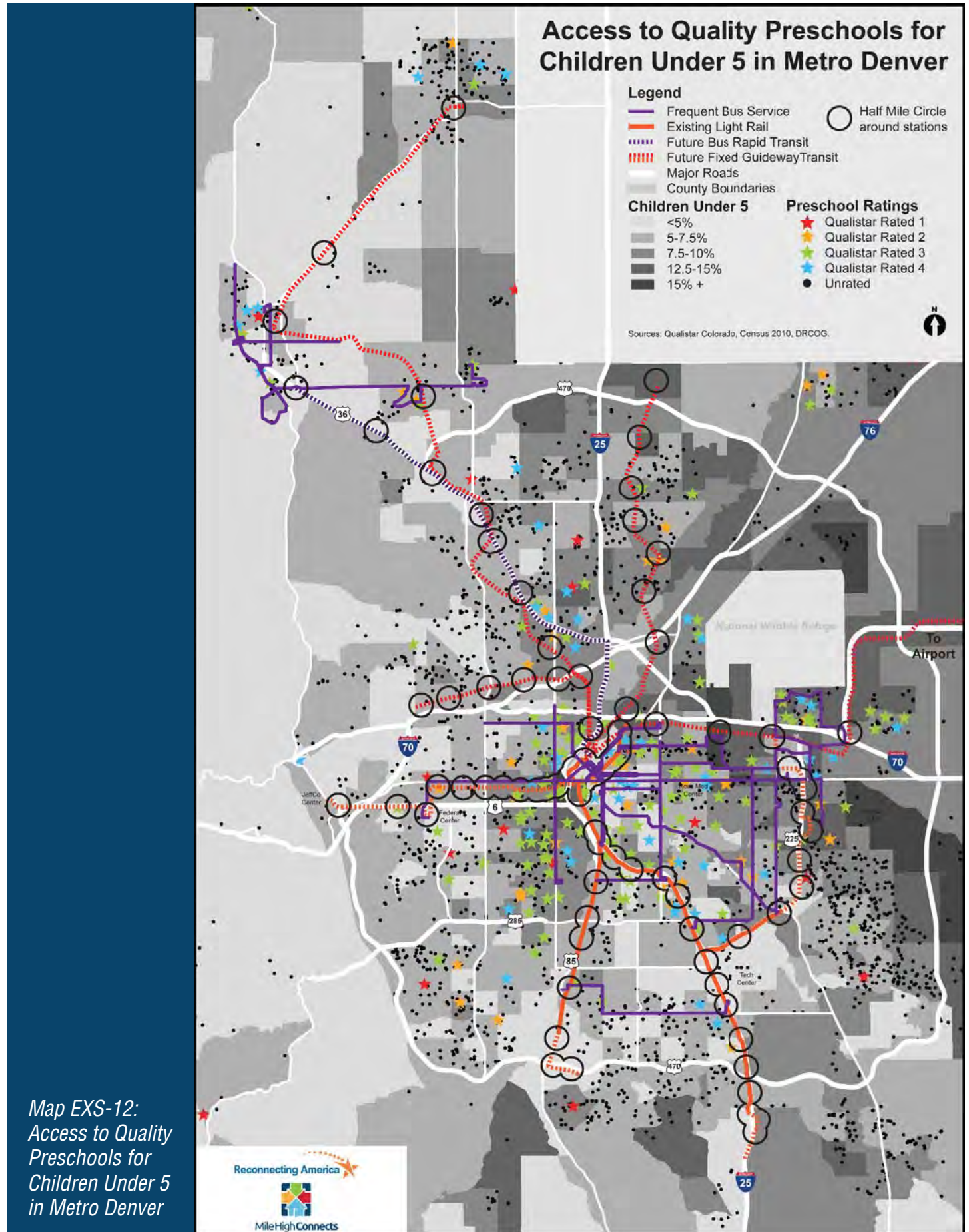
Community health care facilities provide primary, oral and mental health care primarily to individuals who are low-income, uninsured or enrolled in Medicaid and other public health insurance programs. While some of these facilities appear to be located on or near high-frequency bus lines or existing or planned rail corridors, many (particularly those outside Denver) are not easily accessible by rail or bus transit. Significant improvements in last-mile connections, including improved bus service, coordinated bus and rail connections and bike and pedestrian infrastructure, are critical to ensuring convenient access to health care for all residents of the region.

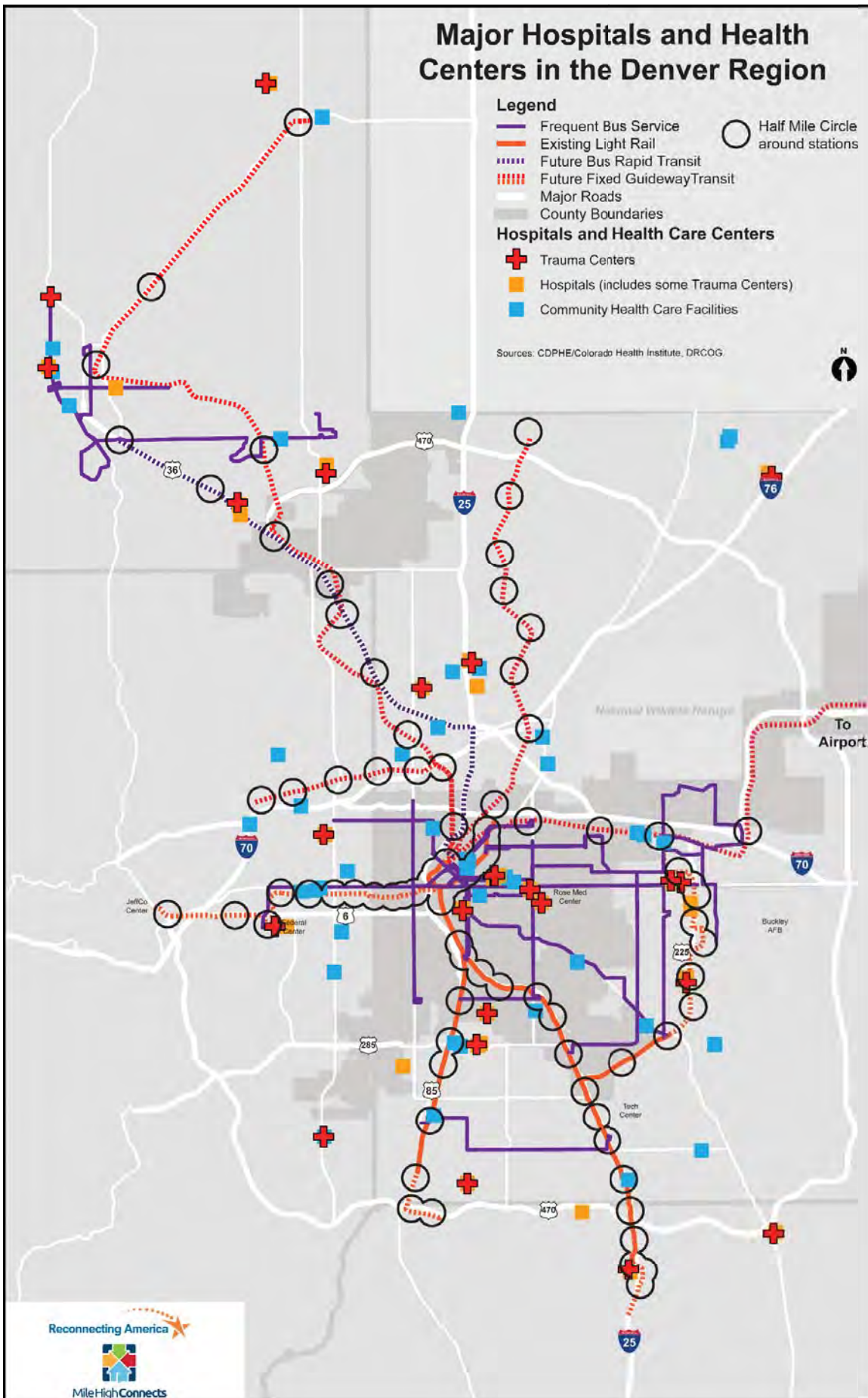
### ***Healthy food options are limited along many transit corridors***

**Map EXS-14: Access to Healthy Food for Residents of Subsidized Housing** shows places with low food access, defined as census tracts that are more than one mile from a grocery store. The map also identifies farmers markets and federally subsidized affordable housing units. There are "food deserts" all over the region, but especially along future transit corridors. Denver has a major food desert in its northern neighborhoods, which are primarily lower income. These residents will benefit from improved transit service, but they will still be quite far from most grocery stores. Many affordable housing units are located in food deserts as well, including those on the Gold, West, East, I-225, and North Metro lines. Currently, several high-frequency bus routes serve a large number of affordable housing units, but it is difficult to know from these maps whether residents are utilizing this service. Taking the bus is a huge sacrifice of time compared to going to nearby convenience stores and fast-food outlets. The build-out of FasTracks presents the opportunity to be thoughtful about aligning food access to transit. Recently, Denver convened a food-access taskforce and identified policy recommendations for facilitating grocery retail development, including economic development policies and practices and financing strategies. As much as possible, this and other efforts to facilitate development of healthy food retail across the Metro Denver region should be coordinated with transit planning and station area development, as there may be many opportunities to locate food retail within station areas.

### ***There is a need for more localized health data***

Most health data is available only at the county level, so it is difficult to examine many of the region's challenges and disparities. While this is a larger challenge that needs to be addressed at the national level, local agencies should study some of the region's lowest income neighborhoods to understand their needs better and to establish a baseline for tracking health outcomes over time.





*Map EXS-13:  
Major Hospitals  
& Health Centers  
in the Denver  
Region*



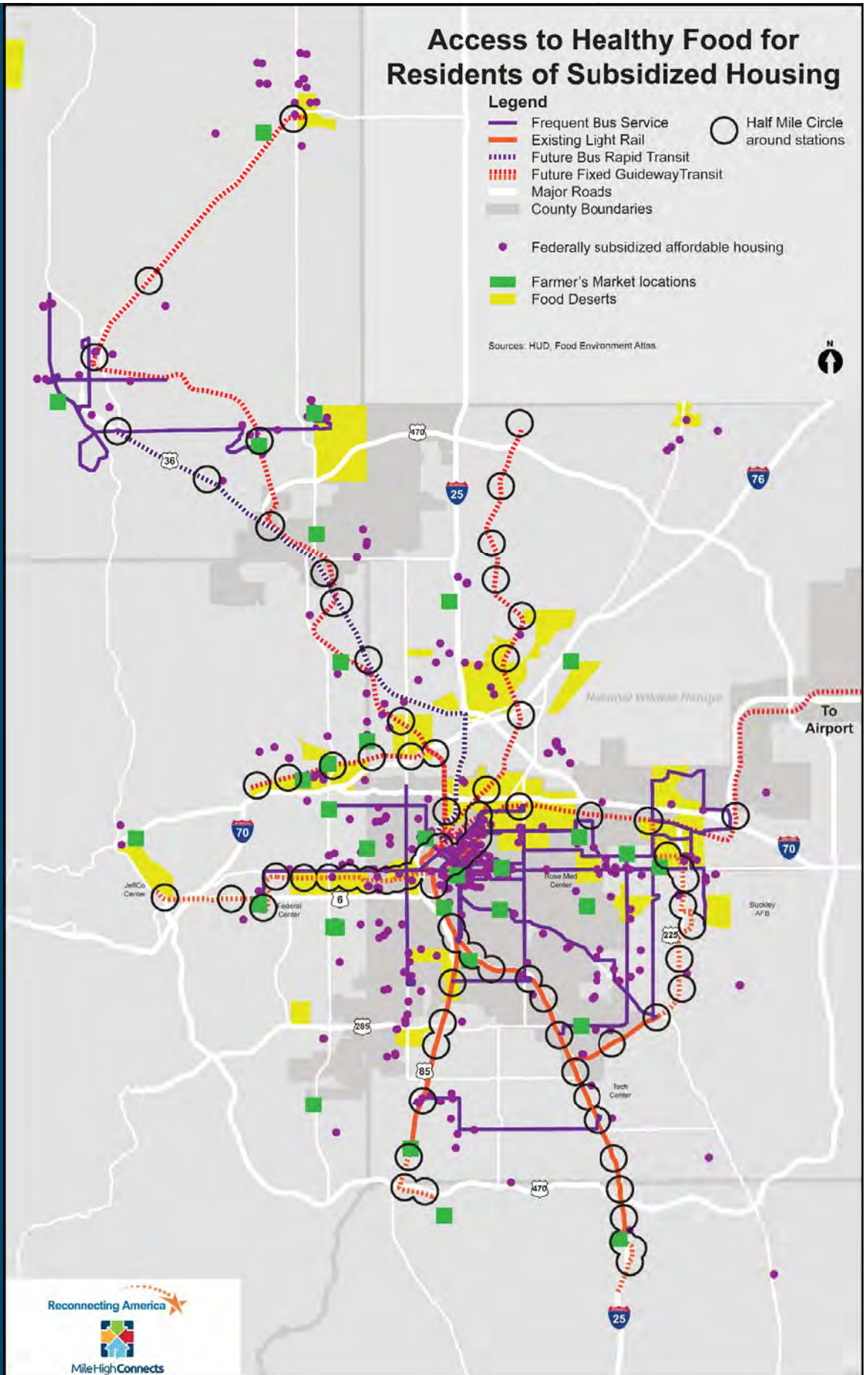


### Access to Healthy Food for Residents of Subsidized Housing

#### Legend

- Frequent Bus Service
- Existing Light Rail
- Future Bus Rapid Transit
- Future Fixed Guideway Transit
- Major Roads
- County Boundaries
- Half Mile Circle around stations
- Federally subsidized affordable housing
- Farmer's Market locations
- Food Deserts

Sources: HUD, Food Environment Atlas.



Map EXS-14:  
Access to  
Healthy Food  
for Residents  
of Subsidized  
Housing



## Action Steps Summary

### **Transportation Access**

- Provide last-mile transportation options to destinations that are too far to walk from transit stations.
- Support Transportation Demand Management (TDM) programs and employer-provided shuttle services.
- Support policy changes such as the adoption of complete streets policies that make walking, bicycling and public transportation safer and more convenient transportation options.
- Improve sidewalk and crosswalk conditions near transit stations.
- Upgrade bicycle facilities and extend the B-Cycle Program throughout the transit system.
- Prioritize improvements in communities with the highest need.

### **Housing**

- Develop and implement an early warning system to alert when existing income-restricted housing developments (Section 8, Low Income Housing Tax Credits, City restrictions, etc.) are nearing expiration of their affordability restrictions.
- Preserve existing affordable housing near stations.
- Enforce existing and enact new policies to promote affordable housing.
- Expand the Denver TOD Fund to a Regional tool.

### **Jobs**

- Conduct additional research to understand the firms, industries, and types of jobs located along major transit corridors to understand how we can best leverage transit access to promote employment.
- Encourage our regional employers to offer transit passes to workers as a core benefit.
- Support the creation of employer-assisted housing.
- Consider location incentives for employers and small businesses to locate by transit.
- Prioritize locating workforce training centers along high frequency transit corridors.
- Preserve affordable commercial space along transit corridors to ensure retention of local businesses.

### **Education**

- Increase outreach to education decision-makers to reinforce the importance of transit.
- Encourage brick-and-mortar investments in early childhood centers and K-12 schools to locate near transit lines.
- Prioritize improving school performance for schools located within a half-mile of transit.
- Create intergovernmental relationships between school districts to plan for highly-mobile, low-income students.
- Provide last-mile connections between schools and transit stations.

### **Health**

- Increase and improve transit service to existing grocery stores to people living in food deserts.
- Provide incentives (funding, zoning, one-stop permitting) to grocers to locate in station areas.
- Provide access to existing park space near transit stations and encourage the setting aside of green space nearby.
- Improve last-mile connections across the transit system so people walk and bike more.
- Allow farmer's markets and other green markets at station areas.
- Obtain more localized data or conduct research studies of certain neighborhoods to better understand the health issues for neighborhoods served by transit.

## Population and Demographics

### Maps in this section:

- Distribution of Race & Ethnicity in Denver Region
- Concentration of Low Income Households in the Denver Region
- Educational Attainment of Residents in the Denver Region
- Distribution of Denver Residents Who Are 55 and Older
- Percentage of Denver Residents Commuting Without A Car

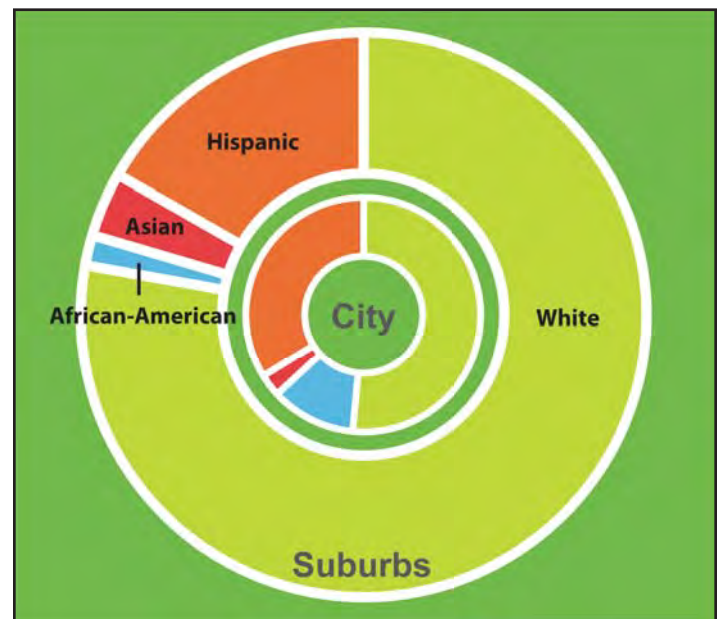
### Race & Ethnicity

The majority of the Denver population is white in both the central cities of Denver and Aurora and the surrounding suburbs. Hispanics comprise the region's largest minority group. Figure X shows how that breakdown differs between the major cities in the region and the suburbs. <sup>1</sup>

**Map DEM-1: Distribution of Race & Ethnicity in the Denver Region** shows this racial and ethnic breakdown spatially. The Hispanic population is most prevalent in western Denver and Lakewood, and the African American population is concentrated in Denver's northeast neighborhoods and northwest Aurora. There is also a large Hispanic population in the northern part of the region in between the two planned rail lines, as well as in Aurora along the I-225 Corridor.

Because many of the planned transit stations are extensions to the suburbs, the neighborhoods with more nonwhite residents may not benefit from direct connections to the light rail system. However, many of these neighborhoods do have high-frequency bus service connecting them to the regional transit network. Still, the transit network as a whole skips over many communities of color. Improving last-mile connections to stations will be critical to ensuring access to opportunities.

**Figure DEM-1: Racial Distribution in Urban Areas**



SOURCE: Brookings Institution: State of Metropolitan America

### Low Income Households (less than 80% of Area Median Income)

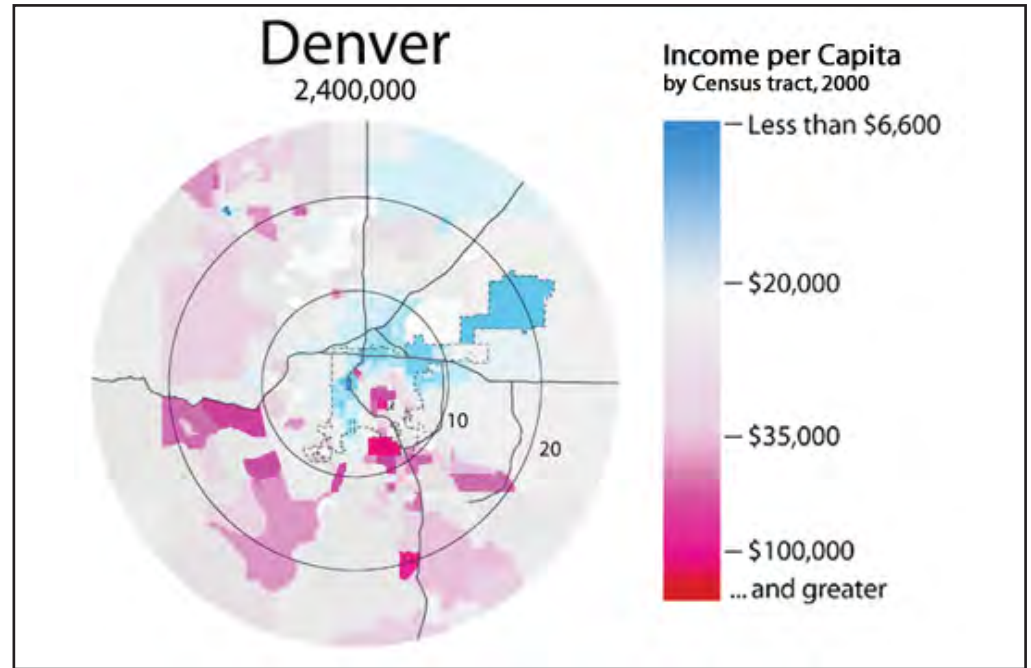
Spatial income patterns often reflect racial and ethnic concentrations, and **Map DEM-2: Concentration of Low Income Households in the Denver Region** shows where low income households are concentrated. Low income households are defined as those earning 80% or less of the Area Median Income (AMI), or \$47,968.<sup>2</sup> The majority of transit station areas are in low income neighborhoods, especially along the West Corridor, Gold Line, and I-225 Corridor. Longmont and Boulder also have a high percentage of low income households. Building out the whole planned system will provide greater access to opportunity for all of these residents, but it also raises concerns about gentrification and displacement as demand for housing near transit increases and outweighs the supply.

Not every neighborhood will benefit from the buildout of the transit system. Many low-income neighborhoods in Aurora and southwestern parts of Denver will still be far from quality service. While many low-income households are served by high-frequency bus routes, these neighborhoods will need stronger connections to light rail in order to take advantage of that network. These neighborhoods also need better pedestrian and bicycle connections to transit stops, as many lack sidewalks and bike lanes.

The map also shows a growing trend of the suburbanization of poverty. In the last decade, the poverty rate in Denver's suburbs rose 96.4%.<sup>3</sup> This is a nationally recognized trend that is a great cause for concern, as communities that lack access to regional

opportunities are likely to decline over time. In 1999, large US cities & their suburbs had roughly equal numbers of poor residents, but by 2008 the number of suburban poor exceeded the poor in central cities by 1.5 million.<sup>4</sup> Poverty rates are still higher in central cities (18.2% vs. 9.5% in 2008), but poverty rates are increasing at a faster pace in suburban areas. In France, research has shown that unemployment is significantly higher in suburbs with lack of transportation access. The work by Radial Cartography (**Figure DEM-2**) shows that a similar shift already happening in Denver could manifest the same results if not properly addressed.

**Figure DEM-2: Denver Income Per Capita**

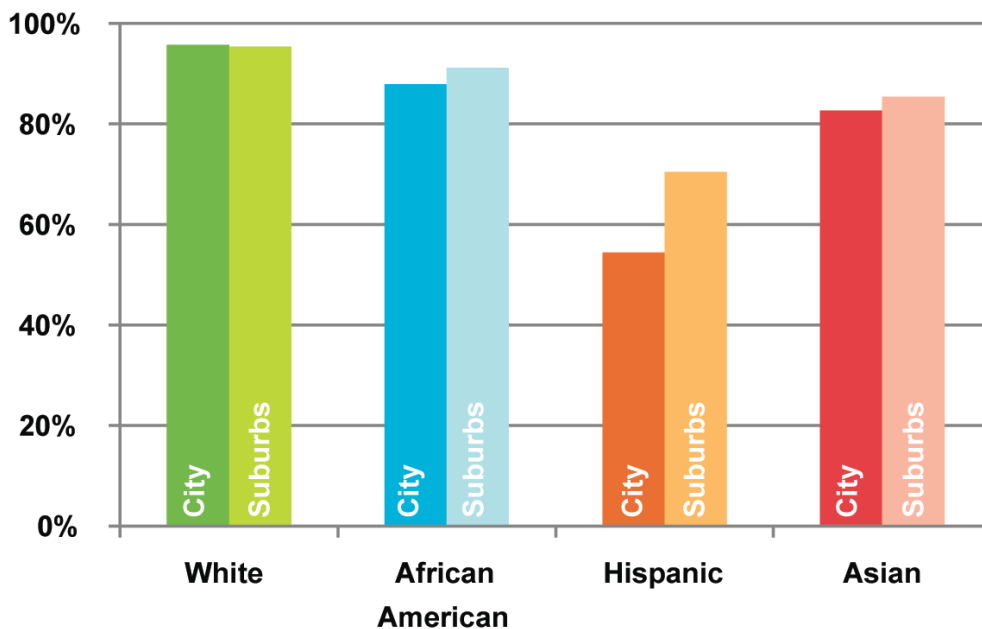


SOURCE: Radial Cartography <http://racted.org/l83hF5>

## Educational Attainment

As with race and ethnicity and income, low educational attainment can be a sign of vulnerable communities. **Map DEM-3: Educational Attainment of Residents in the Denver Region** illustrates the educational disparities of the Denver region—darker-shaded areas have a higher concentration of people who have a high school degree or less. Hispanic and low income neighborhoods also have lower levels of educational attainment. Areas to the north and west of downtown Denver, as well as northwest Aurora, have the lowest education levels in the region. Conversely, the wealthier areas of the region (Douglas and Boulder Counties) have the highest levels of educational attainment.

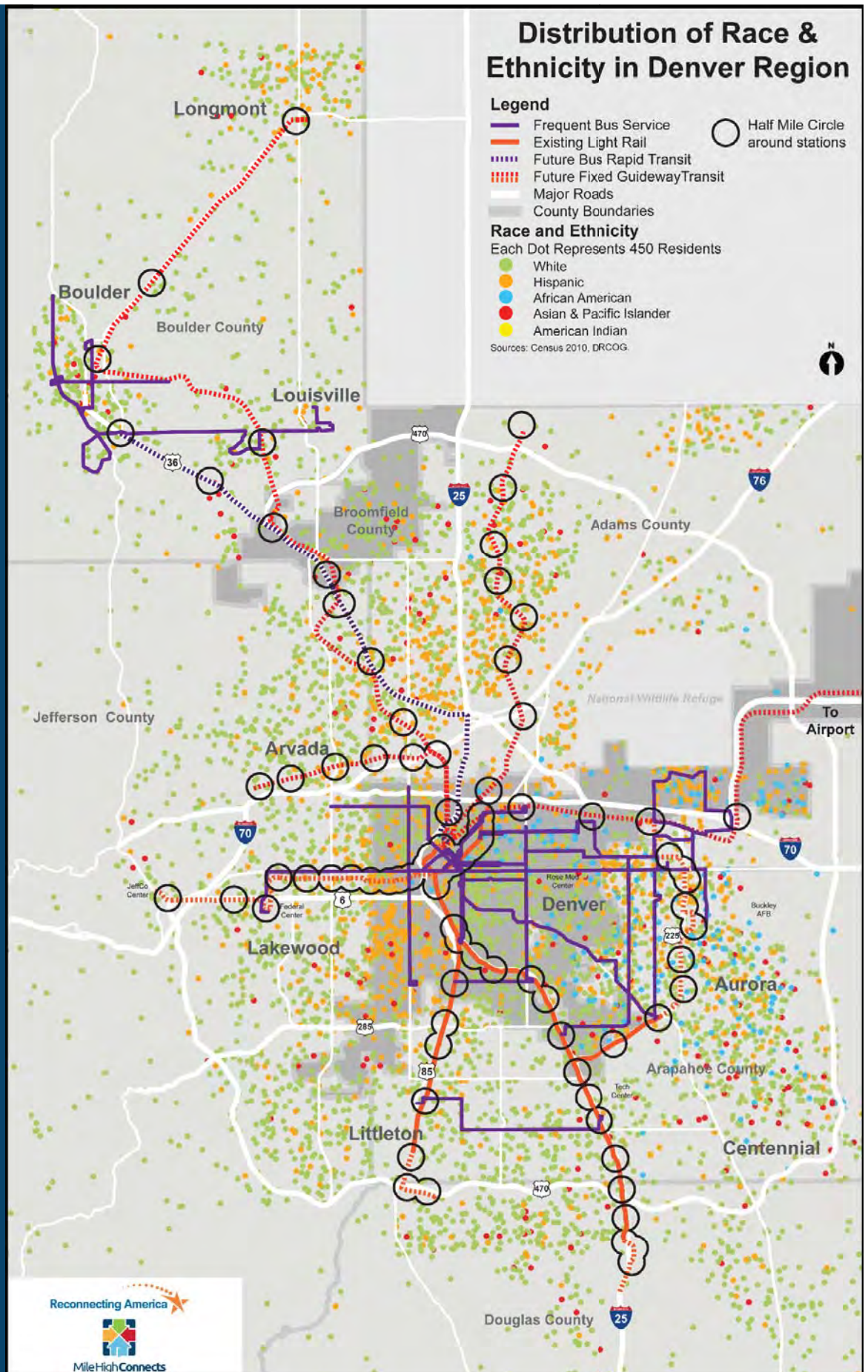
**Figure DEM-3: Population Over 25 Completing High School vs. Suburbs**



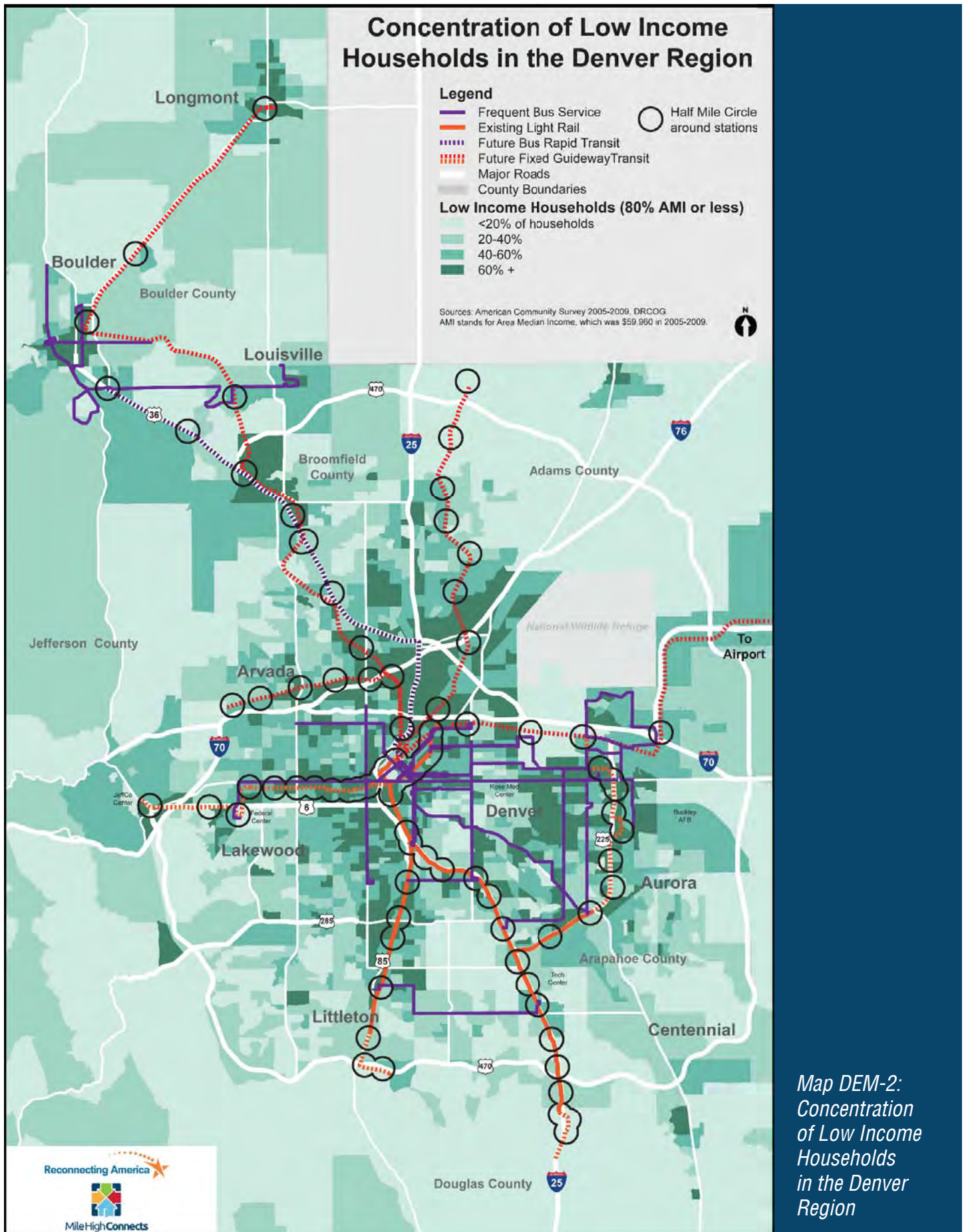
SOURCE: Brookings Institute: State of Metropolitan America

This map raises concerns about connectivity for those people who need it most. Low skill workers often struggle to find jobs that can support their families, and living far from the available jobs or in neighborhoods with poor connections to the regional transit network can be a huge barrier in accessing those jobs that do exist. In Denver, only 25% of low skill jobs are accessible in a 90 minute commute, which is lower than the regional average for all jobs (30%).<sup>5</sup>

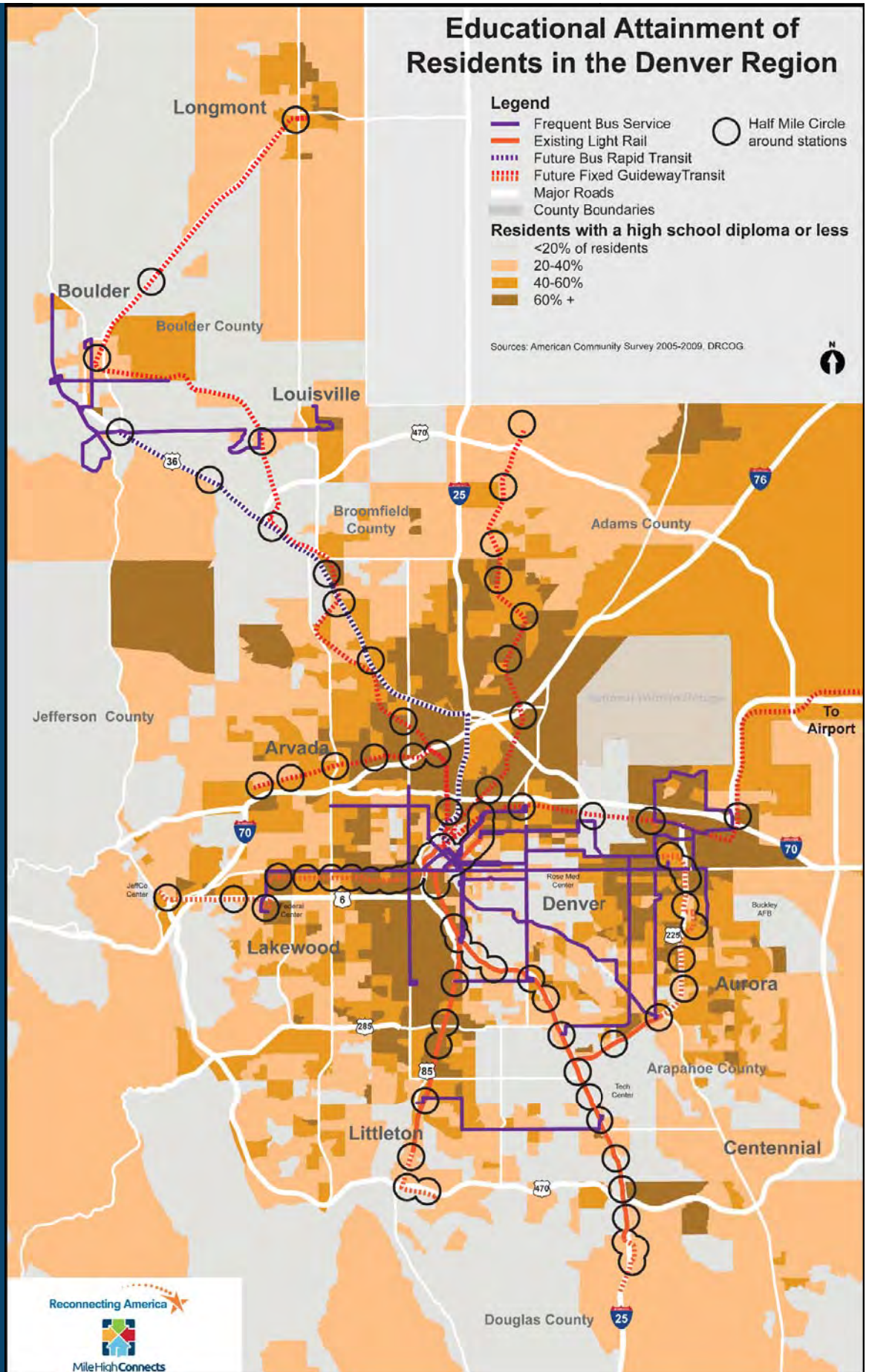
Many low-educated people struggle to find job opportunities, and if they live in places with poor transit access, they



Map DEM-1:  
Distribution of  
Race & Ethnicity  
in the Denver  
Region



# Educational Attainment of Residents in the Denver Region



Map DEM-3  
Educational  
Attainment of  
Residents in the  
Denver Region



have few ways to find a job, let alone commute to it once they get it. Many of the future transit lines will provide better access to opportunities, especially the East and I-225 Lines where there are a large number of jobs. But many neighborhoods with low levels of educational attainment remain far from transit and will need improvements to bus service to help connect people to the places they need to go.

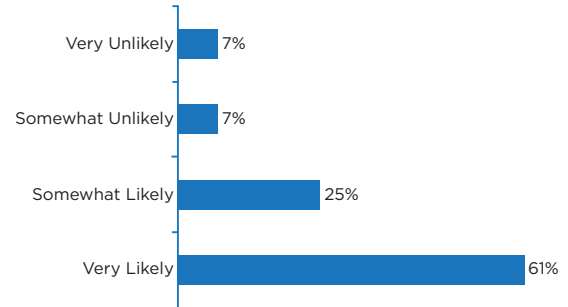
## Residents 55+ and Older

Aging Americans are another potentially vulnerable population, especially as travel by single-occupancy vehicle becomes more difficult and alternative transportation choices in their communities may not exist. According to a survey by DRCOG’s Area Agency on Aging, 26% of older adults in the Denver region have problems finding safe and affordable transportation.

Moreover, transportation was one of the top three most-cited services that older adults felt could help them age in place, especially among low income and homeless seniors, who said that public transportation and special transit services were the only ways they could get to medical providers and food banks.

Since, as **Figure DEM-4** shows, the majority of older residents in Denver want to remain in their existing communities, understanding how the existing and future transit network can serve them is crucial.

**Figure DEM-4: How Likely Are You to Remain in the Community Throughout Retirement?**

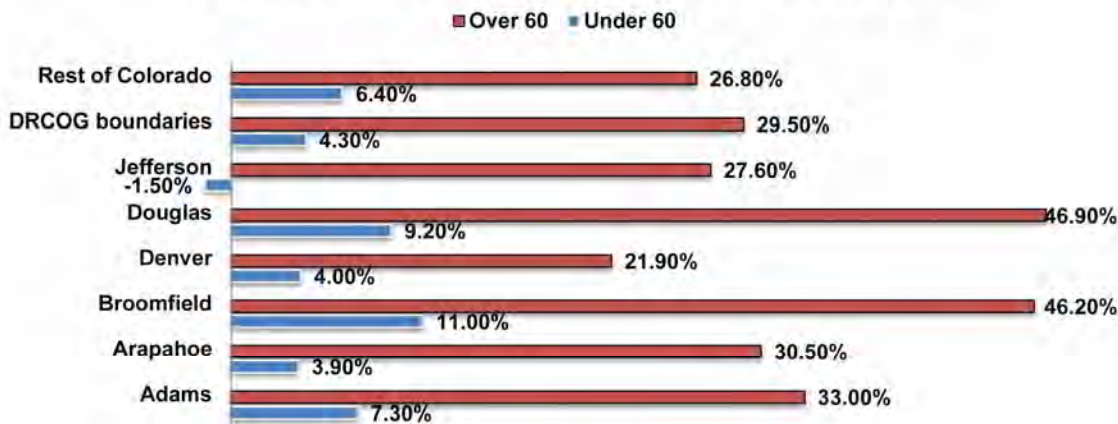


SOURCE: DRCOG Area Agency on Aging

**Map DEM-4: Distribution of Denver Residents Who Are 55 and Older** shows where the Denver region’s older residents live. There are high numbers of older residents along the Southwest and Southeast corridors, which are already built, and station areas along these lines may present opportunities for senior housing. There are also large numbers of older adults in between the West and Gold Lines and in northern Denver on the North Metro Corridor. While connections to job opportunities are not as critical to this age cohort, both regional destinations such as health care and entertainment and local destinations such as grocers and retail shops are important considerations. This may be achieved by developing a combination of connections to the regional transit network and making sure that neighborhoods are safe for walking and accessing transit. Many of these neighborhoods also are places with higher income residents, meaning these may not be populations used to thinking about transit as a viable means of getting around.

**Figure DEM-5: Percent Increase in Younger vs. Older Population, 2010-2015**

### Percent Increase in Younger vs. Older Population in the Denver Region, 2010-2015



SOURCE: DRCOG Area Agency on Aging

The aging of the population will continue to be a challenge for the region and the state for years to come. In the next five years, the state of Colorado will be home to more than 1 million people who are 60 years old or older. In that time, the Metro Denver region’s older adult population is expected to grow 30%. By 2035, one out of every four residents in the region will be 60 years old or older.<sup>6</sup>



### Distribution of Denver Residents who are 55 and older

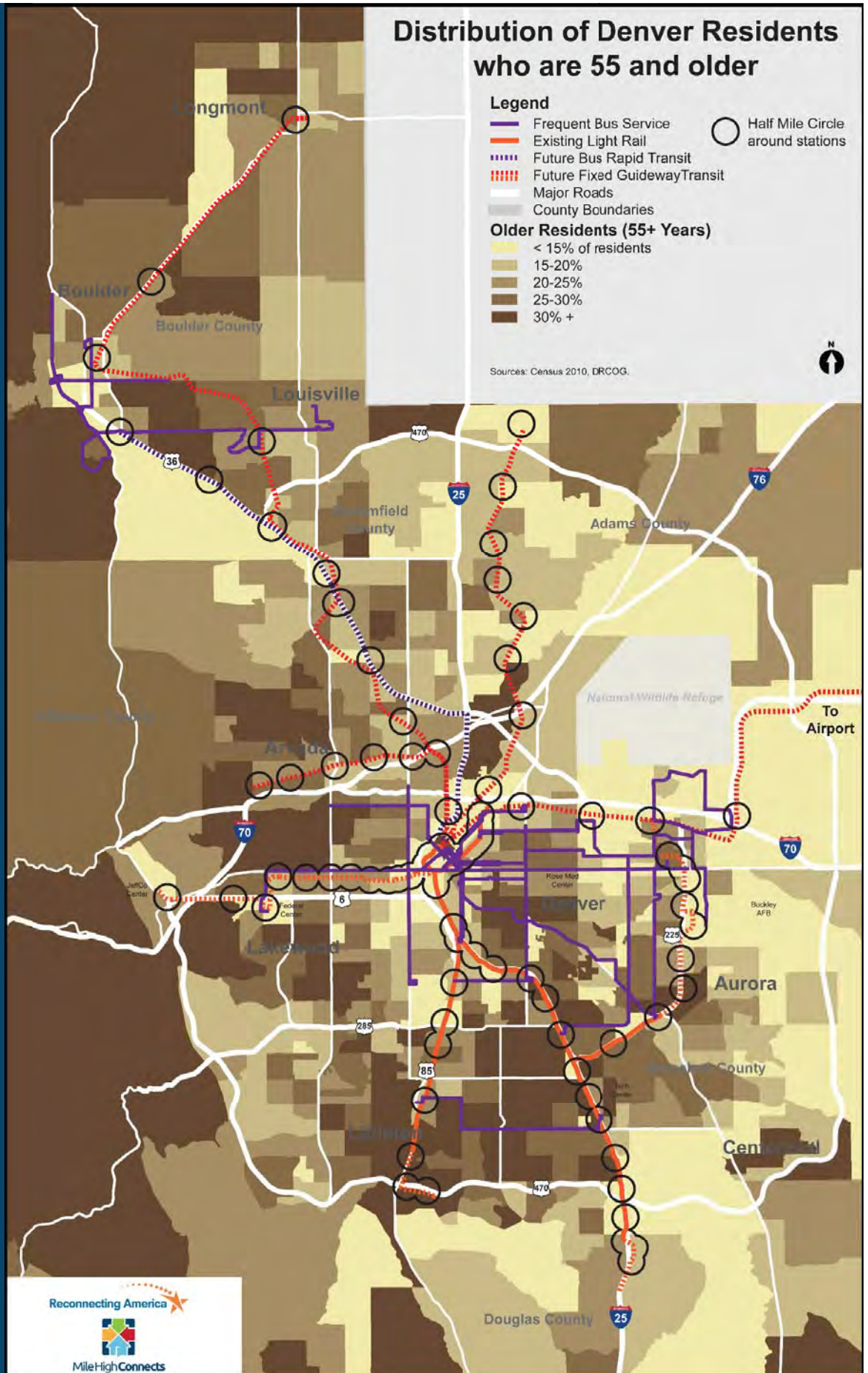
**Legend**

- Frequent Bus Service
- Existing Light Rail
- Future Bus Rapid Transit
- Future Fixed Guideway Transit
- Major Roads
- County Boundaries
- Half Mile Circle around stations

**Older Residents (55+ Years)**

- < 15% of residents
- 15-20%
- 20-25%
- 25-30%
- 30% +

Sources: Census 2010, DRCOG.



Map DEM-4:  
Distribution  
of Denver  
Residents Who  
Are 55 and Older



## Commute Mode Share

While the previous maps looked at specific populations and indicated how they might benefit from transit access, this section looks specifically at where people are using transit and other non-auto modes of transportation.

In the Denver region, 274,900 people take transit on an average weekday. As shown in **Table DEM-1**, the vast majority of Denver's transit riders are taking the bus, with only 25% of transit users taking light rail. While these transit trips are serving a variety of purposes, most of

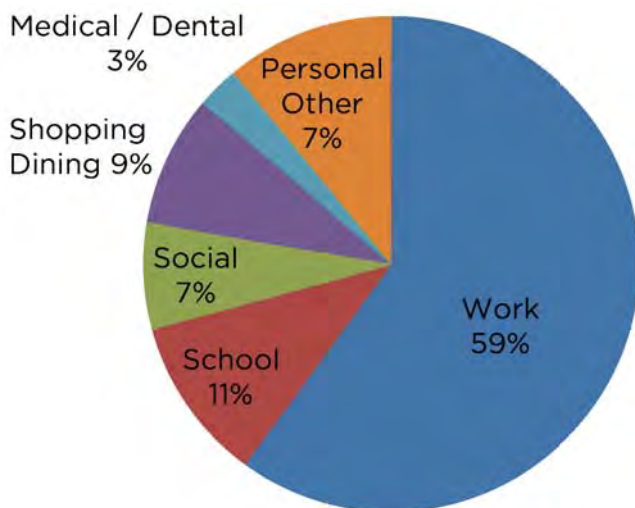
**Table DEM-1: Transit Ridership Statistics (APTA, 2Q 2011)**

	Ave. Weekday Ridership	April '11	May '11	June '11	Quarterly Change	YTD Change
Bus	201,500	5,287,600	5,022,600	4,822,100	-1.57%	-2.44%
Light Rail	67,900	1,894,400	1,646,100	1,648,700	6.39%	8.03%
Demand Response	5,500	122,700	120,500	129,300	0.03%	-0.52%
TOTAL	274,900	7,304,700	6,789,200	6,600,100	0.34%	0.02%

SOURCE: APTA <http://ractod.org/HfWqXR>

these trips are probably being taken to go to and from work. Nationally, we know that nearly 60% of all transit trips serve as a daily commute to work. **Figure DEM-6** shows the proportion of these types of trips.

**Figure DEM-6: Transit Trips in the United States by Purpose, 2007**



SOURCE: American Public Transportation Association, A Profile of Public Transportation Passengers, 2007

high percentage of non-auto commuters along Colfax, especially at Fitzsimmons. The area surrounding Fitzsimmons could be a prime site for additional housing and other TOD amenities because of the large number of jobs.

Also, the communities with high frequency bus and rail service also tend to have more people walking, biking and taking transit. If transit and connectivity investments are made, people will use the system, however, it has to be convenient.

**Table DEM-2: Workers Commuting Behavior**

	MSA		City		Suburbs	
Total commuters	1,277,368		459,834		817,534	
Drive alone	965,670	75.6%	329,958	71.8%	635,712	77.8%
Public Transportation	59,240	4.6%	31,884	6.9%	27,356	3.3%
Work from home	79,828	6.2%	24,179	5.3%	55,649	6.8%
No-car households	61,729	6.3%	36,821	10.0%	24,908	4.1%

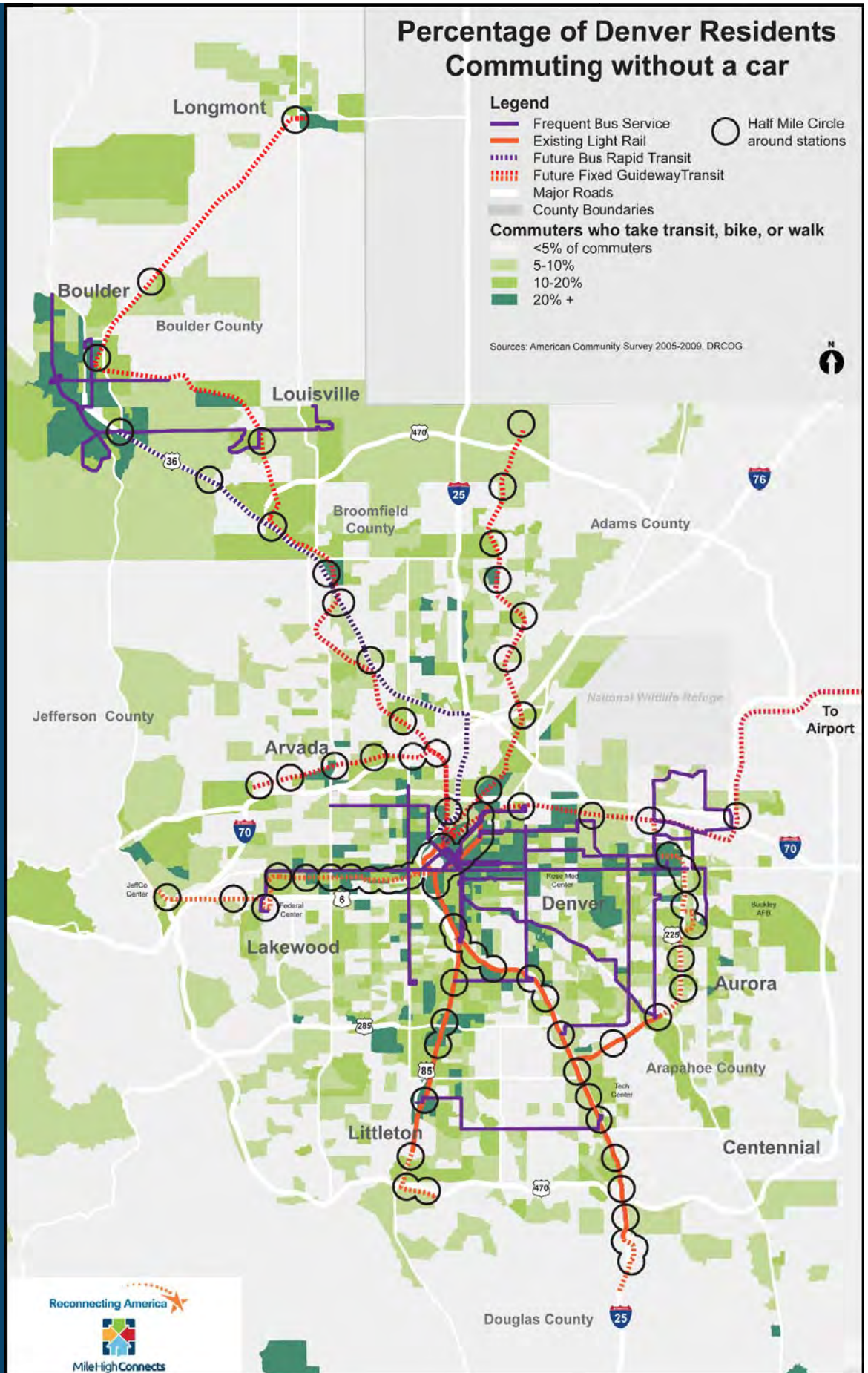
SOURCE: Brookings Institution; U.S. Census Bureau

The future northern lines and Gold Line currently have small numbers of nonauto commuters, and they lack good transportation options today. As new transit stations open, this map will likely change significantly, but only if investments are made to infrastructure surrounding the station to support more walking, biking and transit trips.

### Percentage of Denver Residents Commuting without a car

- Legend**
- Frequent Bus Service
  - Existing Light Rail
  - Future Bus Rapid Transit
  - Future Fixed Guideway Transit
  - Major Roads
  - County Boundaries
  - Half Mile Circle around stations
- Commuters who take transit, bike, or walk**
- <5% of commuters
  - 5-10%
  - 10-20%
  - 20% +

Sources: American Community Survey 2005-2009, DRCOG



Map DEM-5: Percentage of Denver Residents Commuting Without A Car



## Action Steps

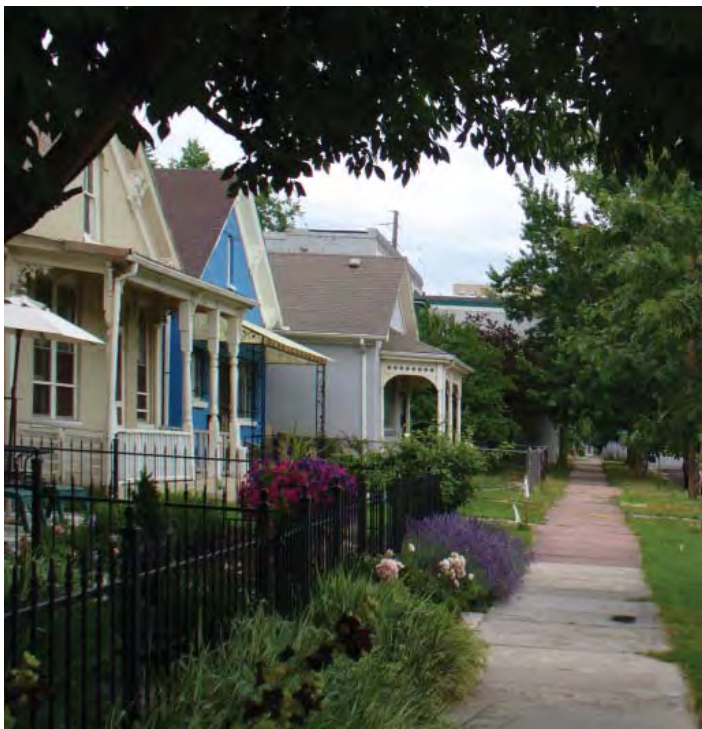
- **Provide last-mile transportation options to destinations that are too far to walk from transit stations.** Many destinations are simply too far to walk from existing or new transit stations. Yet cities, employers, RTD and other groups have the ability to increase connectivity between stations and the places people need to go by improving sidewalks, crosswalks, bicycle facilities, bus service and other supportive infrastructure.
- **Support Transportation Demand Management (TDM) programs and employer-provided shuttle services.** Transportation demand management (TDM) programs and employer-provided shuttle services are two highly successful methods of providing alternative transportation options and filling in that last mile. The Denver region already has many existing TDM programs that can assist with providing information about transportation options. Employers can also work together to provide shuttle services between transit stations and places of work to increase access and reduce the need for employees to spend the money driving to work everyday.
- **Support policy changes such as the adoption of complete streets policies that make walking, bicycling and public transportation safer and more convenient transportation options.** Many cities around the country have been adopting complete streets policies to ensure that streets are made safe for all users of all abilities, whether they walk, bike, take public transportation or drive. Complete streets policies also benefit individuals with disabilities or other mobility challenges. These policies ensure that the most vulnerable users of the road have safe, convenient pathways to get to where they need to go and require cities to include sidewalks, bike lanes and other improvements when redesigning roads. Many cities in the Denver region, as well as the State of Colorado, have passed complete streets policies, but have not yet implemented them on a large scale. Using the areas surrounding station areas as test sites for complete streets would ensure that these destinations become walkable, vibrant destinations that are also great, healthy places to live.
- **Improve sidewalk and crosswalk conditions near transit stations.** Many people feel unsafe walking in their neighborhood because there are no sidewalks or crosswalks. Identifying gaps in the sidewalk network, especially in places where there is heavy foot traffic, can make walking to transit stations safer and more convenient, while also increasing ridership.
- **Upgrade bicycle facilities and extend the B-Cycle Program throughout the transit system.** The Denver region is known for its great bicycling culture, but conditions in many neighborhoods are unsafe. Constructing bicycle lanes or painting shared lane markings can go a long way to improve the bicycling environment, especially near transit stations, where bicycling may be a way to get to a job, store or school that is too far to walk. Cities in the region should also explore bicycle sharing at stations, which would allow people to rent bikes at stations and drop them off at their destination. The City of Denver already has B-Cycle, and other communities could potentially add stations to this existing network if funding can be identified.
- **Prioritize improvements in communities with the highest need.** Many transit lines run through communities with transit-dependent populations, but that does not necessarily mean that cities will prioritize investments in these neighborhoods. These communities can benefit the most from safe, well-connected sidewalks, bicycle routes and other last-mile connections to the places they need to go.

## Housing

### Maps in this section:

- Distribution of Federally Assisted Housing in the Denver Region
- Distribution of Affordable Rental Housing in the Denver Region
- Distribution of Rent & Transportation Cost Burdens
- Overview of Denver Region's Supply of Affordable Housing
- Distribution of Affordable Owner Housing in the Denver Region
- Pre-War Housing Stock and Low Income Neighborhoods in the Denver Region
- Distribution of Subsidized Housing & Employment in the Denver Region

Historically, housing has been considered affordable if it constitutes no more than 30% of a household's annual income.<sup>1</sup> However, with the rise of transportation costs over the last 100 years, experts today agree that the combined costs of housing and transportation is a better measure. Looking at combined costs gives a better sense for what a housing choice really means for a family, given that the amount of money a household spends on transportation is deeply connected to where their home is located. When transportation costs are added to the cost of renting or owning a home, many places that seemed affordable are shown to be more expensive. A better measure of affordability is that the combined housing and transportation costs should constitute no more than 45% of a household's income.<sup>2</sup>



RACTOD on Flickr.com / Creative Commons

grow to 155,000 households by 2030, up from 45,000 in 2006.<sup>4</sup> The Center for Transit-Oriented Development (CTOD) estimates that at least 40% of the demand for TOD in the Denver region will come from those making less than 80% of the area median income, which was \$51,600 for a family of three in 2006.<sup>5</sup> Given high demand, the price for housing near transit may be too high for many who desire to live there, especially those who would benefit financially from living in a compact, transit-oriented community. There might also be concerns that current residents may be pushed out by rising rents when a transit station area redevelops.

The following key findings describe some of the major opportunities and challenges related to housing and transit.

While almost seven out of ten communities (69%) meet the traditional 30% affordable housing cost threshold, only four in ten (39%) meet the 45% affordable housing plus transportation cost threshold. The Center for Neighborhood Technology estimates that for every dollar a working family saves on housing, it spends 77 cents more on transportation (as of 2006).<sup>3</sup> This is especially true of places far from regional employment centers and amenities—where driving long distances is the only way to get around.

One of the outcomes of this transit investment is to spur new development in the areas surrounding stations, which can help lower housing and transportation costs for people who choose to live there. Transit-oriented development (TOD) is typically defined as higher-density, mixed-use development within walking distance—a half-mile—of transit stations. TOD is really about creating attractive, walkable, sustainable communities that allow residents to have housing and transportation choices and to live convenient, affordable, pleasant lives -- with places to raise a family and retire comfortably.

In the Denver region, demand for housing near transit could

## Affordable housing is plentiful near transit, but major gaps remain.

**Map HOU-1: Distribution of Federally Assisted Housing in the Denver Region** displays the locations of federally subsidized Section 8, Section 202/811, and low income housing tax credit (LIHTC) affordable housing within the Denver region. A majority of affordable housing in the Denver region is in close proximity to existing or planned fixed-guideway transit, or along major bus routes with frequent service, such as Parker Road and Colfax Avenue. There are a few outlying developments in places such as Golden, Brighton, Centennial and Thornton that would benefit from better transit connectivity. The I-225 Corridor is a major opportunity to connect low-income households to transit. Numerous affordable housing units in Aurora, Glendale and southeast Denver are within two to three miles of the planned light rail line, and enhanced bus service could provide necessary connections. This area also has a high concentration of jobs at either end — Fitzsimmons and the airport to the north and the Tech Center to the south — so it will also improve connections for people living along other corridors.

## Affordable housing is available in more places than people realize, but most of it not near transit.

**Map HOU-2: Distribution of Affordable Rental Housing in the Denver Region** shows the location of all types of affordable housing throughout the region.<sup>6</sup> This includes multifamily apartments with income restrictions or subsidized rents (via HUD’s Section 8 vouchers and Low Income Housing Tax Credits) and deed-restricted single-family homes available for ownership at reduced rates. Also included are unrestricted market-rate units available for rent to those making less than 60% of the area median income (AMI) or for sale to homeowners making less than 100% of the AMI for a family of four.

Some parts of the region have a good balance of affordable and market-rate housing, but many are largely unbalanced toward either extreme. Significant areas – particularly to the southwest, north, and southeast (Aurora) – are critically underserved by transit options but have a large percentage

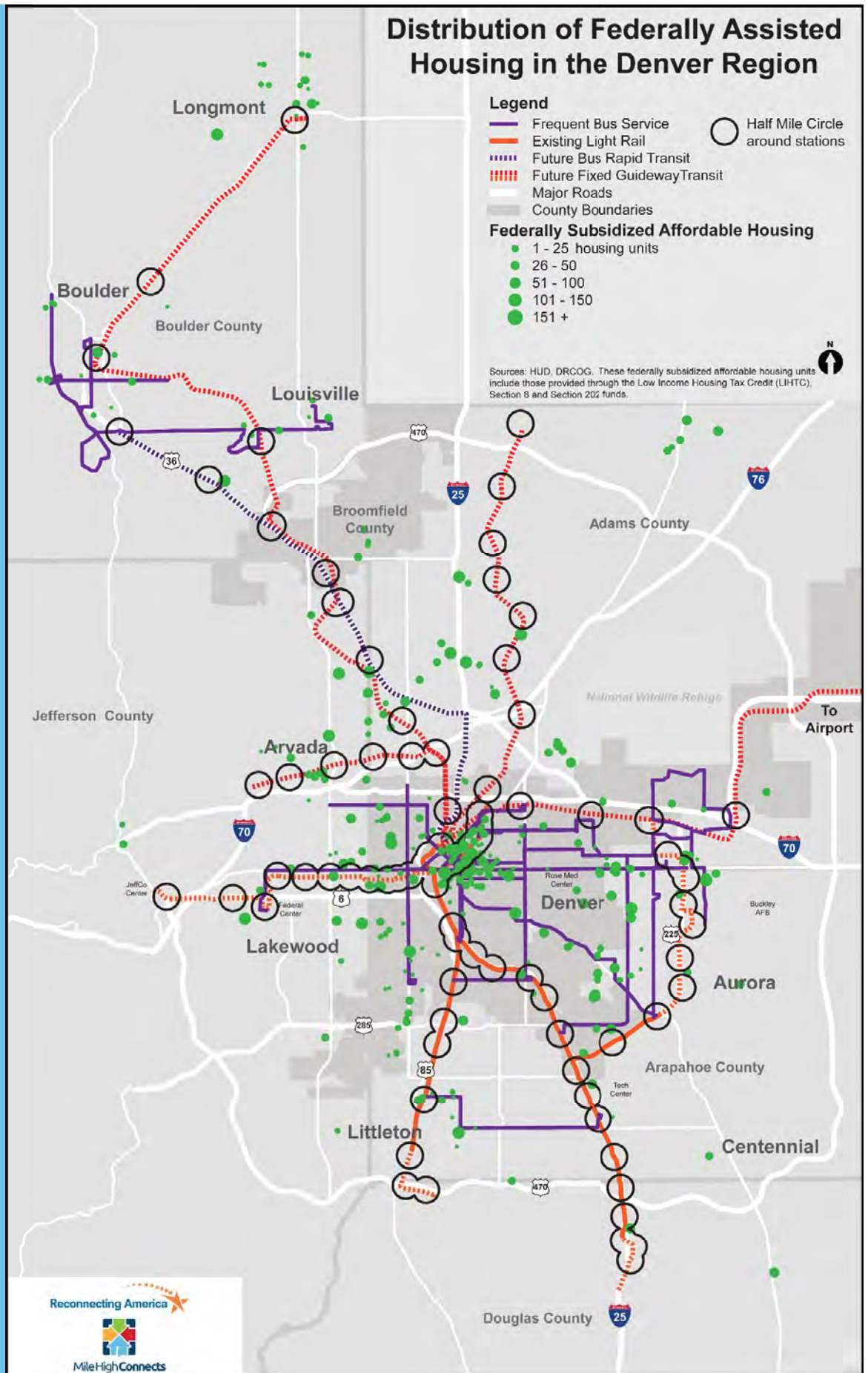
of the region’s affordable market-rate housing. Overall, while most federally subsidized affordable housing is near transit, the majority of affordable housing units are not near transit. There are rental units scattered all over the region that are far away from adequate transit service, especially in the southeastern and southwestern parts of the region. It is particularly evident that much of the affordable market-rate ownership housing is located well-outside of the transit system, with large pockets around the periphery. Many of these families may have “driven ’til they qualified,” not taking into account the substantial transportation costs they would incur. These households need enhanced bus service to connect them to the transit network. As for those inherently affordable units near stations, once demand for living near transit increases there may be displacement pressures.

The preservation and creation of affordable housing opportunities near transit stations is a critical issue for the Denver region.

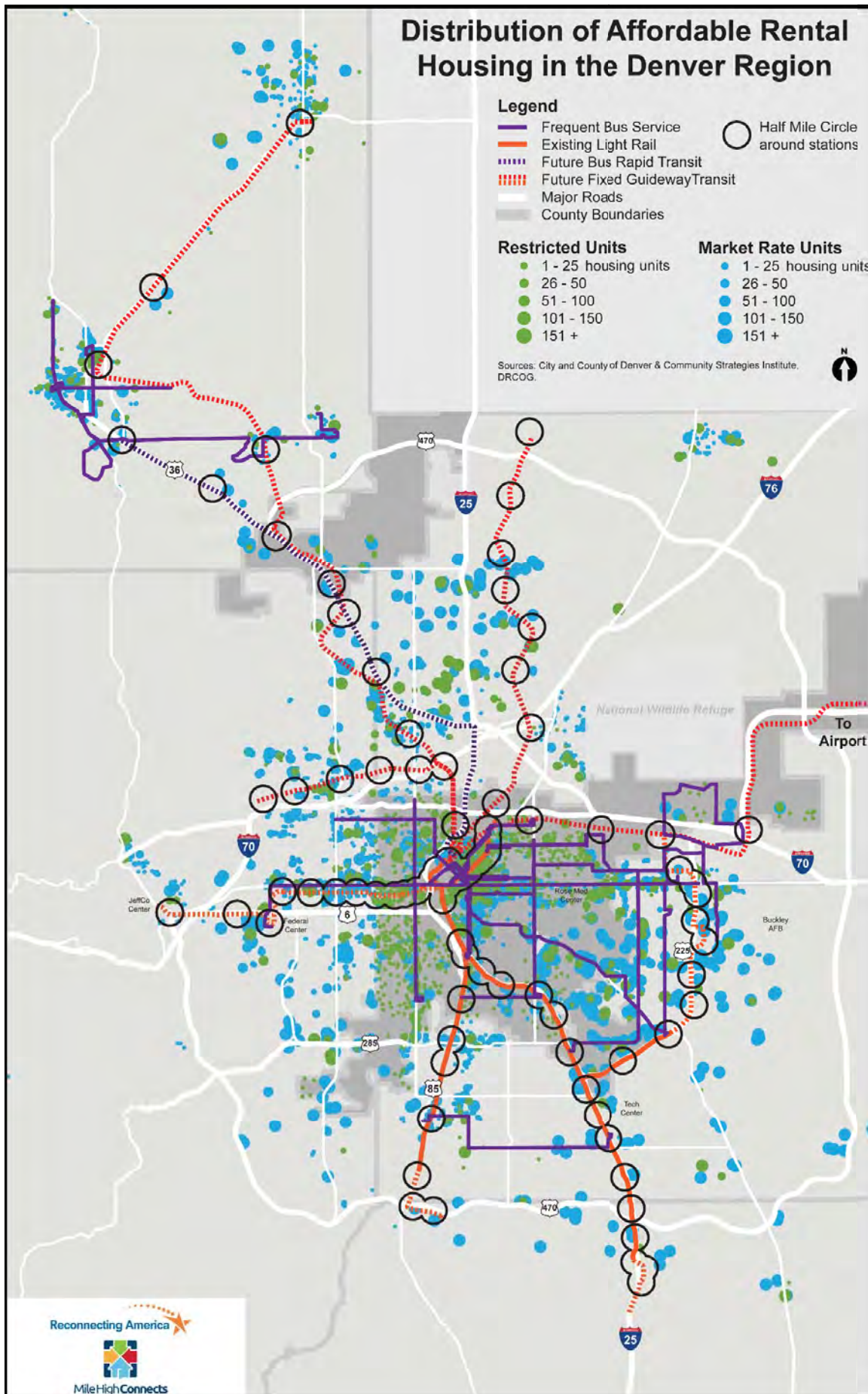
Ensuring that there is affordable and mixed-income housing near transit is essential to improving the health and quality-of-life of the region’s residents. A study by Enterprise Community Partners and Reconnecting America found that approximately 75% of the region’s privately owned, federally subsidized affordable housing stock is located within a half-mile of an existing or proposed quality transit station.<sup>7,8</sup> Denver developers pay an average of 25% more for rental properties within a quarter-mile of an existing or planned light rail stop than for properties further from transit.<sup>9</sup> Yet many of these units are not permanently affordable and the contracts establishing affordability could expire if the owners do not take steps to renew the subsidies. Several mechanisms already are in place to protect affordable housing from expiring, including Denver’s “Early Warning System,” but more work is needed to ensure that what has happened in other regions does not occur in Denver.



Payton Chung / Creative Commons



Map HOU-1:  
Distribution  
of Federally  
Assisted  
Housing in the  
Denver Region



*Map HOU-2: Distribution of Affordable Rental Housing in the Denver Region*





## Transit-Oriented Development

One goal of the region's transit investment is to spur higher-density, mixed-use development within walking distance — a half-mile — of transit stations. Such developments should:

- Increase “location efficiency” so people can walk and bike and take transit.
- Boost transit ridership and minimize automobile traffic.
- Provide a rich mix of housing, shopping and transportation choices.
- Generate revenue for the public and private sectors and provide value for both new and existing residents.
- Create a sense of community
- Connect residents and employers to job opportunities.



Matthew Blackett / Creative Commons

In the end, TOD is about creating attractive, walkable, sustainable communities that allow residents to have housing and transportation choices and to live convenient, affordable, pleasant lives – with places to raise a family and retire comfortably.<sup>10</sup>

The demand for housing near transit is increasing, and the Center for Transit-Oriented Development (CTOD) estimates that by 2030, almost a quarter of all U.S. households (14.6 million) will want to live near transit. To meet this demand, more than 2,000 housing units would need to be built in every existing and planned transit station in the country by 2030.<sup>11</sup> At the time of the study (2004), only 6 million households lived within a half-mile of a fixed-guideway transit station, so by 2030, this number is expected to more than double.<sup>12</sup>

The types of households who will seek housing near transit will vary, requiring a mix of different housing types at different price levels.<sup>13</sup>

- Demographically, nearly two-thirds of total demand for housing near transit will be generated by single householders without children.
- Households with children only account for about 20% of TOD demand
- Baby Boomers (65+) will be the largest group to prefer TOD

In the Denver region, demand for housing near transit could grow to 155,000 households by 2030, up from 45,000 in 2006.<sup>14</sup> CTOD estimates that at least 40% of the demand for TOD in the Denver region will come from those making less than 80% of the area median income, which was \$51,600 for a family of three in 2006.<sup>15</sup> Given high demand, the price for housing near transit may be too high for those who would benefit financially from living in a compact, transit-oriented community. There might also be that current residents may be pushed out by rising rents when a transit station area redevelops.

## Housing & Transportation Costs

Historically, housing has been considered affordable if it constitutes no more than 30% of a household's annual income.<sup>16</sup> However, with the rise of transportation costs over the last 100 years (Figure HOU-1), experts today agree that the combined of housing and transportation costs is a better measure. The combined cost gives a better sense for what a housing choice means for a family. The amount of money a household spends on transportation is directly to the location of their home.

When transportation costs are added to the cost of renting or owning a home, many places that seemed affordable are shown to be more expensive. Instead of using the metric of less than 30% income for housing, a better measure of affordability is that the combined housing and transportation cost should constitute no more than 45% of a household's income.<sup>17</sup>

An extensive regional transit network can offer significant cost savings for families. In 2011, APTA found that households in Denver could save up to \$10,325 a year by taking transit instead of driving, savings of about \$860 a month.<sup>18</sup>

## Distribution of Rent & Transportation Cost Burdens

**Map HOU-3: Distribution of Rent & Transportation Cost Burdens** illustrates where people pay the most in rent in the Denver region, as well as the percentage of household income paid in transportation costs for people living in current or planned station areas. The darker the purple background, the higher the rents. The darker the station area circle, the higher the transportation costs. Housing and transportation costs are generally higher the further one gets from the central business district, but rent is less expensive in many places with poor transit service.

The transit stations at the end of the lines have the highest housing and transportation costs in the entire network (SE, North Metro, and SW especially). These areas also appear to have high percentages of rent-burdened households, most likely because of the high incomes in these areas of the region. Completing the North Metro, East, and SW/SE extensions could potentially reduce the H+T costs of people living in these station areas, even those not in the highest need. There are major gaps in SW Denver, Centennial, Aurora, and in the northern part of the region between the two planned transit lines. These areas should be priorities for enhanced bus service. (Figure HOU-2)

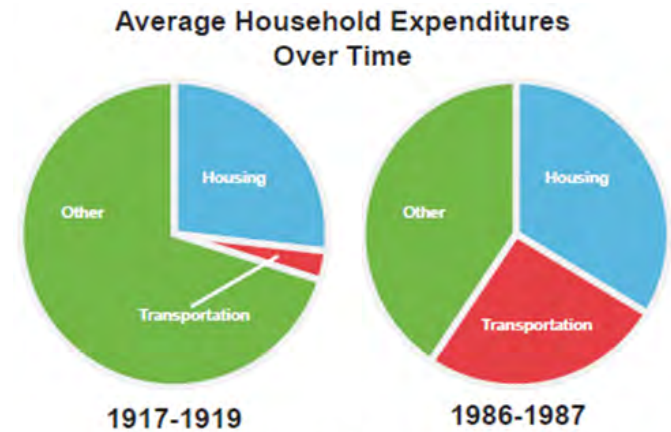
Overall, this map makes the case about the opportunity to connect housing and transportation to lower the costs to residents. Places with low rents often have high transportation costs if there is poor transit service and households must drive everywhere. Places with high rents but good transit service may ultimately save money because they have better connections to the places they need to go.

## Overview of Denver Region's Supply of Affordable Housing

**Map HOU4: Overview of Denver Region's Supply of Affordable Housing** illustrates the location of all types of affordable housing throughout the region, not just federally subsidized housing. This includes multifamily apartments with income restrictions or subsidized rents (via HUD's Section 8 vouchers and Low Income Housing Tax Credits) and deed-restricted single-family homes available for ownership at reduced rates. Also included are unrestricted market-rate units available for rent to those making less than 60% of the area median income (AMI) or for sale to homeowners making less than 100% of the AMI for a family of four.<sup>19</sup>

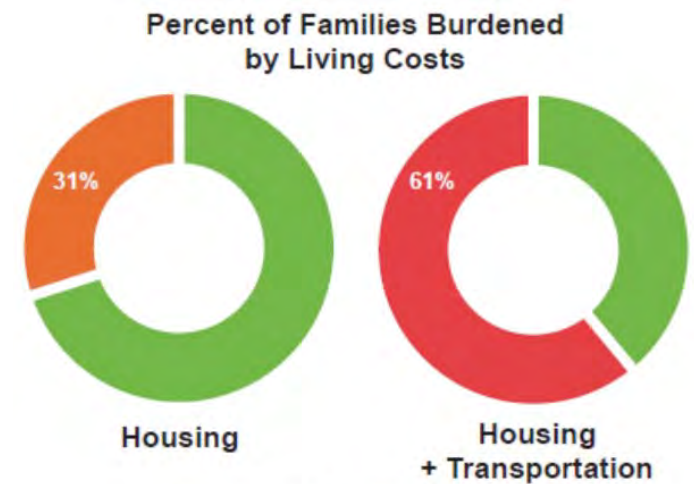
Some parts of the region have a good balance of affordable and market-rate housing, but many are largely unbalanced toward either extreme. The map also illustrates that while most federally subsidized affordable housing is near transit, the majority of affordable housing units are not. There are rental units scattered across the region that are far away from any quality transit service, especially in the southeastern and southwestern parts of the region. These households need enhanced bus service to connect them to the transit network. As for currently affordable housing near transit, once demand for living near transit increases there may be displacement and gentrification pressures for those units.

**Figure HOU-1: Average Household Expenditures**



Source: Johnson, Rogers & Tan, 2001

**Figure HOU-2: Family Housing & Transportation Burden**



Source: Center for Neighborhood Technology

### Distribution of Rent and Transportation Cost Burdens

#### Legend

- Frequent Bus Service
- Existing Light Rail
- Future Bus Rapid Transit
- Future Fixed Guideway Transit
- Major Roads
- County Boundaries
- Half Mile Circle around stations

#### Rent Burdened\*

- < 15% of households
- 15-30%
- 30-45%
- 45% +

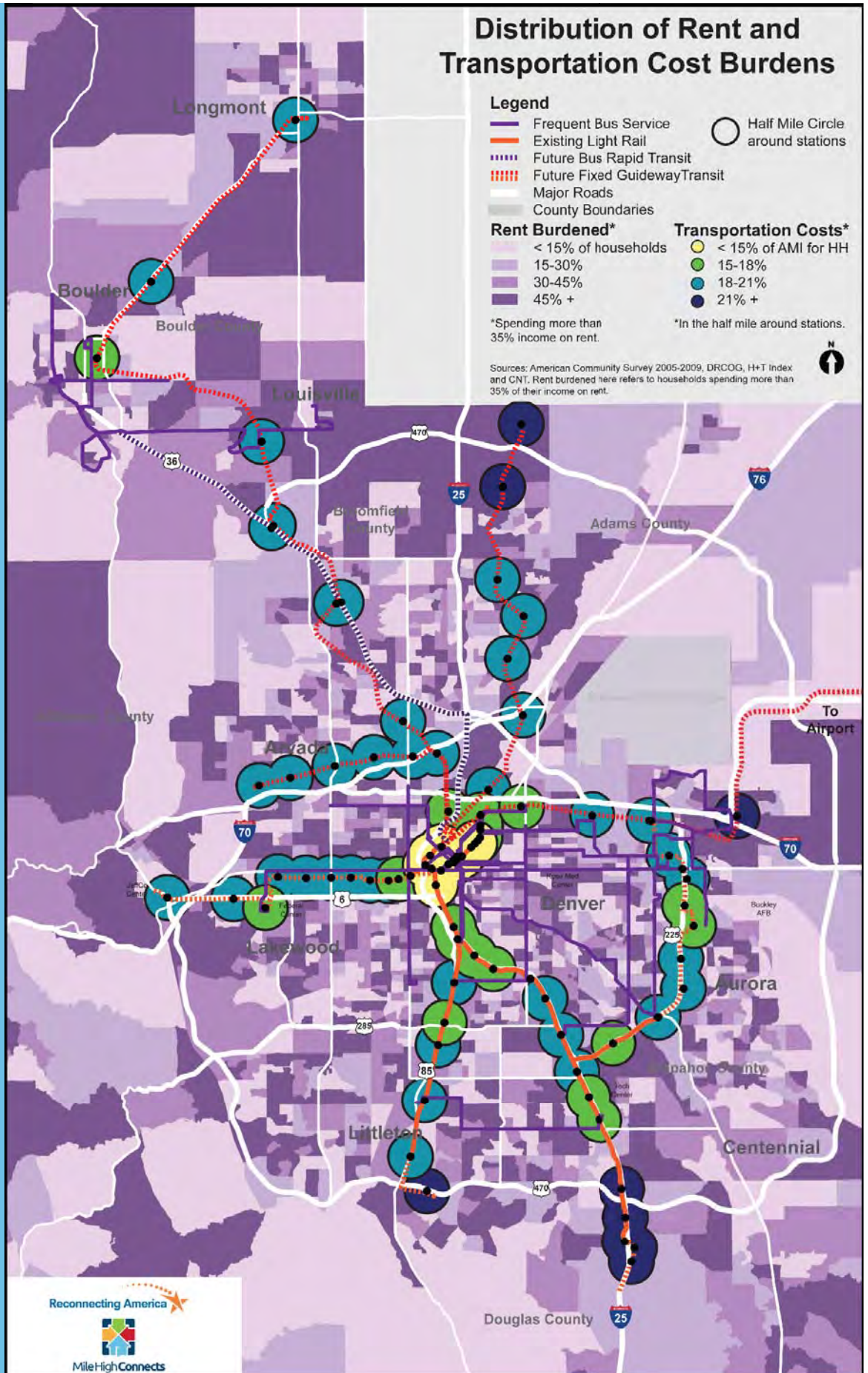
#### Transportation Costs\*

- < 15% of AMI for HH
- 15-18%
- 18-21%
- 21% +

\*Spending more than 35% income on rent.

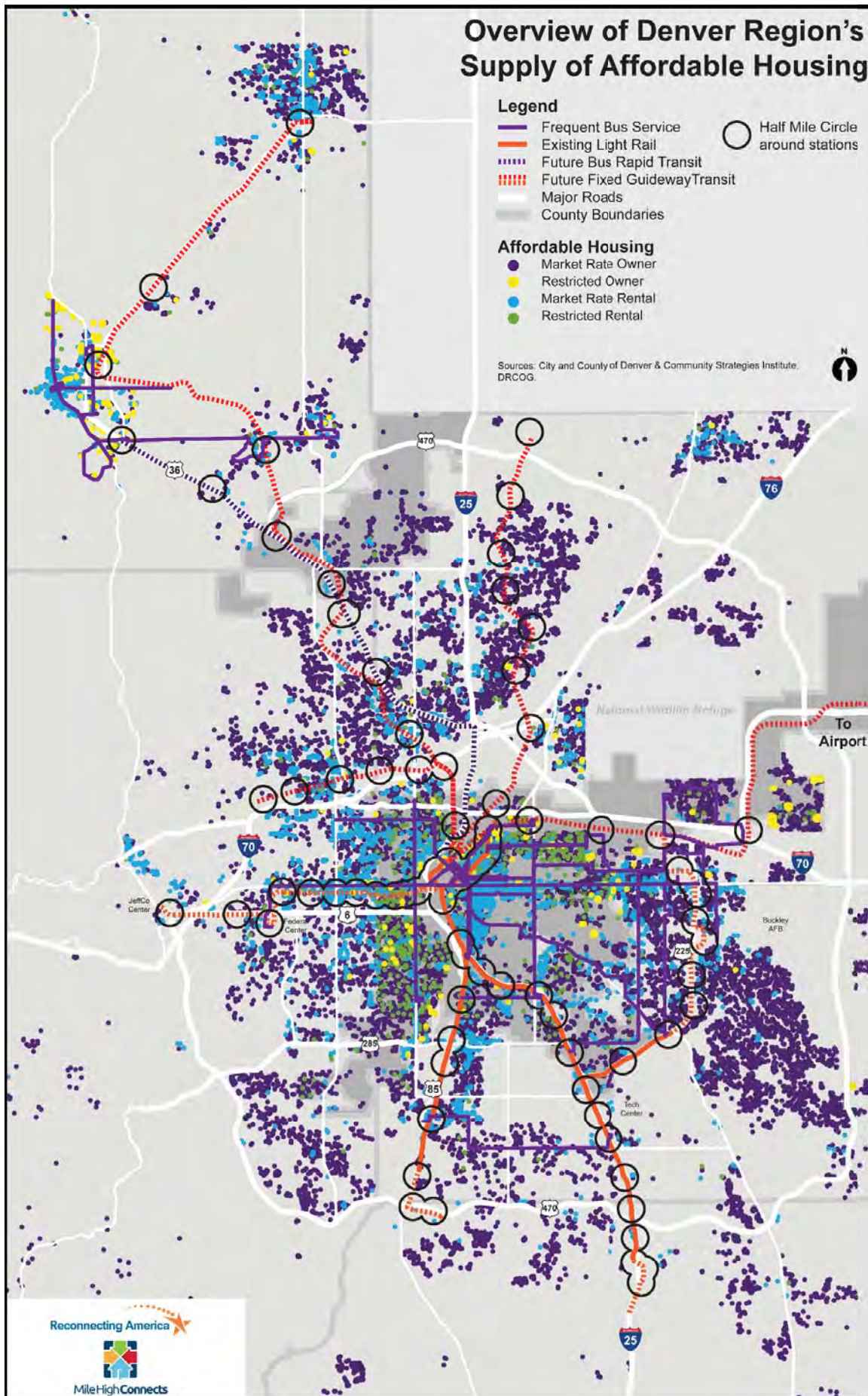
\*In the half mile around stations.

Sources: American Community Survey 2005-2009, DRCOG, H+T Index and CNT. Rent burdened here refers to households spending more than 35% of their income on rent.



Map HOU-3:  
Distribution  
of Rent &  
Transportation  
Cost Burdens





Map HOU-4:  
Overview of  
Denver Region's  
Supply of  
Affordable  
Housing



**H+T in Other Regions: How Denver Compares**

In its 2010 report, Penny Wise and Pound Foolish, CNT looked at all 337 metropolitan statistical areas in the United States and found that:

The number of communities considered affordable drops dramatically in most regions when the definition of affordability shifts from a focus on housing costs alone to one that combines housing and transportation costs.

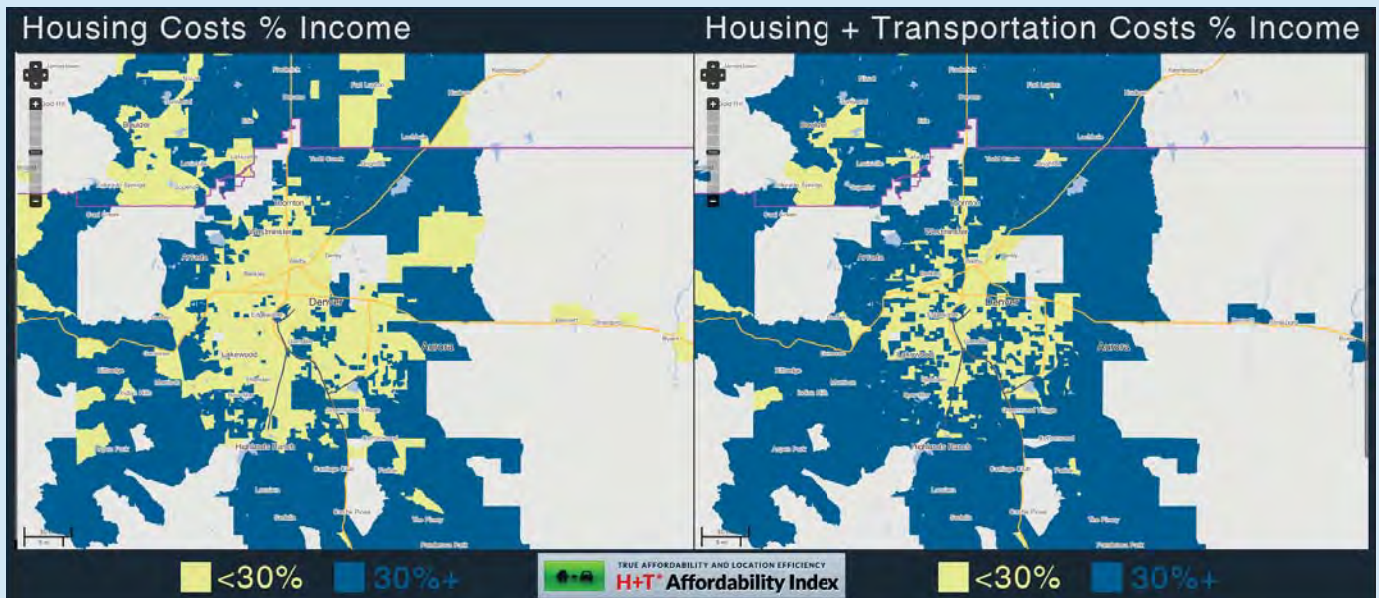
Families who pursue a “drive ‘til you qualify” approach to home ownership in an effort to reduce

expenses often pay more in higher transportation costs than they save on housing, thereby placing more, not less, stress on their budgets.

Residents of “drive ‘til you qualify” zones are most sensitive to jumps in gas prices because of the distances they must drive.

The longer distances associated with sprawl also translate into more congestion on highways, less leisure time with families as workers spend more time in their cars getting to and from jobs, and higher greenhouse gas emissions.

**Figure HOU-3: The Denver Region’s Housing & Transportation Costs**



SOURCE: Center for Neighborhood Technology: <http://www.htindex.org>

**Federally-Assisted Housing**

**Map HOU5: Distribution of Affordable Owner Housing in the Denver Region** looks at the locations of federally subsidized Section 8, Section 202/811, and low-income housing tax credit (LIHTC) affordable housing within the Denver region. A majority of affordable housing in the Denver region is in close proximity to existing or planned fixed-guideway transit, or along major bus routes with frequent service, such as Parker Road and Colfax Avenue. But a few outlying developments in places such as Golden, Brighton, Centennial and Thornton would benefit from better transit connectivity. The I-225 Corridor appears to be a major opportunity to connect low-income households to transit.

Numerous affordable housing units in Aurora, Glendale and southeast Denver are within two to three miles of the planned light rail line, and enhanced bus service could provide necessary connections. This area also has a high concentration of jobs at either end — Fitzsimmons and the airport to the north and the Tech Center to the south — so it will also improve connections for people living along other corridors. Overall, the map makes a strong case for building out the network of fixed-guideway transit to reach many of the low income residents who need it most. Yet improving bus service is critical to helping many of these residents get to the transit stations.

## How Housing and Transit-Oriented Development Impact Low Income Families

Demand for housing in Transit-Oriented Developments (TOD) is increasing. As the advantages of TOD living become apparent to more people, it becomes necessary to focus on growing equitably. Low-income families should have access to communities in and adjacent to TOD sites because of the direct impact the reduced transportation cost and increased connectivity has on their quality of life. These families rely on transportation as a fundamental resource in their daily lives. Convenient access to public transportation is a real savings in money and time.

The poorest fifth of the country's low-income populations spend 36 cents per every dollar on transportation, including vehicle maintenance and operation of cars.<sup>21</sup> In Denver, the average low-income household spends nearly 60% of its gross income on the combined costs of housing and transportation, leaving very little to be spread across health care, food, education, clothing and other critical needs. TOD housing developments will provide people shorter transit trips and lower costs to many of health, housing, education, and jobs.

### AARP Study

An AARP study<sup>20</sup> of affordable housing in 20 metropolitan regions (including Denver) mapped out federally subsidized rental apartments and measured the amount that was within a certain distance of transit. The study found more than 250,000 of 400,000 affordable apartments located within a half-mile of public transit in these 20 metro areas (nearly 200,000 located within a quarter-mile) but the 2009 study found more than two-thirds of the federal subsidies would expire five years. More than 60,000 are senior units (Section 202/811), with 45,000 located within a quarter-mile of transit. In Denver, 45% of subsidized affordable apartments are located within a half-mile of quality transit and due to expire between 2009 and 2014.

### Denver:

- Total regional units: 9,759
- Total affordable units within a half-mile of transit: 7,300 (75%)
  - Elderly units (Section 202): 1,329
  - Below FMR: 4,633
  - Expiring by 2014: 4,382
- Total affordable units within a quarter-mile of transit: 5,546 (57%)
  - Elderly units (Section 202): 1,000
  - Below FMR: 3,700
  - Expiring by 2014: 3,073

Denver has a unique opportunity to be re-center itself around equity growth and transit-oriented development. Over the next 10 years, the Regional Transit Department (RTD) will build 119 miles of new rail lines and 60 new stations throughout the Metro Denver region. The demand for housing within the half-mile of each station is projected to increase by nearly 300%.<sup>22</sup>

A comparison of the Sun Valley and Lincoln Park neighborhoods of Denver provide an example of the benefit of TOD housing. Both areas include low-income, rent-burdened households, public housing projects, and different public transportation options.

Sun Valley and Lincoln Park are geographically adjacent and divided by the Platte River. The 10th and Osage Light Rail Station is located in the Lincoln Park neighborhood, while Sun Valley will soon have its own light rail station near Colfax and Federal, two major boulevards. In the meantime Sun Valley's best options for transit are bus routes that travel along Federal and Colfax.

Both neighborhoods are home to Denver Housing Authority



(DHA) developments. Lincoln Park has a low income housing development located within a half-mile of the 10th and Osage Station. Sun Valley's DHA property is on 10th and Decatur, less than a quarter-mile from Federal Boulevard, a high frequency bus corridor. Using Google Transit, a service provided by Google Maps, it is possible to calculate the routes, distances, and transit times from the two developments to key areas for low-income families, including employment centers, child care, public schools, local colleges, hospitals, and grocery stores. The two DHA properties are within one mile of each other, yet the differences in time spent in transit is astonishing.

The DHA properties tell a story of identical families, one benefiting from TOD housing near light rail and the broad access rail transit provides to metro Denver. Both fictional families are low-income with three children: one in childcare, one in elementary school, and the other in middle school. Neither family has a functional car. Both depend on public transportation. Each family has a child with asthma and depends on health services in a hospital or clinic several times a year. The parents have part-time jobs both downtown and in the Denver Tech Center, a major job hub in Southeast Denver connected to the center

**Table HOU-1: Comparison of the Sun Valley and Lincoln Park neighborhoods**

Destination	Family A - Sun Valley, DHA Housing - 901 Bryant St				Family B - Lincoln Park, DHA Housing - 1008 Osage St			
	Best Route	Transit Times	Sun Valley Route Frequency	Route Operation Times	Best Route	Transit Times	Route Frequency	Route Operation Times
Auraria Campus	Bus 9 » Walk	19min	30min (Peak) 1hr (Off Peak)	5:35am - 8:36pm	LR - C,D, E,F,H	4min	<15min	3:28am - 2:12am
Denver Health*	Walk	37min*			Walk » Bus - 1 » Walk	20min (15min Walk)*		
Denver Tech Center	Bus-9 » LR - F,E	44min	30min (Peak) 1hr (Off Peak)	5:15am - 8:13pm	LR - F,E	21min	<15min	3:15am - 2:25am
Downtown (16th and California)	Walk » Bus-30	28min	15min (Peak) 30min (Off Peak)	4:49am - 9:49pm	LR - D,F,H	9min	<15min	3:59am - 1:53am
Nearest Child Care	Walk	5min			Walk	5min		
Nearest Elementary	Walk	5min			Walk	5min		
Nearest Middle School	Walk » Bus - 31 » Walk	30min	15min (Peak) 30min (Off Peak)	4:35am - 1:35am	Walk » Bus - 1 » Walk	14min		
Nearest High School*	Bus - 9	20min*	30min (Peak) 1hr (Off Peak)	5:35am - 8:36pm	Walk	15min*		
Nearest Grocery Store*	Bus - 9	16min*	30min (Peak) 1hr (Off Peak)	5:35am - 8:36pm	LR or Bus - 9	12min*		
<b>Total Transit Time</b>		3hrs 24min*				1hr 45min*		
<b>Total Daily Transit Time</b>		2hrs 11min				1hr 8min		
<b>Total Daily Roundtrip</b>		4hrs 22min				2hrs 16min		
<b>Roundtrip Time Difference/ Savings</b>				2hrs 6min				
(*) Denotes transit times that are not considered daily trips.								

of the city by Interstate 25 and the Southeast Light Rail Line. Additionally, the parents take classes at the community college in downtown Denver. Family A lives in the Sun Valley neighborhood, and Family B in the Lincoln Park Neighborhood. Transit times between the household and the necessities of life have been calculated to tell the story of the conveniences or lack thereof for each family.

The daily routine for both families includes taking the first child to a preschool program, the second to the nearest elementary school, and the third to the nearest middle school. The parent then uses public transportation to get to the Denver Tech Center three days a week and downtown two days a week. In order to simplify this comparison, we will say that classes are conveniently attended between jobs while the children are in school.

The transit time for each family is displayed by Table HOU-1. The time savings of Family B living on the TOD site is compelling. Every day they are able to save more than two hours of round-trip transit time compared to Family A. Two hours is a clear advantage in time savings, equating to ten hours in a five day week and more than 520 hours a year. That is 21 days that could be spent raising children, working, or going to school, providing a means to emerge from their low-income situation. Not only does Family B save time, they have many more schedule alternatives for the times they would like to travel. This allows for greater flexibility in their daily lives. Family A is limited to the operation times of buses, some of which stop running as early as 8:13 pm.

This example is not extreme. Sun Valley is located near high frequency bus routes, some of which run every fifteen minutes. Even if we drop two of the schools, the part time job in the Tech Center, and the classes at the Community College, Family B would still save an hour and forty-five minutes over Family A daily. This equates to nearly 19 days per year.

Housing that does not benefit from reliable TOD access severely limits opportunities to low income households, placing extreme restrictions and strain on already vulnerable families. There is a fundamental need to provide well-connected housing options to all income levels, particularly for low income families who depend on public transportation for their livelihood. Equitable development is key to healthy communities and cities. Families who find themselves in situations like this example need the opportunity to live in areas that will allow them to save money and time, while easily and inexpensively accessing education, employment, services, and ultimately a higher quality of life.

## Distribution of Affordable Rental & Owner-Occupied Housing in the Denver Region

**Map HOU-2: Distribution of Affordable Rental Housing in the Denver Region** and **Map HOU-5: Distribution of Affordable Owner Housing in the Denver Region**, display housing units that are affordable at current market rates as rentals to those making less than 60% of the AMI or for sale to those making less than 100% of the AMI for a family of four.

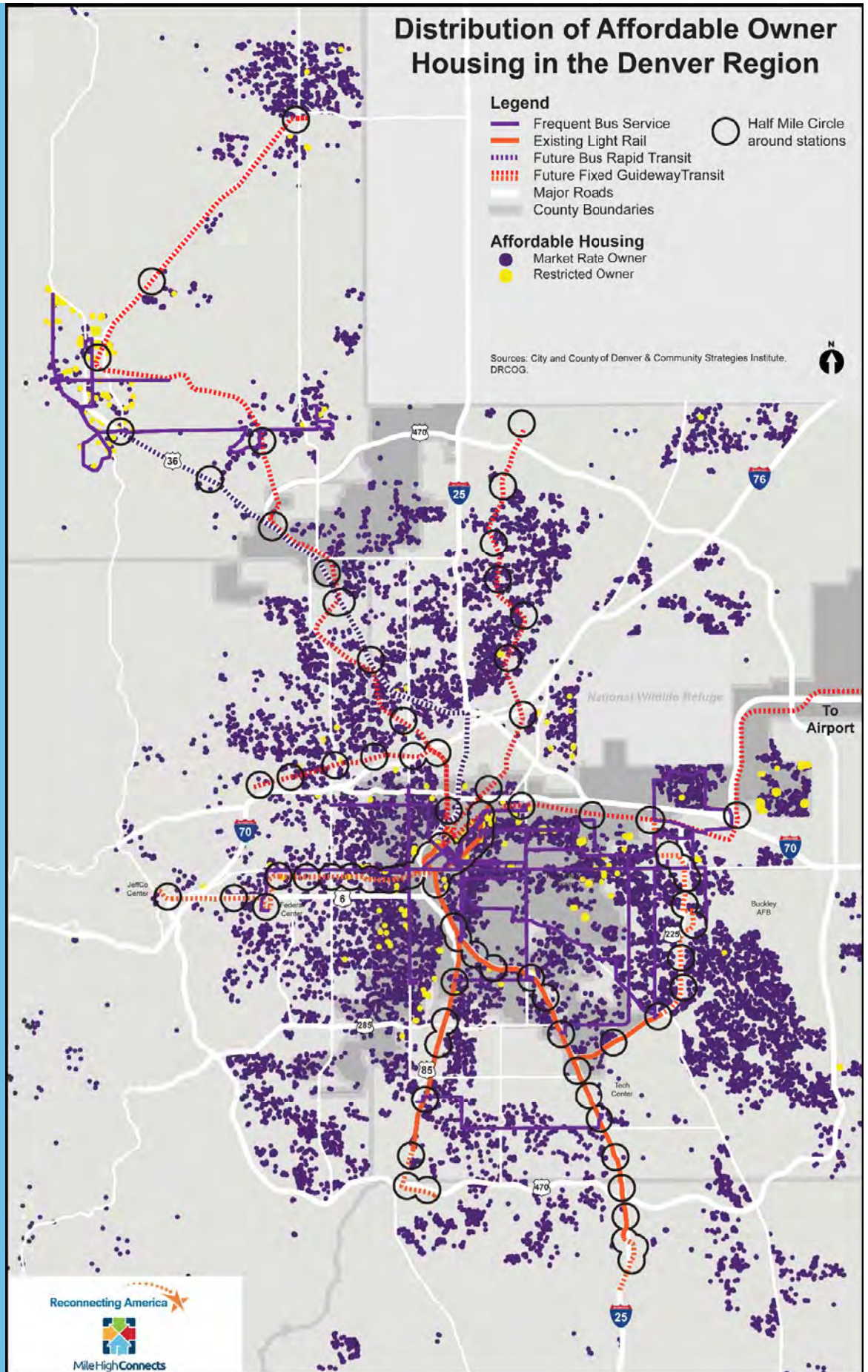
These units do not require subsidies to remain affordable. While there are numerous affordable housing opportunities across the region, many are (1) in areas near transit stations where land values will rise once service starts or (2) in outer suburbs where transportation options are limited and new transit lines will not reach. If all of the housing units near transit become less affordable, then many lower income households will be forced to move to where the automobile will become their only option to getting around, thus raising their transportation costs. Regions across the country are seeing poverty spread to the suburbs, where there are more limited resources to accommodate them. Strategies to preserve market-rate affordable housing near transit while expanding bus service to outer suburbs can go a long way to improving the quality of life for lower income households in the region.

## The Suburbanization of Poverty

An Edgewater family was profiled in an article headlined “Soaring Suburban Poverty Catches Communities Unprepared” as exemplifying the new “suburban poor.”<sup>23</sup> The Blancos collectively earned more than \$100,000 a year and worked secure jobs in technology and health care. They were doing well and never thought they would be in need of help. But then, both lost their jobs and now they are quickly running out of unemployment payments. They barely have enough to pay for their children’s food, clothing and school expenses. As the article explains: “It’s a horrible feeling,” she says, tears staining her face. “There’s pride. I don’t show my kids that we’re hurting, but it hurts me. It makes me feel like I’m failing as a parent. It’s embarrassing.”

Suburban communities are grappling with how to provide assistance to families like the Blancos. They have traditionally not





Map HOU-5:  
Distribution  
of Affordable  
Owner Housing  
in the Denver  
Region

**The Suburbanization of Housing Vouchers<sup>24</sup>**

An increasing number of low-income residents are using housing vouchers in the suburbs of major cities. By the end of 2008, the Brookings Institution found that 49.4% of housing vouchers received through HUD’s Section 8 program were used in suburban areas, a 2.1% increase between 2000 and 2008. The highest growth came from African Americans (up 5%) and Latinos (up 1%). The number of whites using housing vouchers in suburban areas actually decreased 1%. The shift was greatest in metro areas in the Western United States, including Denver, which saw a 4.3% increase, double the national growth rate. Higher-income suburbs with good access to jobs saw the largest increases, but the overall growth of low-income households and affordable housing units remained

in low-income neighborhoods.

The Brookings report theorizes that the following factors are responsible for this shift:

- Job availability in suburban settings (% increases were higher in suburban areas with high job accessibility).
- Affordable housing accessibility
- Relative income of the area
- Housing market crash and resulting recession have made homes in the suburbs more affordable.
- Loosened regulations on where recipients can use housing vouchers (in the 1990s, many jurisdictions only allowed them to be used within the jurisdiction)

**Table HOU-2: Share of Housing Choice Vouchers in Suburbs, 2000 and 2008**

Metro Area	Distribution of Comparison Groups, 2005-2009			Share of Vouchers in Suburbs, 2000 and 2008				
	% Population in Suburbs	% Poor in Suburbs	% FMR in Suburbs	Total Vouchers, 2000	% Vouchers in Suburbs, 2000	Total Vouchers, 2008	% Vouchers in Suburbs, 2008	Change in Suburban %
Denver	64.5%	46.2%	46.4%	23,056	43.6%	38,926	47.9%	4.3%
USA	69.1%	53.6%	52.9%	2.3M (1.1M in suburbs)	47.3%	3.4M (1.7M in suburbs)	49.4%	2.1%

had to deal with the poor and needy as inner cities have. There are no offices, clinics, or support services for low income households in these communities, and if there are, they are not equipped to handle the increasing numbers. Moreover, the primary means of transportation in the suburbs is the car, which adds expenses to already burdened families. Yet they have no choice because public transportation options are minimal to nonexistent, and walking or biking are difficult in low-density areas where distances between destinations are too great.

In Jefferson County, where the Blancos live, Census figures show the number of poor people grew from 27,000 in 2000 to 47,000 by 2010. Now almost 9% of the country is considered poor. The number of children qualifying for free and reduced price lunches grew from 17% in 2002 to 30% in 2010. The number of homeless children in the school system grew from 59 students in 2000 to 2,800 in 2010. The article profiles one family who was evicted from their rented home and now lives in a motel off I-70. The family’s two children must take an hour-long ride on two buses to get to school.

The number of applications for food stamps grew from 900 per month in 2009 to 1,900 per month in 2011. At the same time, the number of staff handling these applications has fallen from 120 to 105. The facility itself is also out of reach for many without a car. It is out at the Jefferson County Government Center near Golden. Fortunately, this facility will be linked by light rail within two years.

Non-profit social service groups are seeing increased demand but decreased funding. “The front door is busier than ever, but the resources coming in the back door, there’s fewer of them,” says the Action Center [of Lakewood]’s executive director, Mag Strittmatter. The same people who used to donate are now relying on them for services.

## Housing Age & Income Levels

**Map HOU-6: Pre-War Housing Stock and Low Income Neighborhoods in the Denver Region** shows the location of housing units built prior to suburbanization in relation to median income. Older housing in low-income neighborhoods is usually subjected to greater displacement and gentrification pressures because of its proximity to major destinations, higher quality construction, and better neighborhood fabric. Areas to the south and northwest of downtown Denver, west of Boulder, and north of Longmont appear to be the most vulnerable. A large amount of older housing stock within Denver and Aurora further from the rail lines may also see increased interest as the area along Colfax Avenue redevelops.

These areas will need a targeted housing preservation strategy to ensure that existing residents are not forced out by redevelopment. The North Metro and I-225 Corridors emerge as major opportunities to connect low-income households to destinations, given the high percentage of people with lower incomes along each corridor. Boulder & Longmont also have pockets of low income households in older neighborhoods that would benefit from the Northwest Rail service. Major gaps appear to the southwest in Denver, Lakewood and Littleton. This is a very low income part of the region with a relatively older housing stock that is not getting new transit investments.

## Center for Housing Policy Study

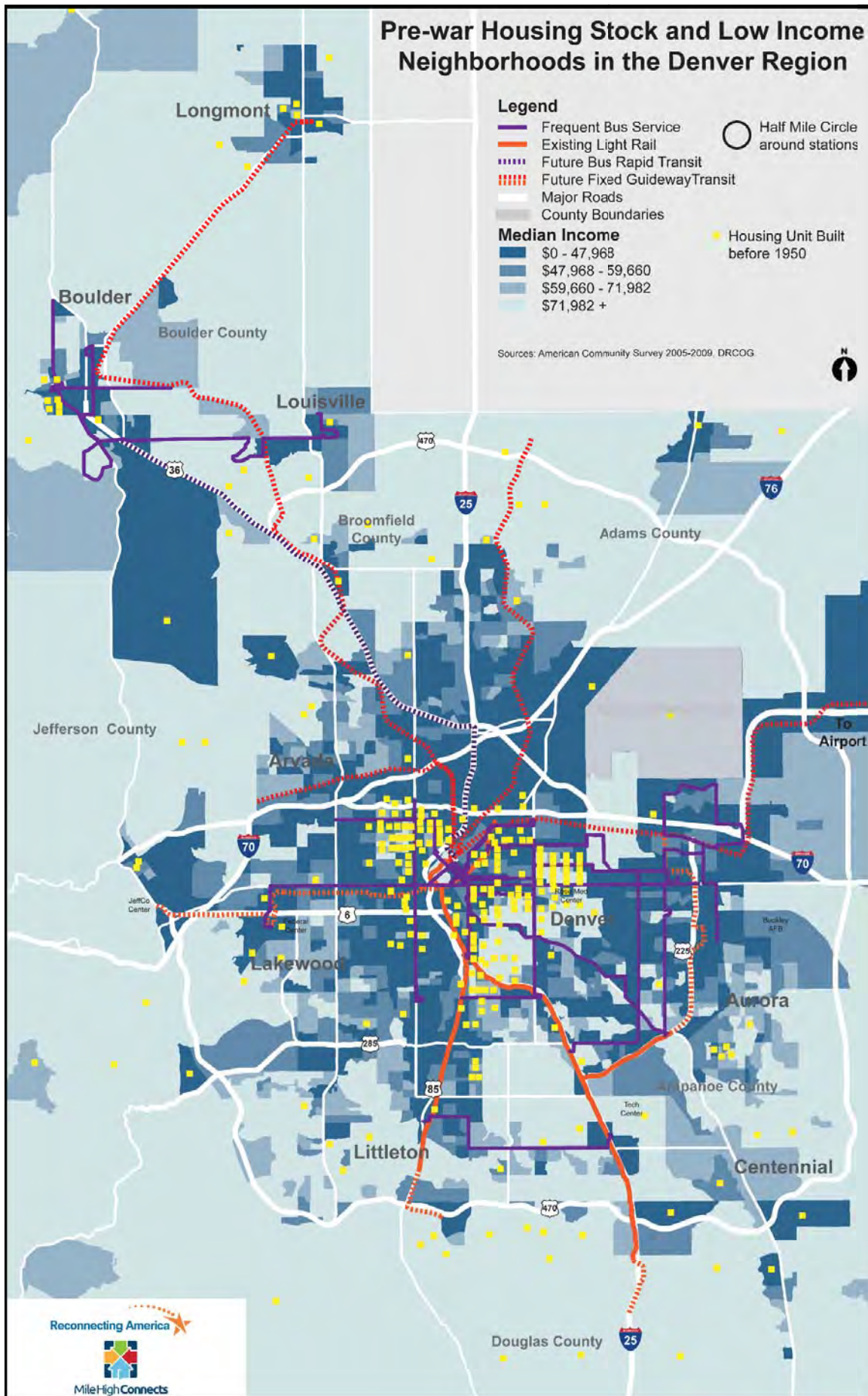
A recent report by the Center for Housing Policy examined the impact of public transportation on housing costs.<sup>22</sup> It found that proximity to public transportation generally leads to higher home values and rents, but the magnitude varies from location to location. Property values can rise as much as 45%. The magnitude of impact depends on a number of mediating factors:

- Accessibility benefits.
- Housing tenure and type.
- Extent and reliability of the transit system.
- Type of transit system.
- Strength of the housing market.
- Nature of the surrounding development.
- Nuisance effects.
- Neighborhood profile.
- Orientation and zoning of the station area.
- Regional economy.
- Public commitment and policy framework.

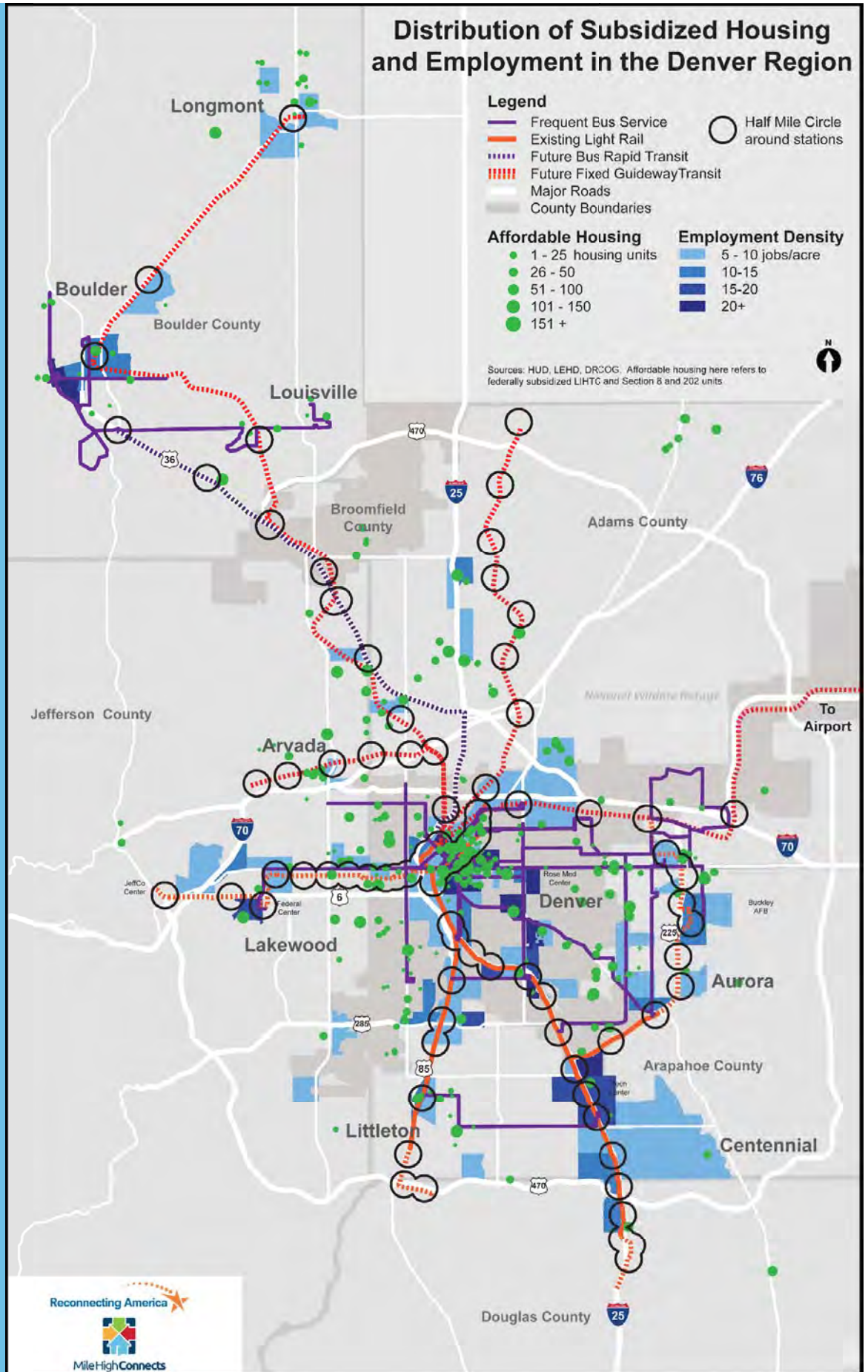
## Employment & Affordable Housing

**Map HOU-7: Distribution of Subsidized Housing & Employment in the Denver Region**, looks at the proximity of federally assisted housing units to the region's dense employment clusters. The downtown area contains the largest concentration of both jobs and affordable housing. In other parts of the region there is a spatial mismatch between major job centers and the location of affordable housing, especially in the Denver Tech Center. The I-225 Corridor emerges as a critical link between jobs and affordable housing in the eastern part of the region, and the West Corridor will provide better connections for those in the western part of the region. Jobs and housing are more dispersed in the northern part of the region but the transit lines will provide better connections between origins and destinations.

Overall, the map makes a strong case for building out the full network of fixed-guideway transit--not only will it reach many people living in affordable housing, but it will also connect to most of the major job centers. The map also makes a strong case for building new affordable/mixed-income housing near transit, since it will connect people to jobs and other opportunities and reduce the spatial mismatch that characterizes much of the region.



Map HOU-6:  
Pre-War Housing  
Stock and  
Low Income  
Neighborhoods  
in the Denver  
Region



Map HOU-7: Distribution of Subsidized Housing & Employment in the Denver Region



## Action Steps

- **Develop and implement an early warning system** to alert when existing income-restricted housing developments (Section 8, Low Income Housing Tax Credits, City restrictions, etc.) are nearing expiration of their affordability restrictions. In many instances, these properties are owned by private investors/developers. In high-demand locations in particular, these owners may be incentivized to re-tenant, redevelop, or sell these properties as unrestricted, meaning existing low-income residents are unlikely to be able to afford to remain in their homes. Armed with this information, Mile High Connects and our affordable housing partners will be better prepared to prevent this from happening by purchasing these properties or otherwise ensuring that they remain in the hands of mission-driven owners who will preserve their long-term affordability. Once these units are preserved, they can be renovated and/or redeveloped to ensure that they remain attractive, safe, and sustainable.
- **Preserve existing affordable housing near stations.** Many low-income residents in the region live in areas that are already served by the existing transit system or soon will be via the FasTracks expansion. Households who use public transportation rather than drive save thousands of dollars every year, thereby increasing their net worth and quality of life. A top priority of MHC will be to ensure that existing housing options near transit stations remain and that more are created. We will accomplish this through a combination of property acquisition, affordable housing finance programs, and collaboration with various state, regional, and local agencies and municipalities to create/modify policies that incent preservation and development of affordable housing near transit stops.
- **Enforce existing and enact new policies to promote affordable housing.** In the near future, many municipalities and organizations, including DRCOG and the City of Denver, will be updating their housing plans. MHC will work diligently to ensure that these housing plans address the full spectrum of housing options, with a particular focus on disadvantaged populations (very low-income, seniors, disabled). In addition, we will work to ensure that these policies are aligned at the local, regional, and state level, and that they drive the allocation of increasingly scarce resources.
- **Expand the Denver TOD Fund to a Regional tool.** The Denver TOD Fund, a creative financing tool developed through a partnership between the City of Denver, Enterprise Community Partners, the Urban Land Conservancy (ULC) and public, private, and foundation investors, seeks to catalyze the development of efficiently located, high quality affordable housing and community amenities for our region's low-income residents. Since the Fund closed in April 2010, it has allowed ULC to acquire six different properties throughout Denver. These properties, all located in close proximity to light rail and/or high frequency bus service, will ultimately provide over 350 affordable rental units, a new public library, non-profit office space, and retail and commercial space that provide community benefit. We believe the TOD Fund can have an equally positive impact in communities surrounding Denver, so we are working with local municipalities and agencies to structure an investment that will be leveraged 10+ times over with capital from local and national foundations, CDFIs, and banks.

## Health

### Maps in this section:

- Major Hospitals & Health Centers in the Denver Region
- Distribution of Parks and Walkable Blocks in the Denver Region
- Access to Healthy Food for Residents of Subsidized Housing
- Adult Obesity Rate by County for the Denver Region
- Adult Asthma Rate by County for the Denver Region

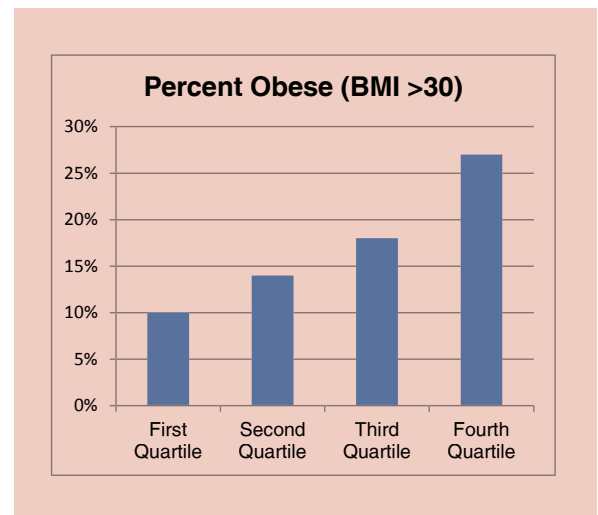
## Health Overview

*“The modern America of obesity, inactivity, depression, and loss of community has not ‘happened’ to us. We legislated, subsidized, and planned it this way”<sup>1</sup>*

Increasing the availability of public transit is a promising strategy to improve the levels of physical activity and reduce the prevalence of obesity. In addition to health benefits achieved from regular physical activity, transit also improves accessibility to community resources, jobs, and affordable housing; lowers transportation costs; and reduces the environmental impact of transportation.

### The Data<sup>2</sup>

- Eight of the ten leading causes of death in Colorado are associated with land use and transportation systems, including obesity-related chronic diseases (stroke, cardiovascular disease and diabetes), injuries, mental health and respiratory disease.
- Currently, 55.7% of Colorado adults and 25.8% of Colorado children are overweight. Colorado’s health care cost from obesity was \$874 million per year in 2003.<sup>3</sup>
- Use of transit to commute to work is associated with an average 1.18 kg/m<sup>2</sup> reduction in BMI, and an 81% reduction in the odds of becoming obese over time. While walking to and from transit stations, 29 percent of public transit users achieved the federally recommended 30 minutes of daily physical activity.



Between 2000 and 2010, the senior population increased by 39%. One in three seniors prefer to walk, but do not feel their surroundings support pedestrian activity.

### Active Transportation & Health:

Research has repeatedly shown that Americans who walk or bike to work are less likely to be obese, have high blood pressure, or be at risk for cardiovascular disease.<sup>4</sup> But between 1977 and 1995, the number of walking trips decreased by 32%.<sup>5</sup> Most adults walk for only 21.2% of trips of less than one mile,<sup>6</sup> and children walk for only 35.9% of trips to school of less than one mile.<sup>7</sup> A six-year study comparing miles driven per licensed driver to adult obesity rates found that there is a 98.44% correlation between driving and obesity.<sup>8</sup> If each person were to drive one less mile per day, then the researchers forecast that 5 million fewer adults would be classified as obese in six years.

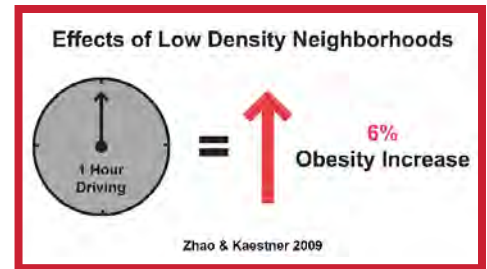
## Transit & Physical Activity

Using public transportation has also been shown to promote physical activity. Transit users take 30% more steps per day<sup>9</sup> than people who drive to work. One study found people who use public transit are three times more likely to be physically active than motorists.<sup>10</sup> Public transit users are less likely to be overweight than people who drive. Using U.S. National Household Travel Survey data, researchers found that 29% of public transit users walked more than 30 minutes per day just getting to and from the station, thereby meeting the government's recommended levels of daily physical activity.<sup>11</sup> A study of Charlotte light rail riders found that the average person lost 6.45 pounds after switching from driving to transit for a year.<sup>12</sup> Commuting by train is associated with 21% more steps per day.<sup>13</sup>

## TOD & Health

*“The more mixed use an area, the skinnier people are. Mixing supports walking, it supports incidental activity and it makes you independent of an automobile...as density of bus and subway stops increase in a neighborhood, body size goes down”*—Andrew Rundle, DrPH, assistant professor of epidemiology at the Columbia University's Mailman School of Public Health.<sup>14</sup>

Land-use mix has a strong association with obesity. In one study, having shops and services near one's residence was the best predictor of not being obese<sup>15</sup> With each quartile increase in density, there was a 12.2% reduction in the likelihood of obesity across gender and ethnicity. The relative risk of being obese increased by 35% between most and least mixed areas. Individuals living in high density, well-connected neighborhoods with a mix of land uses report higher rates of walking and bicycling for utilitarian purposes than individuals living in lower density, poorly-connected neighborhoods with separated land uses.<sup>16</sup> An Australian study found that people were twice as likely to walk for exercise if they lived in a nice neighborhood.<sup>17</sup>



People living in older homes are more likely to walk in their neighborhoods.<sup>18</sup> In a study comparing physical activity levels to the age of homes, researchers found that individuals living in homes built after 1973 were less likely to walk a mile or more on at least 20 occasions in the past month. Twice as many people in good walking environments engaged in moderate amounts of physical activity compared to those in suburbs. Each additional kilometer walked was associated with a 5% reduction in the likelihood of obesity.<sup>19</sup> A white male living in a highly walkable neighborhood with nearby shops and services is expected to weigh 10 pounds less than a similar white male living in a low-density, residential cul-de-sac subdivision.<sup>20</sup> They also have higher levels of physical fitness.<sup>21</sup> People in highly walkable neighborhoods record more walking trips per week, have lower body-mass indexes (BMIs), and are less likely to be classified as overweight than those in the least walkable neighborhoods.<sup>22</sup> New Yorkers who live in densely populated, pedestrian-friendly areas have lower BMI levels than other New Yorkers.<sup>23</sup> Living near public transit, shops, and restaurants were all associated with lower BMI. There was an inverse relationship between BMI and mixed land use, density of bus stops, density of subway stops, and population density.

## Low-Density Land Use & Health:

A study comparing population density between 1970 and 2000 with BMI and obesity during the same time frame found a negative association between sprawl and obesity.<sup>24</sup> The researchers concluded that if the average metro area had not experienced a decline in density over the last 30 years, the obesity rate would have been reduced by approximately 13%. People living in low-density residential neighborhoods tend to weigh more and spend more time driving.<sup>25</sup> Each additional hour of driving was associated with a 6% increase in the likelihood of obesity.<sup>26</sup>

A three-year study<sup>27</sup> of 448 U.S. counties and 83 metropolitan areas found that living in the suburbs was associated with less walking and other forms of physical activity. For every 50-point increase in the sprawl index, residents were likely to walk 14 fewer minutes a month during leisure time. As sprawl increased, so did hypertension, body weight, and probability of being obese. In Salt Lake City, more walkable neighborhoods are associated with a decreased risk of obesity.<sup>28</sup> People who walked to work were found to decrease risk of obesity by up to 10%. Pedestrian-friendly street networks – intersections within a quarter-mile of each address – were related to lower risks of obesity in three-fourths of the models.



## Major Hospitals & Health Centers in the Denver Region

### **Transit Will Better Connect People to Health Centers**

**Map HLT-1: Major Hospitals & Health Centers in the Denver Region** displays the location of major hospitals, trauma centers, and community health care facilities in the Denver region. Many hospitals and community clinics are near existing or future transit stations. This is good not only for patients but also for workers, especially at the major centers such as Fitzsimmons and St. Anthony’s. Health care access appears to be well-distributed throughout the region, although there are a number of major facilities far from any public transportation. Lower income populations may have trouble accessing those facilities. Health centers outside of Denver are generally further away from transit than those within the city limits.

The northern and western parts of the region are especially lacking in good access to health care via transit. The West Corridor has the new St. Anthony’s Hospital, while the Southwest Corridor has several major facilities in Englewood. The North Metro and Gold Lines lack any major hospitals or health centers. Transit may help provide better access to health care for residents living in these corridors, but there will need to be improvements to bus service and other last-mile connections.

Map HLT-1 does not show all health care facilities. It includes only those identified by the Colorado Department of Public Health and Environment and the Colorado Health Institute as of 2009. There are other clinics providing services to low-income residents throughout the region not captured here, including many Denver Health primary care clinics, as well as Planned Parenthood clinics.

Siting health care facilities near transit is a relatively new concept, so the industry may begin to shift locations in future years as transit service improves. While overall the map may prove reassuring, the scale of the map hides the true distance from transit stations to many of these hospitals. Improving bus service and other last-mile connections is critical to ensuring convenient access to health care for all residents.

## Distribution of Parks and Walkable Blocks in the Denver Region

### **Parks Are Abundant, But Not Many Are Near Transit or the Neighborhoods Surrounding Them**

**Map HLT-2: Distribution of Parks and Walkable Blocks in the Denver Region** shows the location of all parks in the region, overlaid with blocks that are smaller than eight acres and the sites of federally subsidized affordable housing units. The pur-

**Table HLT-1: Medicaid Participants, FY08-09**

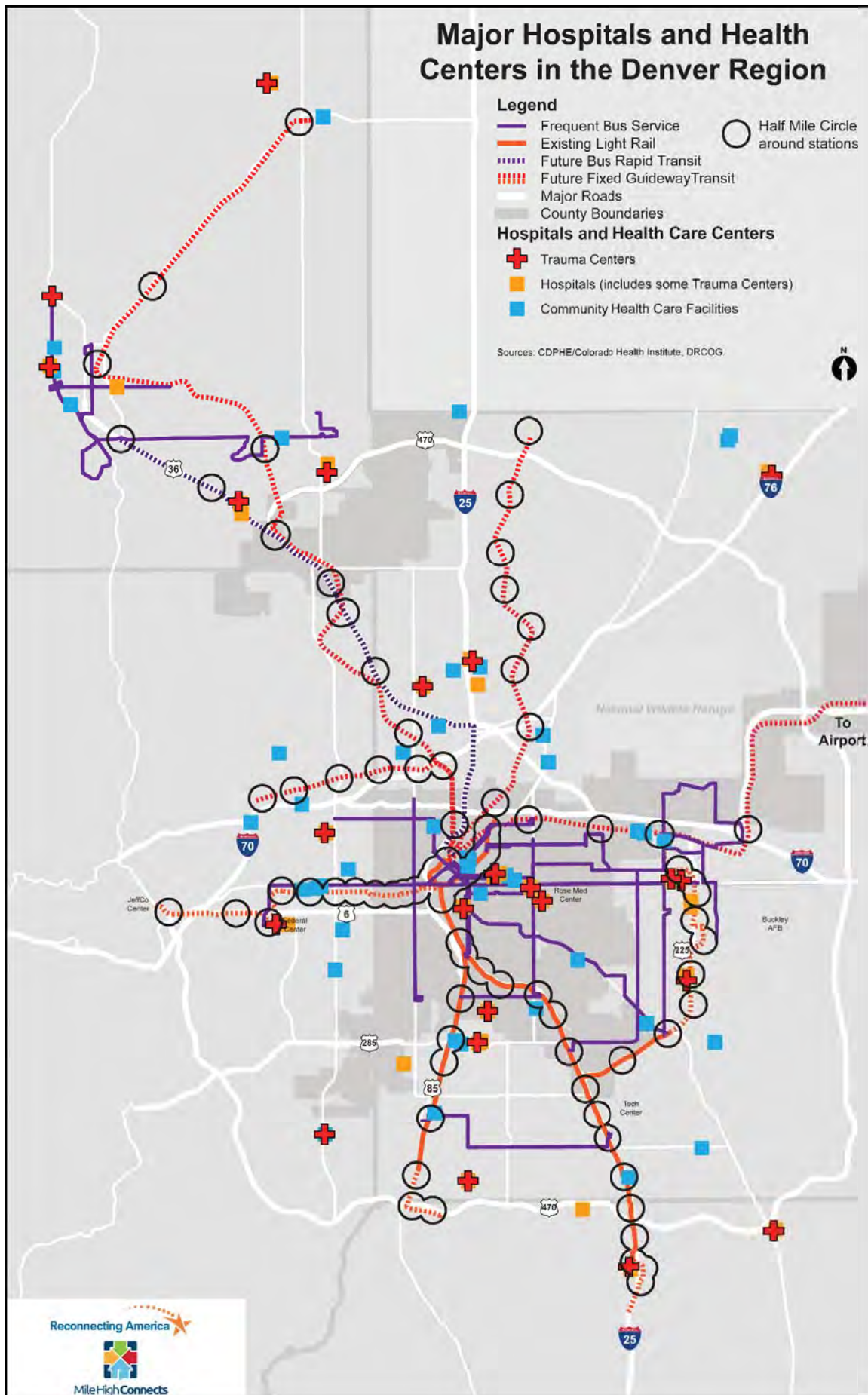
County	% of Population Enrolled in Medicaid
Adams	10-15%
Arapahoe	5-10%
Boulder	5-10%
Broomfield	<5%
Denver	10-15%
Douglas	<5%
Jefferson	5-10%

SOURCE: Colorado Department of Health Care Policy & Financing, 2008-09 <http://ractod.org/xWSZqo>

**Table HLT-2: Physical Activity**

BRFSS Question	Population Group	Adams	Arapahoe	Boulder	Broomfield	Denver	Douglas	Jefferson	Colorado Overall
During the past 30 days, other than your regular job, did you participate in any physical activities?	Overall	77.1	83.5	90.4	84.8	81.7	90.4	85.7	82.9
	Black	59.0	78.0	75.6	100.0	76.7	84.0	72.5	74.2
	Hispanic	72.9	73.5	78.7	84.6	66.9	84.6	82.2	72.1
	Other	74.1	81.4	91.6	72.4	79.4	68.8	82.1	78.8
	White	79.5	85.2	91.9	85.5	87.8	92.1	86.4	85.3
	\$25K-49,999	72.3	76.4	76.9	83.6	82.0	93.1	76.9	79.2
	\$50K	82.8	90.0	95.1	86.3	92.4	91.2	91.7	89.6
	Less than \$25K	68.8	72.0	88.1	79.6	63.6	84.8	71.9	70.7

SOURCE: Colorado BRFSS: <http://ractod.org/x7L2Pz>



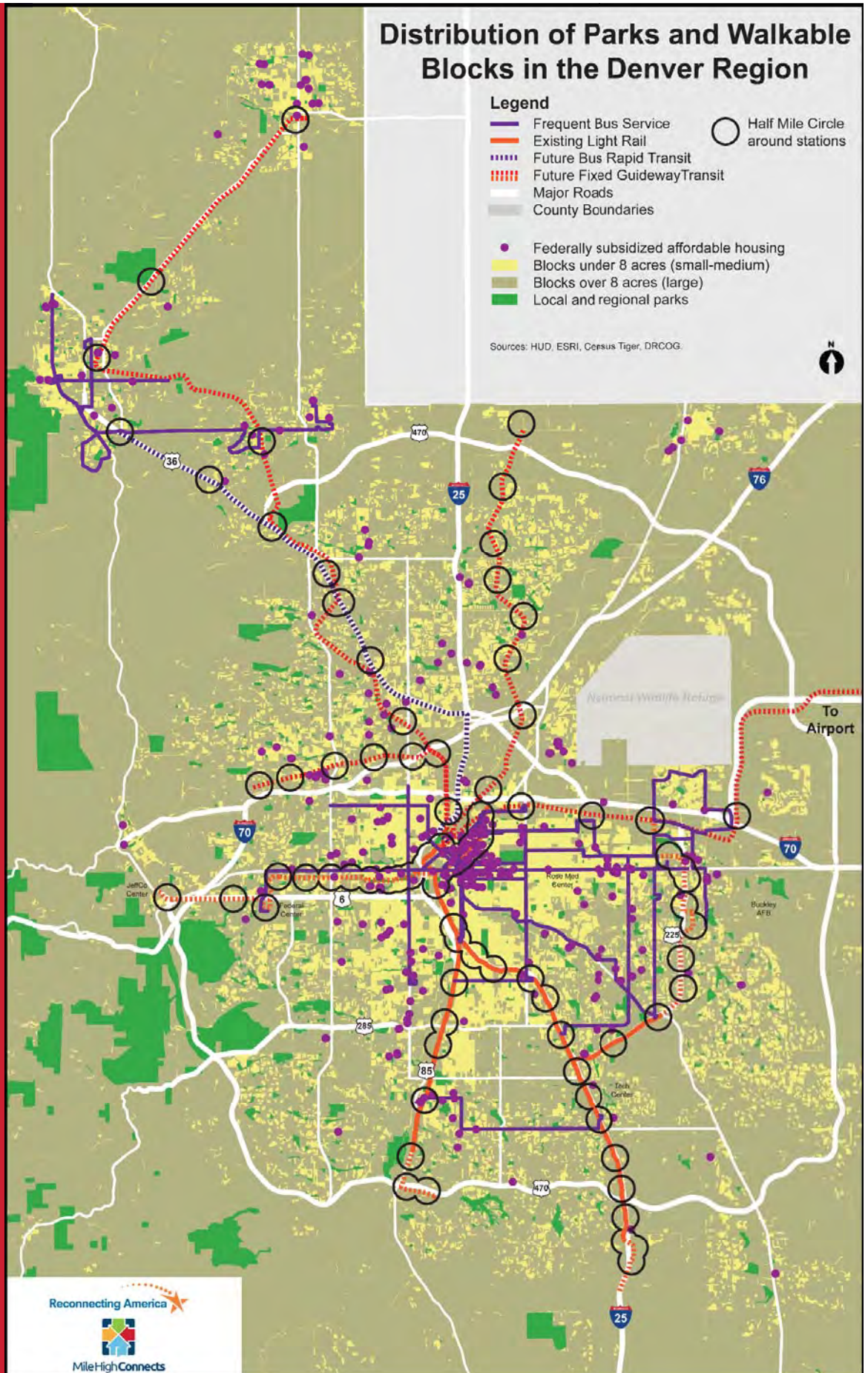
*Map HLT-1:  
Major Hospitals  
& Health Centers  
in the Denver  
Region*

### Distribution of Parks and Walkable Blocks in the Denver Region

#### Legend

- Frequent Bus Service
- Existing Light Rail
- Future Bus Rapid Transit
- Future Fixed Guideway Transit
- Major Roads
- County Boundaries
- Half Mile Circle around stations
- Federally subsidized affordable housing
- Blocks under 8 acres (small-medium)
- Blocks over 8 acres (large)
- Local and regional parks

Sources: HUD, ESRI, Census Tiger, DRCOG.



Map HLT-2:  
Distribution  
of Parks and  
Walkable Blocks  
in the Denver  
Region



pose of the map is to show neighborhoods that are walkable and their proximity to green space. Larger parks may not be as accessible to people because they are outside of residential neighborhoods, so block size is used as a proxy for places where people can walk or bike to destinations. Many parks are too small to stand out on the maps, but places with smaller block sizes appear to have a fair amount of green space.

As expected, block sizes tend to be smaller in the urban centers: Denver and Boulder. Places with smaller block sizes tend to be more walkable – speed limits are usually lower, sidewalks line both sides of the street, and destinations are near enough for walking or riding a bike. Block sizes in suburban areas are larger but there are larger parks in the suburbs that may allow for a greater variety of recreational uses. Thus there is a trade-off between park access and walkable streets. There also appears to be a lack of green space near affordable housing units, especially in Aurora and the southwestern and southeastern parts of Denver.

Transit does not connect well with park space. This may change as station areas get built out and cities invest in new park space, but at present transit is not a viable option for getting people to many of the region's parks.

This map does not show the region's vast trail system, which closely follows many of the transit lines. This trail network serves as an off-street highway for many bicycle commuters. Improving last-mile connections between the trails and the transit stations could increase multimodal options for residents.

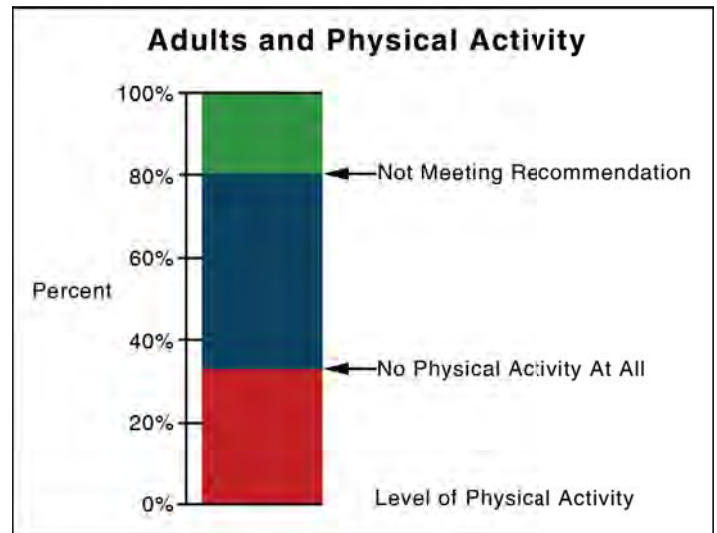
## Access to Healthy Food for Residents of Subsidized Housing

### **Many Future Transit Lines Are Food Deserts**

**Map HLT-3: Access to Healthy Food for Residents of Subsidized Housing** shows places with low food access, defined as census tracts that are more than one mile from a grocery store. The map also displays the sites of farmers markets and federally subsidized affordable housing units. There are food deserts all over the region--most discussions about food deserts focuses on inner cities, but there are some major pockets in Aurora, Thornton, and Louisville. Denver has a major food desert in its northern neighborhoods, which are primarily low income. These residents will benefit from improved transit service but it appears they will still be too far from most grocery stores. Many affordable housing units are located in food deserts as well. This appears to be the case on the Gold, West, East, I-225, and North Metro lines. This is especially troubling for suburban areas, where residents must own a car to get virtually anywhere and low income households may struggle to afford one. It's also a concern for inner-city neighborhoods in northeast Denver who may not own a car at all and have to take a lengthy bus trip to get anywhere.

On the bright side, within Denver, the high-frequency bus routes seem to travel by a large number of affordable housing units, so they do have some access to grocery stores in other neighborhoods. In addition, approximately eight farmers' markets are located in current or future station areas. While many are in higher income areas, they will become accessible to lower income residents once transit service opens.

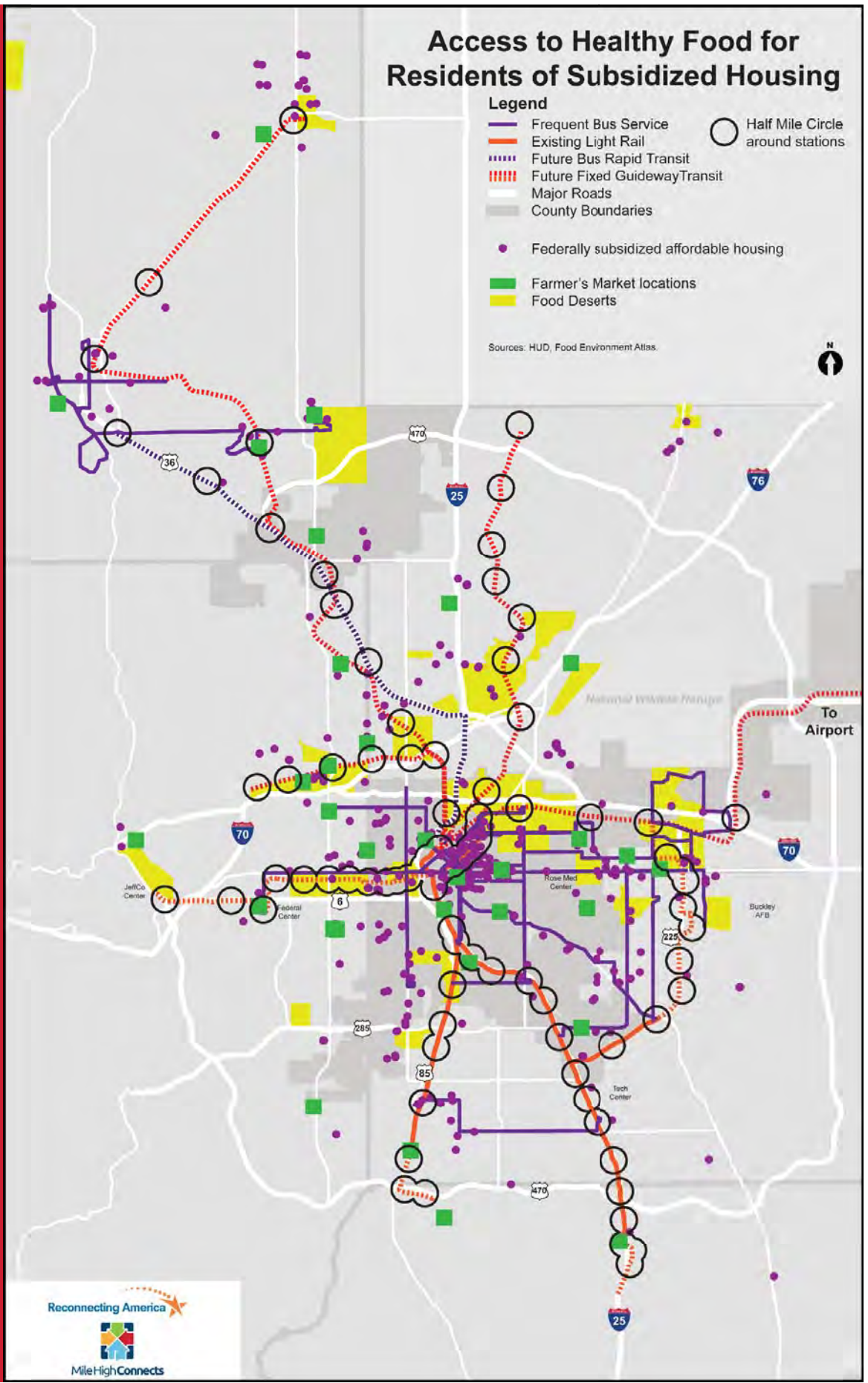
The build out of FasTracks presents the opportunity to be thoughtful about aligning food access to transit and integrating it into corridor plans. Not every station can support a grocery store, but one or two can serve as anchor sites for residents along the entire corridor. Farmers markets can also serve a placemaking function within station areas, attracting residents from throughout the region and providing access to healthier food for those who currently lack it.



### Access to Healthy Food for Residents of Subsidized Housing

- Legend**
- Frequent Bus Service
  - Existing Light Rail
  - Future Bus Rapid Transit
  - Future Fixed Guideway Transit
  - Major Roads
  - County Boundaries
  - Half Mile Circle around stations
  - Federally subsidized affordable housing
  - Farmer's Market locations
  - Food Deserts

Sources: HUD, Food Environment Atlas.



Map HLT-3:  
Access to  
Healthy Food  
for Residents  
of Subsidized  
Housing



## Obesity

According to the Centers for Disease Control and Prevention, 32% of American adults were obese as of 2006.<sup>29</sup> More than two-thirds of American adults and a fifth of American children are obese or overweight. The prevalence of obesity has doubled between 1980 and 2004 and the number of overweight children has tripled.<sup>30</sup> The United Health Foundation expects 43% of Americans (103 million adults) to be obese by 2018, with six states reaching a 50% obesity rate.<sup>31</sup> Obesity is expected to cost Colorado dearly. According to the foundation’s estimates, by 2018 Colorado will be the only state where less than 30% of adults are obese.<sup>32</sup> Obesity-related health care costs will amount to \$864 per Colorado resident by 2018, totaling \$3.2 billion.

One major reason for the national obesity epidemic is a lack of physical activity, and the built environment plays a major role in the sedentary behavior of Americans. More than 55% of American adults do not meet the recommended levels of physical activity, with 25% reporting no physical activity at all.<sup>33</sup> Wide roads and fast-moving cars are major barriers to walkability, while land use and zoning patterns isolate many Americans from grocery stores, retail centers, and employment centers, leaving most people with little option but to drive.<sup>34</sup> In the year 2000, direct medical expenses associated with physical inactivity totaled more than \$76 billion.<sup>35</sup> Excessive weight and physical inactivity account for more than 300,000 premature deaths each year.<sup>36</sup>

## Colorado Obesity Statistics

Colorado may be the leanest state in the country, but the obesity rate has been increasing faster than the nation as a whole for the past 17 years. From 1995-2008, the obesity rate rose 89% compared to the national increase of 67%. Today, one in five children is considered obese.<sup>37</sup> In Denver alone, the childhood obesity rate is more than 37%, compared to the state average of 27%.

**Table HLT-3: Childhood obesity**

	Adams	Arapahoe	Boulder	Broomfield	Denver	Douglas	Jefferson	Colorado Overall
<b>Childhood overweight &amp; obese, 2008-09</b>	32.2%	25%	17.9%	21.2%	37.2%	18.9%	22.3%	27.3%

SOURCE: Annie E. Casey Foundation <http://datacenter.kidscount.org/>

## Adult Obesity Rate by County for the Denver Region

### ***Boulder and Douglas the Skinniest, Adams the Fattest***

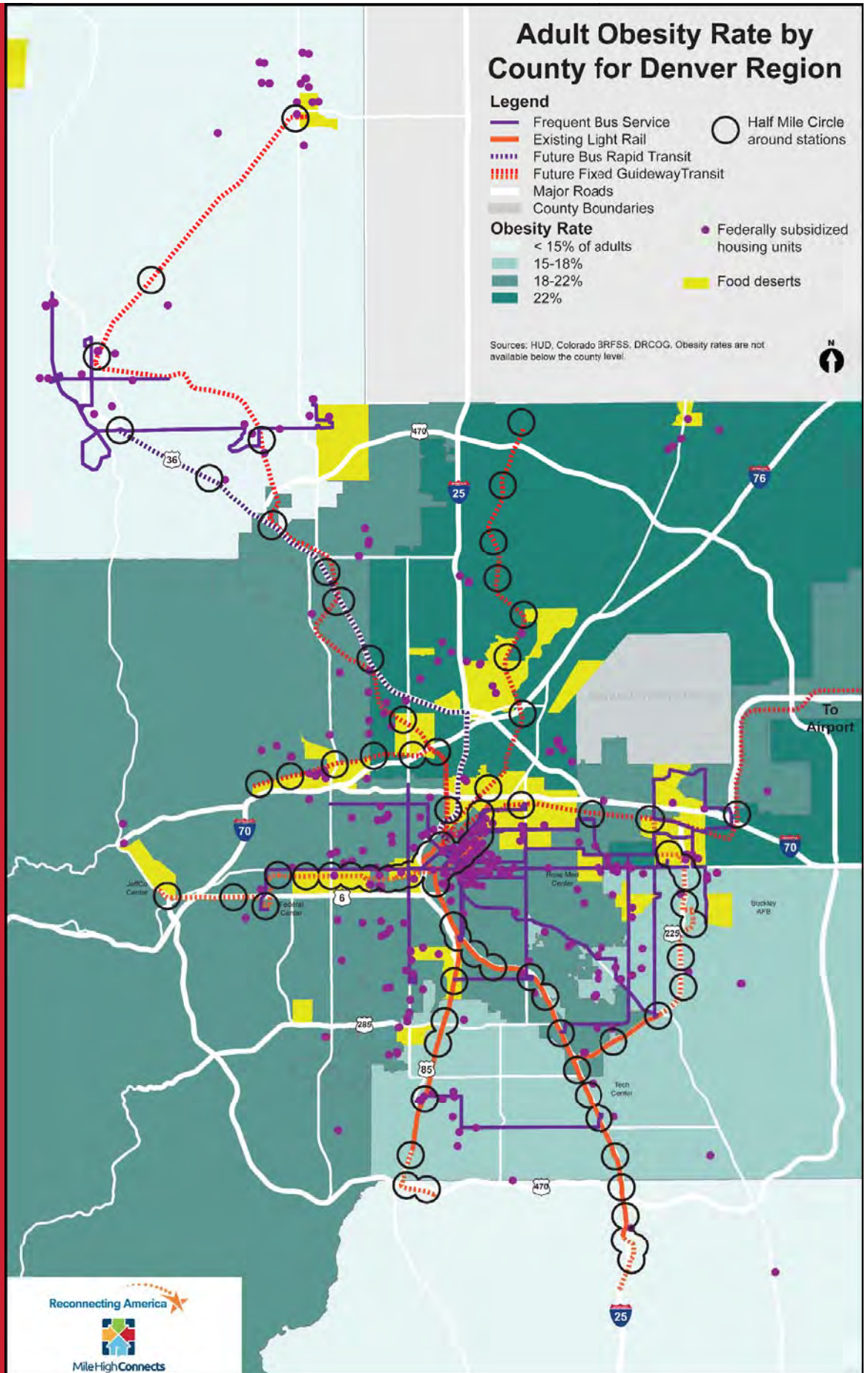
**Map HLT-4: Adult Obesity Rate by County for the Denver Region** illustrates the obesity rates for the region’s six counties, overlaid with the location of federally subsidized affordable housing. Obesity rates are not available at a geography lower than the county level, so the map does not show which neighborhoods have the highest obesity rates. Despite Colorado’s status as the least obese state, within the Metro Denver region, the rate is higher and there are major disparities from one county to another. Douglas and Boulder have very low rates, while Adams County has the highest. Two of the three counties with higher obesity rates – Adams and Jefferson – have the least access to transit.

Colorado’s childhood obesity rate is also among the fastest growing in the nation. Colorado fell from 3rd lowest to 23rd lowest among children between 2008 and 2011. The region also has major disparities by race and income.

## Adult Asthma Rate by County for the Denver Region

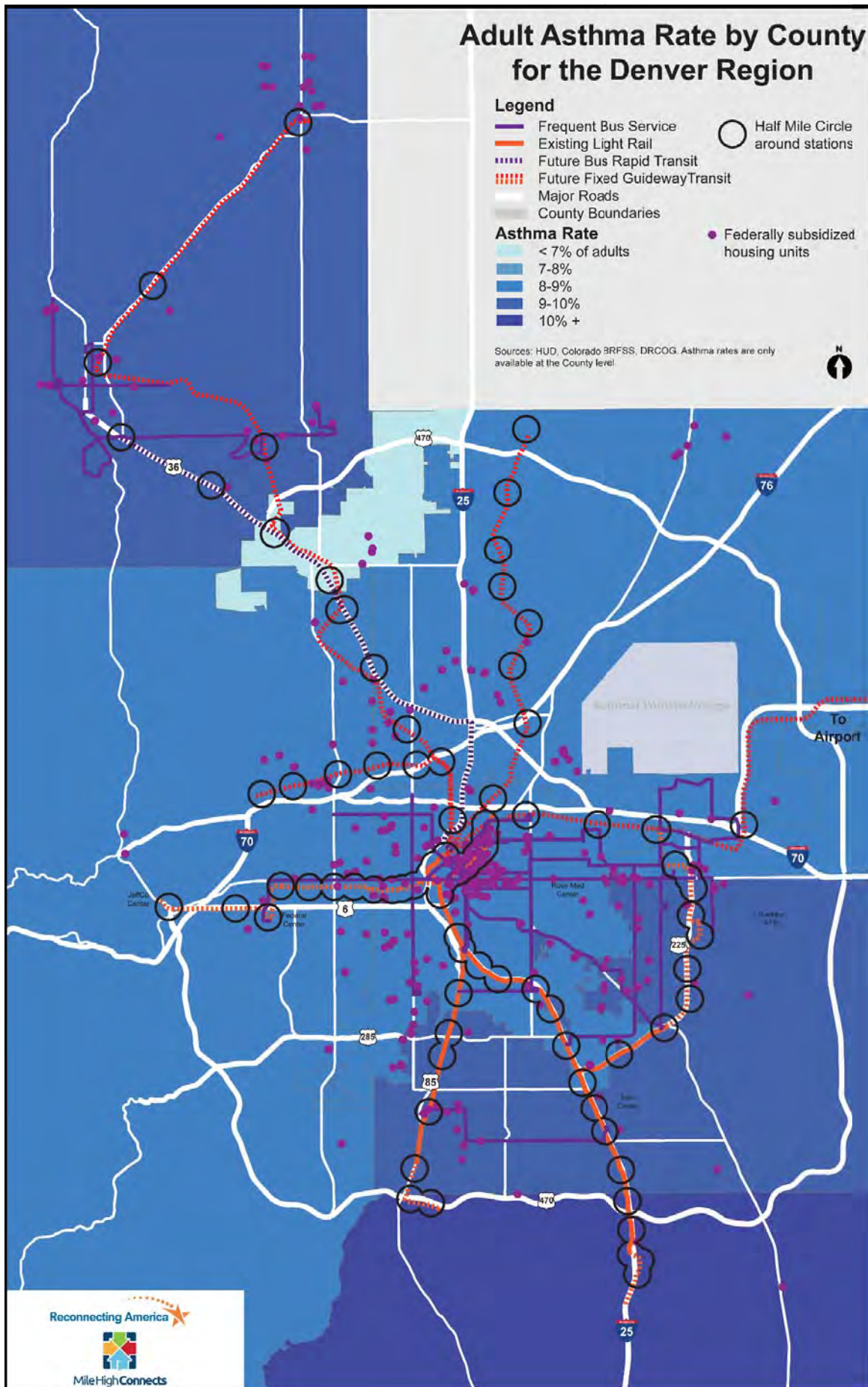
### ***Asthma Rate Higher in Suburban Areas Where People Drive More***

**Map 5: Adult Asthma Rate by County for the Denver Region** shows county-level asthma rates. Asthma rate data is not available at a geography lower than the county level, so neighborhood comparisons cannot be made. The map also just displays the prevalence of asthma, not the underlying causes such as air quality, which are tied to vehicle miles traveled and development patterns, or the adverse symptoms, such as asthma episodes and hospitalizations. Broomfield had a very small sample size, so its low asthma rate is not considered statistically reliable and should be imputed to Boulder County.



*Map HLT-4:  
Adult Obesity  
Rate by County  
for the Denver  
Region*





*Map HLT-5:  
Adult Asthma  
Rate by County  
for the Denver  
Region*





**Table HLT-4: Obesity**

BRFSS Question	Pop. Group	Adams	Arapahoe	Boulder	Broomfield	Denver	Douglas	Jefferson	Colorado Overall
<b>Based on body mass index, are you overweight? (overweight = BMI 25.0 or higher)</b>	Overall	39.9	27.8	31.3	34.6	34.4	35.9	36.4	36.4
	Black	42.3	30.3	35.8	0.0	32.8	54.8	69.4	35.6
	Hispanic	42.7	35.5	32.3	15.9	36.6	27.6	33.3	38.3
	Other	38.9	32.9	24.7	47.2	50.3	26.8	36.9	34.0
	White	38.8	39.4	31.4	36.4	33.1	36.9	36.2	36.3
	\$25K-49,999	33.9	38.6	34.0	34.8	36.6	28.3	36.3	35.9
	\$50K	44.9	40.9	32.2	36.5	35.0	37.8	37.4	38.4
	Less than \$25K	36.5	32.8	34.6	21.1	35.8	29.8	32.5	33.7
<b>Based on body mass index, are you obese? (obese = BMI 30.0 or higher)</b>	Overall	25.2	17.7	15.0	20.6	19.6	14.6	19.5	20.1
	Black	30.0	24.4	4.7	0.0	34.1	8.0	16.3	29.7
	Hispanic	22.0	15.7	26.3	46.7	24.0	26.9	23.4	25.0
	Other	25.2	16.7	18.2	0.0	10.1	10.6	28.0	20.6
	White	26.1	17.4	13.6	19.3	17.0	14.0	18.9	18.9
	\$25K-49,999	32.5	18.6	19.8	26.8	17.3	10.8	19.3	21.6
	\$50K	24.4	19.4	13.1	16.1	15.9	14.8	19.1	18.6
	Less than \$25K	24.8	17.3	21.7	48.7	29.3	26.5	27.0	26.5

SOURCE: Colorado BRFSS: <http://rctod.org/wQ34oT>**Table HLT-5: Asthma Rate**

BRFSS Question	Population Group	Adams	Arapahoe	Boulder	Broomfield	Denver	Douglas	Jefferson	Colorado Overall
<b>Have you ever been told by a doctor, nurse, or other health professional that you had asthma?</b>	Overall	13.6	15.3	15.5	11.2	13.2	16.1	14.3	14.1
	Black	25.2	21.6	3.7	0.0	13.6	11.6	10.5	17.7
	Hispanic	9.1	11.7	10.5	6.8	9.9	8.3	15.9	11.0
	Other	22.4	15.1	0.7	6.4	12.6	12.2	13.0	13.7
	White	14.5	15.2	17.1	12.4	14.6	17.0	14.4	14.6
	\$25K-49,999	14.8	18.2	14.0	6.4	12.0	22.0	10.5	14.6
	\$50K	13.9	13.6	17.0	11.1	13.9	16.3	12.7	13.5
	Less than \$25K	13.2	15.5	10.1	30.5	13.8	7.7	24.6	15.3
<b>Do you still have asthma?</b>	Overall	8.7	9.1	9.2	6.3	8.5	10.4	8.3	8.7
	Black	7.0	9.1	3.7	0.0	12.2	11.6	5.8	10.5
	Hispanic	7.6	9.5	4.4	0.0	6.1	6.0	5.9	7.2
	Other	15.2	3.6	0.7	6.4	4.3	12.2	8.1	8.4
	White	8.7	9.5	10.3	7.4	9.4	10.6	8.7	9.0
	\$25K-49,999	8.0	12.5	4.7	0.0	8.4	16.6	4.8	9.3
	\$50K	9.0	7.4	10.4	8.4	8.2	9.7	8.3	8.3
	Less than \$25K	9.9	10.4	4.1	4.5	10.3	7.7	13.9	9.8

SOURCE: Colorado BRFSS: <http://rctod.org/wQ34oT>

Use of transit can help reduce adverse health outcomes associated with asthma by reducing the number of trips households are required to take in personal automobiles. This in turn will improve air quality for those engaging in walking, bicycling or other outdoor physical activity. Transit also can increase access to health care clinics where people can receive treatment for asthma.

Table 5 provides more detailed data on asthma rates by race and income. The region's African America population tends to have higher rates of asthma than the white and Hispanic populations, though it varies by county. Income variations in the asthma rate are not consistent across county.

## Action Steps

- **Increase and improve transit service to existing grocery stores to people living in food deserts.** Many communities are too far from a grocery store selling healthy food, but the odds of a grocery store locating in their neighborhood are low. Therefore, RTD and other transit providers should study options to improve coordination of existing routes or add transit services where access currently does not exist to get low income and economically disadvantaged populations to grocery stores, whether it be permanent bus routes, dial-a-ride shuttles or other models.
- **Provide incentives (funding, zoning, one-stop permitting) to grocers to locate in station areas.** Currently there are limited options for financing grocery stores specifically in low-income neighborhoods, but tools such as a fresh food financing fund are in the early stages of development, so more opportunities are to come. Communities can also revise their zoning laws to permit grocery stores in places where they would fit within the existing neighborhood fabric. Communities can also provide incentives for corner stores or convenience stores to offer fruits, vegetables and other healthier food choices than what they typically provide.
- **Provide access to existing park space near transit stations and encourage the setting aside of green space nearby.** Consider the development of a regional “green necklace” of pocket parks, trails, and open spaces along the FasTracks build out to promote healthy living and give people from all neighborhoods a safe place to play.
- **Improve last-mile connections across the transit system so people walk and bike more.** Public transportation not only gets people to the places they need to go, but it also encourages physical activity since people typically walk or bike to and from a station. Policies supporting walking and biking, as well as funding to actually implement these policies, can go a long way in encouraging healthier lifestyles.
- **Allow farmer's markets and other green markets at station areas.** When people are waiting for or getting off of a bus or train, they usually have a few minutes to spare. If they can take care of errands at the same time, it allows them more time to spend doing other things. Farmer's markets or other green markets can provide goods and services right at the station, and also support local businesses. Communities should study the feasibility of these types of markets near station areas.
- **Obtain more localized data or conduct research studies of certain neighborhoods to better understand the health issues for neighborhoods served by transit.** The Atlas only scratches the surface of many health issues of critical importance for the Denver region. Local level data is simply not available to illustrate many of the disparities that communities worry about on a daily basis. There is a need for local and state public health departments to conduct additional research at a neighborhood level so that better data and mapping can be done to better understand the challenges and opportunities faced by each community.

## Education

### Maps in this section:

- Access to Affordable Housing For School-Age Children in Metro Denver
- Access to Quality Schools for School-Age Children in the Denver Region
- Access to Quality Preschools for Children Under 5 in Metro Denver
- Percent of Children Receiving Free Lunch by Race in the Denver Region
- Change in School Free & Reduced Price Lunch by School District
- Costs to Get to School for Metro Denver Students by District

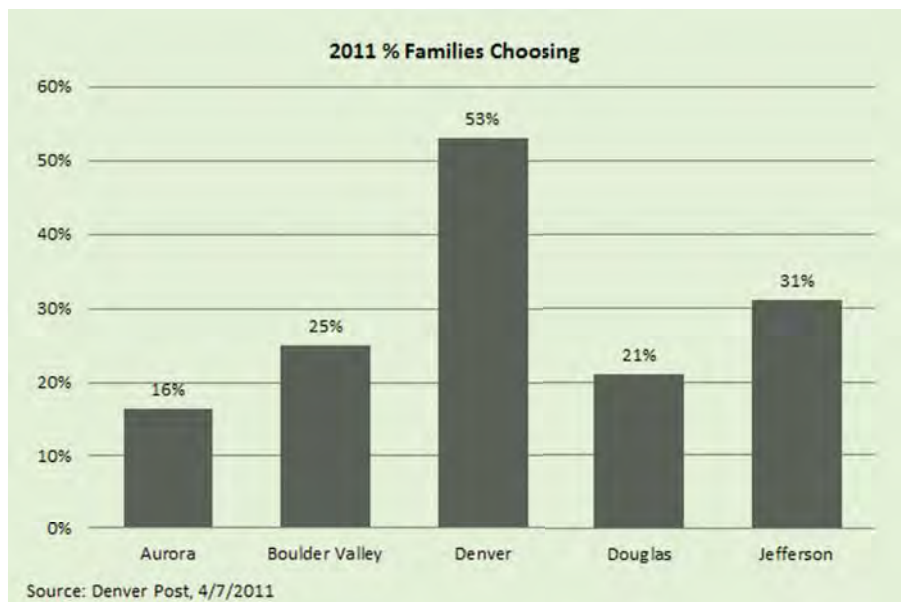
## Education Overview

As with employment, families must consider distance and transportation options when choosing early childhood and K-12 education for their children. Quality educational programming is not equally distributed across the Metro Denver region. In many cases, parents are forced either to settle for a less-than-optimal educational setting nearby or to make the sacrifices necessary to reach distant schools. Meanwhile, the student-age population in Metro Denver suburbs is diversifying, bringing new opportunities and challenges to creating a supportive education environment for all children.

Transportation presents significant barriers to school choice. The Public Schools of Choice Act of 1990 allowed students in Colorado to attend a school outside of their neighborhood attendance boundaries, either in their school district of residence or another Colorado public school district. While increasing school choice opens the door for more equitable access to high quality schools, the cost of transportation associated with choosing schools far from their homes is a major barrier for low-income families.

A 2009 report, “Drivers of Choice: Parents, Transportation, and School Choice,”<sup>1</sup> issued by the University of Colorado’s Center on Reinventing Public Education, found that:

- Transportation is a particular barrier for low-income parents. Forty-five percent of families with incomes of less than \$20,000 do not own cars, and some of those who do reported that their cars are unreliable. This is clearly less of a problem for middle-income families, many of whom drive their children to school.
- Most existing school district policies were designed for a pre-choice model. In Denver, about three-quarters of parents have considered alternatives to attending neighborhood schools. About half of the parents have chosen private, charter, or non-neighborhood public schools. Of the 50 percent of parents who enrolled their children in neighborhood schools, at least half considered other schools before deciding to stay.
- Choice itself is designed to give parents decentralized options for their children’s education, and to give them the power to make decisions. A more decentralized transportation system might also provide parents with an additional tool to make school choices that work better for them. The era of the yellow school bus transporting most children to neighborhood schools is probably already over.



## Access to Affordable Housing For School-Age Children in Metro Denver

**Map EDU-1: Access to Affordable Housing For School-Age Children in Metro Denver** shows the location of subsidized affordable housing units in the form of federal Section 8 vouchers or federal Low Income Housing Tax Credits (LIHTC). These units are set against a backdrop of school-age children to show where more children live and the housing choices parents have available.

The Children's Corridor stands out as having a high percentage of children. The North Metro and I-225 Corridors also have a large youth population, as does the portion of the West Corridor within the Denver city limits. Affordable housing is concentrated in neighborhoods in central Denver, but not necessarily in areas with more children. Future decisions about where to locate affordable housing should take into consideration where young children are living to provide their parents with greater access to housing opportunities.

## Access to Quality Schools for School-Age Children in the Denver Region

### ***Struggling schools clustered in Denver's inner suburbs***

**Map EDU-2: Access to Quality Schools for School-Age Children in the Denver Region** shows school quality, as defined by the state's School Performance Framework, is not uniform across the region. Outer suburbs have a large number of schools receiving high ratings, whereas inner suburbs have a high concentration of low-performing schools. Adams County, which contains northwest Aurora and Thornton, has an average SPF score of 57.1%. Outlying Boulder County, however, has an average score of 70%. In the central city, Denver's higher performing schools are located in the southeastern portion of the district

### ***A tale of three buses***

Eboney Brown's morning routine is timed to the minute: up by 6:00, leave the house by 6:53, catch the 15L at 6:58, then the 40 at 7:09, then the 38 at 7:23.

With seven kids, it helps to be organized.

Brown's 9-year-old daughter sits by the door of their house and pulls chocolate-colored boots over pink and orange leopard print socks. She runs over to her mom and asks for help putting in her earrings. The boys slip on backpacks decorated with Spiderman and characters from Cars.

"Hoods up," says Brown, 26, the last one out the door. "And no running."

Brown and her children squint in the sun, rising over Colfax, and wait for a break in traffic. They cross the street just as the 15L arrives, three minutes early. The bus is packed, like it is every morning, standing room only. Sometimes, her kids ask her why they can't ride the school bus like everyone else.

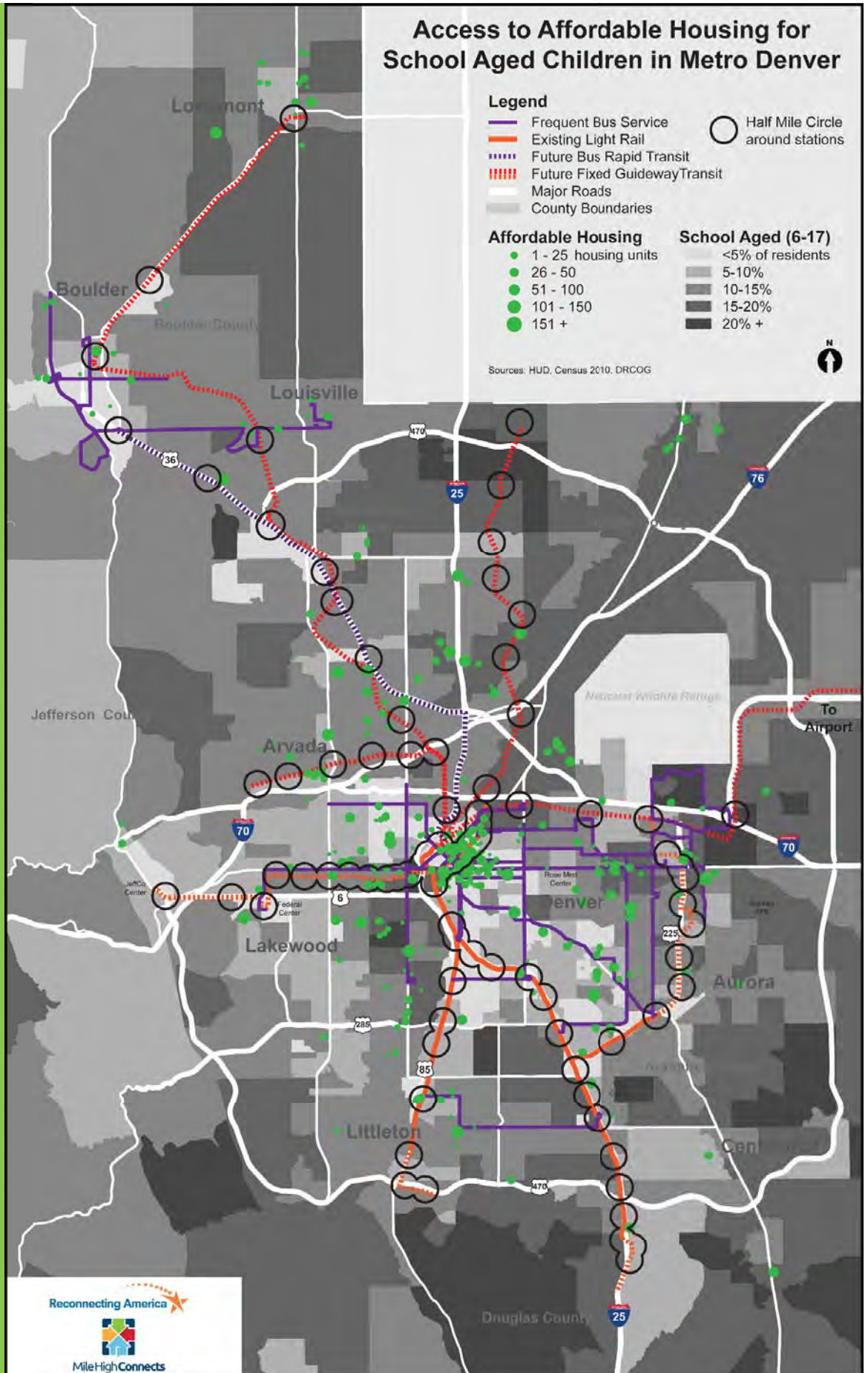
"It's hard for me," she says, "just seeing how hard it is for my kids."

### ***A hard choice***

Brown and her children use public transportation instead of a school bus because for them, as for many families in Colorado, a quality education is worth hours of daily commuting. Colorado is a "choice" state, which means children can attend any public school: It doesn't have to be in their neighborhood, or even in their school district. The choice program is meant to foster educational equity, but because schools only provide local bus service, the families who benefit most are those who have time and money to travel. A survey of 600 families in Denver and Washington, D.C. – another choice district – by the Center on Reinventing Public Education found that transportation difficulties prevented a quarter of parents from sending their children to their top-choice schools. Among families with the lowest incomes, that number rose to a third.<sup>2</sup>

Low income families are often left in the lurch.

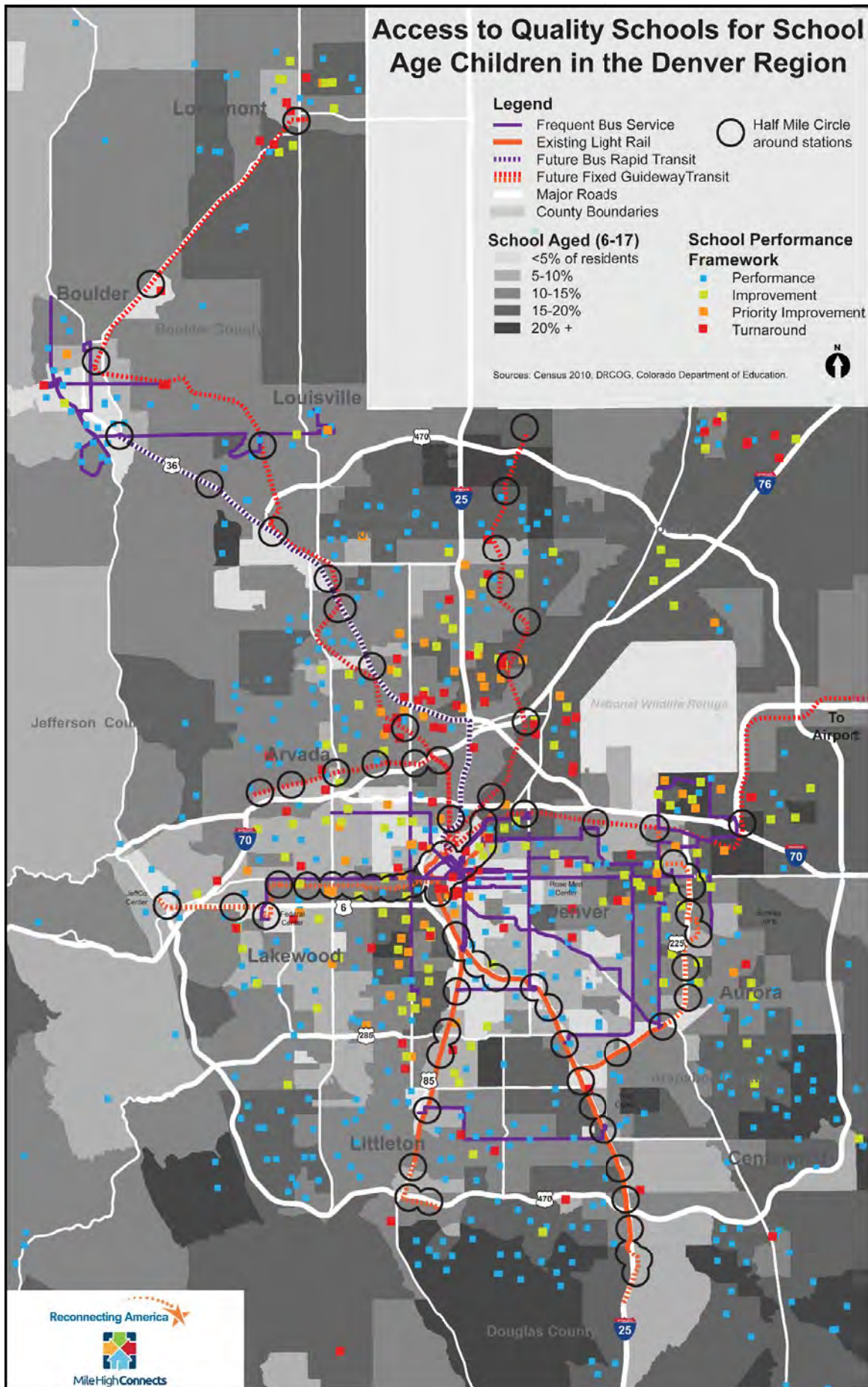
### Access to Affordable Housing for School Aged Children in Metro Denver



Children under 18 make up 24.6% of the metro population.

Map EDU-1: Access to Affordable Housing For School-Age Children in Metro Denver





*Fewer than 10% of the metro area's 5,251 preschools are located within a mile of planned or existing FasTracks stations. Fewer than 3% are within half a mile.*

*Map EDU-2: Access to Quality Schools for School-Age Children in the Denver Region*



while Northeast and Southwest – which have the city’s densest youth population – have struggling schools. The concentration of youth tends to be higher in Hispanic neighborhoods than non-Hispanic neighborhoods according to the 2010 Census.

For many low income families who choose schools outside their neighborhoods, public transportation is their only way to get there. Of the 787 public schools in the metro area, 24.5% are located within a mile of existing or planned FasTracks stations. But the quality of those schools is, generally, lower than the metro area as a whole:

- For all metro public schools, 85.4% are rated as “Performance” or “Improvement,” the two highest SPF categories. But for schools within one mile of stations, only 76.0% are in the top two categories.
- Among the top quarter of schools, only 15.4% are within a mile of stations.

Although there are closer options, Brown sends her kids to Wyatt-Edison Charter School, in northeast Denver’s Cole neighborhood. It’s not in the top 25% in terms of school performance, but Brown appreciates the quality of the teachers and after-school programs, where her kids can get snacks and homework help. “No matter where I move, we always come here,” says Brown. “I just love it. I refuse to switch schools.”

While transit cannot directly impact school performance, increasing access to schools via active transportation options can make it easier for students to get to school and for their parents to drop them off. School performance also affects the location

### *Early Childhood Care Clustered Around Kids, Not Transit*

Desiree Virgil and her husband, Robert, pulled up to Margery Reed Daycare Center in northwest Denver in a beat-up, broken-down car with a couple of windows missing, the rest held up by duct tape. They have five children, all under age 10. Robert is disabled. When the car runs, it’s a good day. When it doesn’t, their mornings start in a mad rush to make the 5:30 am bus from their neighborhood. Desiree has to make it to work by 8:30. Three hours of commuting one way to drop the kids off to school and childcare, make multiple transfers between four or five buses, and over \$12 spent one way, in one day, among the family. For the Virgils and many families like them, transportation is a huge expense, a tremendous time commitment and a daily struggle.

decisions of parents—areas with better-performing schools will be preferable, and often these are areas in the suburbs far from transit. Many transit station areas are not going to appeal to families because of the school quality, and this will lead to under-investment in these station areas.

## Access to Quality Preschools for Children Under 5

For parents with young children who rely on public transit to commute to work, accessing preschools located far from light rail or bus lines creates significant challenges. **Map EDU-3: Access to Quality Preschools for Children Under 5 in Metro Denver** shows preschools dispersed evenly across the metro area, but very few preschools, and virtually no Qualistar rated three- or four-star preschools, are within a half-mile radius of existing and planned FasTracks stations. In the southwestern part of the region near Federal Boulevard, an area with a significant number of low income residents and a high number of small children attending preschool, this disparity is especially striking.

## Percent Children Receiving Free Lunch by Race

Denver’s youth population is rapidly diversifying, especially in the inner suburbs. **Map EDU-4: Percent of Children Receiving Free Lunch by Race in the Denver Region**, which displays the non-white population and the percentage of students receiving free and reduced price school lunches, shows that where there are heavy minority populations, there is also great need. Because free and reduced price lunch eligibility is based on family income, this map complements the income map in the Demographics section (See Map EXS-3: Concentration of Low-Income Households in the Denver Region).

## Denver’s diversifying youth population

The number of Hispanic children in the metro area grew 47% over the past decade, from 150,428 to 221,213. In Adams and Denver counties, Hispanics are a majority among children, representing 50.3% and 51.1% respectively. African Americans make up 5.4% of metro youth, a decrease from 5.7% a decade ago. Denver had the largest decrease in black youth, from 14.4% to 11.4%. On the other hand, Arapahoe County experienced a significant increase in African-American youth, from 8.8% to 11.1%. The percentage of the metro area’s youth population that is white decreased from 63% in 2000 to 53.9% in 2010. Denver was the only county that did not see a decline in the white share of the youth population, holding steady at 29.6% in 2000 and 2010.

Increasing participation in free and reduced price school lunch (FRL) program reflects the suburbanization of poverty. **Map EDU-5: Change in School Free & Reduced Price Lunch by School District** shows the change in FRL participation for each school district since 2001. As Denver’s inner suburbs diversified over the past decade, many inner suburban school districts experienced significant increases in free and reduced price lunch participation. While Denver Public Schools still has one of the highest FRL participation rates in the region, at 73%, districts in Mapleton, Englewood and Aurora are rapidly catching up. Inner suburban school

**Table EDU-1 Change in Free & Reduced School Lunches by District, 2001-2011**

District	Percent FRL '01	Percent FRL '10	Change in FRL	Fourth-Grade Reading Proficiency Gap, '10-'11
Westminster 50	39.2%	79.1%	40.0	196
Mapleton 1	37.9%	68.9%	31.0	24.7
Deer Trail 26J	13.7%	43.4%	29.7	N/A
Adams-Arapahoe 28J (Aurora)	36.3%	65.2%	28.9	30.3
Englewood 1	26.7%	55.2%	28.5	28.2
Sheridan 2	54.9%	80.8%	25.9	N/A
Adams County 14	65.2%	84.9%	19.7	11.0
Bennett 29J	12.0%	30.6%	18.7	24.6
Jefferson County R-1	14.8%	30.6%	15.8	25.9
Cherry Creek 5	10.7%	26.2%	15.6	29.7
St Vrain Valley Re 1J	18.2%	32.4%	14.2	39.6
Adams 12 Five Star Schools	21.8%	34.0%	12.2	36.9
Littleton 6	9.8%	20.0%	10.2	27.4
Byers 32J	29.3%	39.2%	9.8	6.9
Douglas County Re 1	1.9%	10.9%	9.0	27.4
Denver County 1	64.3%	72.9%	8.6	42.7
Strasburg 31J	12.2%	20.2%	8.0	17.8
Boulder Valley Re 2	12.1%	18.4%	6.3	43.2
Brighton 27J	29.8%	33.6%	3.8	18.5

Data source: Colorado Department of Education

districts in Westminster, Commerce City and Sheridan all have higher FRL participation rates than Denver. With respect to transit service, there are large voids in transit services in many areas with a high percentage of students receiving free school lunches. One such void in transit service is in the southwestern part of the region near the Denver-Lakewood border. This area has one of the highest percentages of free school lunches in the entire region. Longmont also has a high percentage of FRL students.

## High price of free lunch

Free and reduced price lunch participation is correlated with lower educational outcomes. Among school districts in the region, 80% of students who aren’t eligible for free or reduced price lunches are proficient in reading in fourth-grade. Only 41% of students who are eligible for free and reduced price lunches are proficient. The table at right shows the change in FRL participation for each metro school district since 2001 along with the proficiency gap between FRL- and non-FRL students in fourth-grade reading.

The areas with the biggest changes in school lunch needs and total school lunch enrollment are also those areas with very low incomes and high minority populations.

## Diversity and proximity to quality schools

Access to quality schools isn’t growing in step with the diversity of the youth population. Metro-wide, 46.1% of the under-18 population is non-white. But non-white children are less likely to live near top-tier schools. Among youths living within a mile of the top quarter of schools, 39.6% are non-white, compared to 52.2% of youths living more than a mile away.



# Access to Quality Preschools for Children Under 5 in Metro Denver

**Legend**

- Frequent Bus Service
- Existing Light Rail
- Future Bus Rapid Transit
- Future Fixed Guideway Transit
- Major Roads
- County Boundaries
- Half Mile Circle around stations

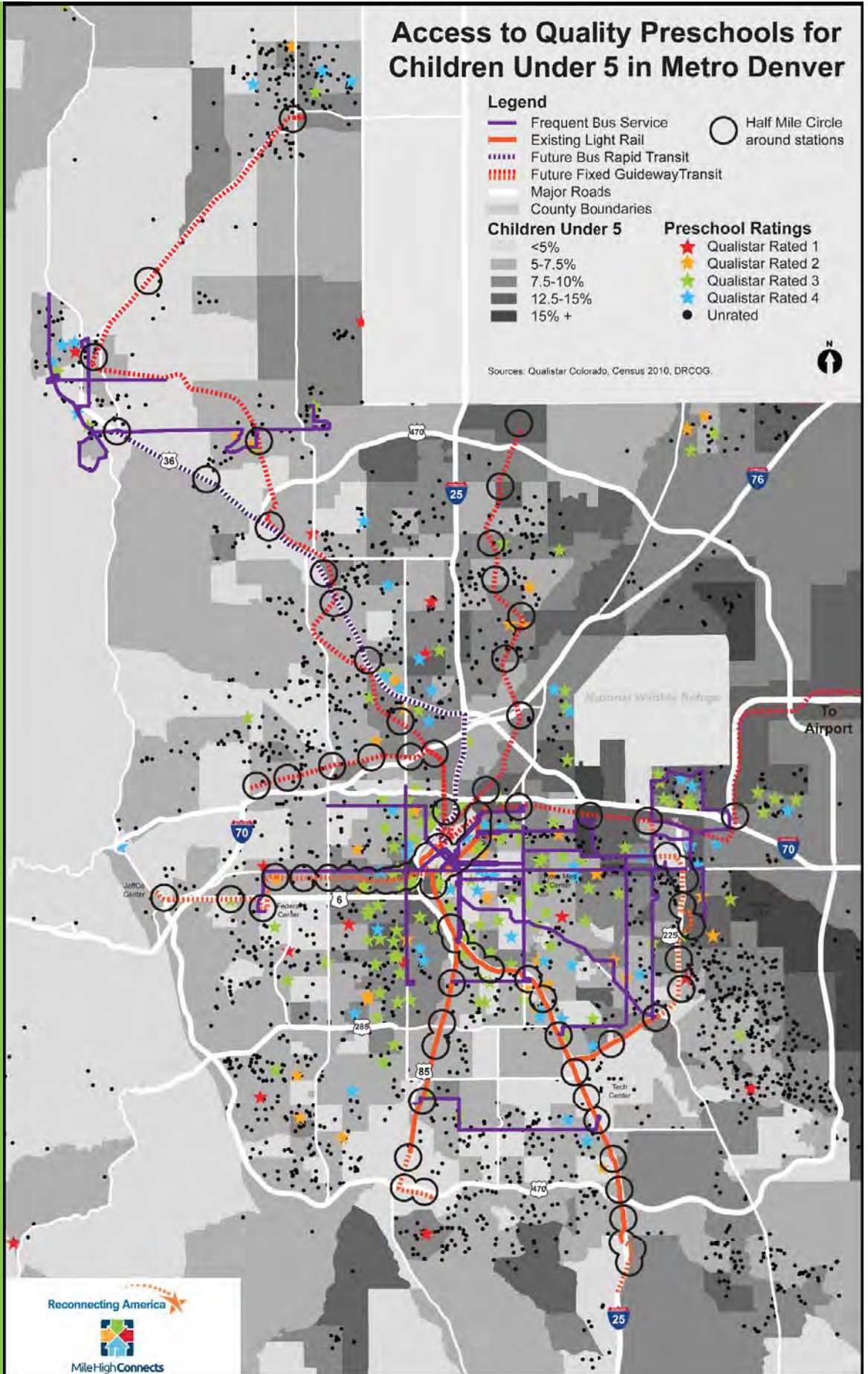
**Children Under 5**

- <5%
- 5-7.5%
- 7.5-10%
- 12.5-15%
- 15% +

**Preschool Ratings**

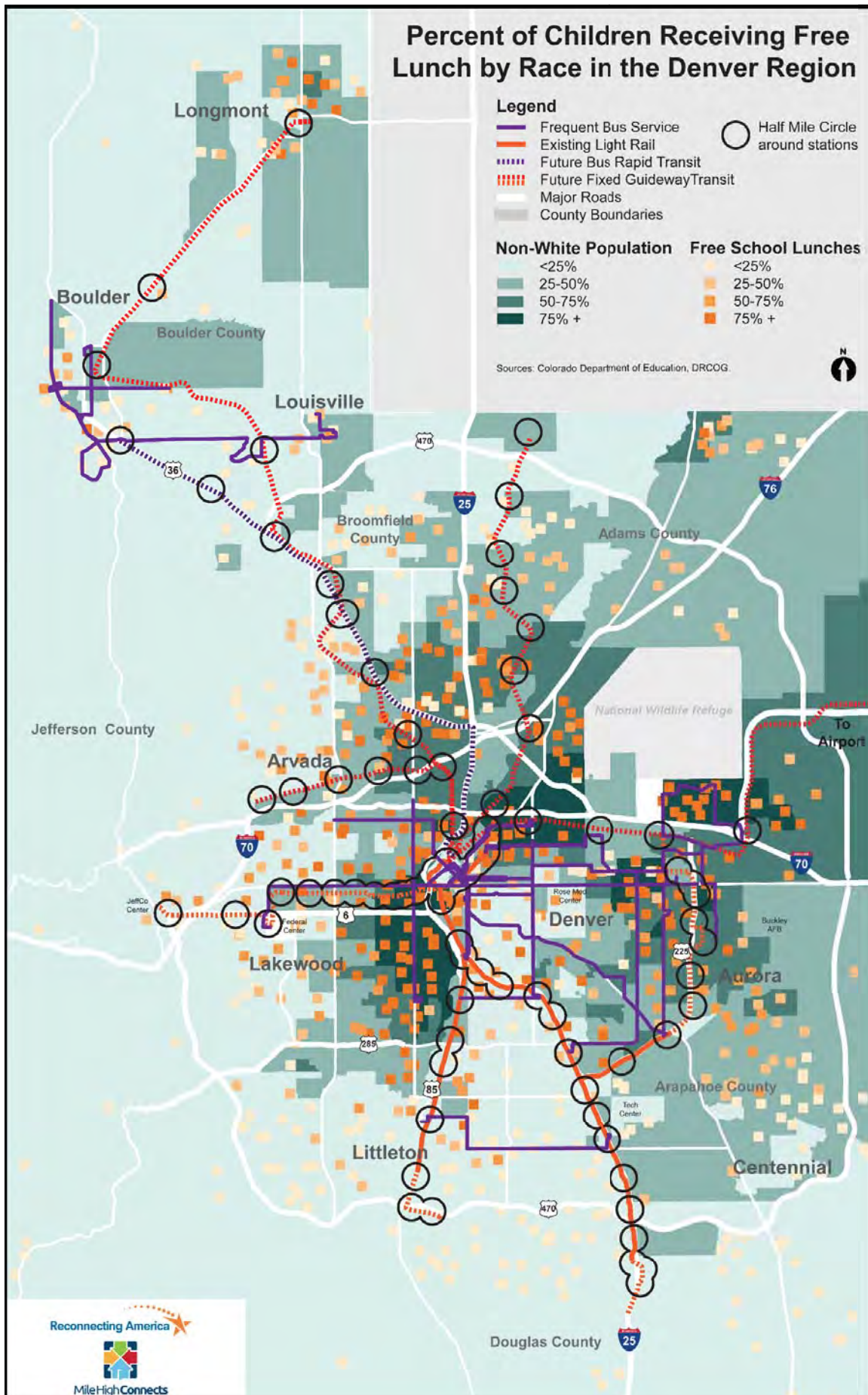
- Qualistar Rated 1
- Qualistar Rated 2
- Qualistar Rated 3
- Qualistar Rated 4
- Unrated

Sources: Qualistar Colorado, Census 2010, DRCOG.

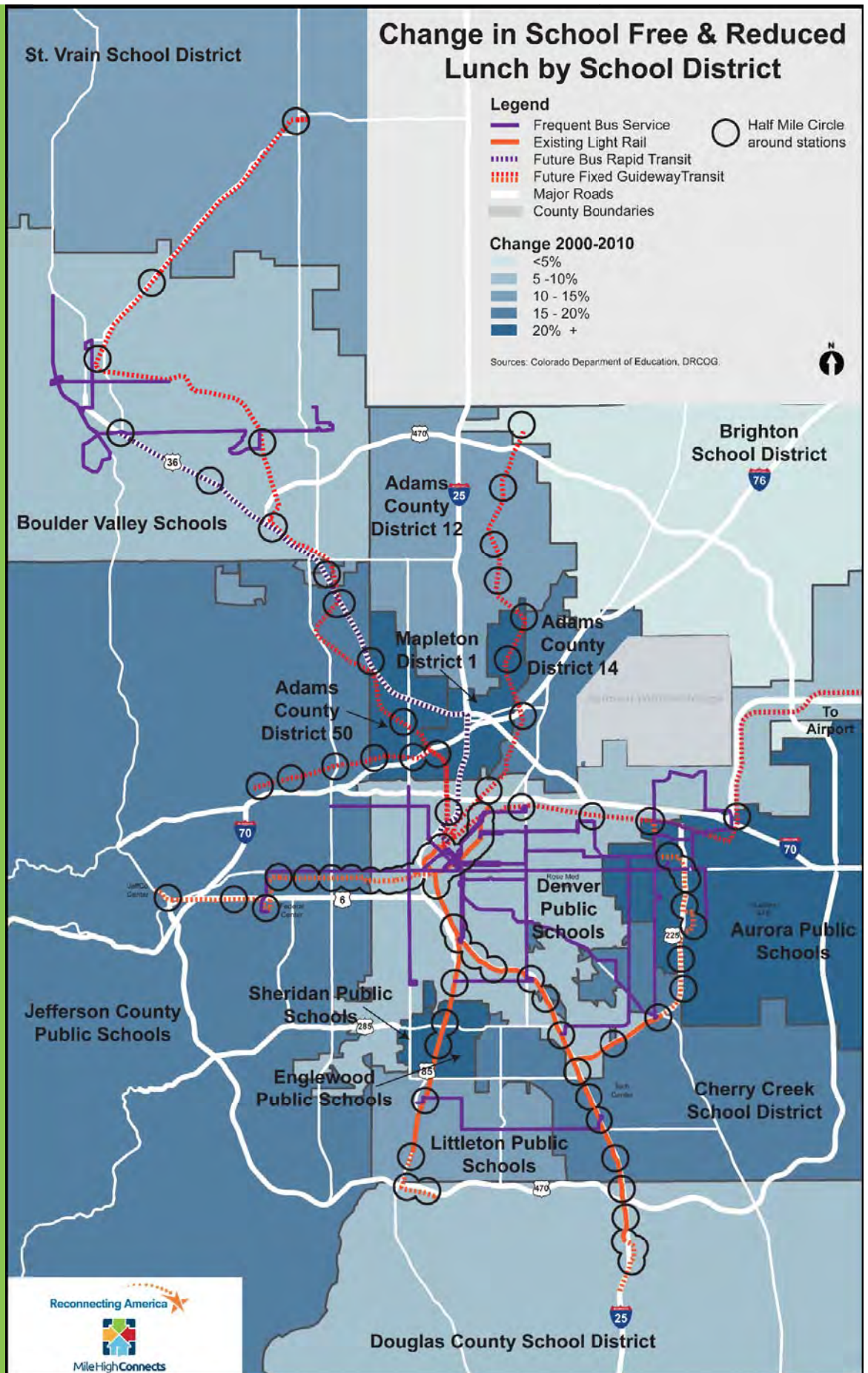


Map EDU-3:  
Access to Quality  
Preschools for  
Children Under 5  
in Metro Denver





*Map EDU-4:  
Percent of  
Children  
Receiving Free  
Lunch by Race  
in the Denver  
Region*



Map EDU-5:  
Change in  
School Free &  
Reduced Price  
Lunch by School  
District



## Costs to Get to School for Metro Denver Students by District

**Map EDU-6: Costs to Get to School for Metro Denver Students by District** shows how much money is spent per student on transportation. Counties like Boulder have higher expenses due to larger travel distances to school and sparser population densities. Some of the school districts with the highest free and reduced price lunch participation rates, such as Westminster and Commerce City, also have the least money to spend on student transportation. Some of the transportation budget goes to school buses and some goes to reimbursements for personal travel.

Eboney Brown's oldest daughter gets a subsidized RTD pass through her school. With that, and free RTD fare for up to three children under age five, she still spends about \$25 per week on bus fare.

Some school districts are taking an innovative approach to the traditional school bus. In fall 2011, Denver Public Schools began experimenting with a circulator-style shuttle called the "Success Express." Ed Brennan, in an EdNews article,<sup>3</sup> writes:

*In both the Far Northeast and the Near Northeast, school buses will no longer make a traditional series of stops in neighborhoods – once in the morning and once in the afternoon. Instead, a fleet of DPS buses will circulate between area schools, offering students up to three chances to catch the one that will get them to their school of choice on time.*

*Martha Carranza, who has a child at Bruce Randolph, said that for students who have depended on RTD, "I was very worried because it is very dangerous for the children coming from Globeville and also from Swansea...the kids were arriving late and sometimes missing classes altogether."*

*And, said Carranza, "...we are very happy that with the new transportation system, no child will have any excuse to miss school."*

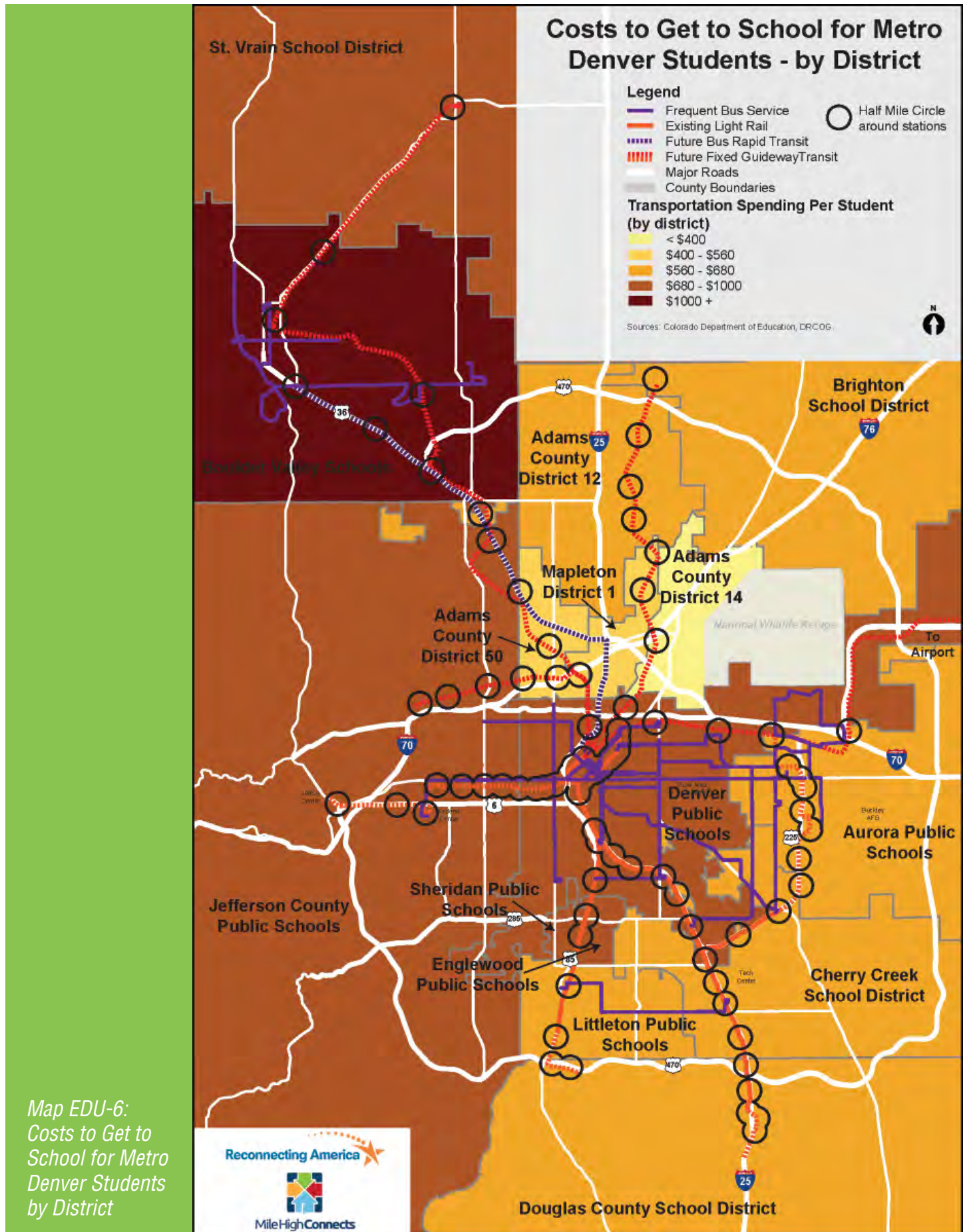
For now, new transportation options like the Success Express and FasTracks won't help Eboney Brown and her children. Brown knows that public transportation isn't always the best thing for her or her kids. One of her daughters has severe asthma, and Brown thinks that standing outside in the cold waiting for the bus makes it worse. A man once followed Brown from bus to bus until she called the police, who met her at her stop and escorted her.

"If I had another option," says Brown "I would definitely go that route."

### Making it through

Brown and her children take public buses everywhere: to school, the grocery store and the laundromat. She's even used the bus to take one of her children to the emergency room. Brown's fiancée takes the bus to his job at an auto parts store and to school, where he's training to be a mechanic. Public transportation isn't the safest solution, or the fastest. But it's the only solution they can afford. Brown is a stay-at-home mom. She was training to be a dental hygienist, but didn't have enough time to both take care of her kids and go to school. Her fiancée's work and school schedule means he leaves the house at 5:45 am and comes home at 10 pm, so Brown is the only one who can take the kids to and from school. Without a second income, her family can't afford a larger car – a car that could free up time for her to finish her dental hygienist training. They are caught in a cycle.

Nonetheless, Brown is optimistic. "I'll make it through," she says. "I make it through every year."



## Action Steps

- Increase outreach to education decision-makers to reinforce the importance of transit: While the value of public transit has been long-recognized in connecting families to quality jobs, there has been less dialogue regarding its role in linking families to quality education opportunities. Similarly, decision-makers should examine the relationship between quality ECE and childcare facilities and transit.
- Encourage brick-and-mortar investments in early childhood centers and K-12 schools to locate near transit lines: As student-age poverty moves out from the central city, suburban school districts will have new opportunities to connect its students to quality options through transit. School districts, government and foundations should develop incentives to encourage developers to site new education-oriented facilities near transit. Cross-sector, joint developments, where partners plan, site, design or build facilities should also be explored.
- Prioritize improving school performance for schools located within a half-mile of transit: Since low-income students are more likely to rely on transit to journey to school, state agencies and local school districts could consider focusing more resources to increase performance for schools located close to stations, increasing quality choice options for all students.
- Create intergovernmental relationships between school districts to plan for highly-mobile, low-income students: Children in poor families are more likely to move into new homes across the region over the course of their childhood. School districts should seek to better understand student mobility and leverage transit to allow for cross-district student commutes.
- Provide last-mile connections between schools and transit stations: A number of the region's high quality schools are located outside of walking distance but could be accessed if last-mile connections are enhanced to connect transit-reliant students to schools. School districts should consider expanding the number of intra-district circulators, anchored to RTD transit stations to increase choice.

# Jobs & Economic Development

## Maps in this section:

- Overview of Employment by Industry for the Denver Region
- Distribution of Retail Employment in the Denver Region
- Distribution of Industrial Employment in the Denver Region
- Distribution of Office Employment in the Denver Region
- Overview of Employment Clusters in Metro Denver
- Distribution of Regional Jobs Requiring Less Than A College Degree
- Relationship of Educational Attainment to Employment Centers

## Getting To Work: Job Accessibility & Transit

Reaching jobs by public transportation is a major challenge in many metropolitan areas. A 2011 Brookings Institution<sup>1</sup> report found that only about 30% of jobs are reachable within 90 minutes via public transportation. The percentage is even lower for less-skilled workers (25%). While Denver ranked sixth out of the 100 largest metro regions for job access via public transportation, there are still major geographic, income and skill disparities within the region.

- **Time:** The report found that 47% of the Denver region’s jobs are reachable within 90 minutes via public transportation, compared to the national average of 30%. However, only 6.7% of these jobs are reachable within 45 minutes and 16.8% within 60 minutes, meaning that most commutes by public transportation are much longer than a car trip.
- **City vs. Suburb:** There are major differences in transit access between people living in central Denver and Aurora versus the surrounding suburbs. The percentage of jobs reachable by public transportation within 90 minutes is only 38% in the suburbs, compared to 60% in the city. Service frequency is also greater in the city (6.1 minutes) than the suburbs (9.6 minutes). For low-income households, taking public transportation is more time-consuming in the suburbs, and living in the city may be a good option to lower transportation costs.

**Table JOB-1: Denver Region Job Access Via Transit**

		Coverage	Service Frequency	Job Access (90-min)
<b>MSA</b>	Overall	83.7%	8.1	47.5% (617,584)
	Low income	97.6%	6.7	57.0%
	Middle-Income	87.4%	8.3	45.5%
	High-Income	68.2%	9.9	37.1%
<b>City</b>	Overall	97.9%	6.1	60%
	Low income	99.8%	5.8	64.5%
	Middle-Income	100%	6.6	55.3%
	High-Income	81.4%	7.0	55.7%
<b>Suburbs</b>	Overall	76.1%	9.6	38%
	Low income	94.4%	8.4	46.8%
	Middle-Income	80.1%	9.4	38.3%
	High-Income	65.9%	10.3	32.9%

SOURCE: Brookings Institution, 2011

- **Income:** Low-income residents are better connected to public transportation than higher income residents. They also live in neighborhoods with higher service frequency. Service tends to be better in the cities than the suburbs, so low-income suburban residents fare worse when it comes to public transportation service.
- **Skill Level:** There is a mismatch between the types of jobs accessible via transit and the types of skills required for those jobs. Nationally, only a quarter of low-skill jobs are accessible via transit, with 69% of low-skill jobs located in the suburbs. So even though most low-income households live within neighborhoods with good transit service, the transit network may not be able to take them to work.

It should be noted that Brookings considers Aurora a “central city” in the Denver MSA, and that Boulder isn’t included in this data.

## The Promise of FasTracks

The buildout of FasTracks is expected to improve these numbers and connect a greater percentage of households of all incomes to jobs. A recent report by Reconnecting America<sup>2</sup> found:

- 17.6% (216,406) of jobs in the Denver region are near fixed-guideway transit.
- FasTracks has the potential to increase this percentage to 26.2% (341,025), a 57.6% increase in jobs near fixed-guideway transit.

## Employment

### ***Overview of Employment by Industry for the Denver Region***

**Map JOB-1: Overview of Employment by Industry for the Denver Region** spatially represents the types of jobs available throughout the Denver region. **Map JOB-2: Distribution of Retail Employment in the Denver Region**, **Map JOB-3: Distribution of Industrial Employment in the Denver Region** and **Map JOB-4: Distribution of Office Employment in the Denver Region** break down the jobs by category.

Office jobs are primarily located in downtown Denver and the Tech Center, while retail and industrial jobs are more dispersed. Many transit corridors run through industrial areas with high numbers of jobs for low- to moderate-skill workers. Taking transit is often a challenge for these workers, and the prevalence of large parcels and warehouses can be a barrier to redevelopment. However, these jobs employ many of the region's low- to moderate-income residents, so devising last-mile strategies to connect them better to transit can reduce transportation costs for workers and provide for a better quality of life.

The proximity of industrial jobs to rail corridors can also pose a problem. Developers looking for big returns on investment often seek out industrial areas for compact redevelopment. Often this means environmental remediation as well as loss of productive industrial land. Manufacturing and industrial jobs offer opportunities for apprentice jobs and care should be taken when thinking about redevelopment of properties that are still productive.

### ***Overview of Employment Clusters in Metro Denver***

**Map JOB-5: Overview of Employment Clusters in Metro Denver** shows where the highest job concentrations are in the region. The dots represent the total number of jobs in the area and the density represents the concentrations. The largest employment clusters are in downtown Denver, along the SE Corridor (the Tech Center), and in Boulder. The I-225 corridor has a lot of jobs near its intersection with the SE and East Lines, as well as near Buckley AFB and Aurora Town Center. When taking these employment concentrations into account, completing the I-225 corridor would significantly improve job access via transit for many of the region's residents and businesses, low and high income alike. In the northern part of the region, jobs are more dispersed but could benefit from last mile connections to future transit stations.

Within central Denver, there are lots of jobs along Colorado Blvd, Park Road, and Colfax. These areas have high-frequency bus routes, but would benefit from improved bus service to the rail lines once they open. This map also can provide guidance on where to build future housing, as many major job centers currently lack affordable residential options, requiring many people to travel long distances to work. There is also an opportunity to think about employment incentives and location. Many major job clusters are away from lower income and minority communities. Connections to these opportunities as well as employment-focus areas could help connect people with jobs.

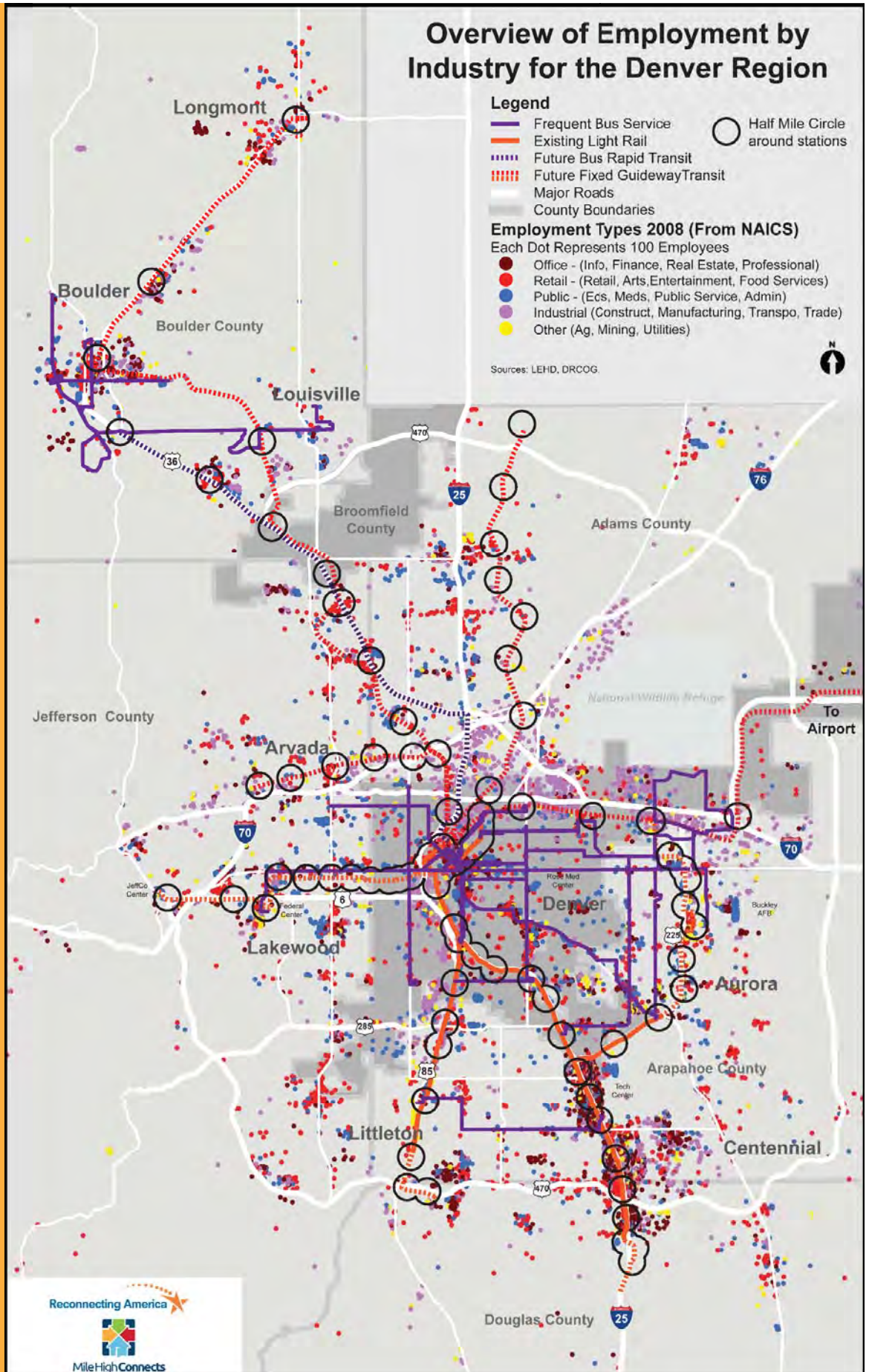
This map does not show employers with less than 100 employees, who represent a major percentage of jobs in the region. Yet it still gives an idea of where these small businesses are likely to cluster. Future mapping efforts by the collaborative will be able to shed more light on the region's small business landscape in relation to transit.

### ***Distribution of Regional Jobs Requiring Less Than a College Degree***

**Map JOB-6: Distribution of Jobs Requiring Less Than a College Degree** displays the location of jobs requiring less than a college degree. Looking back on the previous maps, areas that are focused on retail and industrial have better prospects for non-degree holders. Places such as the Tech Center and Colorado Boulevard also have a high demand for low-skill workers, despite

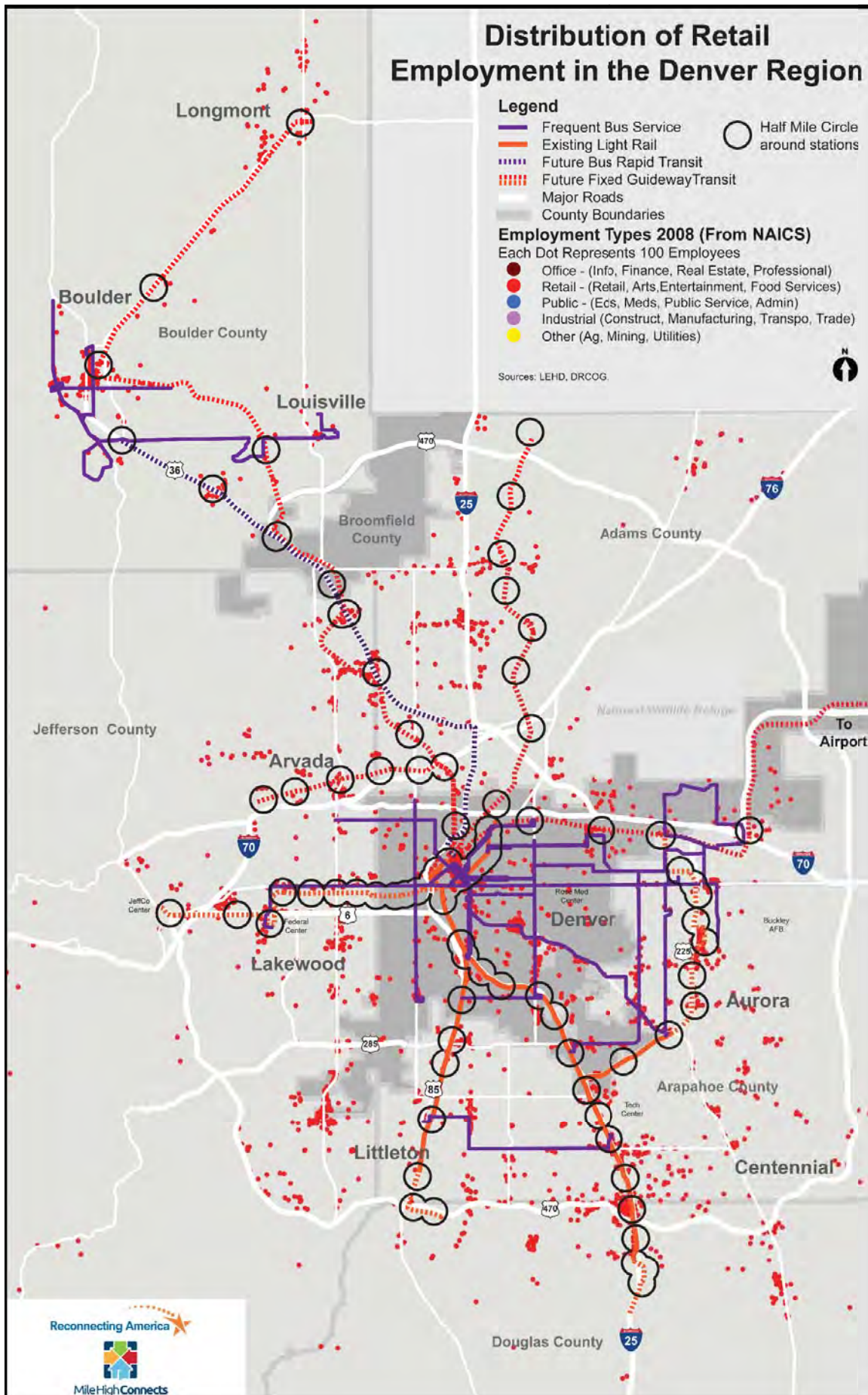


# Overview of Employment by Industry for the Denver Region



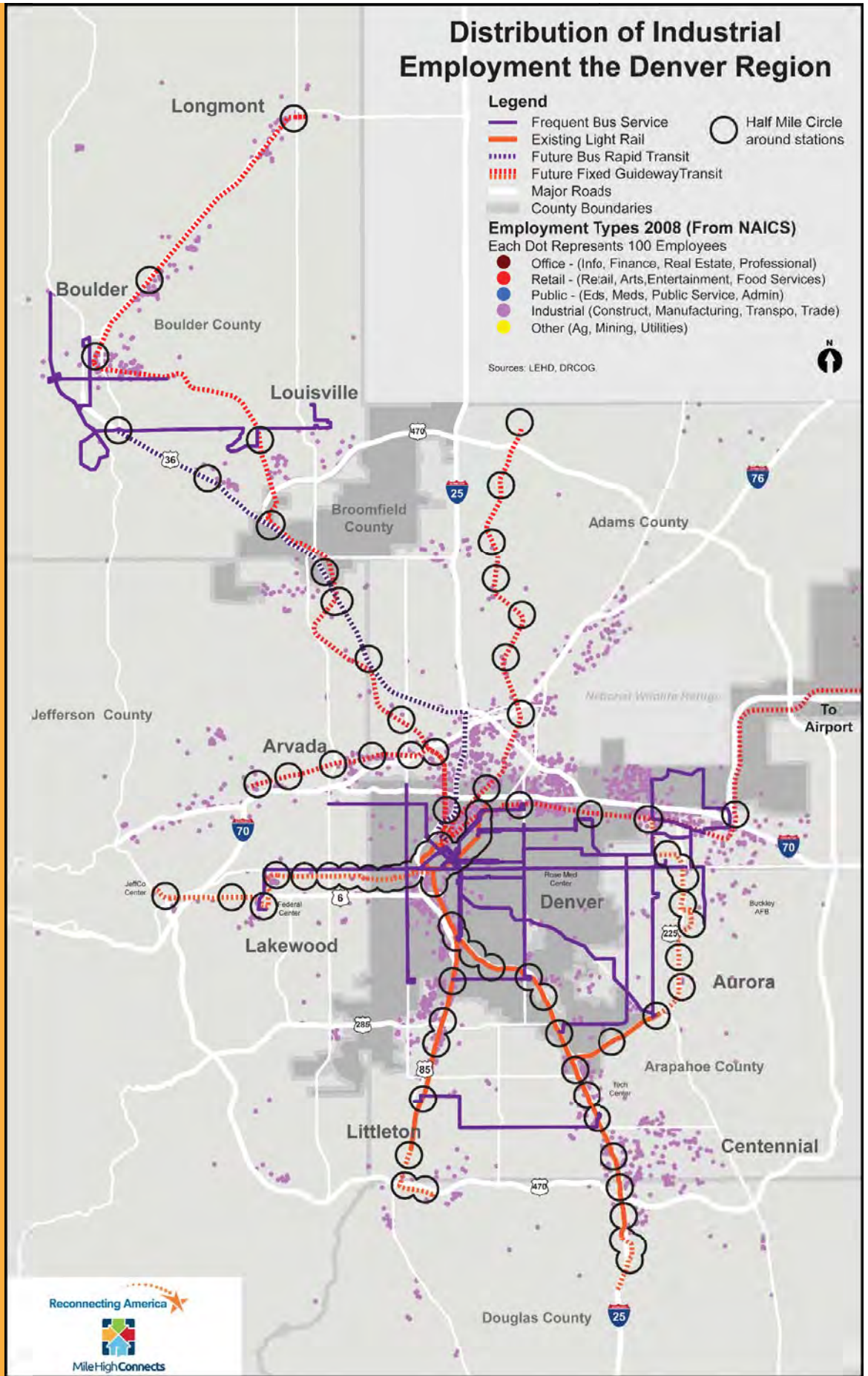
Map JOB-1:  
Overview of  
Employment by  
Industry for the  
Denver Region

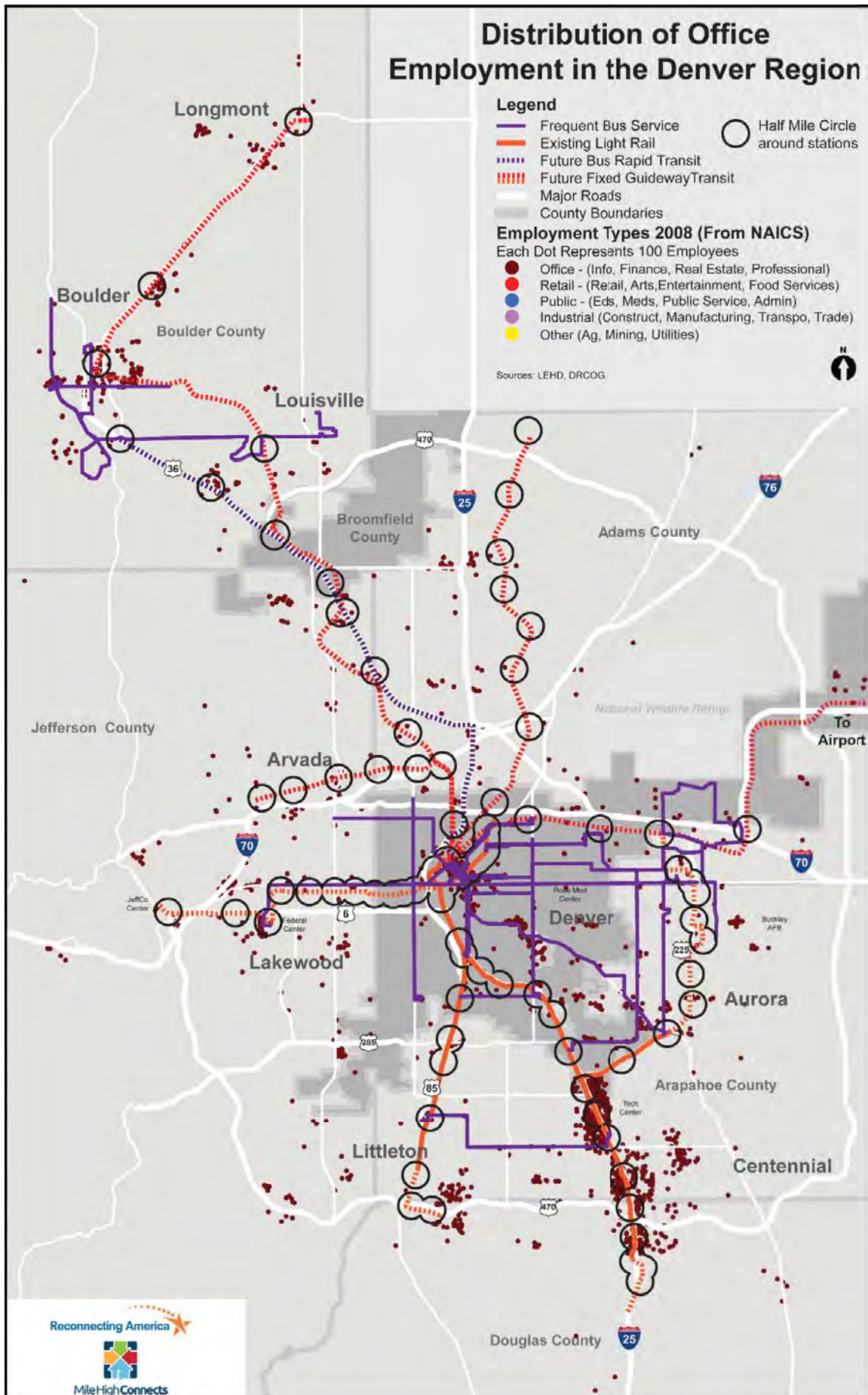




*Map JOB-2:  
Distribution  
of Retail  
Employment  
in the Denver  
Region*

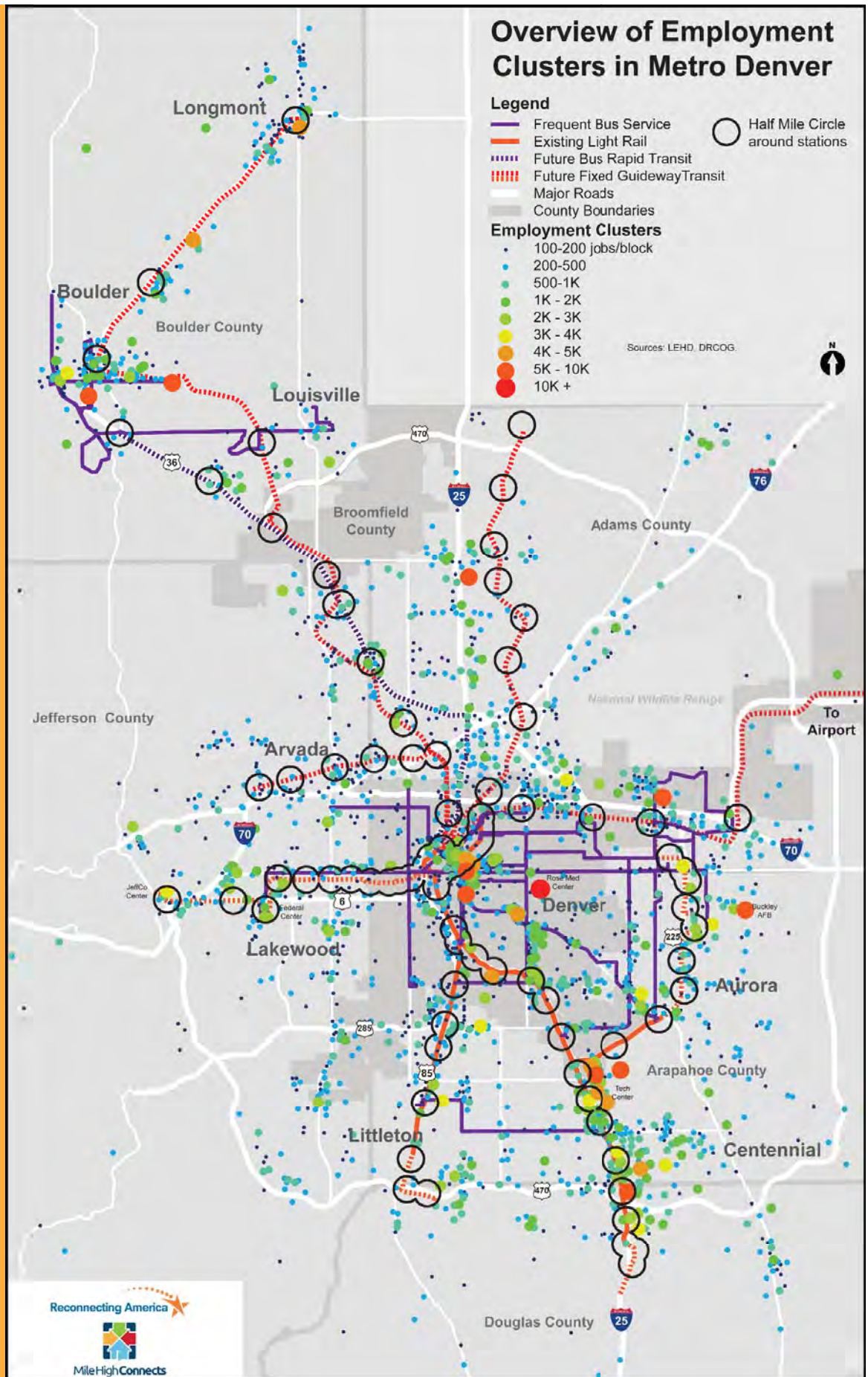
Map JOB-3: Distribution of Industrial Employment in the Denver Region





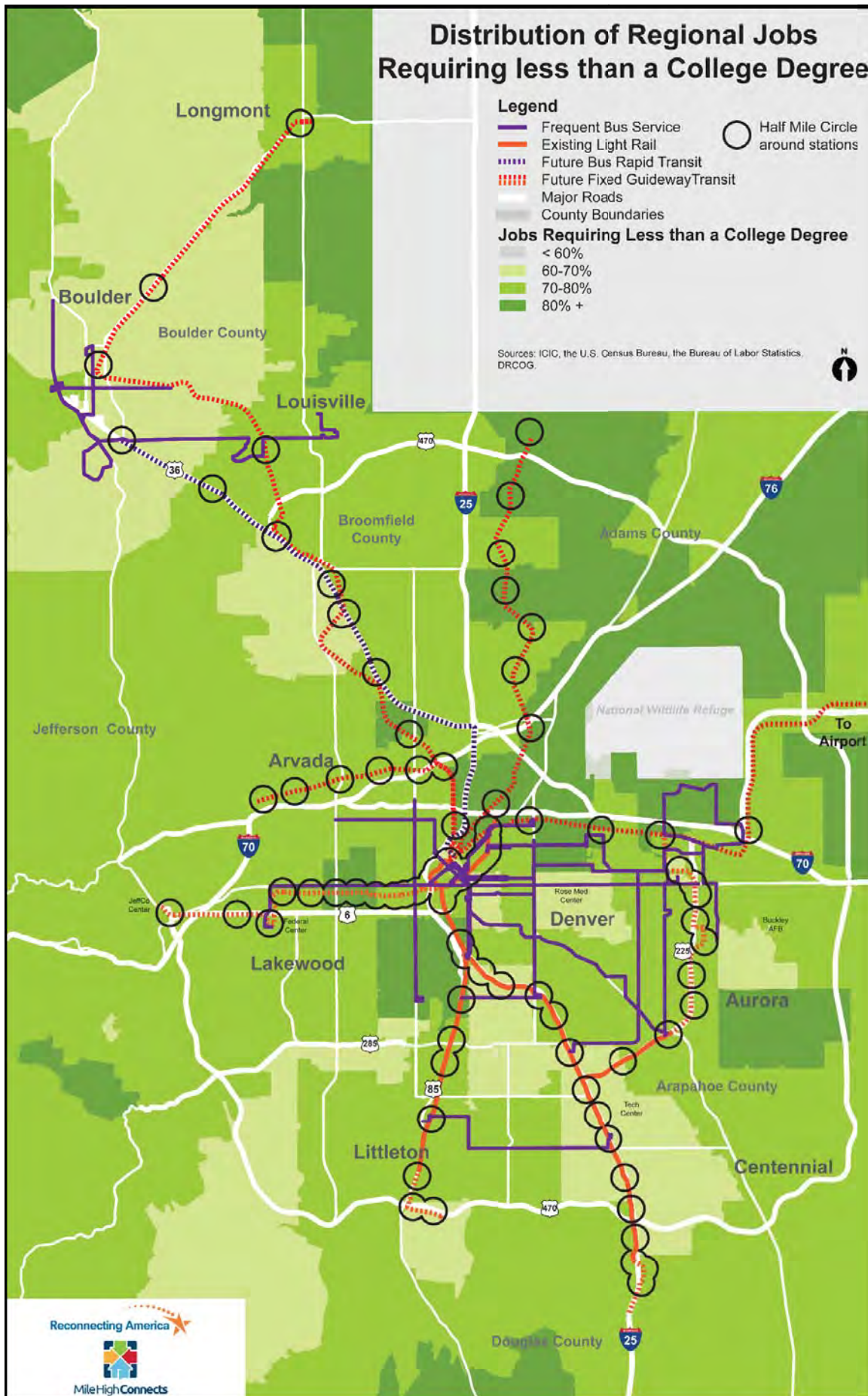
*Map JOB-4:  
Distribution  
of Office  
Employment  
in the Denver  
Region*





Map JOB-5:  
Overview of  
Employment  
Clusters in Metro  
Denver



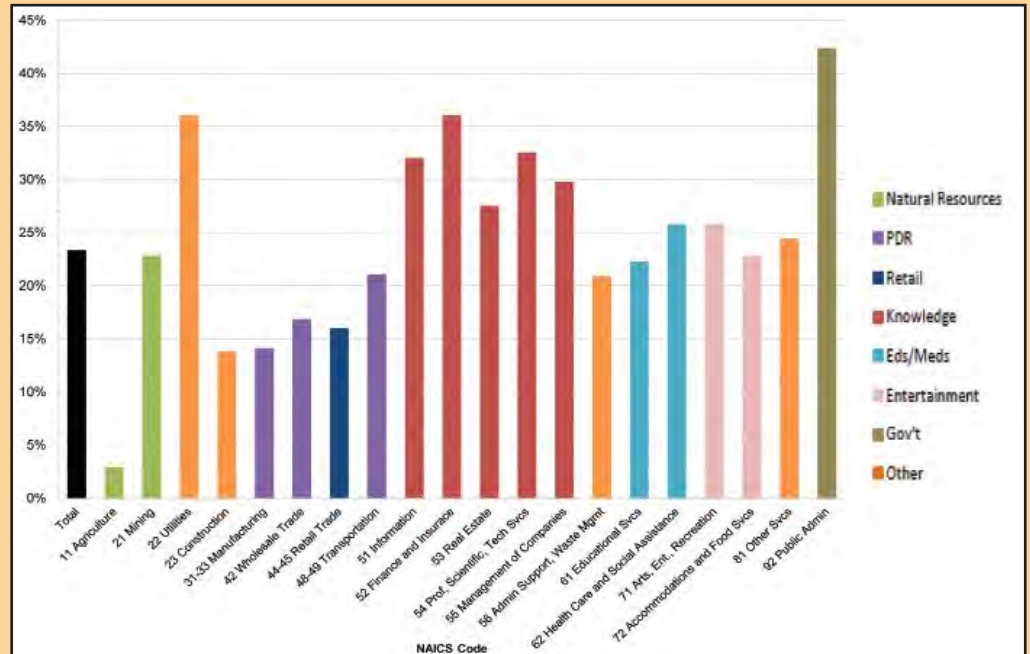


Map JOB-6:  
Distribution of  
Jobs Requiring  
Less Than a  
College Degree

### Transit & Employment: How Job Type Affects Transit Use

A recent report by the Center for Transit-Oriented Development (CTOD)<sup>3</sup> examined employment decentralization patterns by industry sector to see which types of jobs are more accessible via transit. Some types of industries prefer higher-density locations while others prefer lower-density, suburban areas. High-skill, knowledge-based industries are more likely to locate in central business districts and regional employment centers than low-skill, manufacturing-based industries, which are more likely to be found in suburban industrial areas. The government sector has the highest propensity to locate near transit, with 42% of all public sector jobs located in transit zones. This is especially true in the Denver region, where most government jobs are located either downtown or at the Federal Center on the West Corridor. In many places where manufacturing jobs do exist near transit, station area plans call for conversion to higher-density residential and commercial office uses, which can displace those jobs and push them further away from the transit network. Because manufacturing jobs are more available to workers with less educational attainment, this displacement raises equity concerns as the FasTracks network is built out. Will industrial jobs now located along transit corridors remain accessible to workers, or will they be displaced by higher-skill, knowledge-based jobs?

**Figure JOB-1: Transit Zone Capture Rate by Sector, 2008**



SOURCE: LEHD 2008, Center for Transit-Oriented Development 2010

The government sector has the highest propensity to locate near transit, with 42% of all public sector jobs located in transit zones. This is especially true in the Denver region, where most government jobs are located either downtown or at the Federal Center on the West Corridor. In many places where manufacturing jobs do exist near transit, station area plans call for conversion to higher-density residential and commercial office uses, which can displace those jobs and push them further away from the transit network. Because manufacturing jobs are more available to workers with less educational attainment, this displacement raises equity concerns as the FasTracks network is built out. Will industrial jobs now located along transit corridors remain accessible to workers, or will they be displaced by higher-skill, knowledge-based jobs?

**Table JOB-2: Employment by Industry<sup>4</sup>**

	MSA		City		Suburbs	
Employed population age 16 and over	1,296,569		465,889		830,680	
Construction	99,671	7.7%	35,567	7.6%	64,104	7.7%
Manufacturing	91,347	7.0%	22,377	4.8%	68,970	8.3%
Wholesale and retail trade	188,330	14.5%	66,438	14.3%	121,892	14.7%
Transportation, warehousing & utilities	63,890	4.9%	22,038	4.7%	41,852	5.0%
Information	52,826	4.1%	20,001	4.3%	32,825	4.0%
Finance & insurance, real estate, rental & leasing	114,705	8.8%	37,270	8.0%	77,435	9.3%
Professional, scientific, & management; administrative & waste management services	187,939	14.5%	72,167	15.5%	115,772	13.9%
Educational, health care & social assistance	234,381	18.1%	86,719	18.6%	147,662	17.8%
Arts, entertainment, recreation, accommodation & food services	123,811	9.5%	54,569	11.7%	69,242	8.3%
Public administration	57,957	4.5%	18,499	4.0%	39,458	4.8%

SOURCE: Brookings Institution, 2011

the perception that these are high-income areas. Other areas with a high concentration of office jobs tend to have higher educational requirements (downtown Denver, SE Corridor, Westminster/Broomfield, Boulder).

### ***Relationship of Educational Attainment to Employment Centers***

**Map JOB-7: Relationship of Educational Attainment to Employment Centers** shows the difference between the location of jobs and the educational attainment of residents living in those areas. Areas with low educational attainment tend to be further from major job centers, requiring residents of these neighborhoods to travel further for work. These residents are often low income and are more likely to rely on public transportation. Denver's western and northern sides have the lowest levels of educational attainment in the region, and few jobs compared to nearby areas. The northern part of Aurora is also lacking many job opportunities for its less educated residents. Educational attainment is highest in Broomfield, Boulder, and Douglas counties, and lowest in Denver and Adams counties. The SE Corridor is one of the few places where jobs and educational attainment match, but these are primarily high-income, high-skill jobs requiring advanced education. The East Line will significantly improve access to opportunities for many Denver and Aurora residents, but areas in southwestern Denver and parts of Thornton will remain without adequate transit access even after all new lines open.

### ***How Employees Get to Work<sup>5</sup>***

In 2009, the Denver Regional Council of Governments (DRCOG) conducted surveys of employees and employers to understand who takes transit to work and what types of incentives employers provide to get employees to make the switch to transit.

The Employee Survey asked 403 employees from 79 companies in three areas of Denver how they got to work. Approximately 86% of employees who work in transit station areas never use light rail to get to work. Only 6% reported using it at least once a week. In downtown Denver, 55% of employees commuted to work by a mode other than driving alone, compared to 15% in the suburban employment areas. Downtown Denver employees also walked or used transit more for midday trips. The average commute distance from home to work was the same in all three station types. Frequent bus/rail users had lower levels of educational attainment and earned lower wages.

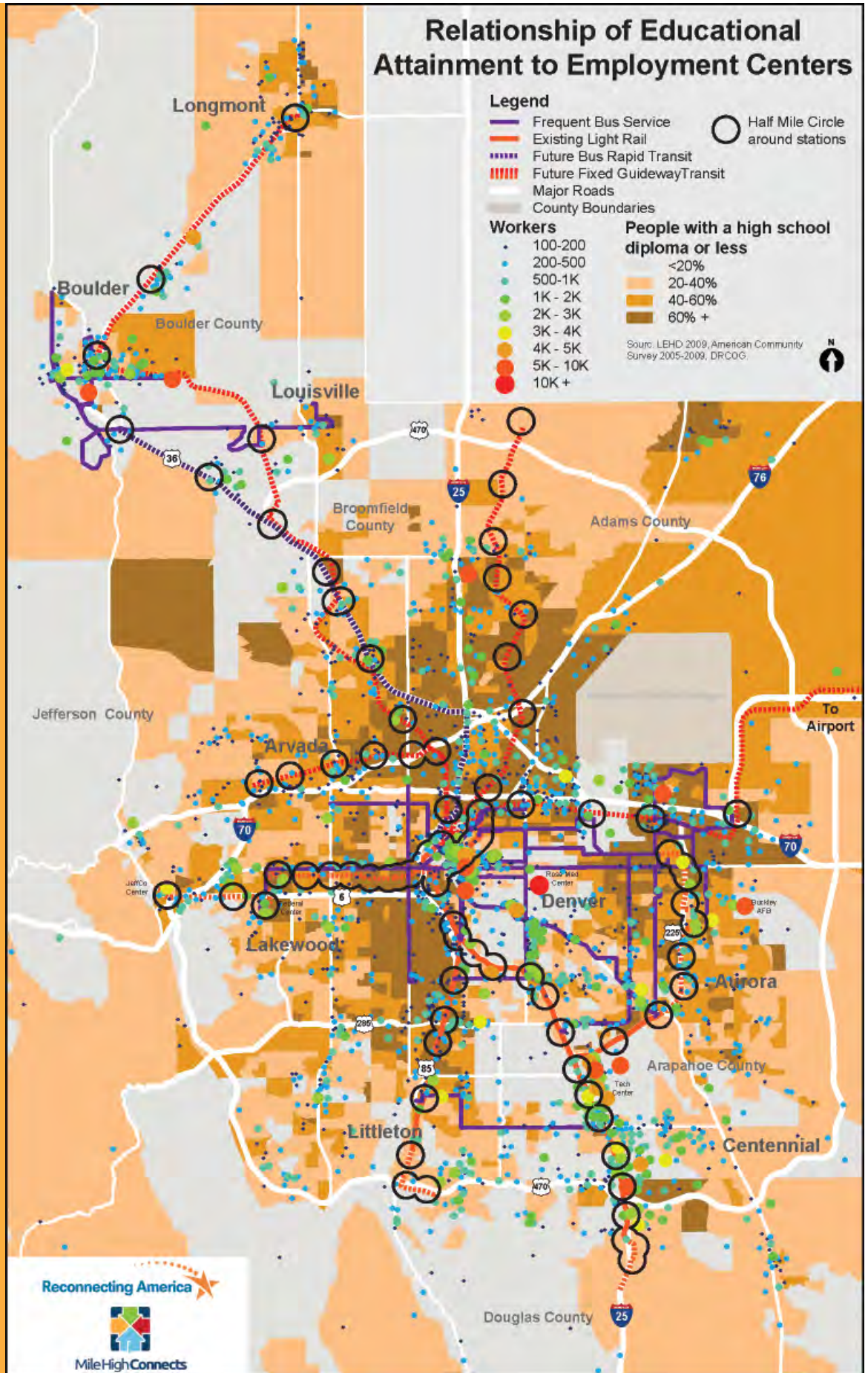
Influence of Work Amenities on Job Choice:

- |                        |                                 |
|------------------------|---------------------------------|
| 1. Salary/wage         | 6. Easy access to car parking   |
| 2. Interesting work    | 7. Convenient amenities nearby  |
| 3. Benefits            | 8. Easy commute by rail transit |
| 4. Company reputation  | 9. Easy commute by bus transit  |
| 5. Easy commute by car | 10. Access by walk/bike         |

The Employer Survey asked 300 businesses within one mile walking distance of a transit station about their location decision. The majority said access to cars and parking was influential in location decisions. Transit amenities mattered to 49% of respondents. More than 80% of businesses outside of downtown had free parking for employees. Access to transit was cited by only 7% of employees as a top reason for choosing a location. The most common reason for business location was proximity to main roads for easy access, followed by good lease rates, and building structure suited to their business needs. Only 13% of businesses saw the rail commute option as a strong influence of location choice and 29% said it was somewhat of an influence. Only 20% said access to a larger workforce from rail transit and access to rail transit foot traffic had at least some influence on their location choice. Access by car and availability of parking were strongest influencers (42% and 33%).



### Relationship of Educational Attainment to Employment Centers



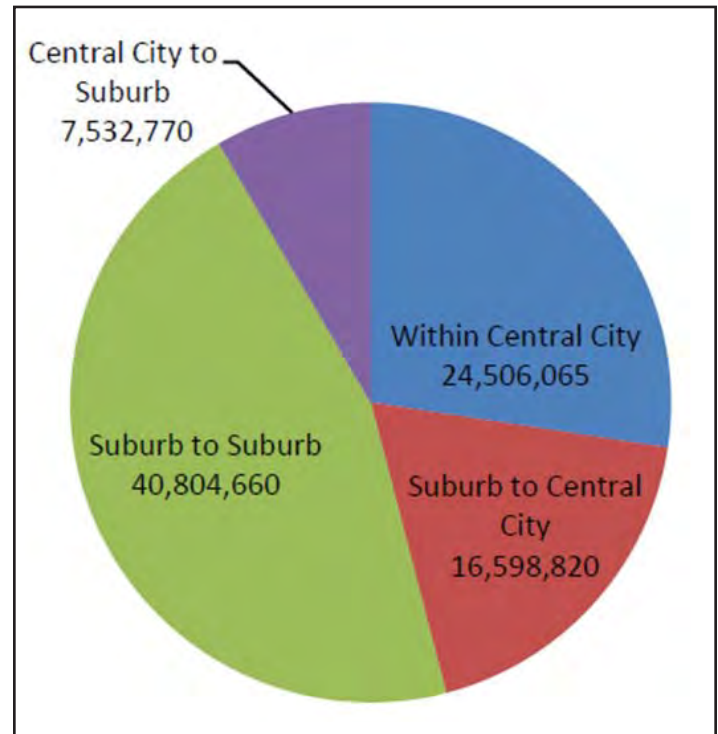
Map JOB-7:  
Relationship  
of Educational  
Attainment to  
Employment  
Centers



## Job Sprawl

A recent report by the Center for Transit-Oriented Development (CTOD) found that the fastest growing employment centers are now located in auto-oriented suburban communities on the edge of metropolitan regions, which are difficult to serve by fixed-guideway transit networks.<sup>6</sup> The traditional “hub-and-spoke” transit network is not set up to accommodate these trips, so most if not all workers must drive to work, which adds to congestion on the roads and costs households more in transportation costs than if they worked in a more centralized location. Moreover, many low-income workers have trouble reaching these jobs because of the lack of public transportation. They must be able to own and maintain a vehicle to get to and from work, increasing the time and cost of commuting to work. To address these challenges, regions are faced with both extending their transit networks to reach these dispersed job centers and also concentrating future development near existing transit networks. The Denver region is already at work on extending the fixed-guideway transit network to reach many of the region’s largest suburban employment centers, while local and regional policies promoting TOD could lead to more concentrated employment centers in the future.

**Figure JOB-2: Major Metropolitan Commuter Flows, by Number of Workers**



SOURCE: Commuting in America III, 2006; Center for Transit-Oriented Development, 2008, 2011.<sup>7</sup>

**Table JOB-3: Brookings State of Metropolitan America Data for Denver<sup>8</sup>**

### Employment—Hourly Wage

	MSA
Low-wage (10th Percentile)	\$8.79
Middle-wage (Median or 50th Percentile)	\$19.99
High-wage (90th Percentile)	\$46.13

### Median Hourly Wage by Educational Attainment

	MSA
Less than high school	\$11.05
High school	\$14.95
Some college	\$18.53
BA or higher	\$28.03

SOURCE: Brookings Institution, 2011

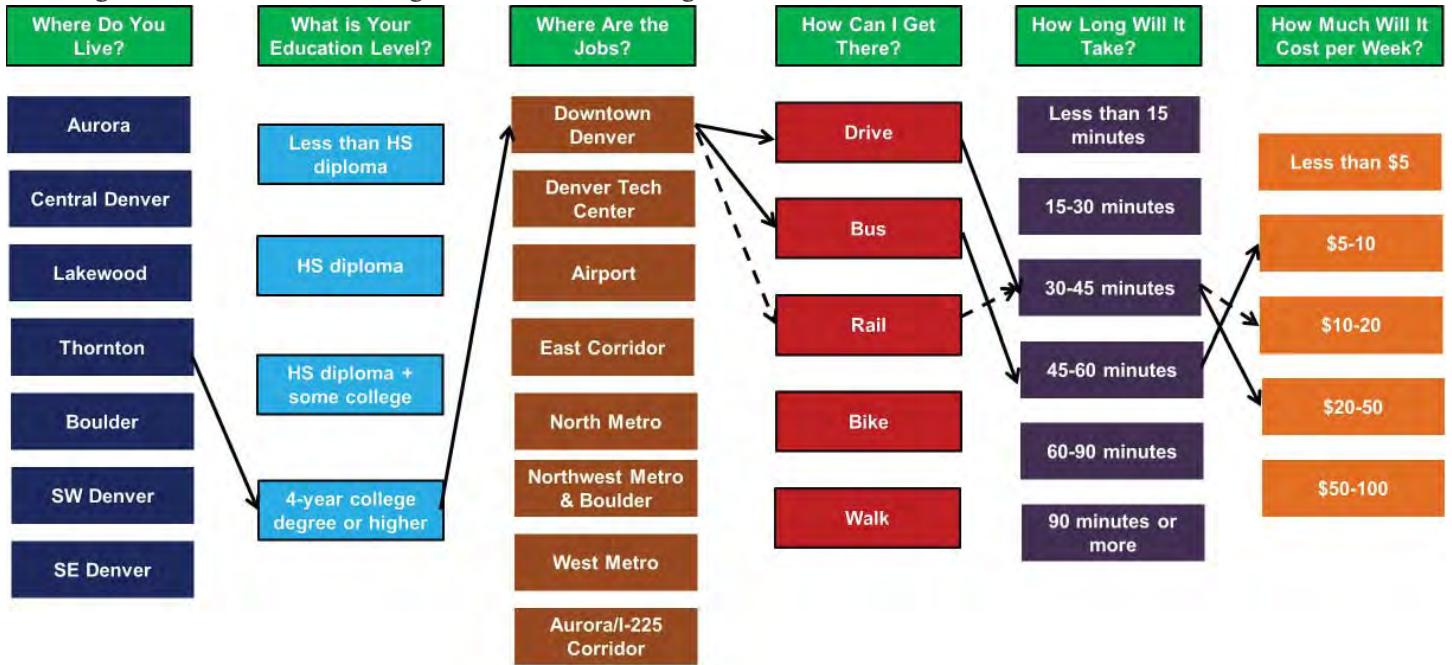
### Median Hourly Wage by Race

	MSA
Hispanic	\$14.42
Asian (non-Hispanic)	\$20.66
Black (non-Hispanic)	\$14.42
Other (non-Hispanic)	\$19.03
White (non-Hispanic)	\$22.34

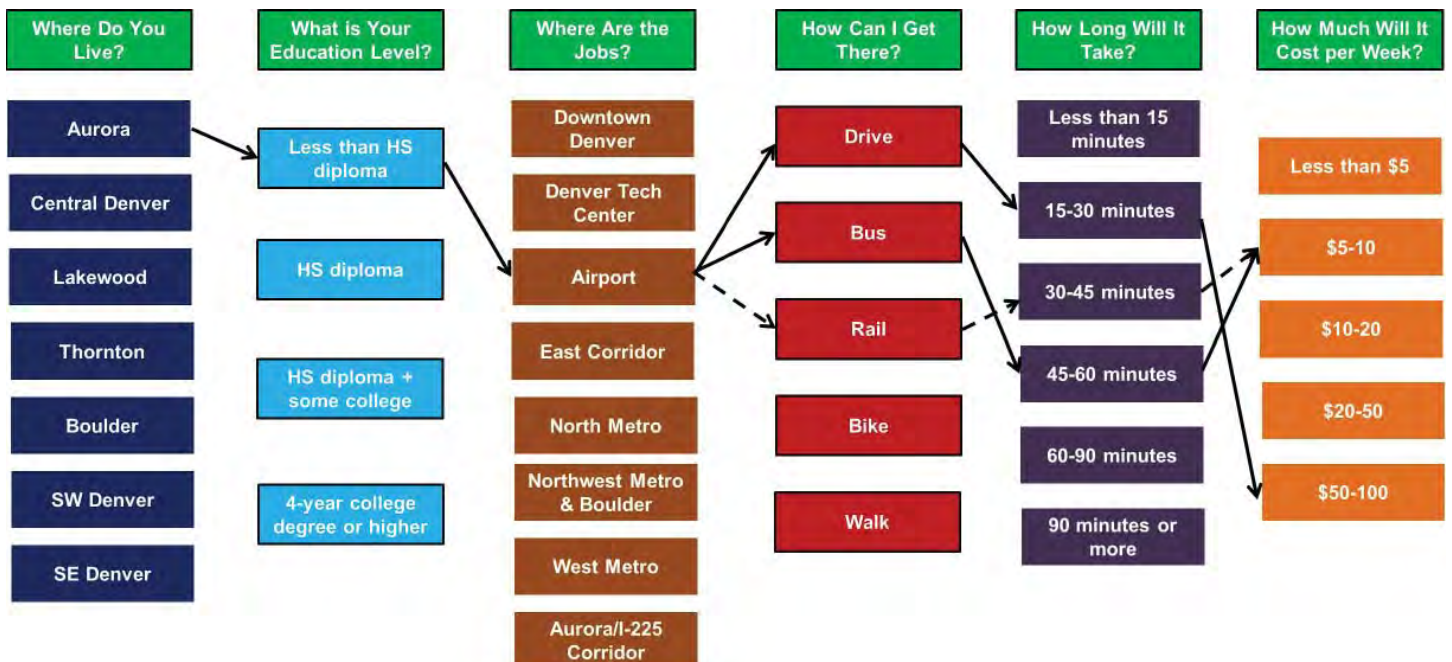
## The Commuting Game

Time and cost of commuting varies greatly depending on where people live in relation to their jobs. Some people may work transit, while others may work further afield from the biggest job centers must drive or take a lengthy bus commute. To demonstrate the different types of commutes people take, the following graphics display several scenarios. They start with a person's location, and then use education level to determine where jobs are likely to be located for that person. The next step is figuring out how to get from home to work, how long it will take, and how much it will cost. In most cases, driving is the quickest option, but it is also the most costly. The graphic also attempts to show how new rail lines will impact travel times and costs. Rail options could make it quicker than a bus to get places depending on where one lives and works, thus making the use of public transportation more attractive. Rail is also cheaper than taking a car in most instances, and if the cost savings outweigh the extra time costs, fewer people may decide to drive on the roads to get to work and some may be able to get by without a car at all.

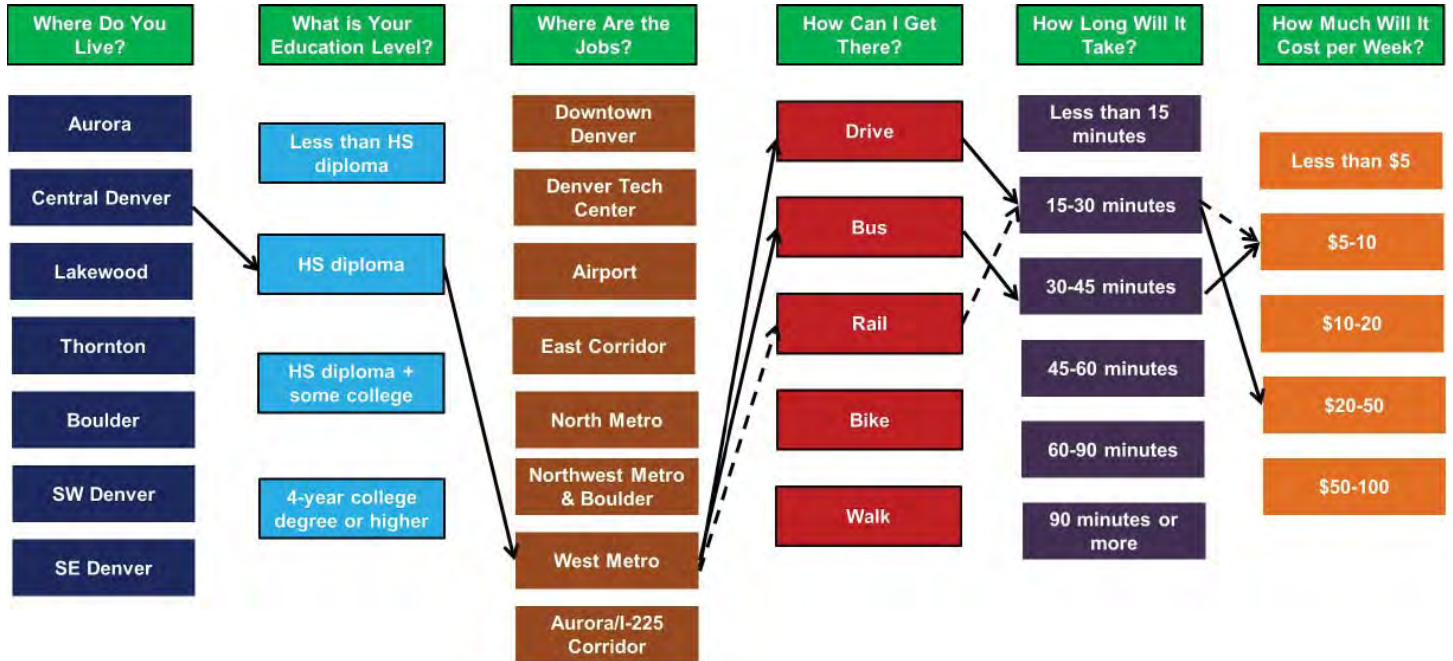
### A College-Educated Worker Living in Thornton, Working in Downtown Deny



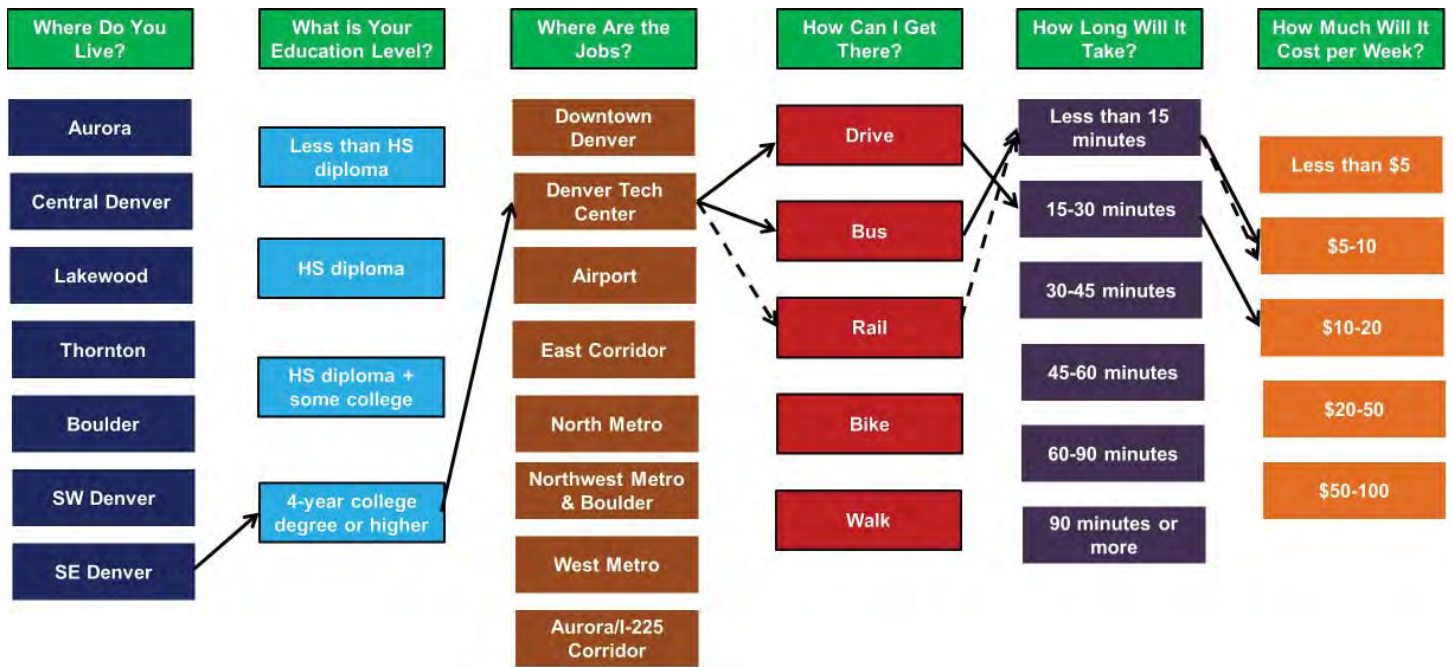
### An Aurora resident with no high school diploma, working at the airport



**A high school-educated resident of central Denver working in the Western suburbs**



**A college-educated resident of southeast Denver working in the Tech Center**



## Action Steps

- **Conduct additional research to understand the firms, industries, and types of jobs located along major transit corridors to understand how we can best leverage transit access to promote employment.** The analysis completed by this Atlas only scratches the surface in our understanding of the relationship between jobs and trained workers. We recommend additional research to better understand the placement of firms along the lines, and the barriers and incentives for facilitating business locations by transit, especially those firms that offer employment to our region’s “middle skill” workers.
- **Encourage our regional employers to offer transit passes to workers as a core benefit.** RTD offers corporate pass programs to employers to subsidize the cost of transit. Work with RTD to increase awareness and usage of these programs.
- **Support the creation of employer-assisted housing.** In communities as diverse as Chicago and Cleveland, key employers are offering employer-assisted housing programs to help lower the cost of housing as well as promote “live where you work” strategies to reduce commuting times. Additional research should be done to explore these and other national models to determine the feasibility of offering a Mile High program for our local businesses.
- **Consider location incentives for employers and small businesses to locate by transit.** As new or expanding firms make site decisions in the region, regional economic development agencies should ensure that their incentive programs reward and prioritize those employers choosing to locate within a half-mile of a high-frequency transit stop and/or that are offering “last mile” connections between their workplace and major transit connections.
- **Prioritize locating workforce training centers along high frequency transit corridors.** Future decisions about investing in workforce training programs should consider location as a key criteria for funding to foster better accessibility to transit.
- **Preserve affordable commercial space along transit corridors to ensure retention of local businesses.** As our regional transit system is completed, national trends have shown land prices along these lines will increase. In order to preserve our local identity and culture, safeguards should be put in place to preserve affordability of commercial space for local small businesses, especially those providing neighborhood services. A scan of national best practices should be done to identify what the most effective strategies are that preserve a “buy local” ethos without stunting the overall market.

## Endnotes: Executive Summary

- 1 American Public Transportation Association, 2012. <http://ractod.org/ymSqGr>
- 2 Median income in the Denver region was \$59,960 in the 2005-2009 American Community Survey .
- 3 Brookings: Parsing U.S. Poverty at the Metropolitan Level <http://ractod.org/AmNfUi>
- 4 Allard, S.W., & Roth, B. (2010). Strained suburbs: The social service challenges of rising suburban poverty. Brookings Institution report. Retrieved from <http://ractod.org/AykiBV> (last accessed October 7, 2010).
- 5 Denver Regional Council of Governments: <http://ractod.org/wo9OXr>
- 6 U.S. Department of Housing and Urban Development. <http://ractod.org/yI7ACz>
- 7 Center for Neighborhood Technology, <http://www.htaindex.com>
- 8 Lipman, B.J., on behalf of the Center for Housing Policy. (2006). A heavy load: The combined housing and transportation burdens of working families. Available at <http://ractod.org/AeCaCz> (last accessed October 11, 2011).
- 9 Center for Transit-Oriented Development. (2005). Hidden in plain sight: Capturing the demand for housing near transit. Available at <http://ractod.org/y20F9D> (last accessed October 1, 2011).
- 10 Center for Transit-Oriented Development. (2005). Hidden in plain sight: Capturing the demand for housing near transit. Available at <http://ractod.org/y20F9D> (last accessed October 1, 2011).
- 11 Federally subsidized affordable housing is defined as: Section 8, Section 202/811, and low-income housing tax credit (LIHTC) federally assisted affordable housing
- 12 Data comes from the Community Strategies Institute, which was contracted by the City & County of Denver's Office of Economic Development to create a database of all affordable housing units within the 7-county Denver region.
- 13 Enterprise, The National Housing trust, and Reconnecting America. Preserving affordable housing near transit: Case studies from Atlanta, Denver, Seattle and Washington, D.C. Quigley, L, ed. Retrieved from: <http://ractod.org/Ax94qh> (last accessed September 30, 2010).
- 14 AARP. Preserving Affordability and Access in Livable Communities: Subsidized Housing Opportunities Near Transit and the 50+ Population. (September 2009).
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## Endnotes: Demographics

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