



TICKET TO THRIVE

A Solution for Affordable Transit in the Denver Region

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Executive Summary

Colorado lawmakers in 1969 created the Regional Transportation District, a transit agency that serves 2.87 million people in eight counties in the Denver-Boulder-Aurora metro area. In the legislation that governs RTD, lawmakers declared that, “Public transportation services are provided to assist the transit-dependent and the poor, to relieve congestion and to minimize automotive pollution.”

Serving the transit-dependent and the poor is a common goal for transit systems across the country, which are often the primary means for working people to get to work. Indeed, as the statute above indicates, it is meant to be a top directive for RTD.

And because RTD recently approved a new fare structure that took effect in January of 2016, a structure approved after months of deliberations and controversy, it is more important than ever to ask how well RTD serves the populations the agency was intended to assist.

But as shown in this report, a year-long research effort from the Colorado Fiscal Institute, RTD’s pre-2016 fare structure was deeply unfair to low-income riders, who comprise about half of RTD users, and unfortunately, the new system is not equitable either.

In fact, the fares that have been reduced in 2016 will mostly benefit higher-income transit users while the fares that have been increased will disproportionately fall on the backs of low-income local bus riders.

An overall “Robin-Hood-in-reverse” effect happens because:

- The 1 percent sales tax to support RTD falls more heavily on the poor, who spend a greater portion (three times as much as higher-income riders) of their earnings on goods subject to sales tax and thus pay a larger percentage of their earnings in sales tax.
- One-day parking at RTD Park-n-Ride facilities is free, benefiting higher-income suburban commuters, who use Park-n-Rides, over low-income users, who don’t use the parking.
- Many low-income transit users don’t have automobiles or are “transit-dependent.” Unlike so-called “choice riders” who weigh the costs of fares, waiting time and travel time compared to the time/cost of driving, transit-dependent riders have little choice when prices increase.
- Higher-income riders are more likely to take advantage of significant discounts offered through purchasing in bulk, such as monthly and yearly passes, and their employers are more likely to offer free or discount passes through the Eco Pass system, which allows employers to bulk purchase passes at a discount. Low-income riders seldom can take advantage of these bulk discounts.
- Neither the pre-2016 fare structure, nor the newly approved one, adequately take into account any of these inequities and attempt to alleviate them, and an existing program where RTD sells passes to nonprofits at a discount (who then distribute them to low-income riders) reaches relatively few riders (less than one-fifth of low-income users’ trips).

Despite any insistence the creation of a new “day pass” has leveled the playing field for low-income riders, CFI’s research shows the new fare structure does not end the inherent inequity in fares.

The new fare structure remains unfair because it increases fares overwhelmingly used by the

poor (local bus service) while decreasing fares primarily used by higher-income riders (regional and airport service).

Yet, as this research paper shows, there are multiple, viable options for creating a system that would better serve the needs of low-income riders, which would align with RTD's statutorily defined mission.

Some of these types of options have been implemented in other cities, where local transit authorities have willingly embraced them as necessary and beneficial.

CFI's recommended option is a **"50/150" program** that would provide a 50 percent discount off regular fares for riders who earn less than 150 percent of the federal poverty level. This idea is similar to a program that is now used in the Seattle area, and it would be comparable to programs RTD already uses that provide discounts for seniors, Medicare recipients and the disabled.

To be sure, RTD would forgo some farebox revenue by offering greater discounts to riders whose income is under 150 percent of the federal poverty level. Therefore, this report also details some viable ways to pay for these options, including:

- Charging even **\$1 for daily parking** that is now free to in-district residents.
- **Increasing fares to the airport**, which now have been cut for riders coming from the suburbs or downtown.
- **Phasing out smart card discounts** on fare purchases after riders become accustomed to using them.
- **Increasing the sales tax** to provide additional revenue.

Finally, RTD should aggressively market discounts to low-income riders the way it has promoted new buses to Boulder and the four new train lines opening in 2016. Providing quality services to low-income and transit-dependent riders is no less important than trumpeting the new array of transit options available to choice riders. Indeed, it is arguably a higher priority, though anyone taking a hard look at the new fare structure might reasonably conclude RTD believes otherwise.

In short, low-income and transit-dependent riders — the very people RTD was intended to serve — have not only been left at the bus stop for years by an unfair pricing structure, they are getting charged more for it in 2016.

SECTION 1:

Increasing Access and Mobility by Increasing Affordability

Public transit agencies are integral in getting people where they need to go. Whether a rider is commuting for work or for recreation, public buses and trains provide an alternative to the more expensive automobile and increase mobility in a region. As technology improves, many transit agencies are turning their efforts to building out world-class transit systems. Often times this sort of mindset is focused on moving people from their cars to trains and buses.

While it is important for transit agencies to make public transportation more appealing to all, transit agencies must also recognize that the publicly funded services they offer play an all too important role in serving populations for whom a bus is not just an alternative but the only option. For those with the lowest levels of mobility and income, affordable transit can have significant and positive implications for social and economic inclusion. These

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riders, often referred to as transit-dependent, rely on public transit to get to employment opportunities, recreational activities, community resources and medical care. Structural changes such as the development of new lines and changes in fares should include a strong lens on equity to ensure that those who depend on transit the most and are least able to pay still have continued and affordable access.

In this section, we examine the benefits of increased mobility for the transit-dependent ridership in the Regional Transportation District (RTD). We look at where transit-dependent riders live, how they travel, how wages compare to increases in fare prices and how the new fare structure continues to shift the cost of riding onto transit-dependent riders. We then examine how making transit more affordable can increase mobility for this population and create a more equitable system. Findings indicate that when fares are made more affordable, transit-dependent individuals do change their behavior and make more trips, reporting greater mobility.

Low-Income and Transit-Dependent Families Benefit Economically and Socially From Well-Planned Transit

Studies find that well-planned service routes and affordable transit can help low-income people find and keep jobs, move out of poverty, make necessary household trips at lower costs and participate in out-of-household activities and local economies in ways they might not otherwise.

Transit riders can be broadly segmented into two categories: transit-dependent or choice riders. As the label indicates, transit-dependent riders are those who rely on transit as their sole means of transportation. Transit-dependent households are those who do not have a car or regular access to a car due to barriers such as not having a license, having a disability or lacking the financial means to purchase and maintain a car.¹ In short, a transit-dependent rider relies entirely on public transit for work, groceries, child care and other activities and is forced to use transit regardless of affordability or accessibility. Choice riders, on the other hand, are those who view transit as

¹ In RTD's surveying material, it identifies "transit-dependent" as a) a car is not available for their trip, b) no valid driver's license and/or c) having a disability or medical condition which precludes legal operation of a vehicle.

Choice riders, are those who view transit as an alternative to a personal car and use transit as a means to decrease the marginal costs associated with driving, such as avoiding rush hour traffic, parking costs or environmental concerns.

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Affordable transit can be the key to meeting the needs of low-income and transit-dependent workers, improving access to jobs and long-term job outcomes. This is particularly true for individuals who are moving from public assistance to work, with communities of color facing some of the greatest barriers (see Alam 2005; Blumenberg 2002; O'Regan and Quigley 1999). Many individuals who are working to move off public assistance are transit-dependent. Some of these individuals take part in workforce development programs that subsidize travel or rely on family or friends to get to and from interviews and employment services. However, after an individual finds a job placement, they find themselves on a cliff where they still cannot afford transit and are no longer receiving subsidized passes from a program or nonprofit and no longer have regular access to a car (O'Regan and Quigley 1999).

During this job flux, transportation can be a large and frustrating barrier to working. Some studies have found that once an individual finds a job, they begin to make more out-of-home trips and begin to build networks that allow the individual to make economic contributions outside the house and take part in activities that increase economic mobility for them and their families (Blumenberg 2004; Nuworsoo et. al 2009). At this point, workers are forced to choose between expensive personal car ownership that could push them back into poverty or purchasing multiple bus passes to chain trips that might also pose a financial burden. This concept is often referred to as “forced car ownership” (Danziger et al. 2000).

Studies show that this mindset often results in low-income individuals generally taking part in fewer out-of-home activities that could be the key to moving out of poverty (see Yang et al. 2007; Alam 2005; Blumenberg and Pierce 2014). Out-of-home activities range from educational opportunities for children to non-emergency medical trips. When a transit-dependent individual is making decisions about how and when they can leave the house because of cost they will begin to ration trips, decreasing both social and economic activities that are good for our economy and individual households.

Low-income and transit-dependent women experience some of the greatest barriers in making non-work trips. Low-income women have historically spent much of their time participating in household activities that are necessary but do not result in monetary gain. This includes activities such as grocery shopping, child care, medical care and other appointments. These sorts of trips are necessary for households, but do not result in a paycheck, making affordable transit that much more important. The problem is worse for low-income and single mother households where the parent also has to balance work (see Alam 2005; Bianco and Lawson 1996; Danziger et al. 2000).

Forced Car Ownership:
Workers who are forced to choose between expensive personal car ownership that could push them back into poverty or purchasing multiple bus passes to chain trips that might also pose a financial burden.

Transit-Dependent Riders and Those Living in Poverty Live in the Urban Fringe and Suburbs

Research also finds that transit-dependent and low-income riders are much more likely to travel shorter distances for services but might need to cross several zones when traveling for work. Over the past two decades, the growth in the number of families living in poverty in suburban areas has outpaced the expansion of affordable transit services to those same areas. Originally, metropolitan transit services were planned for the central urban core, where most low-income and transit-dependent individuals lived and need was greatest. However, over the past three decades the cost of living in the urban core has surged, pushing low-income and minority communities out to the urban fringe and the suburbs. While many transit agencies, including RTD, have made efforts to expand services they have also adopted zone-based fares that make commuting from the suburban areas to the urban business districts more expensive.

Unfortunately, employment opportunities remain most abundant in the urban core for entry level, service and retail work, increasing the cost and distance of commuting for low-income workers. In other words, those living in poverty do not necessarily live where they work, posing unique challenges for transit and mobility planning. This concept is known as the “spatial mismatch theory” or the “suburbanization of poverty” (see Blumenberg and Waller 2003; Blumenberg and Ong 2001; Cervero et al. 2002; Chu et al. 2000; McKenzie 2013; Mohring 1972; Roberto 2008; Sanchez 2003).

As more people move farther away from urban areas, smaller suburban business districts form, presenting opportunities for service and retail work in the suburbs. Unfortunately, these suburban business districts are not as easy to get to as those in the urban core and provide fewer opportunities for work. While a worker could easily walk or bike to work in the urban core, it is more difficult to do so in suburban areas where sidewalks and bike lanes are not always accessible and where residential areas are farther away from business districts (Blumenberg et al. 2001). As such, transit-dependent riders have to rely on buses to get to services and work.

Customer satisfaction data from RTD reflects this behavior. The majority of those who travel on local buses do not own a car or do not have access to a car as a passenger. This is most likely the case because these individuals are going to take the bus when a choice rider would drive. For example, a choice rider is more likely to drive than take the bus when going to the grocery store or to a doctor’s office for medical care. A transit-dependent person will rely on local bus services. Those with access to their own cars make up an overwhelming majority of the express and regional zone buses. This reflects the desire to avoid the marginal costs associated with commuting to work (Table 1).

Table 1: Access to a Car for RTD Riders

	Light Rail	Total Bus (weighted)	Boulder Local	Denver Local	Longmont Local	Express	Regional
Yes, as a driver	68.1%	33.4%	46.1%	26.5%	20.2%	84.4%	74.4%
Yes, as a passenger	7.3%	13.7%	9.9%	15.2%	9.6%	4.7%	5.8%
No	24.6%	52.9%	44.1%	58.3%	70.2%	10.9%	19.8%

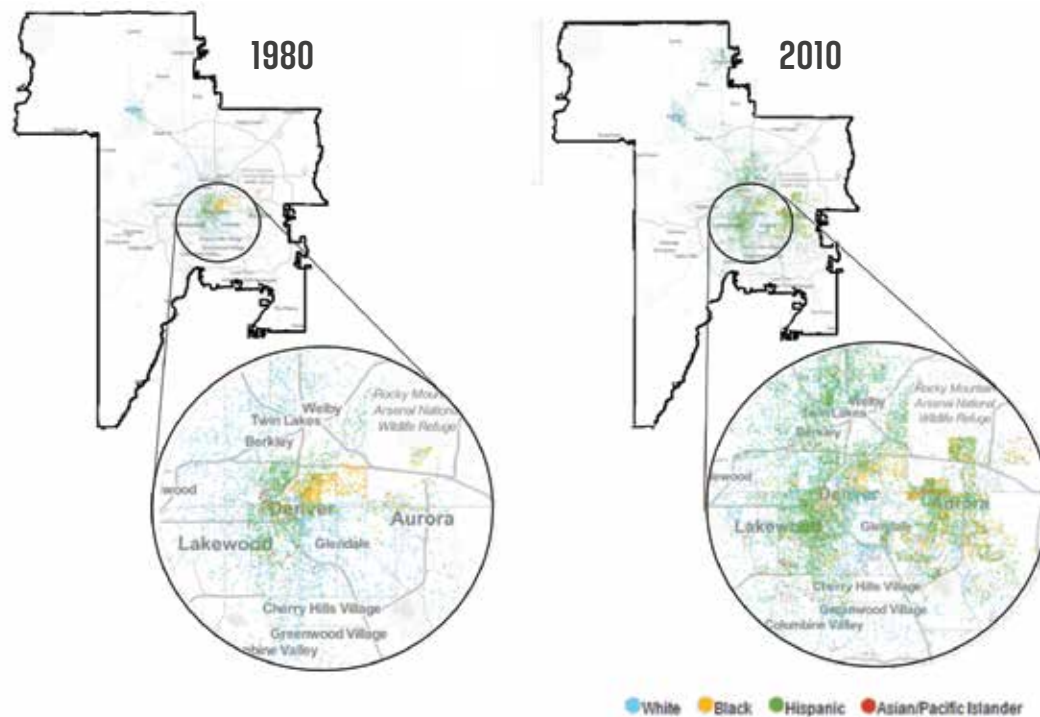
Source: RTD Customer Satisfaction Survey 2011

Table 1 also illustrates what happens when working poor families move farther away from the urban core. Of course, most of those who live farther away from the city are going to seek jobs in their neighborhoods to reduce the cost of commuting. However, as the small number of suburban jobs are snatched up, people have to travel back to the urban core for work, even though they cannot afford to live there. In this situation, commutes become longer and more expensive, worsening the spatial mismatch. Those who report not having a car available make up 20 percent of those who travel regionally, reflecting longer commutes for work.

Research also finds that spatial mismatch tends to have a greater impact on low-income communities of color. From Chicago to Denver, low-income, nonwhite, Hispanic communities were the first nonwhite populations to move away from urban cores in large numbers. Now, other low-income communities of color are also starting to move away in large numbers as housing costs become more prohibitive (see Kawabataa and Shen 2006; Ong and Houston 2002).

The RTD service area, like urban areas across the country, has seen a suburbanization of poverty over the past three decades, according to an analysis of American Community Survey poverty and race data by the Urban Institute. In 1980, the majority of families living in poverty in the transit district lived close to the Denver urban core and were predominantly Hispanic and black. Poverty within the white population was less concentrated in the urban core. By the 1990s, the concentration of white poverty in the suburbs had grown significantly, with increasing pockets of Hispanic, black and Asian/Pacific Islander (API) poverty in the suburbs. By 2010, poor neighborhoods spanned beyond the transit district's urban core with significant concentrations of black, Latino, API and white poverty in the suburbs (see Figure 1).

Figure 1: Suburbanization of Poverty in the RTD Service Area



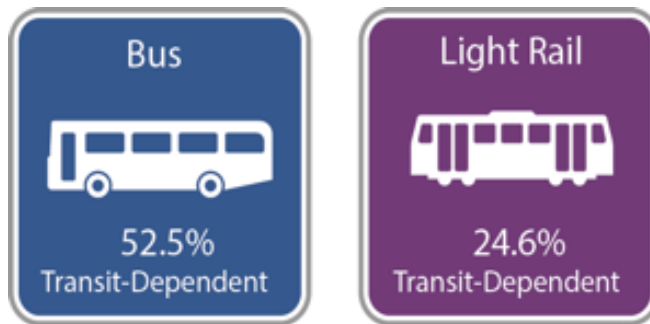
Each dot represents 20 people with income below the federal poverty line

Source: Urban Institute analysis of 1980, 1990, and 2000 Census data and 2007-11 American Community Survey (ACS) data (approximated above by "2010"). 1980 through 2000 Census data is summarized at the 2000 tract-level from the Neighborhood Change Database. 2007-11 ACS data is summarized at the 2010 tract-level from the Census. Race is defined as White Alone, Black/African American Alone, Asian, Native Hawaiian, and other Pacific Islander alone, and Hispanic or Latino origin (of any race). All MSAs are standardized to 2008 OMB CBSA definitions.

Transit-Dependent and Choice Riders in the Regional Transportation District

In the Regional Transportation District, approximately 52.5 percent of bus users are transit-dependent and 56 percent earn less than \$35,000 a year, signifying a correlation between being low-income and transit-dependent. There is also a strong correlation between the type of transit user and the mode of transit they employ. Transit-dependent riders are much more likely to use bus service while choice riders are more inclined to use the light rail. Rail services in transit areas are often considered the more efficient and desirable service. Light rail services are more likely to arrive on time since they avoid traffic altogether and stops are often located near Park-n-Rides and major business areas, solving the last mile and first mile concerns of choice riders.

Figure 2



Unfortunately, this type of service tends to be more expensive due to the increased convenience and is often directionally limited, making the bus one of the only options for intra-city commutes for medical care, groceries, child care or other basic needs.

Transit-Dependent Riders Do More When Transit Is Affordable

When asked why they use transit in an RTD Customer Satisfaction Survey, both transit-dependent and choice riders highly ranked comfort and reliability of the light rail. However, choice riders were significantly more likely to report having an employer that paid for all or part of their transit pass than their transit-dependent counterparts. Choice riders were also more likely to cite avoiding traffic and parking as motivators for using the light rail and bus. Transit-dependent riders, on the other hand, listed not having a car as the major reason for using both light rail and bus.

The RTD Customer Satisfaction Survey also found that 42 percent of low-wage workers who used RTD to commute to and from work rode during off-peak hours compared to 22 percent of higher-wage workers.² Studies show that this might be due to the tendency of low-income individuals to work nontraditional hours.

Discounts

For many years, RTD riders could ride during off-peak hours at a discounted rate. In 2002, RTD officially removed these time-of-day based fares and established a more flat fare structure where peak and off-peak travel were charged at the same rate.

However, prior to eliminating the off-peak fares, RTD conducted an interesting experiment. For a year (1978-1979) RTD provided a free off-peak fare and ridership did change. Ridership increased 49 percent system-wide and 52 percent during off-peak hours. It is important to note that during this time additional bus lines were also added and routes were restructured to serve more. However, a year after the implementation of the program (1978-1979) RTD reported that while the efficien-

² CFI analysis of Census Bureau Public Use Microdata 2012. These figures illustrate how taxes on consumption, such as a sales tax, place a larger burden on low-income riders since they spend more of their income on goods subject to sales tax.

cy, defined as the cost per passenger, did increase for many routes so did overcrowding on buses. In addition, reliability and the reported morale of bus drivers decreased.

A study of the free off-peak fare suggested that there were significant benefits to the program, and that while a *free* fare might have more negative externalities than benefits, a *lower* fare during off-peak hours could be beneficial and efficient (Donnelly et. al 1980).

Transit agencies often posit that reducing costs of transit for those who are transit-dependent will increase the cost of service in these areas and will have long-term negative ramifications for the transit region as a whole. Having more transit-dependent riders on the bus could increase the demand for buses, drivers and routes. However, an equitably planned transit system can cater to the needs of transit-dependent riders and maximize transit service coverage for underutilized portions of transit areas, actually resulting in new revenue for transit agencies (Blumenberg and Waller 2003). In other words, if more people can get on the bus, more of those off-peak and empty seats on buses can be filled, increasing equity and resulting in new revenue for transit agencies.



**For a year
(1978-1979)**

RTD provided a free off-peak fare and ridership did change. Ridership increased:

49%
system-wide

52%
during off-peak hours

Free Fares

In June 2014, the City of Longmont in Boulder County, which is within the transit district, ran its own experiment and began offering free fares on local buses that operate in the city. The City of Longmont has high levels of poverty and many of the residents are transit-dependent. However, ridership was decreasing as fare prices increased, signifying a correlation. The pilot program, which was later extended and is set to be revisited in the summer of 2016, was intended to serve as an experiment to gauge the impact fares have on how often people use bus services. In August 2013, Longmont local buses averaged 575 boardings a day. Approximately a month after the free local fares program was implemented, ridership increased to an average of 900 boardings per day, a 72 percent increase. In the second month ridership increased to 1,050 boardings a day, an increase of 83 percent. Following a year and a half of implementation, the daily bus boardings totaled more than 1,800 a day, without any overcrowding, additional buses or additional routes. The county estimates that 43 percent of the riders were new.

Boulder County also conducted a survey of bus riders to estimate the impact a free fare had on families in December 2015.³ Approximately 72 percent of riders cited transportation to be a challenge for them and their families. Most of these riders listed not having access to a car and affordability of fares and car ownership as the biggest barriers to accessing transportation. Approximately 40 percent of respondents who listed transportation as a challenge did not use transit prior to the free fares because they found fares to not be affordable and were finding other, less efficient ways to get around. After the free fares were instated, every single one of these riders reported riding at least a handful of times a week.

Of all those who listed transportation to be a challenge, 80.3 percent rode more often after the fares became free, 76.3 percent reported increased freedom and mobility to get around, and 47.4 percent improved and changed their living situations. When asked what hours of the day they rode during, 81.8 percent rode during the off-peak hours.

³CFI analysis of Boulder County 2015 Ride Free Longmont passenger survey CFI analysis of Boulder County 2015 Ride Free Longmont passenger survey

When these same riders were asked what they did in the past when making decisions about whether or not to take a trip, 40.8 percent stated that they just didn't make the trip. Now, with the barrier of price removed, transit was significantly more accessible to these populations and increased their mobility and participation in the local economy.

Fares Compared to Hourly Wages

We know from the Longmont data and RTD Customer Satisfaction data, those who are transit-dependent are also often those who are low-income and most likely making close to the minimum wage. To put the increases in fares over the years in perspective, we can compare fares to the state minimum wage. In 2000, minimum wage in Colorado was \$5.15 and the peak fare was \$1.25 and off-peak fare was \$0.75. This means that the local bus fare for a low-wage worker in 2000 was 24.3 percent of their hourly wage in 2000 and 14.6 percent of their hourly wage when they rode during off-peak hours. RTD removed the time-based fares from its fare structure in 2002 and now has a flat fare.

In 2016, RTD increased its base fare to \$2.60, which is 31.3 percent of a low-income individual's hourly wage when they earn a minimum wage of \$8.31 an hour. Increasing fares and stagnating wages present serious issues for mobility and participation in our economy for the lowest wage earners in the region (Table 2).

Table 2: RTD Fare Compared to Minimum Wage

	2000	2016
Off peak local bus fare	\$0.75	\$2.60
Peak hours local bus fare	\$1.25	\$2.60
Minimum Wage	\$5.15	\$8.31
Off peak local bus fare as portion of minimum wage	14.6%	31.3%
Peak hours local bus fare as portion of minimum wage	24.3%	31.3%

We know from the experiences in Longmont and the existing research that affordable fares have a significant impact on how often people ride and the overall mobility in a district. Improving the mobility of the poorest households lifts those households out of poverty and strengthens communities and local economies. However, as fares continue to increase, transit-dependent riders continue to feel the burden across the transit region. Increasing mobility and equity by addressing affordability should be a priority for transit agencies as they look to improve and modernize services.

SECTION 2:

RTD's New Fare Structure Does Not Increase Mobility for the Transit-Dependent

In 2016, the Regional Transportation District altered its fare structure and increased prices for most services. Effective in January 2016, RTD increased the base fare from \$2.25 to \$2.60 and reduced the number of zones. Unfortunately, many of the changes negatively affected low-income riders or shifted costs away from choice riders who are more able to pay. In addition, the Nonprofit Reduced Fare Program, a program that RTD claims is designed to meet the needs of low-income transit users, saw some administrative changes, but continues to be a limited program that is not accessible to most low-income riders, especially the working poor.

In this section we examine the current structural deficiencies that actually make transit more expensive for low-income riders.

RTD's New Fare Structure Makes Transit More Expensive for Transit-Dependent Riders

The majority of RTD funding comes from public sources such as federal grants and sales and use tax collections, making it a public good. At 56 percent of revenue collections, the 1 percent sales and use tax levied in the eight-county district is the largest source of revenue for RTD. The sales tax is a consumption-based tax. It places a greater burden on lower-income Coloradans who pay a higher percentage of their income in sales tax because they spend a larger share of their total income on consumable goods like clothing. As Table 3 illustrates, a household earning \$35,000 a year pays about 0.6 percent of its income to RTD through sales tax while a household making \$316,000 a year pays only 0.18 percent. In other words, households that are low-income are paying into the system at a greater share of their income than higher income households.

Table 3: The RTD Sales Tax Burdens Low-Income Households

Household Income	\$15,000	\$ 35,000	\$ 59,000	\$ 85,000	\$ 145,000	\$ 316,000
Portion of income paid to RTD currently (1% sales tax) ^(a)	0.669%	0.599%	0.480%	0.403%	0.297%	0.188%

(a) Institute on Taxation and Economy Policy (ITEP) 2014 analysis of 1 percent transit sales tax⁴

The fare structure adopted by RTD in 2016 makes these inequities more pronounced. Between 8 percent and 15 percent of fares will be cheaper in 2016, but the biggest reduction in prices will be on routes with a greater share of higher-income riders, while fare prices on routes with a larger numbers of low-income riders will be more expensive (Table 4).⁴ RTD increased the price of a single, local fare from \$2.25 to \$2.60 and decreased the cost of the regional fare from \$5 to \$4.50. The express fare was eliminated, and the zones were reclassified as either local or regional.

⁴ These figures illustrate how taxes on consumption, such as a sales tax, place a larger burden on low-income riders since they spend more of their income on goods subject to sales tax.

⁵ CFI analysis of RTD's 2015 Fair Equity Study data assuming local bus, local light rail, Call-N-Ride and half of the express routes will see a fare increase in 2016. Range comes from assumptions about how many of the pre-2016 express fares will become local and thus increase in fare or become regional and see a decrease.

This proves problematic as the majority of regional riders are higher-income and the majority of local riders are low-income. About 86 percent of regional light rail riders are higher-income earners, and 77 percent of regional bus riders are higher-income earners. This means that the decrease in the regional fares will disproportionately benefit higher earners. On the other hand, more than a quarter of the riders on local buses make less than \$15,000 a year, and 60 percent of them make less than \$35,000 a year. All the local bus riders will see a fare increase in 2016.

Services such as Sky-Ride to the airport are significantly cheaper in the new fare structure. The 2015 Sky-Ride was between \$9 and \$13, depending on where riders boarded. In 2016, all Sky-Ride trips are \$9, regardless of where a rider boards. Higher-income riders, who make up 52 percent of total riders, make up more than 72 percent of Sky-Ride users.

Table 4: Household Income By Service Type

	Change in fare in 2016	under \$15,000	\$15,000-\$24,999	\$25,000-\$34,999	\$35,000-\$49,999	\$50,000-\$74,999	\$75,000-\$99,999	\$100,000 or more	Portion of Total System
Bus Total		25.6%	15.7%	13.6%	14.3%	13.8%	7.4%	9.4%	75.0%
Local	Increase	28.34%	17.17%	14.40%	14.78%	12.73%	5.95%	6.63%	65.0%
Express	Uncertain	3.6%	2.7%	7.4%	10.2%	25.9%	22.2%	28.0%	3.0%
Regional	Decrease	9.6%	6.8%	6.8%	9.1%	19.1%	15.4%	33.3%	4.0%
Sky Ride	Decrease	7.6%	8.9%	11.8%	16.0%	20.7%	15.5%	19.6%	2.0%
Call-N-Ride	Increase	12.2%	13.9%	15.9%	13.5%	19.6%	12.7%	12.2%	0.0%
Light Rail Total		16.0%	7.2%	9.2%	12.0%	17.2%	15.2%	24.4%	25.0%
Local	Increase	21.7%	9.4%	12.0%	12.9%	16.1%	10.4%	17.5%	12.0%
Express	Uncertain	7.7%	5.9%	6.8%	9.9%	19.4%	20.3%	30.0%	11.0%
Regional	Decrease	7.0%	1.2%	5.8%	14.0%	16.3%	14.0%	41.9%	2.0%
Total System		19.7%	15.0%	13.5%	15.2%	14.4%	9.6%	12.6%	100.0%

Source: RTD 2015 Fare Equity Analysis Data

Looking at the entire RTD system by riders and by income shows that the 2016 new fare structure gave some of the biggest reductions in fares to higher-income riders. The new 2016 fare changes result in low-income riders, many of whom have no other choice but to ride, shouldering the majority of the increases.

Table 5 breaks down overall ridership between higher-income and lower-income populations. It also breaks down fares that became cheaper and fares that became more expensive in 2016 by income group. Riders making less than \$35,000 a year make up 48.2 percent of riders but only 22 percent of the riders who get a decrease in fares in 2016. On the other hand, riders making more than \$35,000 a year make up 51.8 percent of total riders but make up 78 percent of the riders that get fare decreases in 2016. Put another way, the increase in fare revenue generated from low-income local bus riders helps subsidize the price-reduced routes for higher-income regional riders.

The increase in fare revenue generated from low-income local bus riders helps subsidize the price-reduced routes for higher-income regional riders.

Table 5: Higher-Income Riders Get Breaks While Low-Income Riders Get Increases

	Total Riders	Decrease Fare in 2016	Increase Fare in 2016
Above \$35,000	51.8%	78%	43%
Below \$35,000	48.2%	22%	57%
Total	100%	100%	100%

Source: CFI analysis of RTD 2015 Fare Equity Analysis Data in conjunction with increases in local bus, local light rail, and Call-N-Ride with decreases in fares for Sky Ride and the regional bus and regional light rail fares.

Existing structure of fringe benefits and discounts do not benefit transit-dependent riders

RTD provides several fringe benefits and discounts to riders. For many years, RTD has provided free parking for transit users at Park-n-Rides, eco-passes for commuters and discounts for bulk purchases of 10-ticket booklets and monthly passes. These discounts and benefits make transit more appealing to populations that have cars and those who can afford an upfront payment for several discounted passes. RTD, like most transit agencies, also has a youth, elderly and disabled discount. The new fare structure also presents discount opportunities through a reduction in single fares bought on a smart card and daily passes that are equivalent to two single rides but can be used an unlimited number of times in a day. In most cases, these discounts do not benefit transit-dependent riders and the final prices after discounts are still higher than the full prices prior to the fare changes.

Daily parking in the district is free for in-district residents at any of the 77 Park-n-Rides. The Park-n-Ride facilities are primarily built and maintained with federal capital carry-forward funds, which are also used for studies conducted in transit-heavy areas and can be used to expand services.

Park-n-Ride use data indicates that this free service is primarily used by higher-income riders and is designed for commuters who are traveling longer distances. For instance, a majority — 64 percent of express bus riders and 48 percent of regional bus riders — use Park-n-Ride facilities. Of those bus riders, 86.3 percent are higher-income users and more than half live in households with annual incomes higher than \$75,000. Similarly, light rail users are more likely to use Park-n-Ride facilities. Approximately half of all light rail riders park at Park-n-Rides, and 69 percent of light rail riders, are higher income.⁶

In contrast, local riders, who are primarily low-income, only make up around 5 percent of Park-n-Ride users. In other words, free daily parking is an attractive perk that tends to benefit higher-income riders.



⁶2011 RTD Customer Satisfaction Survey and 2015 Fare Equity Analysis Data

Bulk Purchase Discounts Don't Work for Transit-Dependent Riders

RTD offers three bulk purchasing options for frequent transit users. The monthly pass, annual pass and 10-ticket booklets save riders money over the long-run but require an upfront purchase that most low-income riders cannot afford. This results in low-income riders paying incrementally (per trip), which ends up being more expensive.

Unlike travelers who have the resources to purchase a bulk-pass, many low-income riders pay cash for each trip even though other means would be cheaper per ride. Of the low-income riders who pay cash, 29 percent rode frequently enough that purchasing a monthly pass would save them money.⁷ Yet very few low-income riders purchase monthly passes because they simply don't have the upfront cash at the beginning of the month. This means that in 2015, between 9,000 and 12,000 low-income riders ended up paying more per month than the unlimited monthly pass of \$79 because their financial situation makes it difficult for them to bulk purchase for savings. A similar effect is seen with the low usage rates of the 10-ticket books that save riders 25 cents a ride. Everyone reporting riding at least "a few times a month" would benefit from purchasing the 10-ticket booklets and saving a quarter off each fare. Yet only 7 percent of low-income riders report using the 10-ticket booklets, while 71 percent are paying cash fares. Meanwhile, 64 percent of low-income riders report using RTD at least "a few times a month."⁸ Utilizing the 10-ticket booklets would save the average low-income RTD rider \$70 a year in 2015.⁹

The monthly pass, annual pass and 10-ticket booklets save riders money over the long-run but require an upfront purchase that most low-income riders cannot afford. This results in low-income riders paying incrementally (per trip), which ends up being more expensive.

Few Low-income Riders Have Access to Discounts Offered by the Eco Pass Program

Table 6: Portion of the Ridership Using Eco Pass at Method of Payment

	Low-Income	Overall
Eco Pass	2.8%	18%

Source: RTD 2015 Fare Equity Analysis

RTD offers a pass program for employers who wish to provide transit benefits to their employees. The program is designed using an "insurance model" where RTD requires full "buy-in" from a company and a tiered discount is provided. The more employees a company has, the larger the discount on the per pass price. These programs are mainly used by higher wage-paying businesses as an additional benefit in employment packages. According to the RTD Fare Equity Analysis, only 2.8 percent of low-income riders utilize an Eco Pass as their fare payment method compared to 18 percent of the overall system (Table 6).

⁷ RTD analysis of segmentation data

⁸ Ibid.

⁹ Assuming they paid the prior single fare of \$2.25 for each trip and ride an average of 23.6 rides a month

Fares Still Higher with New Day Pass and Smart Card Discounts

RTD is also offering two discount programs that are not means tested or targeted and can be accessed by any rider. The smart card discount, like the ten-ticket booklet, provides a 25-cent discount to riders. This reduces the price of a single fare, but riders will still be paying more than the \$2.25 cost of a single fare prior to the fare increases.

The day pass also provides a discount to those riders who take multiple trips a day. The day pass was developed following a public out-reach and public comment period. RTD heard from many transit-dependent riders that a longer transfer period or cheaper roundtrip fare would be beneficial to those who chain trips and are reliant on public transit. Unfortunately, the day pass (unlike smart card fare or monthly passes), can only be purchased with cash and does not receive a smart card discount.

Nonprofit Reduced Fare Program Aimed at Low-Income Riders Is Not Enough

Many of the existing universal benefits and discounts provided by RTD are not targeted at low-income transit users, unlike the youth, elderly and disabled passes which are targeted at specific populations. However, RTD does have a limited, means-tested pass program for low-income individuals called the Nonprofit Agency Reduced Fare Program (Nonprofit Program). Unfortunately, the Nonprofit Program is inherently flawed in its design. It has proven administratively and financially burdensome for nonprofits, and as a result, does not reach the low-income ridership as a whole, particularly low-income working people.

Unfortunately, the Nonprofit Program is inherently flawed in its design. It has proven administratively and financially burdensome for nonprofits, and as a result, does not reach the low-income ridership as a whole, particularly low-income working people.

The Nonprofit Program offers a 50 percent discount on passes that low-income individuals living at or below 185 percent of poverty can purchase from select nonprofits and service providers. Participating nonprofits are responsible for verifying that a client meets the income requirement or what is known as means-testing, distribution and marketing, and must also pay for the discounted passes upfront, many of which are then distributed to clients at no cost.

With the fare restructure in 2016, RTD removed some of the administrative stressors of the program. Prior to these changes, RTD provided a 40 percent to 60 percent discount on passes and required that nonprofits track all tickets and passes sold or distributed by matching tickets (each marked with a unique six-digit number) to the user. Due to customer discontent and the enormous administrative burden this placed on nonprofits, RTD removed this requirement.

RTD also began allowing for purchase pooling with the new restructure. In other words, a larger organization can purchase a greater number of passes and tickets and work with a smaller nonprofit to distribute the passes. The smaller nonprofit can dip into the pool of tickets and passes of the larger organization. Unfortunately, this pooling still requires the smaller nonprofit to conduct income verification and there is no readily accessible list or reference of participating nonprofit organizations that are willing to pool. This is a barrier to entry for nonprofits that might be able to provide reduced passes under such a structure because they do not know which larger nonprofits to contact.

While the Nonprofit Program is more streamlined, it is still inherently flawed in execution. For one, RTD has placed a cap on how many passes and tickets can be purchased by nonprofits every month at \$575,000 per month in fare media face value, with a growth cap of 10 percent. This curbs the growth of the program that could result from the streamlined system.

However, the larger problem lies with the role that nonprofits are still asked to play. The Nonprofit Program assumes that all nonprofits are equipped to verify income and are capable of serving as a point of purchase for RTD. In reality, not all nonprofits provide direct services and many don't verify income as a part of their daily activities. For organizations that do provide direct services and income verification as a part of other operations, the Nonprofit Program requires that the nonprofit fund the initial purchase of the passes rather than allowing low-income people to purchase the discounted passes directly from RTD once they have been deemed eligible. Many nonprofits want to provide a transit benefit and are even willing to administer the program, but finding that initial stream of money in a nonprofit budget proves a difficult task.

The Nonprofit Program also assumes that nonprofits reach all low-income riders in some form. Unfortunately, this is not true. Most nonprofits serve very select populations, which presents problems for those riders who do not use nonprofit services regularly. While these riders might benefit greatly from a reduced fare, the Nonprofit Program currently requires that they interact on regular basis with a service provider to receive it. After being initially income qualified, the client must then return to the nonprofit to pick up a pass at least once a month, if not more often for ride coupons. This is burdensome to people who have to repeatedly take time off, often during work hours, to make their way to a nonprofit service provider, putting their job on the line.

Nonprofits also report the “cliff effect” that their clients feel. For example, workforce development centers provide transit passes to their program participants who suddenly lose access to free or reduced passes as they start working simply because they have graduated from the program. These individuals have nowhere to go while they transition away from services even though they are still low-income, and would benefit from a reduced fare pass.

Nonprofit Program Doesn't Serve the Majority of Low-Income Riders

The structural flaws in the Nonprofit Program are reflected in the programs lack of reach. In 2014, the Nonprofit Program only served 17.7 percent of low-income riders. Another 23 percent of low-income riders already received a discount from an existing discount (this does not include disabled riders who use Access-a-Ride). This means that more than half of all low-income RTD users did not receive any discount.

Table 7: Percent of Low-Income RTD Boardings Discounted Pre-2016 Fare Structure

Monthly boardings by riders with less than \$35K household income ^(a)	4,247,523
Percent of low-income boardings discounted because of senior, student, or disabled ^(b)	23.3%
Percent of low-income boardings discounted because of nonprofit ticket books ^(c)	9.4%
Percent of low-income boardings discounted because of nonprofit monthly discount pass ^(d)	8.3%

^(a) RTD Systemwide Boarding Averages Data April 2014 of 7,827,675 multiplied by percent of low-income riders from 2011 RTD Customer Satisfaction weighted by light rail and bus income breakdowns.

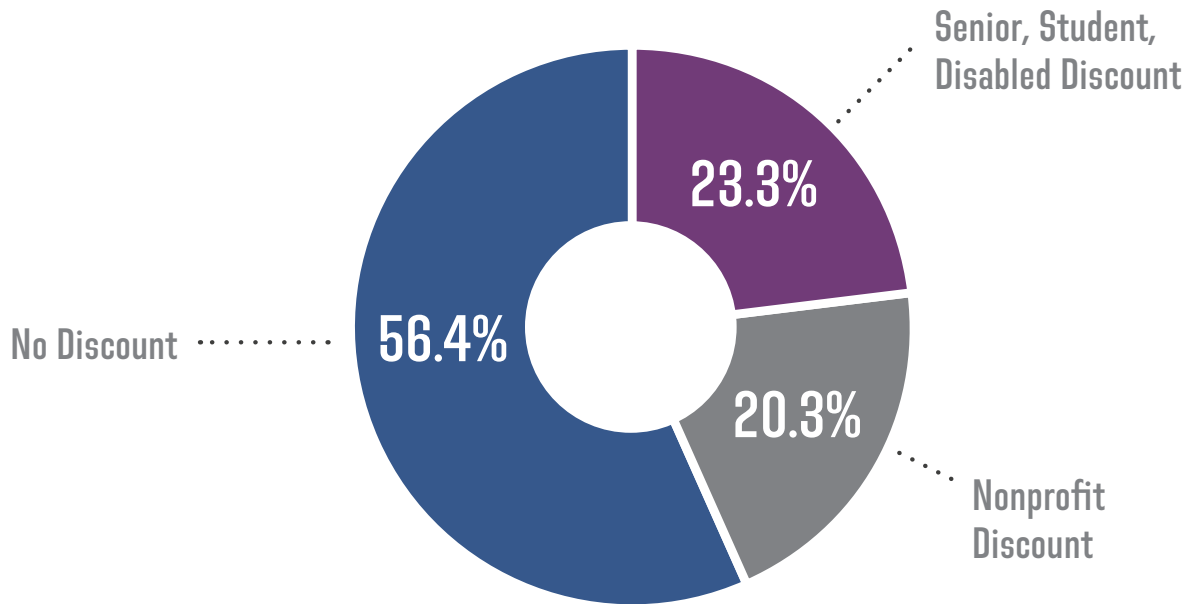
^(b) Data provided by RTD staff on discounts by income category. They were a weighted proportion based on 31% making less than \$15K, 22% between \$15K-25K, and 10% making between \$25K-35K who get discounts because they are seniors, students or disabled.

^(c) \$274,524 (2014 April nonprofit revenue 10-ticket book revenue) divided by \$2.25 then multiplied by 1.46 boardings per fare. This was divided by the total boardings of those making less than \$35K in household income in April 2014.

^(d) Combination of the 40% and 25% nonprofit discounted monthly passes issues in April 2014 which was 3,879 25%-reduced and 887 40%-reduced. This was translated into boardings by assuming those monthly users perform 25 round trips per month and 2.92 boardings per round trip. This figure was then divided by total monthly boardings by low-income users.

Even with proposed changes to streamline administration of the Nonprofit Program, and an additional \$500,000 in funding, CFI estimates the reach of the program will only grow by 2.6 percent. In other words, even with the new structure, more than half of all low-income riders will receive no discounts. (Figure 3)

Figure 3: The 2016 Nonprofit Discount Program Still Leaves More than Half of Low-Income Riders without Discounts



SECTION 3:

Options for Fair Fares

A “50/150” Program

To address the inequities of the RTD fare structure, CFI recommends creating an easily accessible, means-tested program for low-income riders that would provide them with the same 50 percent discount that seniors, youth and the disabled receive. In particular, CFI proposes a “50/150” program: a 50 percent reduction for all types of fares — including single fares and monthly passes — for those riders who live at or below 150 percent of the Federal Poverty Level. The following sections outline the possible costs and structure that would make this program effective in reducing costs and increasing accessibility and mobility for low-income people.

Eligibility and Structure

The 50/150 program is targeted at low-income households that live at or below 150 percent of the Federal Poverty Level (150 FPL). This means that single-person households that make less than \$18,000 a year and four-person households that make less than \$37,000 a year would qualify for the program (Table 8).

Table 8: 150 Percent of Federal Poverty Line

Household Size	Maximum Income to Qualify (2016)
1	\$ 17,655
2	\$ 23,895
3	\$ 30,135
4	\$ 36,375
5	\$ 42,615
6	\$ 48,855

The proposed 50/150 program provides a discount at an income level (150 percent of FPL) that is slightly lower than that of the Nonprofit Reduced Fare Program (185 percent of FPL), but it would significantly reduce the financial and administrative burden on local nonprofits, resulting in greater reach.

Structure and Administration

To best address the needs of low-income transit users, CFI proposes a program in which all fare media is 50 percent off for low-income individuals, similar to other discounts that RTD provides for the elderly, disabled and youth. Low-income riders will be income verified once a year by an authorized organization or institution and will in return receive some proof of verification or pre-programmed smart card (Figure 4). Riders will then be able to purchase fares at any RTD outlet until the income verification period ends.

In addition to creating this new program, to ensure that more low-income riders benefit from the program, RTD will need to increase marketing and outreach efforts. At the moment, RTD does

Figure 4



Students, ages 14-19: current student ID or proof of current school enrollment. Applies only to students in elementary, middle and high school



Seniors, age 65+: photo ID showing passenger's age, Medicare card or RTD-issued Special Discount Card



Individuals with disabilities: RTD-issued Special Discount Card or Medicare card



Income verification

not promote the discounts currently available to low-income riders. Instead, nonprofits conduct outreach. As nonprofits already shoulder all of the administrative burden and much of the financial burden for the current Nonprofit Program, marketing and advertising the program to low-income communities becomes a secondary priority.

There is some natural outreach that will occur as nonprofits continue to interact with some low-income clients who require transit assistance. If a nonprofit works with disabled populations and verifies income for other programs, they could work with this same population to verify a rider's income for the 50/150 program. In addition, if a nonprofit prefers to give its clients free passes, they can continue to do so as they would under the current Nonprofit Reduced Fare program by merely purchasing passes at the 50 percent reduced fare and verifying income at the site of the nonprofit.

Those who do not interact with nonprofits directly but qualify for an already existing program could get qualified for a low-income fare while being qualified for another program, such as Medicaid. These riders would then be able to access a discount without having to figure out where an existing nonprofit is and how to access their program.

CFI also recommends that this discount be available for all fare media, including monthly passes, day passes, and single fares. By analyzing the frequency of travel by income and the method of payment by income, CFI determined what portion of current low-income RTD riders would be incentivized and able to purchase the discounted monthly pass. We concluded that to reach the greatest number of low-income riders, the 50/150 program would need to apply to single trip fares and day passes as well as monthly passes (Table 9).

Table 9: Riding Frequency of RTD Users by Income

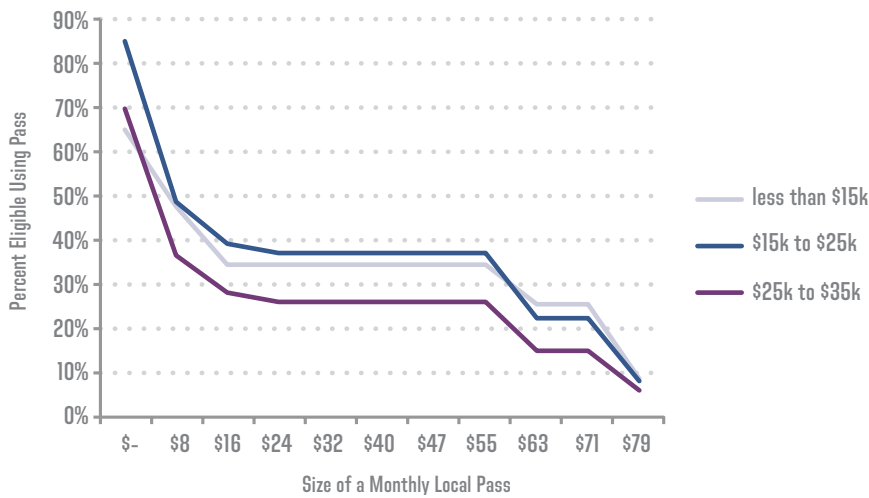
Household Income	less than \$15K	\$15K to \$25K	\$25K to \$35k
Every day	26%	12%	16%
Almost every day	13%	15%	6%
A few times a week	13%	17%	16%
Once every week	0%	3%	3%
A few times a month	21%	11%	12%
Once every month	2%	3%	2%
Once every few months	6%	9%	9%
A few times in year	11%	19%	22%
Once a year	7%	12%	14%

Source: CFI analysis of RTD Cost and Value Assessments Data: Bus and Rail Frequency by Income

Monthly Pass Alternatives

Relying on unlimited monthly pass usage and ridership frequency data, CFI constructed a model to see what portion of riders would use a monthly pass. Figure 5 shows the discount pass utilization by income category depending on the size of the discounted monthly pass. Only about a third of RTD users who would be eligible for the pass based on their income would purchase the \$40 monthly pass (assuming pre-2016 structure).

Figure 5: Projected Usage Rates of Monthly Discount Pass by Size of Discount



Source: CFI's estimate assuming a utilization function proportional to size of discount and "break even" calculations based on ridership frequency by income level from RTD's Cost and Value's Assessment Data.

This model illustrates that some of the poorest riders in the district would still find the 50/150 program unaffordable and would still need free coupons.



Looking at ways to increase ridership among low-income working riders, it would be essential to allow riders to purchase as they go (as noted, low-income riders often can't afford to bulk buy up front). To increase utilization rates of monthly passes, RTD could:

- Allow monthly passes to be good for 30 days from the date purchased, rather than a calendar month; and
- Allow monthly pass users to load money on a card as needed.

Estimated Cost of 50/150 Program

To get an idea of the cost of the 50/150 program, one first must know about how many people would utilize the program. As Table 10 shows, there are about 350,000 adults living in the district that fall under the 150 percent of poverty line. About a quarter of them use transit at least a few times a week. Therefore, about 84,000 adults who use transit would be eligible for the program. Some of that 84,000 already receive a discount from the other discount structures offered by RTD. This leaves approximately 57,000 adults who would be eligible, ride often enough to use the discount program and don't already have a discount. Of course, not all of them will go through the application process to utilize the program. In fact, most human services programs reach fewer than three-quarters of the population that is eligible. For instance, the Supplemental Nutrition Assistance Program serves roughly 75 percent of eligible families across the country, even fewer in Colorado.¹⁰ Based on the utilization in Seattle's nascent discount transit program and the utilization rates of other human services programs across Colorado, CFI estimates 25,000 riders will use the program in the first year. Of course, utilization will improve as knowledge of the program grows.

In estimating the full revenue impact of the program, it is necessary to include the additional ridership that would arise on account of the lower prices. Assuming a very low price elasticity of demand, CFI estimates that a 50 percent reduction in fares will lead to a 10 percent increase in rides among those low-income transit users who utilize the discount. When new riders and existing ones are taken into consideration, the cost of the 50/150 program would be \$7.1 million.¹¹

¹⁰ <http://www.hungerfreecolorado.org/impact-reports/#reportoverview>

¹¹ If the 50/150 program has a 100 percent take-up rate, the program could cost upwards of \$12 million, but there is reason to believe the program might never have a 100 percent take-up rate.

Table 10: The Cost of a Discount Card to Individuals Earning Less Than 150 Percent of Federal Poverty Level

Number of adults in the RTD service area under 150% of FPL ^(a)	350,146
Portion using transit at least “a few times week” ^(b)	24%
Riders under 150% FPL using transit at least “a few times a week” ^(c)	84,035
Riders under 150% FPL using transit at least “a few times a week” with no discount ^(d)	57,144
Individuals who utilize the program year 1 ^(e)	25,715
Average number of riders per month ^(f)	20.3
Static cost of giving 50% discount to riders earning less than 150% FPL in year 1 ^(g)	\$8 million
Dynamic cost of giving 50% discount card to riders earning less than 150% FPL in year 1 ^(h)	\$7.1 million

^(a) CFI analysis of 2014 ACS PUMS data.

^(b) Frequency used for riders in households making less than \$50K weighted by riders by income category. RTD Ridership Survey.

^(c) 24% of 350,146.

^(d) 68% of 84,035 to account for those already discounted (seniors, disabled, students, nonprofit discount)

^(e) 45% utilization rate for year 1; assumption drawn from a similar program currently in effect in King County Metro in Seattle. Seattle’s program is seeing about a 40% utilization rate. (10,000 signed up after 3 months, which extrapolated is 40,000 a year of the total 100,000 Seattle predicted would be eligible). For full ramp-up a few years down the road, CFI expects utilization to move closer to 65%. SNAP sees a 76% utilization rate nationally. (Meaning 76% of those eligible utilize the program).

^(f) Frequency used for riders in households making less than \$50K assuming “every day” meant 60 one-way rides a month, “almost every day” meant 50 rides, “a few times a week” meant 30 rides a month, and “once every week” was 10 rides.

^(g) 25,715 multiplied by 20.3 rides a month multiplied by 12 multiplied by \$1.30.

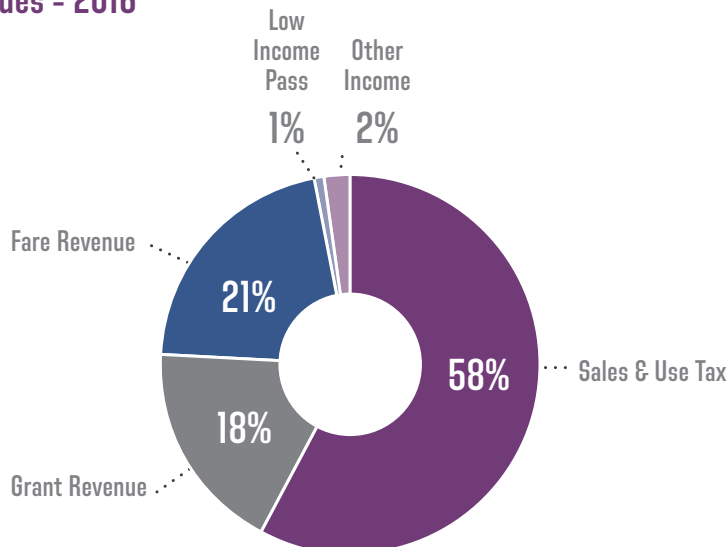
^(h) \$8 million minus \$0.9 million (which came from assuming a -0.2 price elasticity so a 50% reduction in price leads to a 10% increase in rides which produces roughly an extra 615k one-way trips a year for those 25,248 individuals, which cost \$1.30 a ride.)

Cost of 50/150 in Context

In 2016, RTD projects collecting \$595.4 million in revenue and other income. Approximately 79 percent of the revenue is a result of sales tax and farebox collections. A \$7.1 million cost would only equate to 1 percent of the total revenue (Figure 6).

RTD’s largest source of revenue is the district-wide 1 percent sales tax, with \$535 million revenue projected from RTD sales tax collections in 2015. If actual revenue comes in 1.5 percent higher than projected, RTD would have enough extra sales tax revenue to make up for the cost of the 50/150 program.

Figure 6: RTD Revenues - 2016



Benefits of 50/150 Plan by County

The Regional Transportation District consists of eight counties. The highest proportion of riders who would benefit from the 50/150 program live in Denver County. Thirty-eight percent of riders who would use the 50/150 program live in Denver County. Arapahoe County would also highly benefit as 21 percent of those who would qualify for a 50/150 program reside in Arapahoe County (Table 11; also see Appendix B).

Table 11: Proportion of the 50/150 Low-Income Pass RTD Users by County

Adams	13%
Arapahoe	21%
Boulder	12%
Broomfield	1%
Denver	38%
Douglas	2%
Jefferson	11%
Weld	3%
Total	100%

Source: CFI analysis of RTD Segmentation data and U.S. Census American Community Survey Data

50/150 Around the Country: Case Study, King County Metro

A handful of transportation districts in the country offer passes to low-income families in an effort to offset costs. The most recent and robust program to be developed is in King County, Washington, which includes Seattle.

Sales Tax Increase and Advisory Committee

In October of 2012, the King County Council passed a motion to establish an advisory committee to assist in developing a public transit fare program for low-income transit users. The Low-Income Fare Options Advisory Committee began meeting in 2013, and following several months of meetings and consideration of policy objectives and the existing structure, proposed an ordinance to include a low-income fare with existing plans to increase all metro fares. The program entered a pilot period in February 2015 and went into full effect March 1, 2015. When the ordinance was approved in February 2014 by King County Metro, voters also approved a one-tenth sales tax, \$2 million of which would be used to fund the \$5 million low-income fare program. The program is known as the One Regional Card for All (ORCA) LIFT program.

Structure and Participation

Low-income individuals with income at 200 percent of the federal poverty levels or less qualify for the program. People must visit approved sites to sign up for a pass and to verify their income. Once their income has been verified, an individual will receive a bus pass that is programed to charge a lower fare per use. The ORCA passes that these individuals receive are not distinguishable from those that are full fare cards. Those who use LIFT are only charged \$1.50 per ride. Depending on the mode of transportation and time of day, this is equivalent to a 40 percent to 64 percent discount from the full fare.

In order to verify the additional 45,000 to 100,000 riders who would qualify for this program, King County Metro works closely with Department of Community and Human Services and Public Health — Seattle & King County as well as local direct service organizations. King County Metro recognizes that these groups would be best able to improve customer awareness of and access to low-income fares. These organizations were selected from those who responded to a request for proposal with an intent of reaching a greater number of people who would qualify. The request for proposal from King County Metro totaled just over \$1 million in the first year of implementation.

The participating community organizations request preprogrammed cards from King County Metro on a monthly basis and also receive income verification training. This means that a person can be income verified and receive a ready-to-use card in a single visit. Participants are able to sign up at various locations including community colleges, the Mexican Consulate, medical clinics, social service offices, youth detention centers, adult drug court and the City of Seattle's court resource center. Once their income is verified and they receive a card, a person can use a credit card or cash to top off ORCA cards at participating retail locations as well as the Metro office. Their discount card is valid for a full year, after which time they need to recertify their income.

In the first three months of full implementation, approximately 9,000 individuals had signed up for the ORCA LIFT program, and boardings from these passengers were numbering close to 60,000 on a weekly basis across all transit modes.



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SECTION 4:

Options to Offset the Cost of 50/150

Recognizing that RTD needs to operate in the black, CFI examined a number of ways to offset the cost of the 50/150 program. In this section, CFI takes a closer look at how revenue would be impacted by a low-income pass and ways in which RTD could offset the cost of such a program.

CFI expects that a low-income pass program like 50/150 would draw in new riders who would benefit from transit. These new riders would fill seats that were not filled before and, therefore, bring new revenue. However, for new riders to completely pay for the program, ridership would need to double. Since we do not expect ridership to double, the extra fare revenue from increased ridership won't fully offset lost revenue from the new discount.

Many of the following revenue options would help free up revenue for the 50/150 program and shift costs away from low-income travelers, making the system more equitable.

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Increasing the Airport Fare

Charging an extra dollar or so for the airport buses and light rail would be a source of additional fare revenue that would help offset the lost revenue if RTD offered the 50/150 program. RTD's 2015 fare for Denver International Airport consisted of SkyRide buses with fares that cost between \$9 and \$13 depending upon the starting location. In April of 2016, the rail line to DIA will open, which will cost \$9 dollars each way. SkyRide buses will all also move to \$9 each way. This will make suburban trips as well as the SkyRide bus from downtown Denver — that had cost \$11 to DIA — cheaper.

Much of the explanation behind the decrease in price has to do with the low-wage workers who work at the Denver International Airport. Unfortunately, a blanket decrease in prices for the SkyRide means that even higher-income riders will benefit when their motivation for taking the bus is more closely linked to avoiding traffic and the increasingly scarce and increasingly expensive parking at the airport. These riders benefit greatly from not having to park at the airport when they fly out of Denver, whereas low-income riders would benefit more from a low-income pass that could also be used to get to a low-wage job at DIA.



Increasing the airport fares to \$11, instead of lowering them to \$9, could generate an additional \$2 million to \$3 million in fare revenue.¹²

Phasing Out the Smart Card Discount After One Year

Because CFI expects the 50/150 Discount program's utilization rate to increase as the public becomes more aware of the program, the cost of the program will inch up. Phasing out the 25-cent Smart Card Discount after a year or two once riders become accustomed to using Smart Cards could be a revenue offset that would account for the increased utilization of the 50/150 program. Phasing out this ineffective discount or reducing it would allow RTD to reallocate up to \$3.1 million to the more targeted 50/150 program (table 13).

Table 13: Estimated Lost Fare Revenue from Smart Card 25-cent Discount

RTD projected total fare revenue ^(a)	\$131 million
Percentage of revenue from Smart Card ^(b)	15% - 25%
Total farebox revenue from Smart Cards ^(c)	\$20-\$33 million
Percent discount from 25 cents off per fare ^(d)	9.6%
Lost revenue from 25-cent Smart Card Discount ^(e)	\$1.9-\$3.1 million
Revenue saved if Smart Card discount were 15 cents ^(f)	\$0.8-1.2 million

^(a) RTD's target for new fare structure.

^(b) CFI estimate extrapolating from pre-2016 system that got 11% of fare revenue from 10-ticket booklets and 34% from cash.

^(c) \$133 million multiplied by 15% - 25%.

^(d) \$0.25/\$2.60 (assumes all local fares).

^(e) 9.6% multiplied by range of \$20 million - \$33 million.

^(f) 5.8% (\$0.15/\$2.60) multiplied by range of \$20 million or \$33 million subtracted from lost fare revenue in (e).

Pay to Park

Charging for daily parking is a revenue generating option. Only out-of-district users and long-term parkers of RTD Park-n-Ride facilities pay for parking. These parking fees resulted in an estimated \$591,000 in parking revenue in 2014. There are an estimated 22,000 parked cars on a given weekday at RTD Park-n-Ride facilities that don't pay to park because they are in-district.

Most low-income transit users would not be affected by parking costs. Approximately 25 percent of light rail riders and 53 percent of bus riders are transit-dependent and therefore do not have a need for parking. Most Park-n-Ride users ride the express and regional routes — 64 percent of express bus riders use parking and 48 percent of regional bus riders use parking, and tend to be higher income. Roughly 50 percent of express and regional bus riders live in households with more than \$75,000 annual income. By contrast, only 10.2 percent of local bus riders use parking. Free parking at Park-n-Rides disproportionately benefits higher-income riders.



¹² Calculations based on \$7.2 million made from AF AT AS Skye Ride Buses and assumes a 50% increase when rail is completed which was multiplied by 22% (the change from a \$9 airport fare to \$11).

Table 14: RTD Park-n-Ride Usage

Average weekday riders on bus ^(a)	75,310
Average weekday riders on light rail ^(b)	35,545
Percent of riders on bus that parked ^(c)	10.2%
Percent of riders on bus that parked and paid ^(d)	1%
Percent of riders on light rail parked ^(e)	49.5%
Percent of riders on light rail that parked and paid ^(f)	7.3%
Average weekday riders on bus that use free parking on Park-n-Ride ^(g)	6,930
Average weekday riders on light rail that use free parking on Park-n-Ride ^(h)	15,000
Number of parked cars using free parking at Park-n-Rides on week days in a year ⁽ⁱ⁾	5,482,000

^(a) Appendix A

^(b) Calculated above in Method 2 in Appendix A

^(c) 2011 RTD Customer Satisfaction Survey on Park-n-Ride Usage

^(d) 2011 RTD Customer Satisfaction Survey on Parking Payment Methods

^(e) 2011 RTD Customer Satisfaction Survey on Park-n-Ride Usage

^(f) 2011 RTD Customer Satisfaction Survey on Parking Payment Methods

^(g) 10.2% multiplied by 75,310 minus 1% multiplied by 75,310

^(h) 49.5% multiplied by 35,545 minus 7.3% multiplied by 35,545

⁽ⁱ⁾ 250 work days multiplied by 21,930 cars parked each day

CFI estimates that if everyone who now parks for free at Park-n-Rides paid \$1 a day to pay, that would generate \$5.4 million dollars. This is a static calculation that assumes that a small parking fee will not alter behavior.

Table 15: Estimating Parking Revenue

Cost per Day for Parking	Potential Annual Parking Revenue Generated
\$0.50	\$2,741,249
\$0.75	\$4,111,873
\$1.00	5,482,498
\$1.25	6,853,122
\$1.50	8,223,746

While there is some evidence that charging for parking could dissuade choice riders from riding, it is difficult to determine their price sensitivity. In RTD's customer satisfaction surveys, when asking about parking, two factors contribute most between those who are satisfied with and dissatisfied with RTD's Park-n-Ride programs: the price of parking and the ease of payment for parking. The data shows a declining value of consumer satisfaction when users must pay for parking.

However, for many Park-n-Ride users, the aggravation of driving coupled with the cost of parking in downtown Denver still outweighs the cost of transit and a potential parking cost at the station. According to RTD's Cost and Value Assessments data, the top reason for taking the light rail cited by those living in households making more than \$50,000 is to "avoid traffic." Whether these users pay \$1 a day to park or not wouldn't change the fact that using RTD still helps them avoid traffic. In addition, many downtown Denver commuters receive a fully or partially subsidized transit pass from their employers.

According to the 2013 downtown Denver Commuter Survey, nearly 60 percent of commuters receive at least a partially subsidized transit pass. Many car owners who utilize RTD also cite an employer-subsidized pass as a reason for riding.¹³ Therefore, someone with a subsidized transit pass, even with an additional \$20 a month for Park-n-Ride parking, should still prefer taking RTD transit to driving and paying for parking downtown. For instance, in 2012 the median monthly cost of parking in downtown Denver was \$180.¹⁴

Allowing RTD to charge for parking would require changes to Colorado law as well. RTD is not allowed by statute to charge for parking for in-district vehicles staying less than 24 hours.¹⁵

Increase the Sales Tax

Sales tax could also be increased to provide cheaper fares to all riders. At present, taxable purchases in the district are subject to a 1 percent RTD sales tax. Of that, 0.6 percent goes to RTD operating costs, and the remaining 0.4 percent is the FasTracks sales tax that can only be used for construction and not operation of the base system.

CFI calculated how much the RTD sales tax would be required to increase in order to cover the cost of total farebox revenue in 2014. An increase of 1 percent to 1.26 percent in the sales tax could raise enough money to cover RTD's total farebox revenue, giving everyone in the district a free pass. That would mean an extra \$74 paid in sales tax for the median Colorado household. Families below the median income would pay even less. For example, a household making \$15,000 would pay an additional \$26 a year in sales tax but would be provided with a free RTD pass for the year.

Table 16: What Increase in RTD Sales Tax Would Be Required to Offer Free Fares for Everyone in the District?

2014 Revenue from 0.6 percent RTD sales and use tax ^(a)	\$302,285,000
2014 purchases in the RTD service area subject to sales tax ^(b)	\$50,380,833,333
2014 total farebox revenue ^(c)	\$131,000,000
Additional percent sales tax to cover all farebox revenue^(d)	0.26%

^(a) RTD presentation to community organizers 2014

^(b) \$302,285,000 divided by the operating sales tax rate of .006

^(c) RTD presentation to community organizers 2014

^(d) \$119,342,000 divided by \$50,380,833,333

¹³ RTD Customer Satisfaction Survey: Light Rail Passengers were asked for the reason they ride RTD. Transit-dependent respondents rated "employer pays for all or part of transit pass" as the lowest ranking reason while choice riders ranked this as being of higher importance. This suggests that more choice riders ride because their employers provide a subsidy such as the Eco-Pass than their transit-dependent counterparts.

¹⁴ Colliers International 2012 Parking Rate Survey for Denver's Median Nonreserved monthly rate, the reserved rate is even higher at \$224 a month.

¹⁵ See C.R.S. 32-9-119.9

Table 17: Increase in Sales Tax Paid per Household with an Increase of 1 Percent to 1.26 Percent

Household income	\$15K	\$ 35K	\$ 59K	\$ 85K	\$ 145K	\$ 316K
Portion of income paid to RTD currently (1% sales tax) ^(a)	0.669%	0.599%	0.480%	0.403%	0.297%	0.188%
Sales tax paid to RTD at 1 percent	\$ 100	\$ 210	\$ 283	\$ 343	\$ 431	\$ 593
New sales tax paid annually at 1.26 percent	\$ 26	\$ 55	\$ 74	\$ 89	\$ 112	\$ 154

^(a) Institute on Taxation and Economy Policy (ITEP) 2014 analysis of 1 percent transit sales tax¹⁶

However, increasing the sales tax to reduce the cost of fares would also require changes in Colorado law. Article X Section 20 of the Colorado Constitution requires voter approval for any tax increase. In addition, state legislators might have to change state law, which says RTD cannot collect more than 70 percent of its operating costs from sales taxes.¹⁷ In 2014, RTD collected 52.4 percent of operating costs from sales tax revenue and 20.7 percent of operating costs from fares. If all fare revenue were replaced by revenue from an additional sales tax, RTD would collect more than 70 percent of operating costs from sales tax.

Voters also could approve a smaller sales tax increase to make rides cheaper but not necessarily cover the entire cost of fare revenue.

If the RTD sales tax were increased from 1 percent to 1.1 percent, or an extra dime in sales tax on a \$100 purchase, RTD could reduce its fares by a third. This scenario would generate approximately \$50 million. That would have been enough to reduce the 2015 one-way local fare from \$2.25 to \$1.50.

Table 18: Increase in Sales Tax Paid per Household with an Increase of 1 Percent to 1.1 Percent

Household income	\$15K	\$ 35K	\$ 59K	\$ 85K	\$ 145K	\$ 316K
Portion of income paid to RTD currently (1% sales tax) ^(a)	0.669%	0.599%	0.480%	0.403%	0.297%	0.188%
Sale tax paid to RTD at 1 percent	\$ 100	\$ 210	\$ 283	\$ 343	\$ 431	\$ 593
New sales tax paid annually at 1.1 percent	\$ 10	\$ 21	\$ 28	\$ 34	\$ 43	\$ 59

^(a) Institute on Taxation and Economy Policy (ITEP) 2014 analysis of 1 percent transit sales tax

¹⁶ These figures illustrate how taxes on consumption like sales taxes place a larger burden on low-income riders, since they spend more of their income on goods subject to sales tax. Hence an individual making \$35,000 a year pays about 0.6% of their income in the form of the RTD sales tax while an individual making \$316,000 pays only 0.19%.

¹⁷ See C.R.S. 32-9-119.7

Conclusion

A world-class public transit system gets people where they need to go — to work, to school, to play. When all residents, including low-income and transit-dependent people, can get where they need to go easily and cost-effectively, all our families and communities benefit. As RTD expands and continues to grow into a world-class transit system, it must ensure that the people who depend most upon its services are able to get where they need to go affordably.

RTD's new fare structure and price increases have made it harder, not easier, for low-income, transit-dependent families to ride. A system that favored choice riders to begin with was made even more inequitable with the changes implemented in 2016.

It doesn't have to be this way. Citizens can work with lawmakers and RTD on solutions like the 50/150 program. A reduced-price fare for low-income and transit-dependent riders could be life-changing. CFI has shown in this report that there are viable options for doing so. Many other communities in America, such as Seattle, have recognized the benefit of a low-income discount transit program and have welcomed such programs as necessary and valuable to the entire community. There is no reason why RTD could not join these cities in leading the way.

Appendix A: About CFI's Ridership Calculations

CFI's calculations were made with the best available survey data from RTD. They were not performed with dynamic modeling software, and they should be interpreted as "ballpark" estimates with some uncertainty in both directions. Nevertheless, they will still be useful in determining the relative size of the farebox revenue foregone by each recommendation.

The first major obstacle is that total daily RTD user statistics are not available. RTD reports "boardings" across the transit system, but this doesn't directly translate into "riders." In addition, RTD's market research data does not lend itself very easily for use in predictive economic modeling because much of its survey data asks categorical questions instead of continuous variables. For example, survey participants are asked how often they use RTD and they can answer, "every day," "almost every day," "a few times a week" or "a few times every month," etc. Additional assumptions must be made to translate categorical questions into one useful for quantitative calculations.

Therefore CFI uses three separate approaches to estimate the total number of RTD daily users: analysis of Census Survey Data; RTD analysis of total boardings (from which CFI estimates riders); and RTD categorical survey analysis.

Table A1: Method 1, PUMS Census Data

Number who commute to work via RTD in 2012 ^(a)	65,942
Estimated number who commute to work via RTD in 2014 ^(b)	73,256
Portion of riders who use RTD to commute to work ^(c)	68.4%
Total RTD users on an average work day ^(d)	107,099

^(a) U.S. Census PUMS data 2012 on variable "means of transportation to work" narrowed by PUMAS that correspond with the Regional Transportation District

^(b) 2012 figure grown by 5.4% over two years, which was the growth in ridership from April 2013 to 2014.

^(c) 2011 RTD Customer Satisfaction Survey

^(d) 65,924 commuters divided by 68.9%

Table A2: Method 2, RTD Boardings into Riders

Average Weekday Boardings on Bus ^(a)	219,904
Boardings per rider on bus ^(b)	2.92
Average weekday riders Bus ^(c)	75,310
Average Weekday Boardings on Light Rail ^(d)	83,886
Boardings per rider on Light Rail ^(e)	2.36
Average weekday riders Light Rail ^(f)	35,545
Total number of RTD users on an average weekday ^(g)	110,855

^(a) RTD System-wide Boarding Averages Data April 2014

^(b) 1.46 services per ride (2011 RTD Customer Satisfaction Survey) multiplied by 2 for round trip

^(c) 219,904 divided by 2.92

^(d) RTD System-wide Boarding Averages Data April 2014

^(e) 1.18 services per ride (2011 RTD Customer Satisfaction Survey) multiplied by 2 for round trip

^(f) 83,886 divided by 2.36

^(g) Bus riders plus light rail riders

Table A3: Method 3, RTD Market Research Phone Survey

Population 18 years and older in RTD service area 2012 ^(a)	2,122,914
Population 18 years and older in RTD service area 2014 ^(b)	2,208,680
Percent of reporting using RTD every day ^(c)	4.8%
Total number of RTD users on an average weekday ^(d)	106,017

^(a) U.S. Census PUMS data 2012 narrowed by PUMAS that correspond with the RTD area

^(b) 2012 figure grown by 2% per year which was the population growth in the Denver Metro Statistical area between 2012 and 2013 from U.S. Census

^(c) RTD Market Research Phone Survey 2013 (survey sample restricted to those 18 and older)

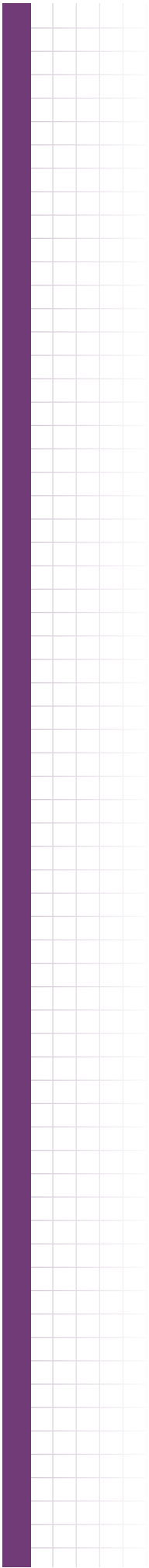
^(d) 4.8% multiplied by 2,208,680

These calculations estimate weekday ridership on RTD to be between 106,000 and 110,000. As a result, an estimate of 108,000 weekday riders was used to perform the following calculations. The next step was to divide those total riders by household income, collected through RTD's ridership surveys.

Appendix B: 50/150 Ridership by County Calculations

Sixty-eight-point-four percent of bus riders and 66 percent of light rail riders use RTD to commute to and from work (2011 RTD Customer Satisfaction Survey). This is approximately two-thirds of all RTD users. Using this area on commuters and federal poverty levels, CFI weighed the category of "portion of commuters under 150 percent of FPL" by two-thirds. Unfortunately, the American Community Survey (from the U.S. Census Bureau) does not collect data on public transit usage for other purposes.

Instead, to capture the other third of riders who use RTD for noncommuting reasons, CFI uses ACS variables for "income" and "households-without-cars" in conjunction with ridership frequency data from the RTD segmentation survey. These categories were then weighted by one third: "portion of low-income households in the district by county"; "portion of frequent riders in district by county"; and "portion of households with no car in district by county."



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