WESTMINSTER

TRANSPORTATION & MOBILITY PLAN

# CURRENT & FUTURE CONDITIONS REPORT

AUGUST 2020

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## CURRENT AND FUTURE CONDITIONS REPORT

**Transportation & Mobility Plan:**
https://www.cityofwestminster.us/Government/Departments/CommunityDevelopment/WestminsterForward/TransportationMobilityPlan

August 2020

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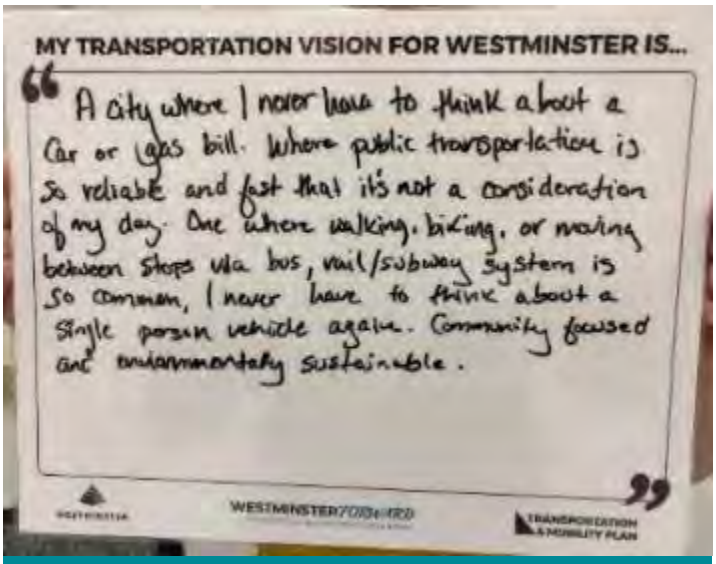
# INTRODUCTION

Westminster residents, employees, commuters, and visitors require safe, connected, convenient, accessible, and reliable transportation options that provide access to employment, neighborhoods, school, health and human services, and shopping. A comprehensive multimodal transportation system also provides the freedom of personal mobility and the choice of how to travel—whether it's driving, walking, rolling (using a mobility device such as a wheelchair), biking, carpooling, or riding transit.

Thriving and sustainable cities have an extensive and expanding multimodal transportation network, including supportive policies and programs that seamlessly integrates all modes of transportation. The City recognizes, as reflected in the current Westminster's Strategic Plan and other citywide goals, the importance to be proactive to meet the current and future transportation needs of the community.

Addressing the current and future transportation and mobility needs of Westminster have been initially assessed and identified in plans including the Comprehensive Roadway Plan (2008), 2030 Westminster Bicycle Master Plan, the Mobility Action Plan, and in coordination with other local, regional, and statewide plans and programs. The City is integrating and updating these existing three plans to create a more comprehensive and updated multimodal transportation plan, the Transportation & Mobility Plan (TMP). The actions and recommended projects from each plan that have not been completed to-date will be evaluated through the TMP to determine if they should be carried forward, updated, or removed.




One of the transportation vision statements received from a Westminster resident during the Westminster Forward Open House in fall 2019

Understanding the current transportation system's opportunities and deficiencies is an important first step to informing the development the near- and long-term transportation framework and recommendations in the TMP. This Current and Future Conditions Report provides an overview of Westminster's demographics as well as the current and future (year 2040) conditions of the Westminster's transportation network, including services and infrastructure. This includes streets, bicycle and pedestrian facilities, trails, transit, truck freight, and evolving transportation technologies. The current conditions are based on available data from various resources and prior to events related to COVID-19 – data sources and dates are noted throughout the report. The future conditions in this report reflect an anticipated future without any additional changes or improvements to the transportation system in

Westminster, other than those improvements with funding commitments. This report serves as documentation of baseline conditions and does not include future recommendations - future recommendations, including considerations for economic and community impacts such as COVID-19, will be identified in the next steps in developing the TMP.

# CURRENT CONDITIONS

## WHO IS WESTMINSTER?

Assessment of demographics is a key step to understand the composition of the community, the use of the transportation system, and anticipating where new or improved transportation facilities or services are needed and to ensure they are accessible and equitable. Not only does the number of people living and working in Westminster affect transportation needs, but where people choose to live and work greatly influences the demand for transportation infrastructure and services in Westminster as well as in the Denver Metro region.

This section provides an overview of Westminster's population composition, including a summary of the vulnerable populations that may have unique transportation needs, including older adults (65 and older), children (younger than 18), people with disabilities, zero-vehicle households, low-income populations, and minority populations. The demographic information provided in this section is based on data from the Census Bureau (American Community Survey 2013-2017 data) and base year 2020 data from the Denver Regional Council of Governments (DRCOG).

### WESTMINSTER'S POPULATION AND EMPLOYMENT GROWTH

Population and employment growth trends are important to consider when planning for transportation investments and improvements. Growth in population and employment increase the need for transportation options and connections. Additionally, increase in the number of transportation system users also impacts transportation infrastructure conditions and maintenance needs.

- **Population:** According to the Census Bureau, the estimated population of Westminster was over 113,000 people in 2018. Westminster's average annual population growth has been less than one percent since 2010.
- **Households:** There are currently 61,752 households within Westminster. According to population forecasts, this number is expected to increase to 87,530 households by 2040, an increase of approximately 42 percent. **Figure 1** identifies the locations where the increase in households is expected to be the greatest.
- **Employment:** There are currently 58,129 jobs within Westminster. This number is expected to increase to 87,859 jobs by 2040, an increase of approximately 51 percent. **Figure 2** identifies the locations where the increase in employment is expected to be the greatest.

FIGURE 1. HOUSEHOLD GROWTH ESTIMATES (2020-2040)

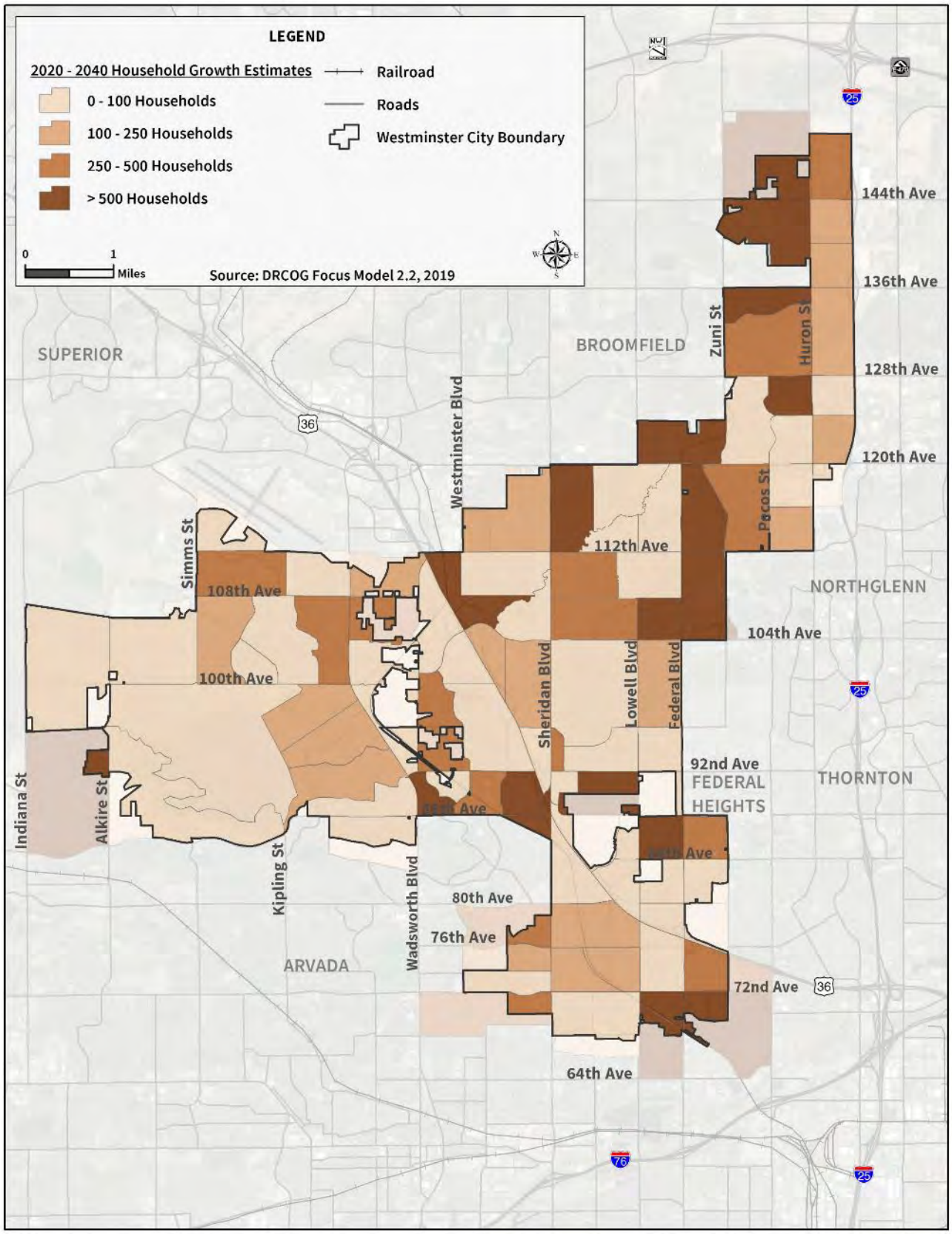
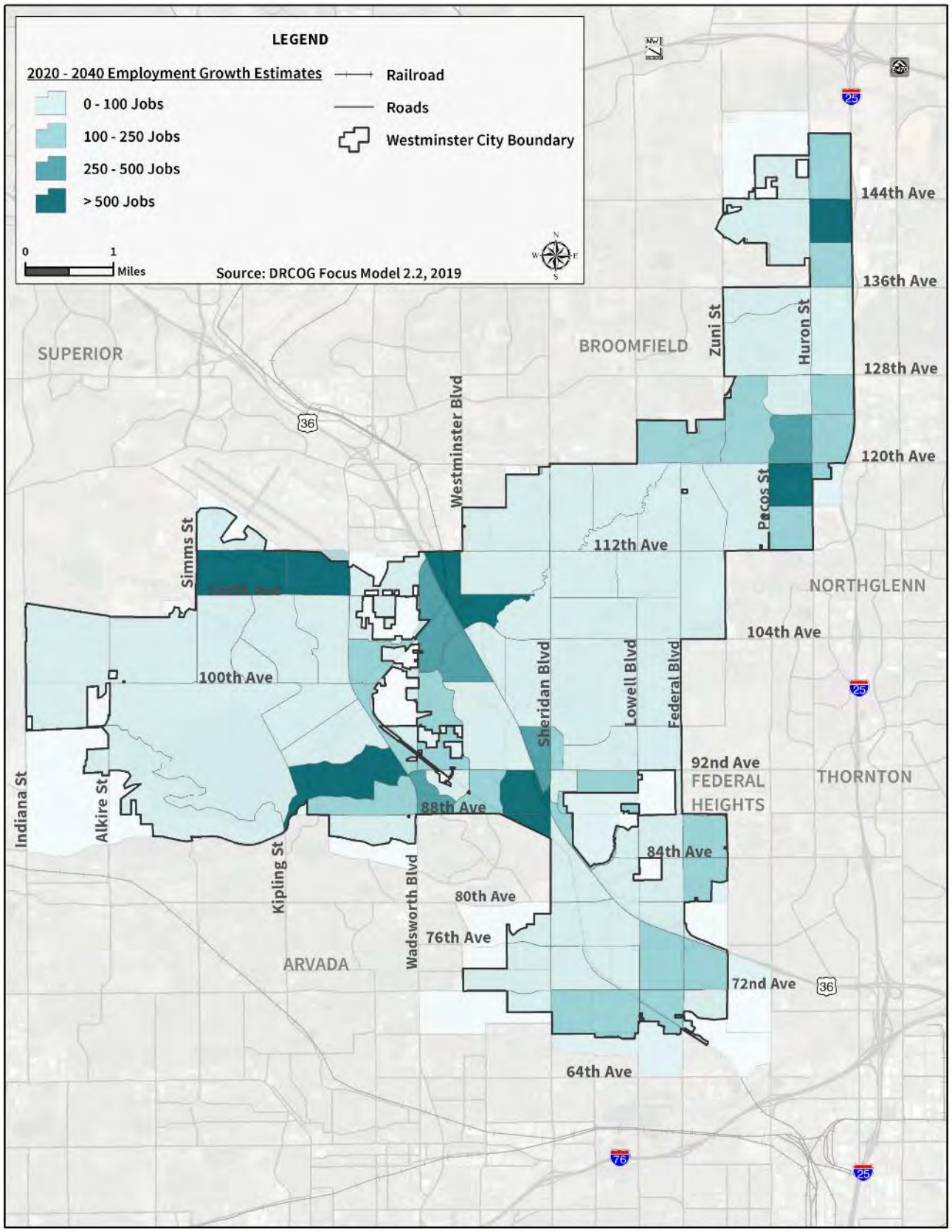


FIGURE 2. EMPLOYMENT GROWTH ESTIMATES (2020-2040)



## OLDER ADULTS (65+)

Approximately 17 percent of Westminster residents are 65 years and older, and this number is expected to increase in the next 20 years. The map on **Figure 3** shows the concentrations of residents 65 years and older within Westminster.

WHY IT'S IMPORTANT: The growing interest in active and independent living among older adults and providing services and amenities to allow older adults to age in place, has increased communities' focus on providing more accessible transportation services that support active older adult lifestyles. The availability and quality of transportation options are important factors to where older adults decide to reside — while many prefer the freedom of driving their own vehicle, the ability to do so may be limited over time, resulting in limited access to reliable services and community amenities.

## CHILDREN

Approximately 23 percent of Westminster residents are younger than 18 years of age. **Figure 4** shows the concentrations of where residents younger than 18 live within Westminster.

WHY IT'S IMPORTANT:
School-aged children, under the legal driving age and without a driver's license, must rely on walking, biking, transit, or rely on those who can drive for transportation. Transportation services and infrastructure connecting between neighborhoods schools and community facilities should be safe and easily accessible. Additionally, safe routes to walk and bike can encourage more active lifestyles that contribute to improved physical and mental health.

Children walking in a crosswalk with a crossing guard

## PEOPLE WITH DISABILITIES

People with disabilities comprise approximately 11 percent of the Westminster population. Disabilities can include a vision or hearing impairment, a cognitive or learning disability, mobility or physical impairment, or other type of disability. **Figure 5** shows the concentrations of where residents with a disability reside in Westminster.

WHY IT'S IMPORTANT: Persons with disabilities that are unable to drive must rely on other forms of transportation including walking, biking, transit, or rely on others who can drive to meet their transportation needs. Some persons with disabilities may require the use of a mobility aid (e.g., wheelchair). It is important that transportation infrastructure such as sidewalks and services such as transit are accessible for all abilities.

FIGURE 3. OLDER ADULTS (AGE 65 OR OLDER)

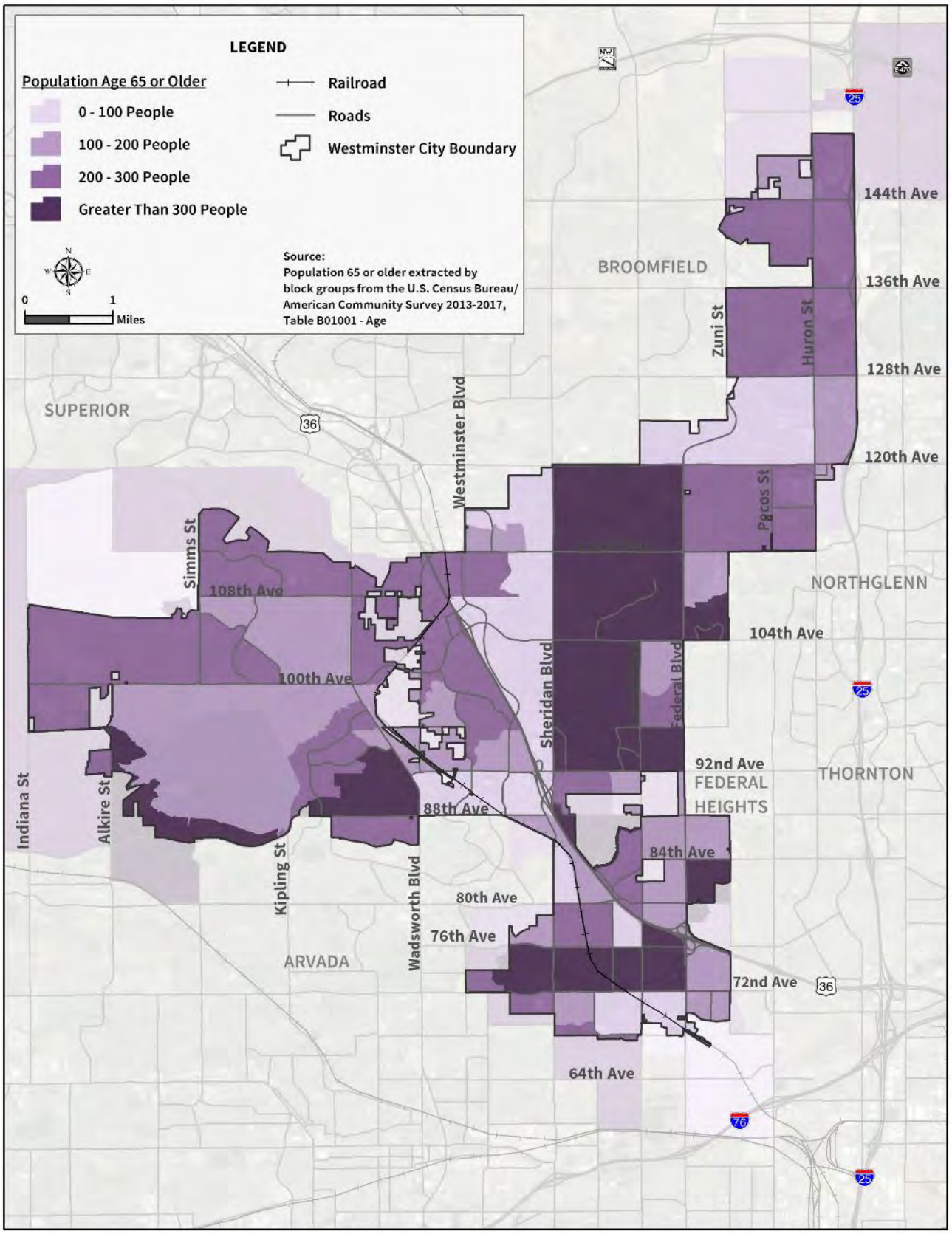


FIGURE 4. CHILDREN UNDER 18

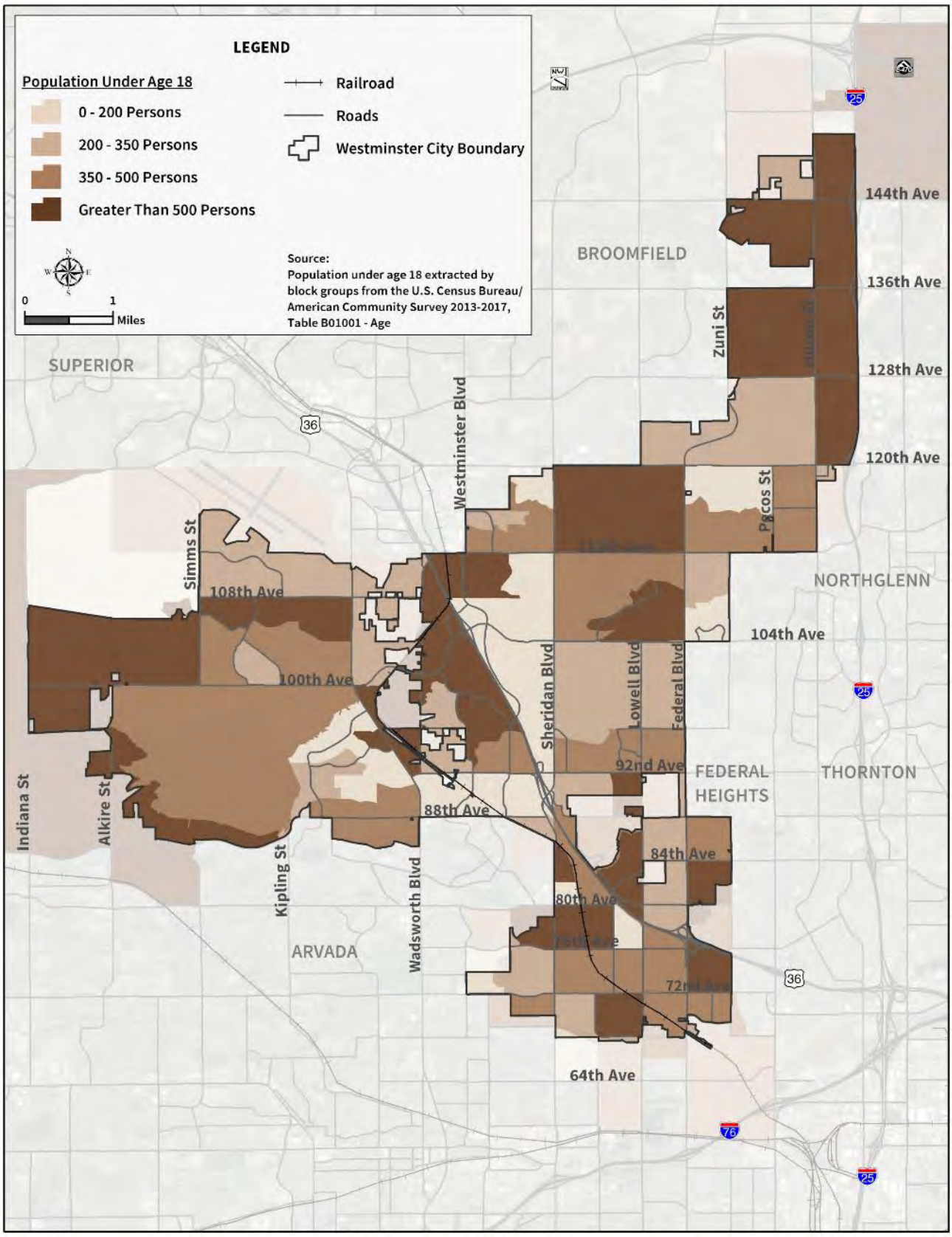
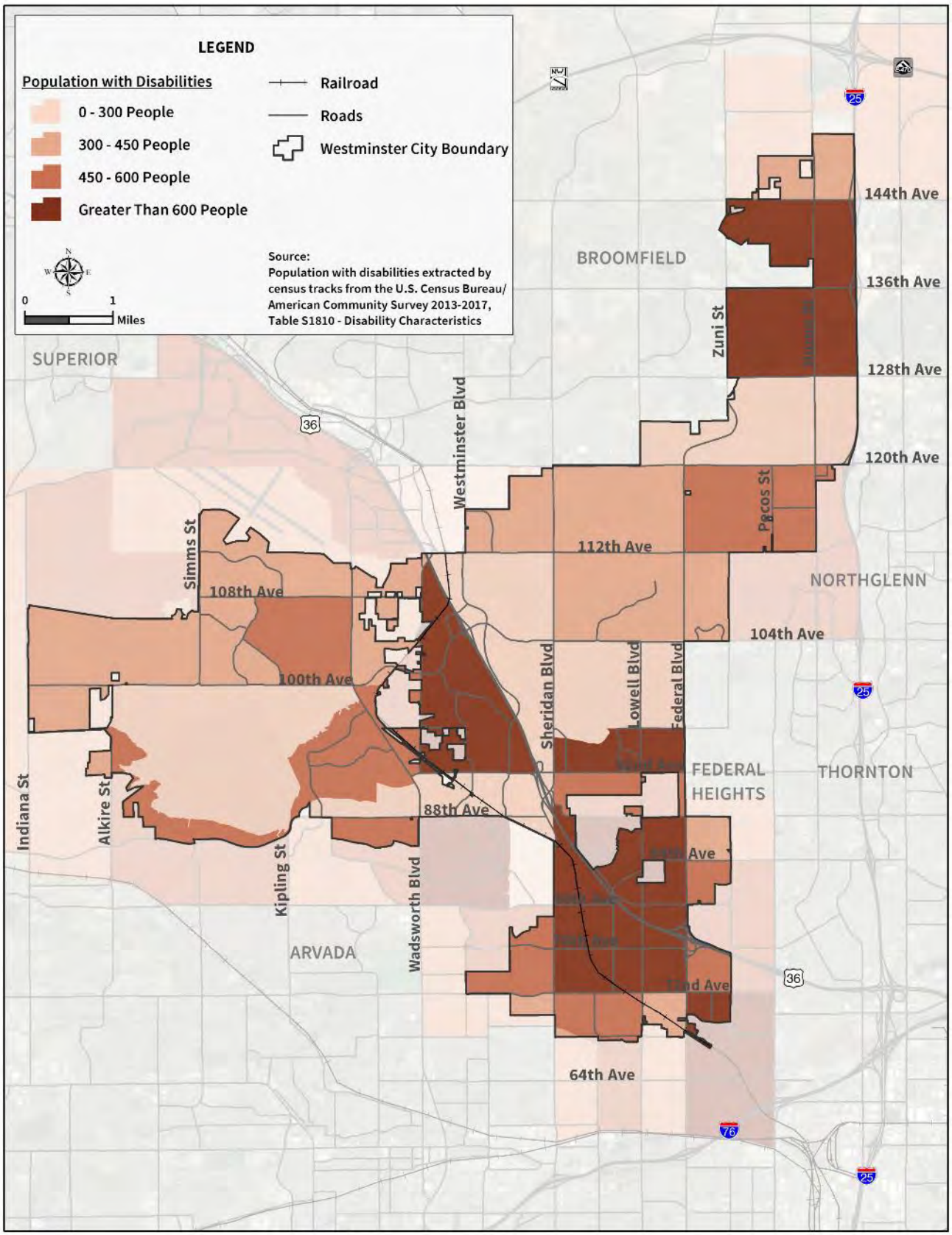


FIGURE 5. PEOPLE WITH DISABILITIES

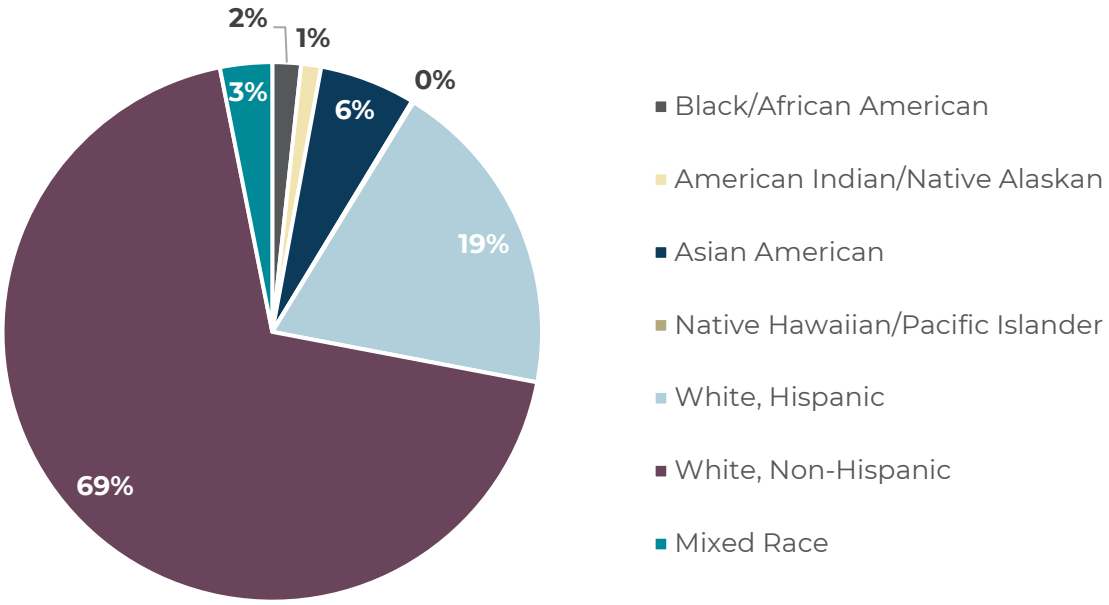


## MINORITY POPULATIONS

As shown on **Figure 6**, Westminster is a diverse community with approximately 31 percent of the community comprised of a minority population. **Figure 7** shows where the greatest concentrations of minority residents reside in Westminster.

WHY IT'S IMPORTANT: Minority populations, including people who identify as black, Hispanic, Asian, American Indian, or Alaskan Native have been historically underserved in communities throughout the United States. An equitable transportation network offers convenient and affordable access between housing and jobs, medical services, education, grocery shopping, and social/recreational activities for all users. Access results in opportunities which can often positively influence personal health and quality of life.

FIGURE 6. PERCENT OF RACE/ETHNICITY IN WESTMINSTER




*Source: 2013–2017 American Community Survey 5-Year Estimates*

## LOW-INCOME POPULATION

**Figure 8** shows the concentrations of low-income residents in Westminster. Low-income populations include those whose median household income is below the federal poverty guideline.

WHY IT'S IMPORTANT: Low-income populations are important to consider when planning for transportation improvements because these residents may have limited access to a vehicle, be more reliant on lower-cost transportation options such as walking, biking, riding transit, or rely on others to meet their transportation needs.

FIGURE 7. MINORITY POPULATION

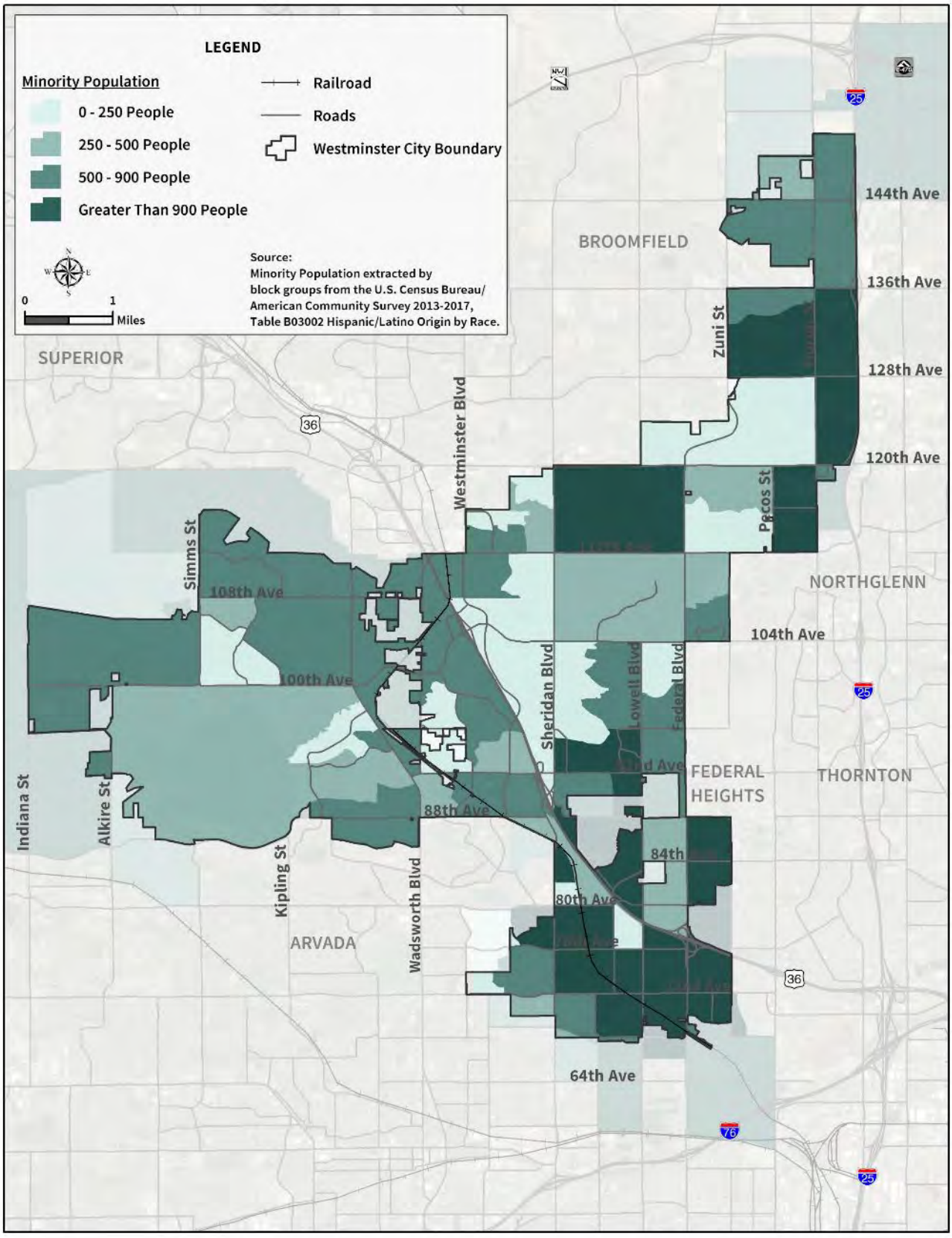
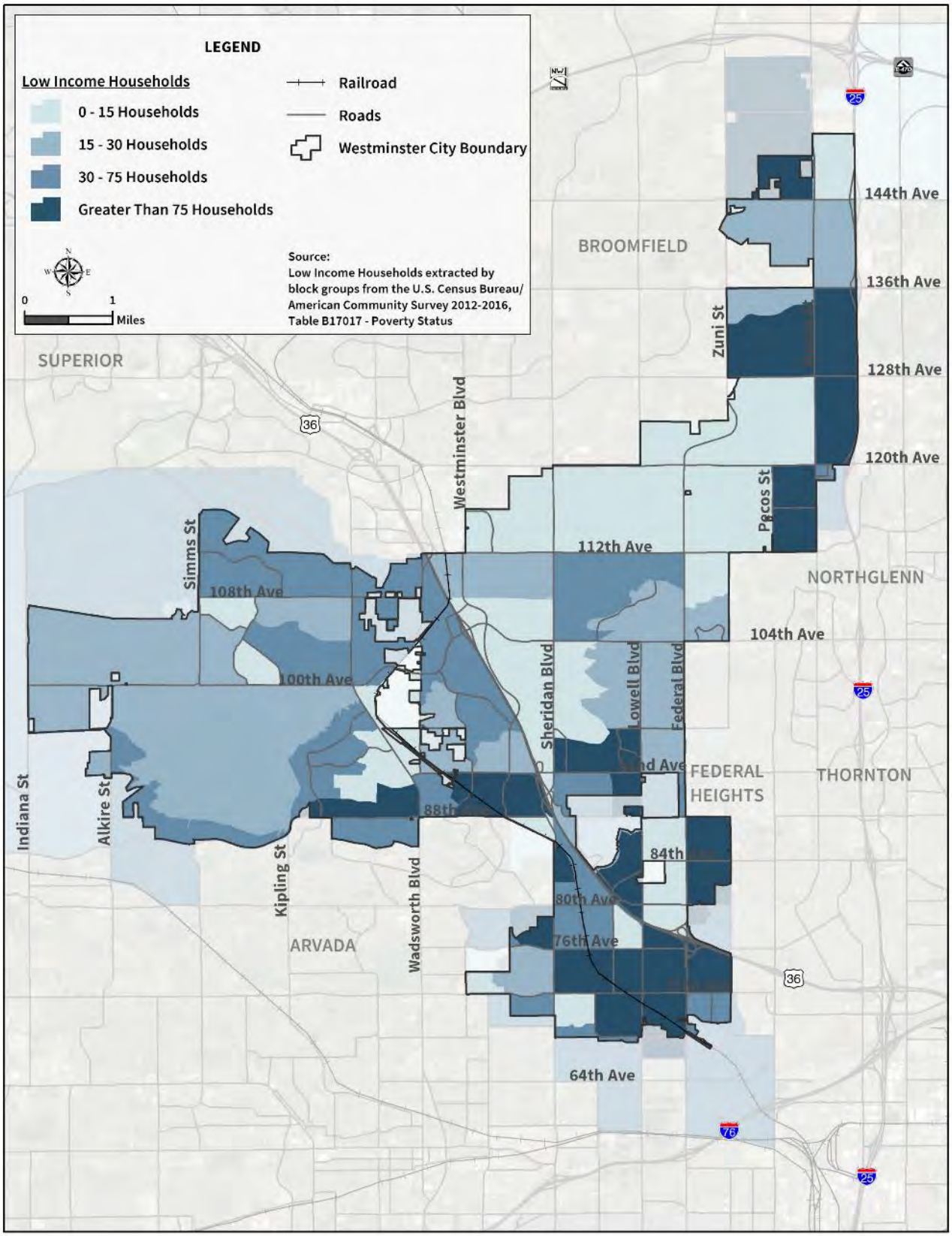


FIGURE 8. LOW-INCOME HOUSEHOLDS



## ZERO-VEHICLE HOUSEHOLDS

In 2017, approximately 2 percent of Westminster residents did not have access to a vehicle. These households either cannot afford a vehicle, choose to not have a vehicle, or have a disability preventing them from driving a vehicle. Across the country, an increasing number of younger individuals from the Millennial and Generation Z cohort do not own a personal vehicle compared to previous generations. **Figure 9** shows the concentration of zero-vehicle households in Westminster.

WHY IT'S IMPORTANT: When identifying transportation infrastructure and service improvements, residents with limited or no access to a vehicle should be considered as they rely on others to carpool or depend on other modes of transportation for daily trips and errands, including walking, biking, and riding public transit.

# HOW WESTMINSTER TRAVELS

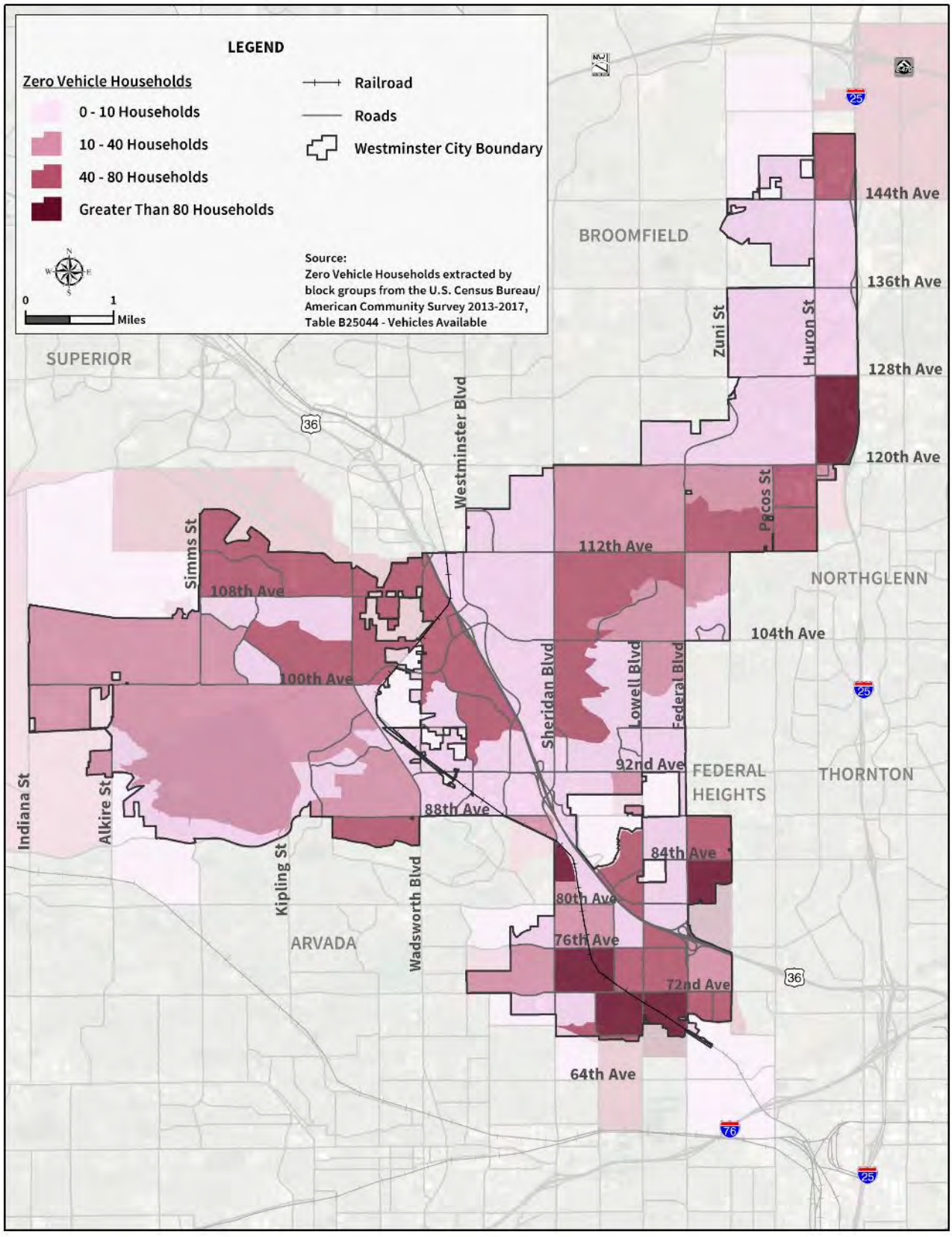
The quality and experience of how people travel within and in and out of the city is one of the most significant factors in planning for current and future growth and associated transportation needs. City streets can play multiple roles—as major thoroughfares that handle significant traffic through the city, as bicycle routes for commuters to employment or transit stations, or as recreation facilities for pedestrians or bicyclists. Land use patterns throughout the Denver Metro Region have largely resulted in car-dependent communities, but recent and long-term investments in transit and multimodal infrastructure in the Denver Metro Region indicate that land use patterns, demographics, and travel preferences are changing.

## QUALITY OF LIFE

The design and structure of transportation systems influence the everyday health and quality of life of residents, employees, and visitors. The availability and quality of transportation options can affect levels of physical activity, stress, air quality, safety, and access to employment as well as retail land uses, healthcare, and other services.


Passenger boarding a bus at the US 36 and Sheridan Station

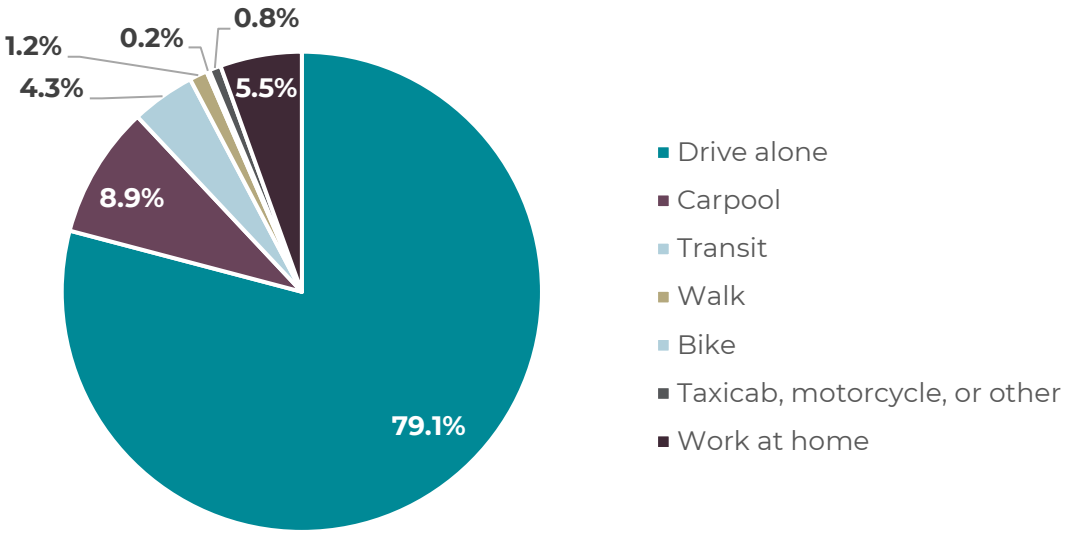
FIGURE 9. ZERO VEHICLE HOUSEHOLDS



## TRANSPORTATION TO WORK

MODE SHARE: As shown in **Figure 10**, on a typical workday, approximately 79 percent of Westminster residents drive alone to their employment, 9 percent carpool, and 4 percent take transit. Approximately 1 percent walk, less than 1 percent bike, and 6 percent work from home. These percentages represent only Westminster resident commute to work trips, not other types of trips such as running errands. Through the development of the TMP, a mode share goal for Westminster will be established as a citywide target to shift single-occupant vehicle trips to more bike, walk, and transit trips. This shift in mode use supports a number of other citywide goals including improvements in environmental and health.

FIGURE 10. WESTMINSTER RESIDENT COMMUTE TO WORK TRIPS




*Source: 2013–2017 American Community Survey 5-Year Estimates*

TRAVEL TIME: As correlated with population and employment growth, traffic and congestion continues to increase for the Denver Metro Region, including in Westminster. Average travel times to work increased from 25.4 to 27.1 minutes for Westminster residents between 2010 and 2017.

Congestion at the intersection of Sheridan Boulevard and 92nd Avenue

The TMP will identify transportation improvements recommendations that will help improve the efficiency and reliability of the street network and transportation options.

*Source: 2013–2017 American Community Survey 5-Year Estimates*

## COMMUTER INFLOW AND OUTFLOW

As shown in **Figure 11**, the overall daily population in Westminster is reduced as more residents commute to work outside the city than employees who commute into Westminster. Approximately 38,000 residents from other communities in the Denver Metro Region commute into Westminster to work, whereas approximately 50,000 Westminster residents leave Westminster for employment in other communities.

In addition to the inflow and outflow of Westminster residents and employees, there are also many commuters who travel through Westminster everyday along many of Westminster's major corridors, for example US 36, 104th Avenue, Sheridan Boulevard, Federal Boulevard, and Wadsworth Boulevard. As jurisdictions adjacent to Westminster continue to grow, Westminster will likely continue to experience an increase of commuters along these corridors.

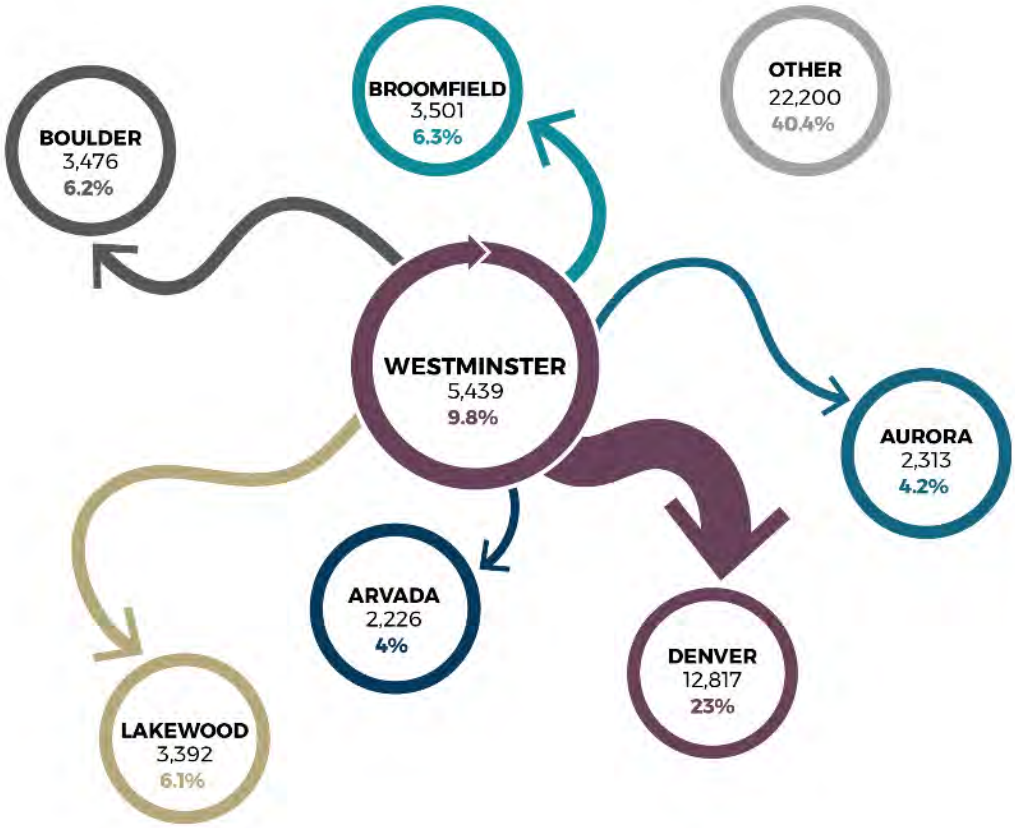
FIGURE 11. DAILY POPULATION CHANGE IN WESTMINSTER


*Source: U.S. Census Bureau; American Community Survey, 2017 5-Year Estimates, Longitudinal-Employer Household Dynamics Program*

Understanding the impacts of population and employment growth in Westminster as well regional, both long-term and on a daily basis, is important in planning for transportation improvements, programs, and associated maintenance, to ensure transportation infrastructure and services can meet current and future needs.

As shown in **Figure 12,** the cities where the highest number of Westminster residents commute to are Denver (23 percent), Broomfield (6 percent), Boulder (6 percent), Lakewood (6 percent), Aurora (4 percent), and Arvada (4 percent). Approximately 5,400 people both live and work in Westminster.

FIGURE 12. WHERE WESTMINSTER RESIDENTS COMMUTE TO




*Source: U.S. Census Bureau; American Community Survey, 2017 5-Year Estimates, Longitudinal-Employer Household Dynamics Program*

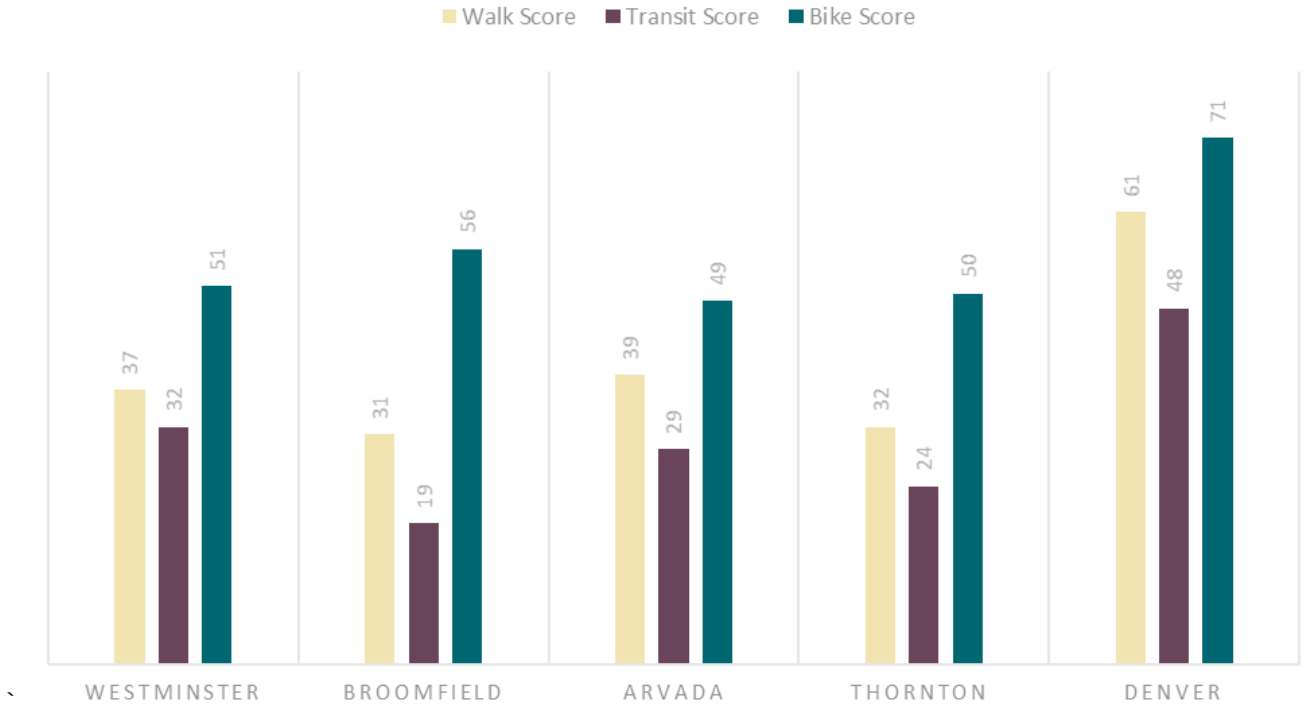
## WALK, TRANSIT, AND BIKE SCORES

A nationally-used metric called Walk Score is used to measure how easy it is to get around a community by walking. The Walk Score calculates points based on the distance to the closest amenities, including businesses, parks, theaters, schools, and other common destinations. Communities are scored from 0 to 100; the higher the score, the easier it is to get around a community on foot. While these scores give some indication of the ease of travel on foot based on proximity to amenities and destinations, the score does not consider level of comfort and overall experience for the user such as sidewalk conditions and street type. Similarly, the Bike Score and Transit Score indicate the ease a traveler can bike around a community and take transit.

**WESTMINSTER'S SCORES:**
Walk: 37
Bike: 51
Transit: 32

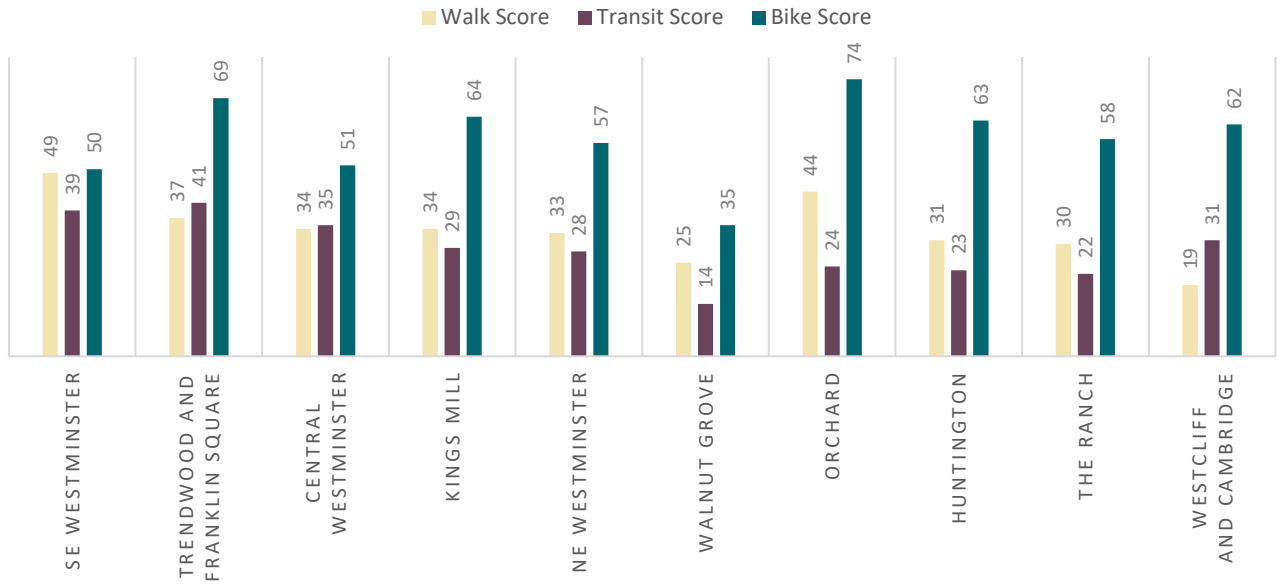
**Figure 13** and **Figure 14** show Westminster's walkability, bikeability, and transit scores relative to other local municipalities and for the neighborhoods within Westminster, respectively. Westminster's scores are about equal or exceed those of neighboring communities, except for Denver.

FIGURE 13. WALK, TRANSIT, AND BIKE SCORES IN ADJACENT MUNICIPALITIES




*Source: https://www.walkscore.com/ October 2019*

FIGURE 14. WALK, TRANSIT, AND BIKE SCORES IN WESTMINSTER NEIGHBORHOODS




*Source: https://www.walkscore.com/ October 2019*

## SHORT-TRIP ANALYSIS


Buffered bike lanes on Yates Street

Using the DRCOG 2020 regional travel model, a short-trip analysis was completed to identify corridors (not including US 36 and I-25) with a high portion of short-distance trips in 2020. While these short trips are likely currently being made by automobile, it is useful to identify corridors with a lot of short trips because these represent trips that could potentially be converted to bicycle or pedestrian trips. **Figure 15** shows three color bandwidths reflecting trips less than 1 mile (white), trips 1 to 2 miles in length (pink), and trips 2 to 3 miles in length (red). The wider the band, the more short-distance trips occur along the corridors.

The short-trip analysis results can be overlaid with the map of the existing and future bicycle and pedestrian network to identify areas to add or improve facilities to accommodate current and new biking and walking trips. For example, Sheridan Boulevard near 92nd Avenue, 92nd Avenue between Wadsworth Boulevard and Lowell Boulevard, and Wadsworth Boulevard between 88th Avenue and 100th Avenue, have a high number of short-distance trips. While many of these arterials may have sidewalks they also have constraints such as long street crossings distance and close proximity to high vehicle volumes and travel speeds that results in an uncomfortable walking or bicycling environment.

## HOUSING AND TRANSPORTATION (H+T) AFFORDABILITY INDEX

The Housing and Transportation (H+T) Affordability Index is another metric used to understand how transportation impacts Westminster residents and inform how Westminster can plan for more accessible, equitable and affordable transportation options. Transportation, including the various costs of vehicle ownership such as maintenance or the costs associated with using another mode of transportation such as transit, is typically the second largest expenditure for households. Traditional measures of affordability do not include transportation costs, therefore, factoring in both housing *and* transportation costs through the H+T Affordability Index provides a more comprehensive way of thinking about the cost of housing and true affordability.

On average, Westminster residents spend 26 percent of their household income on housing and 20 percent on transportation. Combined, this is 46 percent, just slightly above the Center for Neighborhood Technology's recommended amount of 45 percent. The average annual transportation cost is $13,420 for Westminster residents, and the average number of cars per household is 1.83. **Figure 16** shows the H+T Affordability Index by census block group.

FIGURE 15. 2020 SHORT TRIP ANALYSIS

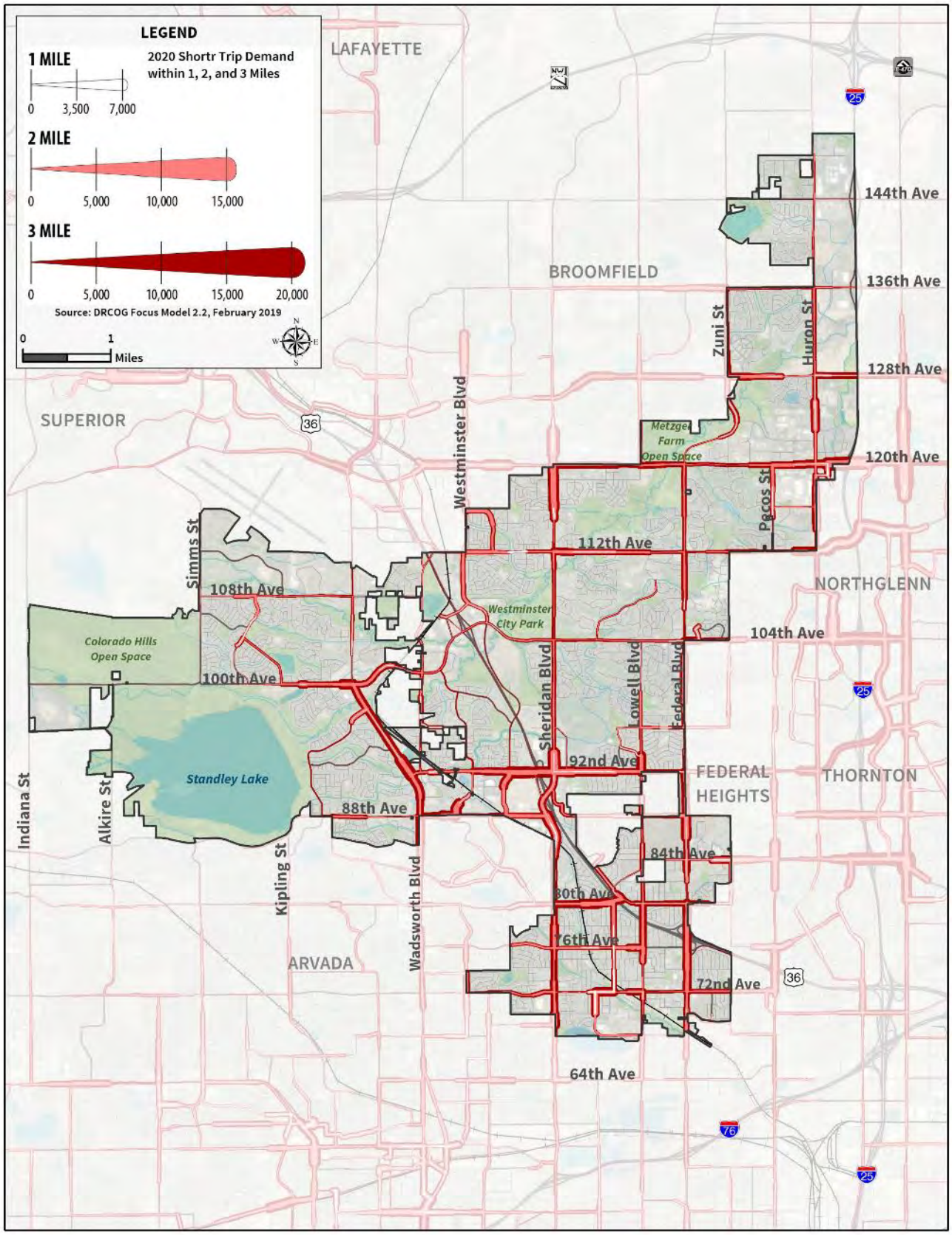
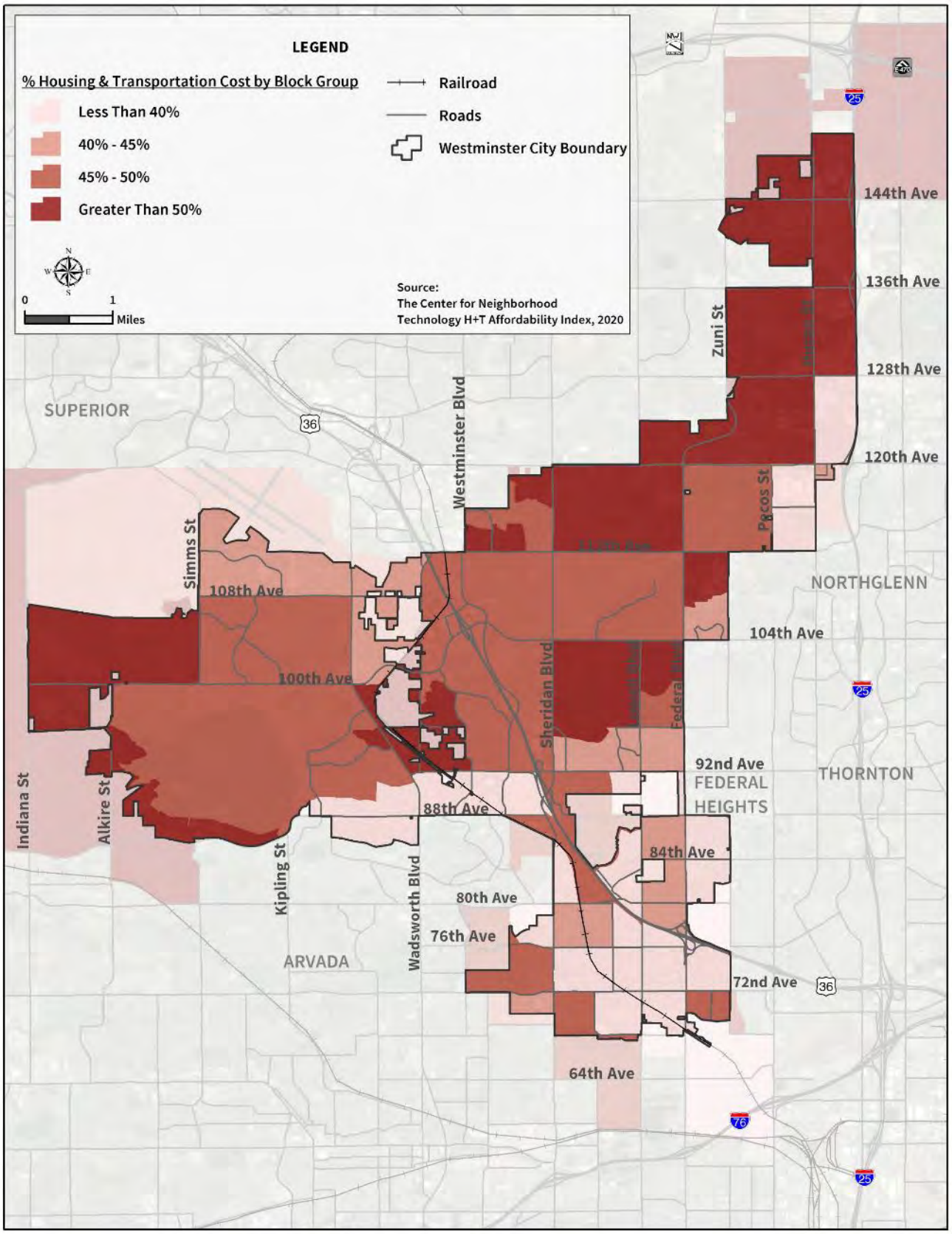


FIGURE 16. H+T AFFORDABILITY INDEX



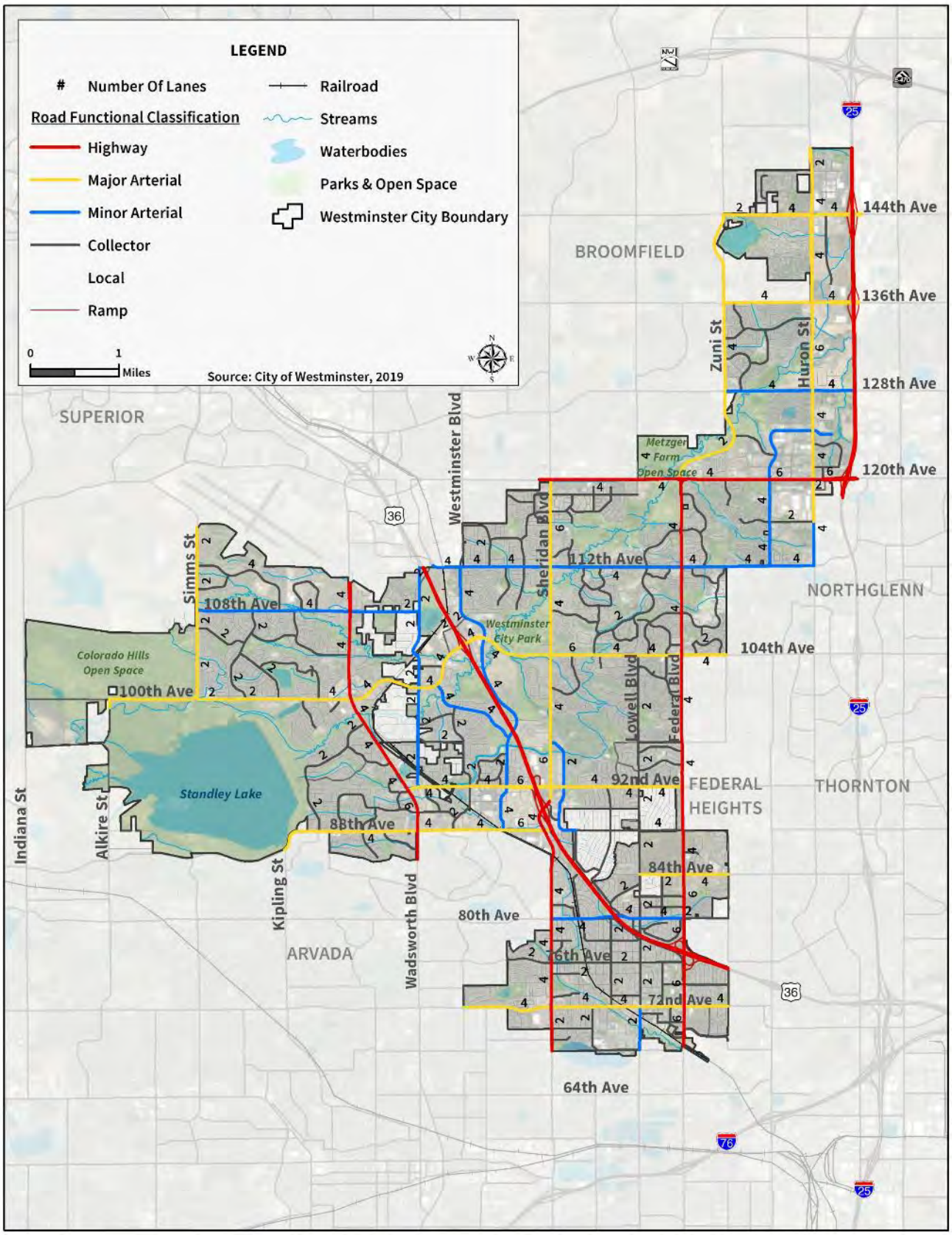
# WESTMINSTER'S STREET NETWORK

Streets generally provide two important functions: access and mobility. Each street type is specifically designed to operate with certain characteristics based on the adjacent land uses, level of continuity, transportation modes served, and proximity and connections to other facilities. The functional classification of a street describes these characteristics and reflects its role in the street network and relationship with adjacent land use. A street's classification also forms the basis for access management (e.g., driveways), corridor right-of-way preservation, multimodal facility types, and street design guidelines and standards. The functional classification is typically viewed as the desired condition for a street.

Westminster's streets are classified as local, collector, minor arterial, major arterial, or highway, as shown on **Figure 17**. The number of through travel lanes on each street segment is also shown. The street network in Westminster has historically been designed to prioritize the efficient movement of the number of vehicles, not the number of people.

- **Local Streets** serve the highest level of access, providing direct driveway access to adjacent properties and carrying traffic to collector streets. Local streets may be limited in continuity and may be designed to discourage through traffic. Local streets are usually the most comfortable streets for walking and biking as the amount of interaction with vehicular traffic is minimal and travel speeds are low.
- **Collectors** gather traffic from local streets and connect travelers to the arterial network. Collectors provide a balance between access and mobility and retain continuity through neighborhoods. Collector streets can plan a critical role in increasing connectivity of the bicycle and pedestrian network. Collector streets are usually comfortable streets for walking and biking as the amount of vehicular traffic is minimal and traffic speeds are moderate.
- **Minor Arterials** provide for trips of moderate length and offer connectivity to streets of higher functional classification. Minor arterials provide intra-community continuity and a higher degree of land access than major arterials. With higher posted speed limits and a greater amount of vehicular traffic, minor arterials can present more stressful environments for bicyclists and pedestrians. Westminster Boulevard and 112th Avenue are examples of minor arterials providing intra-community continuity in Westminster.
- **Major Arterials** provide a high degree of mobility and serve corridor movements with longer trip lengths. While adjoining land uses can be served directly, access to adjacent properties is limited to emphasize mobility of vehicles. Sheridan Boulevard (north of US 36) and 92nd Avenue are examples of major arterials with regional connectivity in and through Westminster.
- **Highways** have the highest level of mobility, providing unimpeded high-speed regional and interstate connections and are under the jurisdiction of the Colorado Department of Transportation (CDOT). Highways like I-25 and US 36 are limited access divided highways that link major urban areas. Other state highways that extend through Westminster include Wadsworth Boulevard (SH 121), Sheridan Boulevard (SH 95), Federal Boulevard (US 287), and 120th Avenue (US 287/SH 128).

FIGURE 17. STREET FUNCTIONAL CLASSIFICATION



## DAILY TRAFFIC COUNTS

Daily traffic volumes on a street indicates the level of traffic congestion. The amount of traffic volume that can moved along a street depends on several considerations, such as the number of lanes, the number of driveways, presence of left turns lanes, and when and how often traffic will be required to stop at stop signs or traffic signals. Current and future forecasted traffic volumes are important data used in the evaluation of current conditions as well as future corridor-wide and intersection improvements to ensure all modes of transportation can travel safely and efficiently to their destinations.

Congestion along Sheridan Blvd at 92nd Ave

The average daily traffic counts on major arterials, minor arterials, and select collector streets in Westminster are shown on **Figure 18**. The 2040 forecasted traffic volumes are presented later in this report. Wadsworth Boulevard and Federal Boulevard carry the highest volumes of north-south traffic through the city; 120th Avenue and 92nd Avenue carry the highest volumes of east-west traffic.

## EXISTING VOLUME TO CAPACITY RATIOS

Volume to capacity ratio (V/C ratio) is a metric used to identify deficiencies in the existing street network by describing congestion on street segments. V/C ratios are calculated based on daily traffic volumes and street capacities and do not account for peak hour conditions or individual intersections. As the V/C ratio approaches 1.0, drivers experience congestion including queuing at intersections and longer delays. Streets with lower functional classifications and fewer lanes would be expected to carry fewer vehicles per day, whereas streets with higher functional classifications and a higher number of lanes would be expected to accommodate more vehicles. However, as the number of vehicles increases due to population and employment growth, many streets are starting to experience traffic congestion throughout the day because the number of vehicles is approaching the street's capacity. **Table 1** shows the per-lane capacities for different functional classifications. Similar to traffic counts, V/C ratios are important in evaluating current and future conditions along a street as well as implementation of improvements. The existing V/C ratios are shown on **Figure 19**.

### TABLE 1. TYPICAL DAILY STREET CAPACITIES (PER THROUGH LANE)

| Functional Classification | Average Daily Vehicles |
|---|---|
| Major Arterial | 8,000 |
| Minor Arterial | 6,000 |
| Collector | 5,000 |

FIGURE 18 EXISTING DAILY TRAFFIC COUNTS (2018)

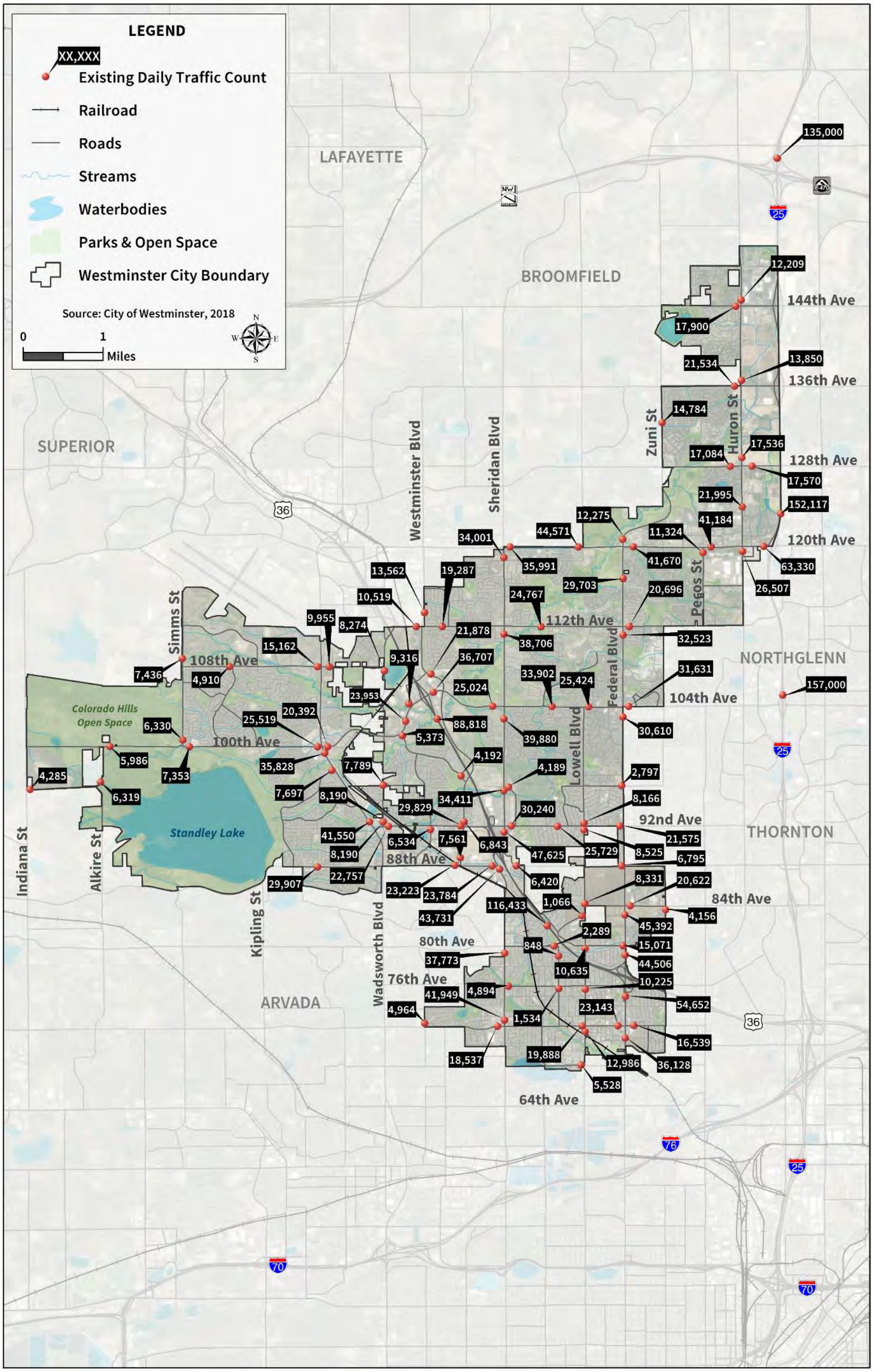
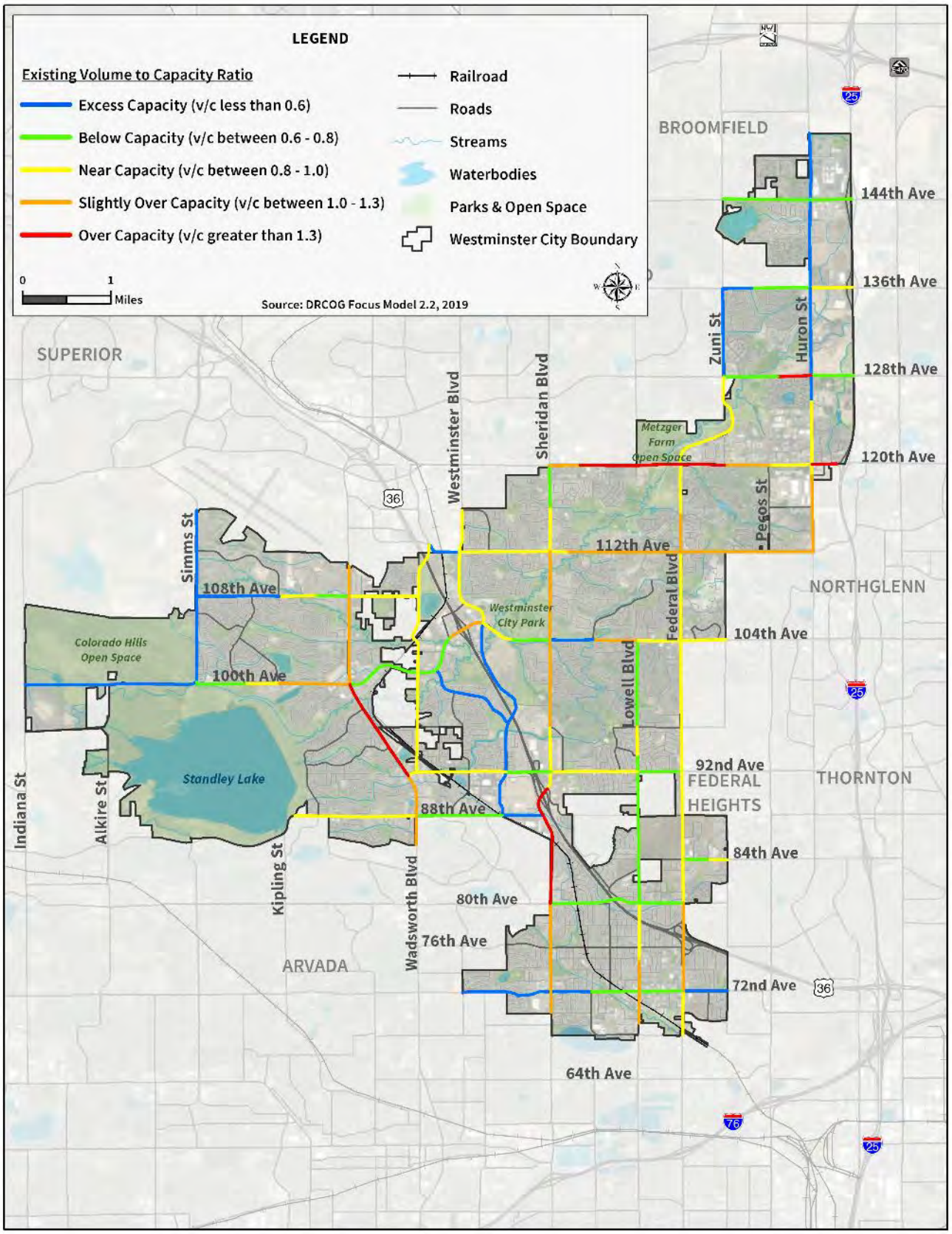


FIGURE 19. EXISTING VOLUME TO CAPACITY RATIOS



## POSTED SPEED LIMITS

Posted speed limits in Westminster range from 20 miles per hour (MPH) on local streets such as Westminster Station Drive to 55 MPH on Federal Boulevard, and 65 MPH along US 36 and 55 MPH along most portions of I-25, as shown on **Figure 20**. The majority of streets in Westminster are posted as 25 MPH. Major thoroughfares such as Sheridan Boulevard are posted as 45 MPH. Access, adjacent land use, placement of crosswalks and other elements of street design can all impact speed limits along the street. It is important to design streets to balance the safety and mobility needs of all users. Higher speeds are associated with severe injury and fatal crashes, as described in the next section.

Pedestrian crossing Sheridan Boulevard

## CRASHES

An evaluation of crash data provides an understanding of where conflicts and crash trends between modes of transportation occur. These data inform the development of transportation safety improvements and safety education strategies. This section provides an overview of the number and severity of crashes in Westminster.

Crash data presented in this section are from the CDOT crash database that is populated with data provided by police departments throughout Colorado. The crash data report is created bi-annually, with the last report reflecting crash data through 2017.

During the three-year period from 2015 through 2017, there were approximately 7,900 reported traffic crashes on streets and highways (including US 36 and I-25) within the city limits of Westminster. As shown on **Figure 21**, a comparison of yearly totals shows a decline in 2016 and 2017.

FIGURE 20. POSTED SPEED LIMITS

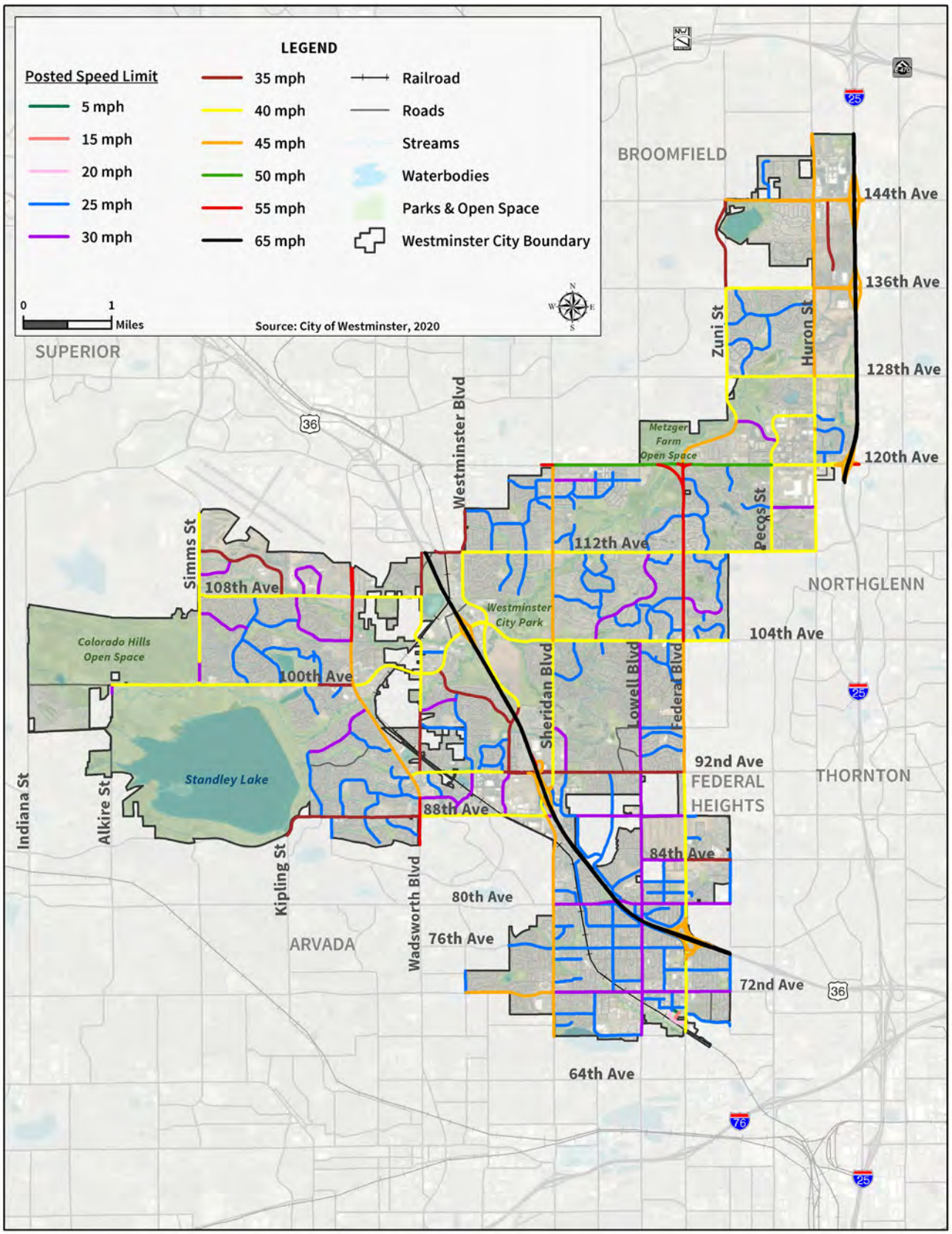
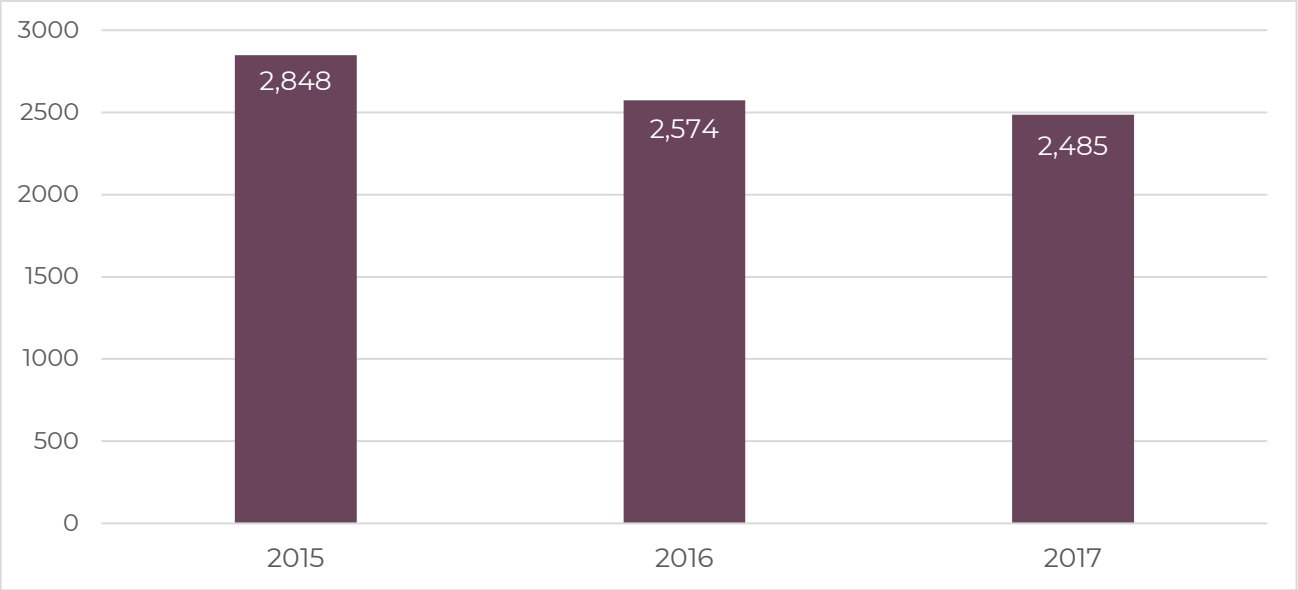


FIGURE 21. TOTAL CRASHES IN WESTMINSTER (2015 – 2017)




## CRASH SEVERITY

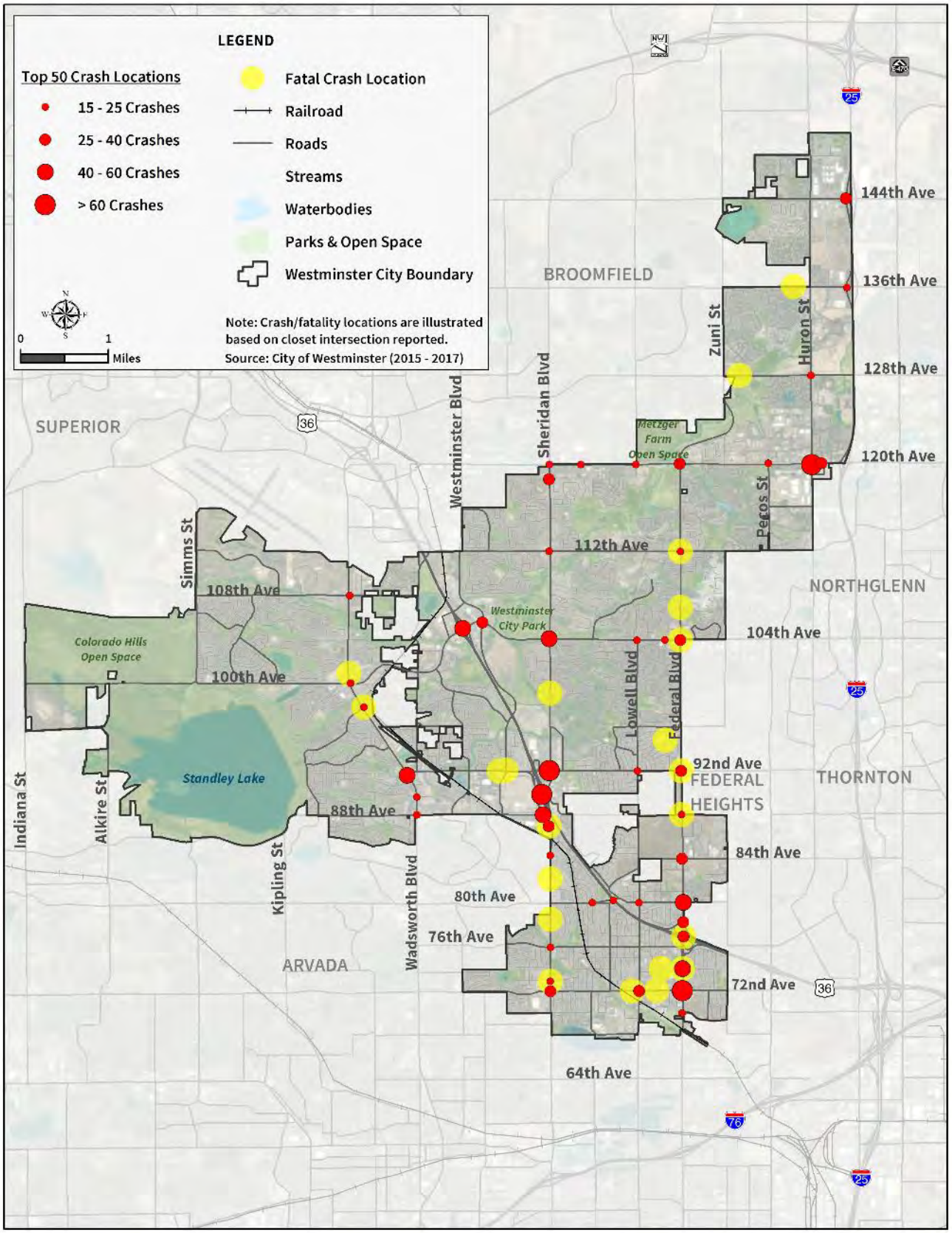
Vehicle crashes are categorized by severity: fatal, injury, or property damage only. During the three-year period (2015 through 2017) there were 22 fatalities, with the most occurring in 2017 (11). Approximately 8 percent of crashes (615 crashes) resulted in injuries, with the most injury crashes occurring in 2016. The remaining 7,200+ crashes (92 percent) in 2015 to 2017 resulted in property damage only (PDO).

The 50 intersections with the highest number of reported crashes in Westminster between 2015 and 2017 are shown on **Figure 22.** The location of the 22 fatal crashes that occurred between 2015 are also shown on **Figure 22**. The top 10 locations with the highest number of crashes between 2015 and 2017 are:

- 120th Avenue and Huron Street
- 92nd Avenue and Sheridan Boulevard
- US 36 and Sheridan Boulevard
- 72nd Avenue and Federal Boulevard
- 92nd Avenue and Wadsworth Parkway
- 104th Avenue and Sheridan Boulevard
- 88th Avenue and Sheridan Boulevard
- 74th Avenue and Federal Boulevard
- Church Ranch Boulevard and US 36
- 80th Avenue and Federal Boulevard

These intersections experienced a total of 597 crashes, which is 7.6 percent of the city-wide total for these three years. The most common type was rear-end crashes with a total of 395 (66 percent of the 3-year total). There was a total of seven crashes involving pedestrians.

FIGURE 22. HIGH CRASH AND FATAL CRASH LOCATIONS (2015 – 2017)



## BICYCLE AND PEDESTRIAN INVOLVED CRASHES

Bicyclists and pedestrians are some of the most vulnerable users of the transportation system. Between 2015 and 2017, bicyclists and pedestrians were involved in 153 crashes (1.9 percent) of all crashes in Westminster, but half of all traffic-related fatalities during the same time period involved a pedestrian or bicyclist.

Bicycle and pedestrian trips are expected to increase as more people chose active transportation options in Westminster and in the region. This growth emphasizes the critical importance in supporting the implementation of safe, comfortable, and connected facilities.

### VISION ZERO

DRCOG, in partnership with jurisdictions, agencies, and advocates, is developing a regional Vision Zero Action Plan to create a shared regional vision, implementable action plan, and strategies needed to move the region toward zero deaths and serious injuries. Westminster is one of a number of agencies throughout the region participating on the Vision Zero Stakeholder Committee, to help inform the development of a plan that will:

- Reduce and eventually eliminate fatalities and serious injuries in the Denver region
- Support DRCOG's safety performance measures and targets
- Increase awareness of Vision Zero to influence safer behaviors on streets
- Provide tools and strategies to local jurisdictions and other stakeholders to encourage safety in planning and design of the regional transportation system

Vision Zero is a safety approach with the core principle that "it can never be acceptable that people are killed or seriously injured when moving within the road transport system." Vision Zero switches safety from being solely the responsibility of street users to a shared responsibility of system designers and street users. It is inevitable that street users will make mistakes, so streets should be designed to ensure these mistakes do not result in severe injuries or fatalities (Source: DRCOG).

# FREIGHT TRANSPORT

## DRCOG REGIONAL MULTIMODAL FREIGHT PLAN

DRCOG is developing the Regional Multimodal Freight Plan to create a shared vision, implementable action plan, and identify strategies needed to help move freight and goods more efficiently throughout the Denver region. This data-driven and stakeholder-informed initiative will identify potential infrastructure improvements and policies to facilitate efficient freight movement throughout the Denver region. (Source: DRCOG).

Westminster's and the Denver region's economic vitality and the quality of life it offers are dependent upon the ability of manufacturers, retailers, delivery services and distributors to efficiently transport their goods throughout the region. From long-haul truck drivers to package carriers, there are many freight delivery services who are reliant on the transportation system to carry out their day-to-day tasks – congestion and poor road conditions, for example, are particularly disruptive to ability to reliably transport freight. The proliferation of online shopping and smartphone apps that offer door-to-door pickup and delivery ranging from groceries to restaurant meals to dry cleaning is changing the freight industry considerably. This evolution in freight delivery is important to consider in transportation infrastructure improvements and street maintenance programs.

Though critical to the local and regional economy, heavy vehicles are more impactful to streets than passenger vehicles because the loads cause faster deterioration to streets, particularly if the street is not designed to carry heavy vehicles. Truck routes are often defined to route heavy vehicles on streets that can effectively handle the loads. The City does not currently have established truck routes and references the Model Traffic Code for Colorado for vehicle height and weight restrictions. Resources including the DRCOG Regional Multimodal Freight Plan will be used to help identify freight routes in Westminster.

A freight vehicle passing through Westminster

# TRANSIT

The Regional Transportation District (RTD) provides transit service to many communities in the Denver Metropolitan Region, including Westminster. RTD's service within Westminster consists of a variety of service types that will be further evaluated during the development of the TMP, including:

- Fixed-route bus service (learn more)
- Bus rapid transit (BRT) (learn more)
- Commuter rail service (learn more)
- Access-a-Ride service (learn more)
- FlexRide service (learn more)

## REIMAGINE RTD

Reimagine RTD is a two-year effort that will evaluate and forecast the changing transportation needs of the region and determine how to balance regional priorities with limited resources.

## BUS SERVICE

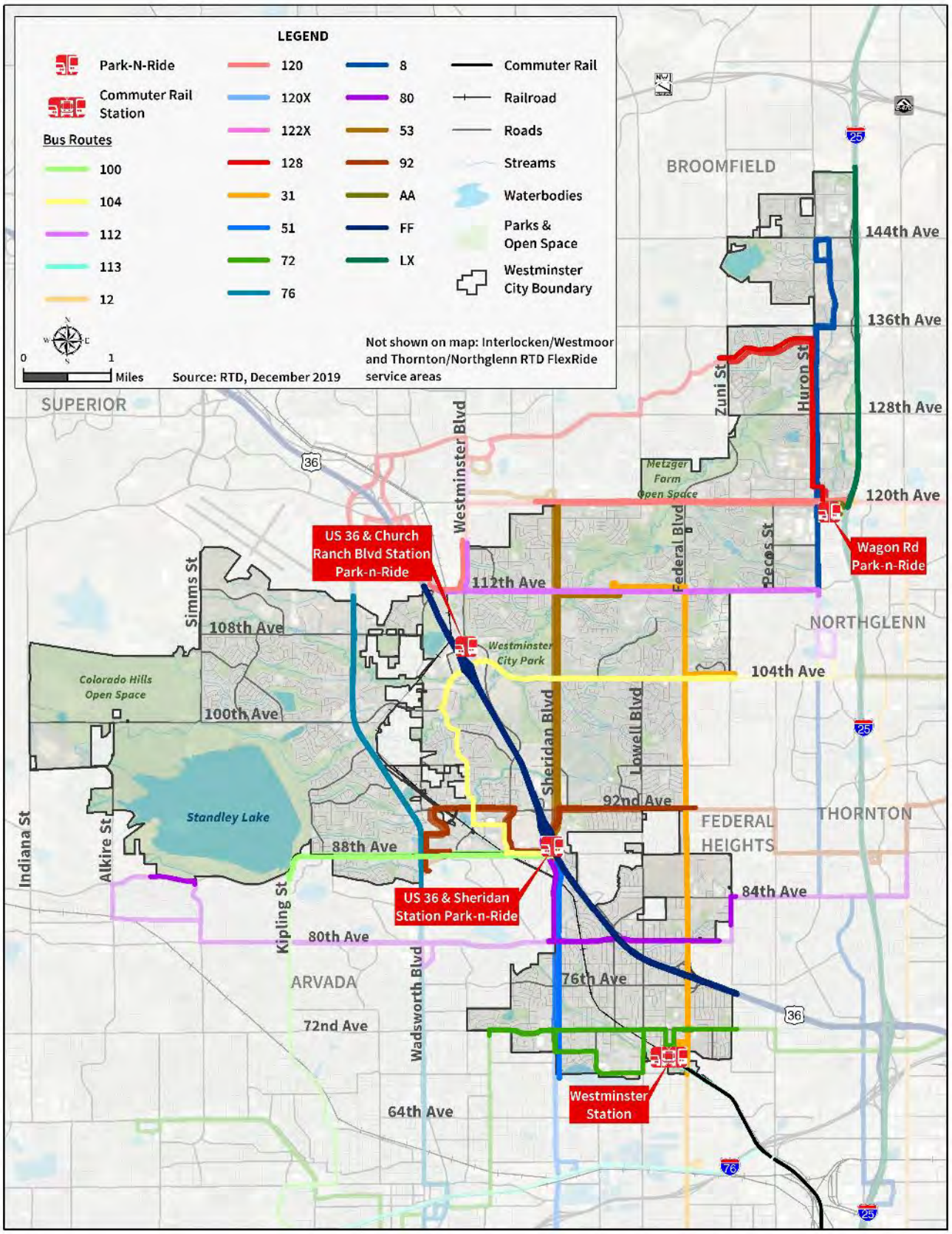
Transit service along streets and major highways in Westminster is provided by RTD. As shown on **Figure 23**, RTD operates 21 bus routes serving many neighborhoods and four Park-n-Rides in Westminster. Bus service in Westminster includes both express routes (along US 36 and I-25) and local and regional routes. Many of the regional routes connect Westminster with Denver and Boulder and other surrounding communities.

Passengers loading the Flatiron Flyer bus

## BUS RAPID TRANSIT

The Flatiron Flyer, a BRT service, opened in 2016 providing service between Denver, Westminster, Broomfield, Louisville, Superior, and Boulder along US 36. Two Flatiron Flyer stations serve Westminster: US 36 & Church Ranch, and US 36 & Sheridan. Five of the seven Flatiron Flyer routes benefit Westminster residents, running every 15 minutes all day. Since opening in 2016, ridership has continually increased for the entire Flatiron Flyer line, making it the third highest ridership bus line within the RTD system in 2017 (Source: RTD's 2017 Boardings Data).

FIGURE 23. RTD BUS AND RAIL SERVICE



## FLEXRIDE

RTD also provides FlexRide services in the Interlocken Westmoor area of Westminster and between the 144th Avenue and the Wagon Road Park-n-Ride. This service is open to the general public and provides reservation-based shared ride curb to curb bus service between transit stations, Park-n-Rides, and destinations such as shopping centers, businesses, and schools.

## ACCESS-A-RIDE AND HUMAN SERVICES

In addition to the local and BRT regional bus service, RTD provides Access-a-Ride services for people with disabilities. Programs in Jefferson and Adams Counties also provide transportation services for older adults and people with disabilities for trips such as to medical appointments or grocery shopping.

An Access-a-Ride vehicle at the Westminster Station


## RIDERSHIP

Average daily ridership for bus routes in Westminster vary depending on route type and what corridors and destinations they serve, with some stops serving more than 1,000 boardings and alightings per day, as shown on **Figure 24**.

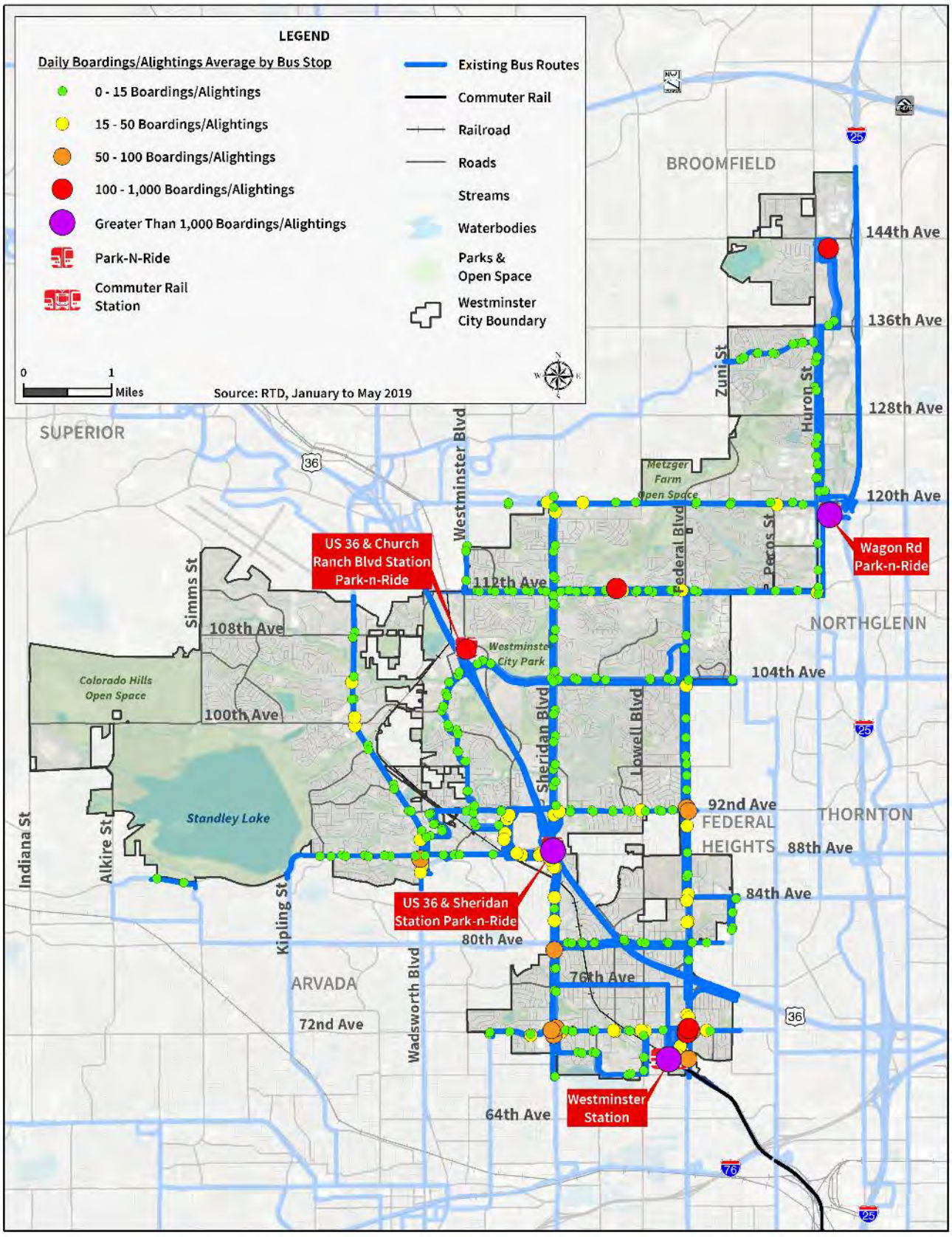
Bus stops and stations in Westminster with the highest average daily boardings and alightings include:

- Wagon Road Park-n-Ride
- US 36 & Sheridan Station Park-n-Ride
- Westminster Station
- US 36 & Church Ranch Boulevard Station Park-n-Ride
- Front Range Community College

## RAIL SERVICE

The B-Line commuter rail line transports riders between Westminster Station to Union Station in Denver, providing access to major employers, services, and other key destinations. At Union Station, the B-Line connects to C, E, G and W rail lines, the University of Colorado A-Line to the Denver International Airport, as well as local and regional bus routes. Between 2016 and 2017, the B-Line reduced travel time between Westminster and Denver from 34 to 12 minutes. Average daily ridership on the B Line ranges from 1,500 to 1,800 passengers per day.

FIGURE 24. DAILY BUS STOP AVERAGE BOARDINGS AND ALIGHTINGS



## TRANSIT FACILITIES AND PASSENGER AMENITIES

**Table 2** identifies the amenities at the Westminster Station, US 36 & Sheridan Station, US 36 & Church Ranch Station, and Wagon Road Park-n-Ride.

TABLE 2. TRANSIT AMENITIES AT STATIONS AND PARK-N-RIDES IN WESTMINSTER

| Amenities | US 36 & Church Ranch Blvd. | US 36 & Sheridan Station | Westminster Station | Wagon Road Park-n-Ride |
|---|---|---|---|---|
| Parking Spaces | 396 | 1,310 | 600 | 1,540 |
| Parking Utilization | 21% | 76% | 77% | 95% |
| Bike Racks | 6 | 31 | 18 | 10 |
| Bike Lockers | 6 | 21 | – | 20 |
| Bus Routes | FF1, FF3 | 51, 53, 80L, 92, 100, 104, FF1, FF3, FF5, FF6, FF7<br>BroncosRide, RunRide | 31, 72, 72W | 8, 12, 120, 120X, 122X, 128, AA<br>FlexRide |
| Rail Lines | — | — | B Line | — |

Source: RTD, https://www.rtd-denver.com/app/facilities, April 2020

### WESTMINSTER STATION

Westminster Station is an important regional mobility and economic development hub. The Westminster Station is located in the southern part of the Westminster and offers over 600 parking spaces, 20 bike lockers, and electric vehicle charging stations. Approximately 870 riders board and 855 riders alight the B-Line at this station daily, and there is an average of 65 daily boardings and 56 daily alightings for local bus service from this station. The area adjacent to this major regional transit hub has become a major development of housing, office, and retail land uses as part of the Westminster Station Transit Oriented Development. The City continues to collaborate with RTD to implement station area access and connection improvements.

### US 36 & SHERIDAN STATION AND PARK-N-RIDE

The US 36 & Sheridan Station and Park-n-Ride, served by over 500 buses a day including the Flatiron Flyer, continues to be an important regional transit stop in Westminster along the US 36 corridor, especially with the development of Downtown Westminster. An average of 2,005 bus riders board and 1,980 bus riders alight at this station. The station is adjacent to two highly utilized park-n-ride facilities, a pedestrian bridge over US 36, and is adjacent to the US 36 Bikeway. Through grant funding, the City will construct (beginning in 2021) a new underpass under Sheridan Boulevard between Downtown Westminster and the US 36 & Sheridan Station Park-n-Ride (west side, Denver-bound), to provide a safer and more direct

access for pedestrians and bicyclists to and from the station, Downtown Westminster and the US 36 Bikeway.

### BUS STOP CONDITIONS AND AMENITIES

There are over 300 bus stops in Westminster that vary in condition as well as the different types of passenger amenities including shelters, benches, and garbage receptacles. Shelters are installed and maintained through a contract with a vendor. Over the next year, the City will be conducting a citywide inventory of bus stop amenities and conditions to gain an overall understanding of bus stop conditions including access, quality, and amenities. This data will be used also help determine the funding and resources needed to improve stops.


A bicycle parked at a bike rack at Westminster Station

### FIRST AND LAST MILE

Travel to/from a transit stop or station is just as important as the transit trip. If transit riders are unable to access a stop or station due to poor infrastructure quality or missing connections, transit becomes ineffective. More communities, including Westminster, are focusing on ways to improve the first and final mile transportation options for transit users to ensure they can easily access stops and stations. RTD, in coordination with agencies and jurisdictions, including Westminster, developed a First and Last Mile Strategic Plan. Wagon Road Park-n-Ride, located in Westminster, was on the areas that was evaluated and identified in the plan for first and last mile improvements.

## BICYCLE AND PEDESTRIAN FACILITIES

As the City's population increases and growth continues, a variety of transportation options available including biking and walking will become increasingly important, particularly to connect to local neighborhood centers and services, transit, employment centers, recreational amenities, and support healthy transportation choices. Westminster's bicycle and pedestrian networks are part of the overall structure of the city and the region, which includes a significant network of shared-use bicycle and pedestrian trail facilities integrated into parks, open space, and urban development.

### REGIONAL ACTIVE TRANSPORTATION PLAN

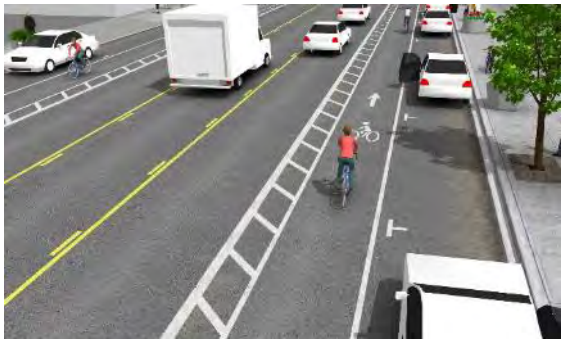
In 2019, DRCOG developed the metro area's first regional Active Transportation Plan. The Plan envisions a safe, comfortable, and connected network across the metro area, and highlights opportunities and implementation strategies to improve active transportation.

## ON-STREET BIKE ROUTES

The City of Westminster's network of on-street bicycle facilities is expanding. In 2010, Westminster did not have any on-street bicycle facilities. In 2011, the City developed a 2030 Bicycle Master Plan to identify citywide bicycle facility improvements and other associated programmatic actions. Through on-going implementation of the bicycle plan, Westminster currently has an on-street network comprised of 26 miles of bike lanes, 2.6 miles of buffered bike lanes, and 4.4 miles of shared lanes. As shown on **Figure 25**, the on-street network complements the over 150 miles of off-street network of trails.

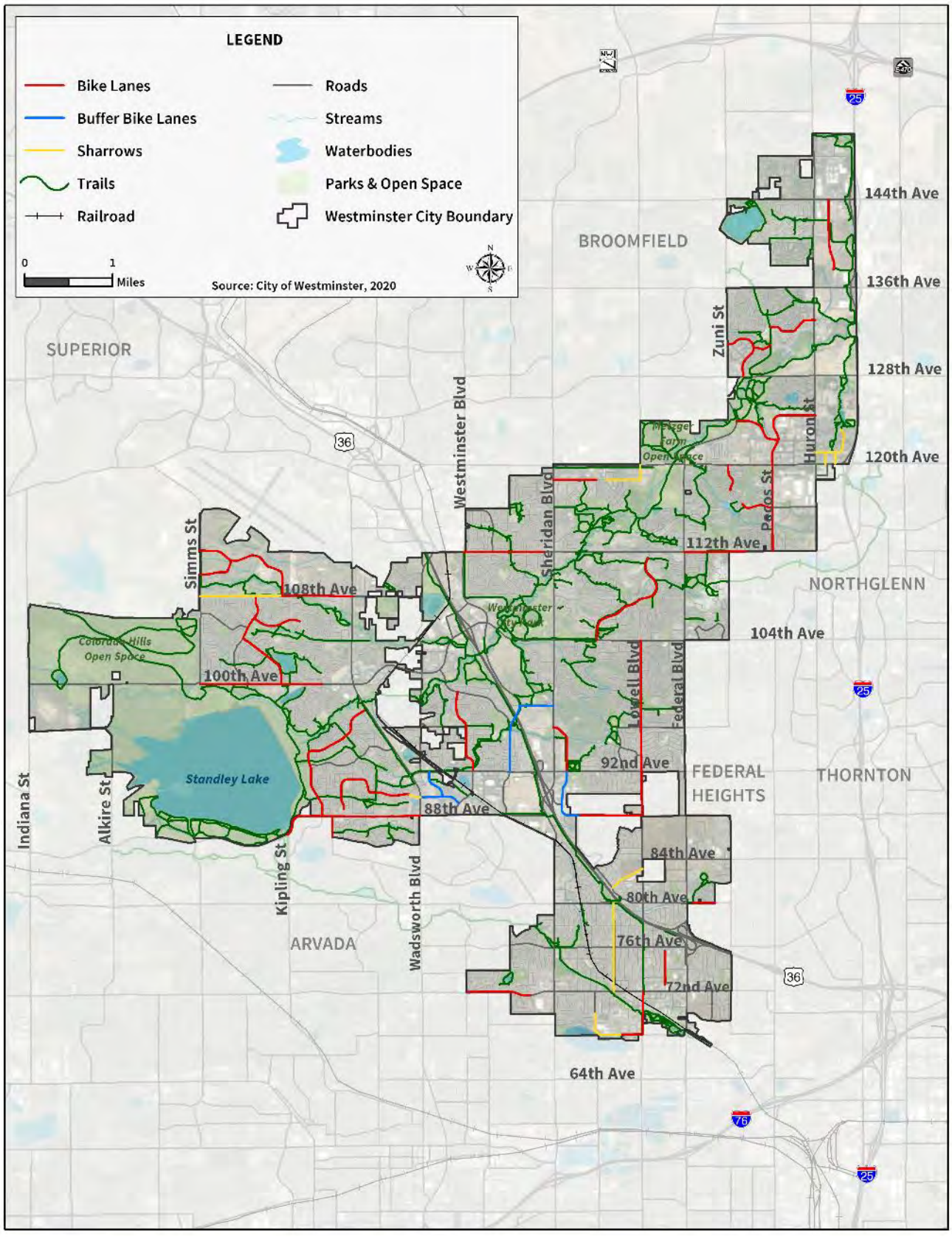
**Bike lanes** designate an exclusive space for bicyclists using pavement markings and signage. The bike lane is located adjacent to motor vehicle travel lanes and flows in the same direction as motor vehicle traffic. Bike lanes facilitate predictable behavior and movements between bicyclists and motorists.

**Buffered bike lanes** are conventional bicycle lanes paired with a designated buffer space separating the bicycle lane from the adjacent motor vehicle travel lane and/or parking lane. Buffered bike lanes provide greater distance between motor vehicles and bicyclists, which appeals to a wider cross-section of bicycle users.



**Shared lanes** are used by both automobiles and bicyclists and are typically delineated by shared lane markings (sometimes called sharrows) to indicate a shared environment for bicycles and automobiles. Shared lane markings send the message to drivers that they should expect bicyclists to be sharing this street with them. They also help bicyclists positions themselves in the street. Shared lane markings should be applied in situations where the difference in speed between bicyclist and motorist travel speeds is low, such as along local or collector streets.

FIGURE 25. ON-STREET BIKE ROUTES AND TRAILS



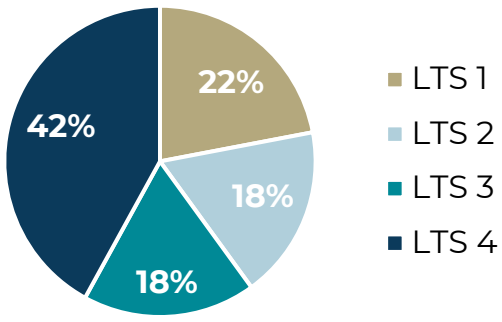
## LEVEL OF TRAFFIC STRESS FOR BICYCLES


Bicyclist riding in a buffered bike lane on Yates Street

To attract bicycle riders of a wide range of ages and abilities, a bicycle network needs to include safe, low-stress, and high-comfort facilities that limits the interaction with motor vehicles on streets. The bicycle Level of Traffic Stress (LTS) tool, developed by the Mineta Transportation Institute, assesses the comfort level associated with bicycling on different types of on-street bicycle facilities. The results of this tool help to identify potential areas of concern in a transportation network. Using street characteristics, including traffic speeds and volumes, number of lanes, and bike lane width (if applicable), the tool calculates a grade on a scale of 1 to 4, with each grade corresponding to the following levels of comfort:

- LTS 1: Little traffic stress; suitable for most all bicyclists, including children
- LTS 2: Minimal interaction with traffic; suitable for most adult bicyclists
- LTS 3: Exclusive riding zone or shared lane with low speeds; comfortable to many current bicyclists
- LTS 4: High traffic stress; only suitable for "strong and fearless" bicyclists

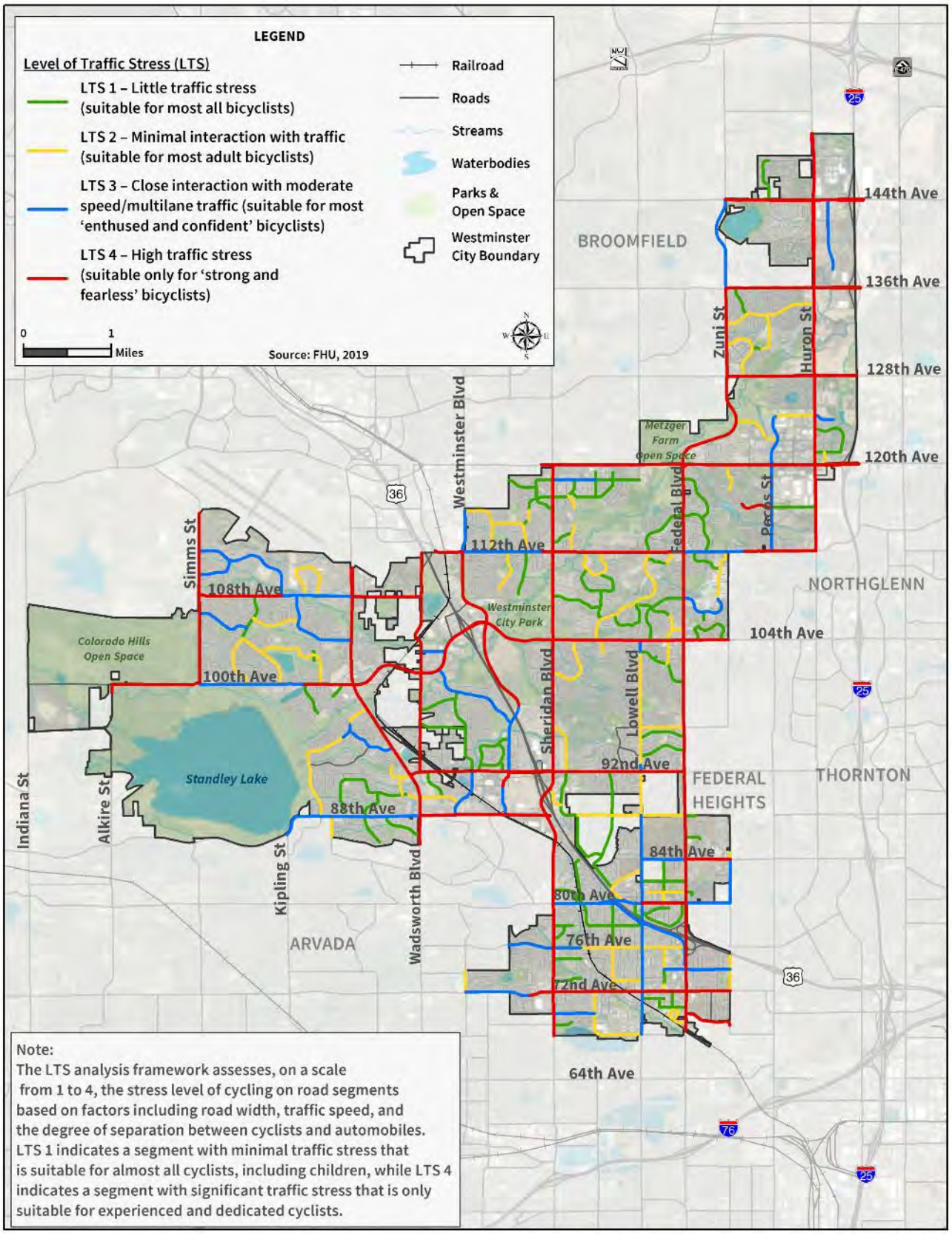
### FIGURE 26. LEVEL OF TRAFFIC STRESS ON WESTMINSTER'S STREETS




The LTS on streets in Westminster classified as collector, minor arterial, major arterial, and highway were analyzed, regardless of whether a bicycle facility currently exists. As shown on **Figure 26**, Westminster's street network currently includes 40 percent of LTS 1 and 2, 18 percent LTS 3, and 42 percent LTS 4 conditions. **Figure 27** maps the results of this analysis.

Many of Westminster's collector streets are comfortable for bicycling today, but these lower-stress facilities are intersected by a grid of arterials with speeds and/or volumes too high to provide comfortable bicycling conditions without separated facilities. A focus on intersection improvements at these arterial crossings would enhance connectivity. Many LTS 3 facilities in the south and west portions of Westminster represent an opportunity for expanding the low-stress network, as they would require less extensive improvements than the main arterials to become comfortable for bicycling.

FIGURE 27. LEVEL OF TRAFFIC STRESS FOR BICYCLING



## TRAIL NETWORK

The City of Westminster has a robust network of local and regional off-street trail facilities, totaling over 150 miles. These trails provide connections to local and regional parks and open space, neighborhoods, transit, and other city amenities such as recreation centers. The trail system also includes bike repair stations as well as an expanding wayfinding sign program. The Big Dry Creek Trail, for example, provides an off-street connection under US 36 connecting the southern neighborhoods of Westminster to the northern neighborhoods of Westminster. The US 36 Bikeway is major regional trail facility, providing connections between Westminster and other communities along the US 36 corridor. Connectivity along the Westminster's trail network includes 40 underpasses that provide safer arterial crossings, and wide sidewalks and landscaped areas providing space between trail users and vehicular traffic. **Figure 25** shows the trail network. More details about the trail network are available on the City website, in the Parks, Recreation & Libraries Plan (currently under development) and the Open Space Stewardship Plan.

A walker and biker using an unpaved trail at Standley Lake

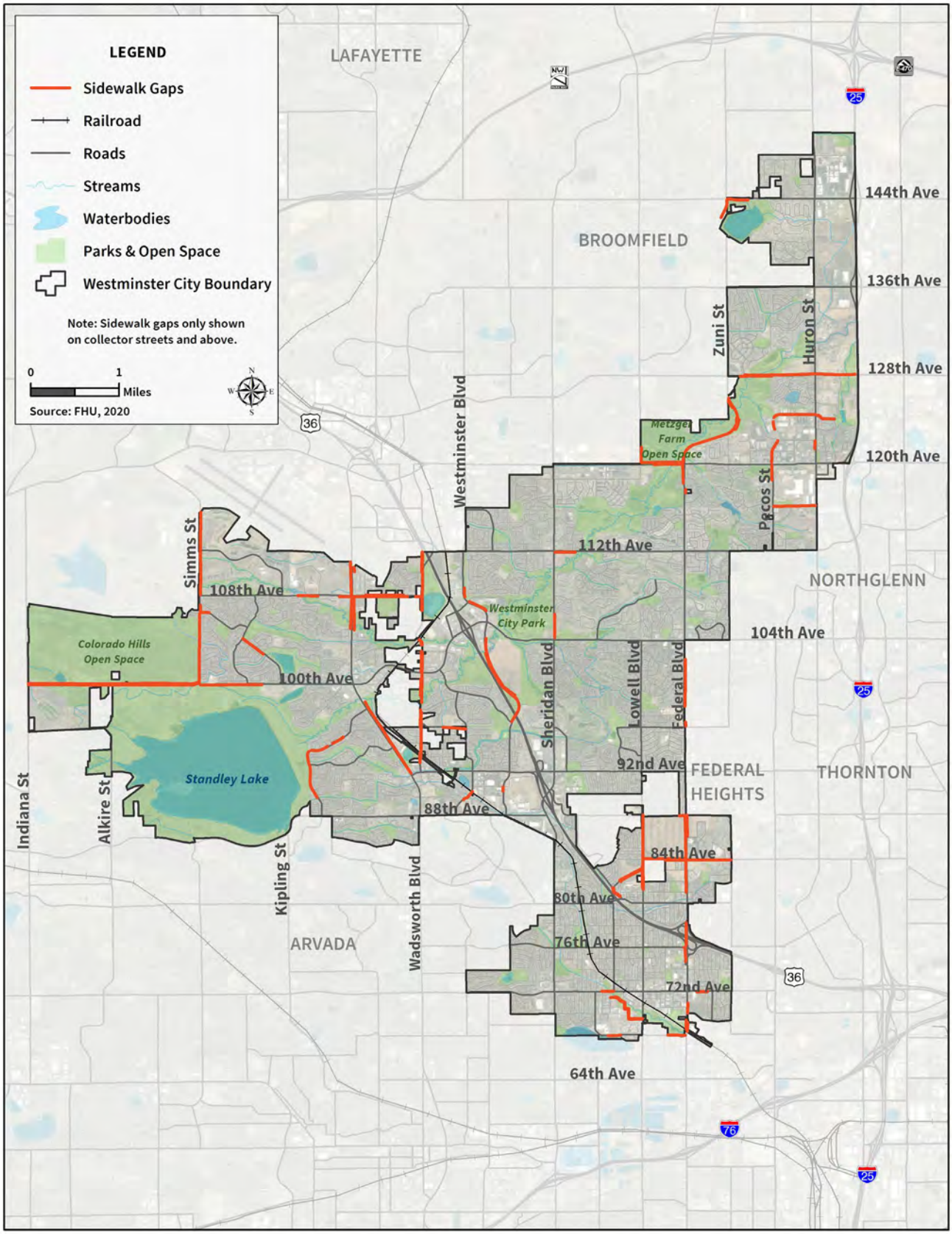
## SIDEWALK GAPS

Approximately 92 percent of collector and arterial streets in Westminster have sidewalks. While sidewalks exist on the majority of streets, many do not meet current standards. Sidewalks in poor conditions or that do not meet standards can limit the ease of mobility of pedestrians and bicyclists, including persons with disabilities. **Figure 28** highlights those streets with missing sidewalks. Examples of sidewalk deficiencies include:

Damaged crosswalk and sidewalk

- Gaps in the sidewalk
- Missing accessible curb ramps at street crossings
- Poor sidewalk condition
- Missing or inadequate crossings
- Narrow widths

FIGURE 28. SIDEWALK GAPS



# TRANSPORTATION DEMAND MANAGEMENT

Transportation Demand Management (TDM) refers to strategies, policies, and programs that help people use the transportation system more efficiently, while reducing traffic congestion, vehicle emissions, and fuel consumption. By providing other transportation options and amenities, TDM can encourage the use of other modes of transportation than single-occupant vehicles. The City continues to build internal and external TDM programs. Local and regional TDM efforts underway include:

## EXAMPLES OF TDM STRATEGIES

- Discounted/subsidized transit passes
- Carpool incentives and benefits
- Bicycle racks
- Alternative work schedules/telework options
- On-site showers/changing facilities for walking/biking commuters

- In 2016, the City developed a Transportation Demand Management Plan for the Downtown area (2016) and is currently in the early stages of implementation. The plan includes strategies, policies, and programs such as transit passes and parking management programs
- The City's Comprehensive Plan (currently being updated) includes design requirements for transit-oriented development (TOD) areas to create bike and pedestrian friendly environments and encourage biking and walking. Some design requirements include visually attractive building facades, shade features, bike racks and lockers, and bike lanes.
- The DRCOG partners with cities in the region and provides TDM tools through its s Way to Go program. Way to Go provides reliable, easy, and environmentally friendly commuting options to Denver area commuters. Way to Go offers employer services, carpool, vanpool and Schoolpool programs, Guaranteed Ride Home, and annual programs, including Bike to Work Day and Go-Tober.
- Two Transportation Management Associations (TMAs) serve areas including Westminster: Commuting Solutions (US 36 Corridor) and Smart Commute Metro North (North I-25 Corridor). Current programs offered by both TMAs include TDM strategies such as:
  - Free/subsidized transit passes
  - Carpool and vanpool incentives
  - Interactive biking and walking map applications
  - Employer incentives such as the telework program
  - Advocacy and education to encourage sustainable commuting

# PARKING

Different parking options are available throughout Westminster including on-street parking and private and public off-street parking (garages and open lots). The City manages 600 on-street parking spaces and over 1,900 off-street spaces as shown in **Table 3**.

TABLE 3. CITY MANAGED PARKING SUMMARY

| Location | On-Street Spaces | Off-Street Spaces |
|---|---|---|
| Downtown Westminster Area | 500 parking spaces | 1,300 parking spaces (incudes the garage and off-street surface parking lots) |
| Westminster Station TOD Area | 100 parking spaces | 631 parking spaces (350 are RTD transit spaces) |
| **Total** | **600 parking spaces** | **1,931 parking spaces** |

Westminster exercised forward-thinking in developing a Downtown & Station TOD Parking Plan with a goal to minimize surface parking lots and reduce parking requirements. The Downtown & Station TOD Parking Plan recommended establishing a public parking strategy to regulate parking for the redevelopment area. The Downtown & Station TOD Parking Plan sets minimum thresholds for parking by land use within Downtown that are much lower than in other areas of the city, capitalizing on shared parking between uses.

The City manages a Residential Permit Program for several areas near high schools that experience increased parking demand. The City Clerk is authorized to issue parking permits to allow on-street parking by residents along blocks designated by the traffic engineer as restricted parking areas. Restricted parking areas are defined as those blocks within one-half mile of the closest property line of a senior high school. To qualify for "restricted area" designation residents must submit a written petition by the owners or residents of approximately two-thirds of the lots with frontage on the block. Currently, there are two existing and one upcoming restricted parking areas:

- Standley Lake High School
- Pomona High School
- Hidden Lake High School (Approved – implementation in progress)

## PARKING MANAGEMENT DURING MAJOR EVENTS

Westminster implements off-site parking management, with assistance from a contracted parking management company, for large events such as the Halloween Harvest Festival, which attracts over 40,000 people to Downtown Westminster. During the event, the City partners with Front Range Community College to provide shuttles between the event and three off-site locations. Additionally, free bike valet is provided, as well as designated Uber and Lyft drop-off zones.

## ELECTRIC VEHICLE CHARGING STATIONS

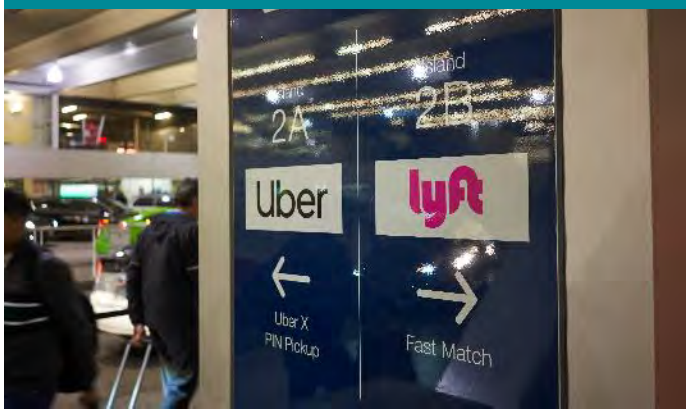
Alternative fuel vehicles, including electric vehicles, are becoming more common due to US Environmental Protection Agency (EPA) provisions designed to reduce US dependence on petroleum by accelerating the introduction of alternative fuel vehicles. In 2019, Colorado Governor Jared Polis signed an executive order to support the Colorado's transition to zero emission vehicles.

Electric vehicle charging at Westminster City Hall

To support and incentivize electric vehicles adoption, Westminster continues to seek resources and evaluate expansion of the implementation of electric vehicle charging stations throughout the city. To date, the City has received a number of grants to install charging stations throughout Westminster including in the Westminster Station Parking Garage, City Hall, Downtown Westminster Parking Garage and the Municipal Service Center. Existing charging stations are also located throughout Westminster including at shopping centers, and the Adams County Human Services Center. A current map of all charging stations in Westminster is shown in **Figure 29**. Westminster will continue to evaluate the expansion of vehicle charging stations throughout the city, including the potential use of public-private partnerships. The City is also currently evaluating options for City fleet electrification and the infrastructure required to support the transition to an electric fleet.

## MOBILITY AS A SERVICE

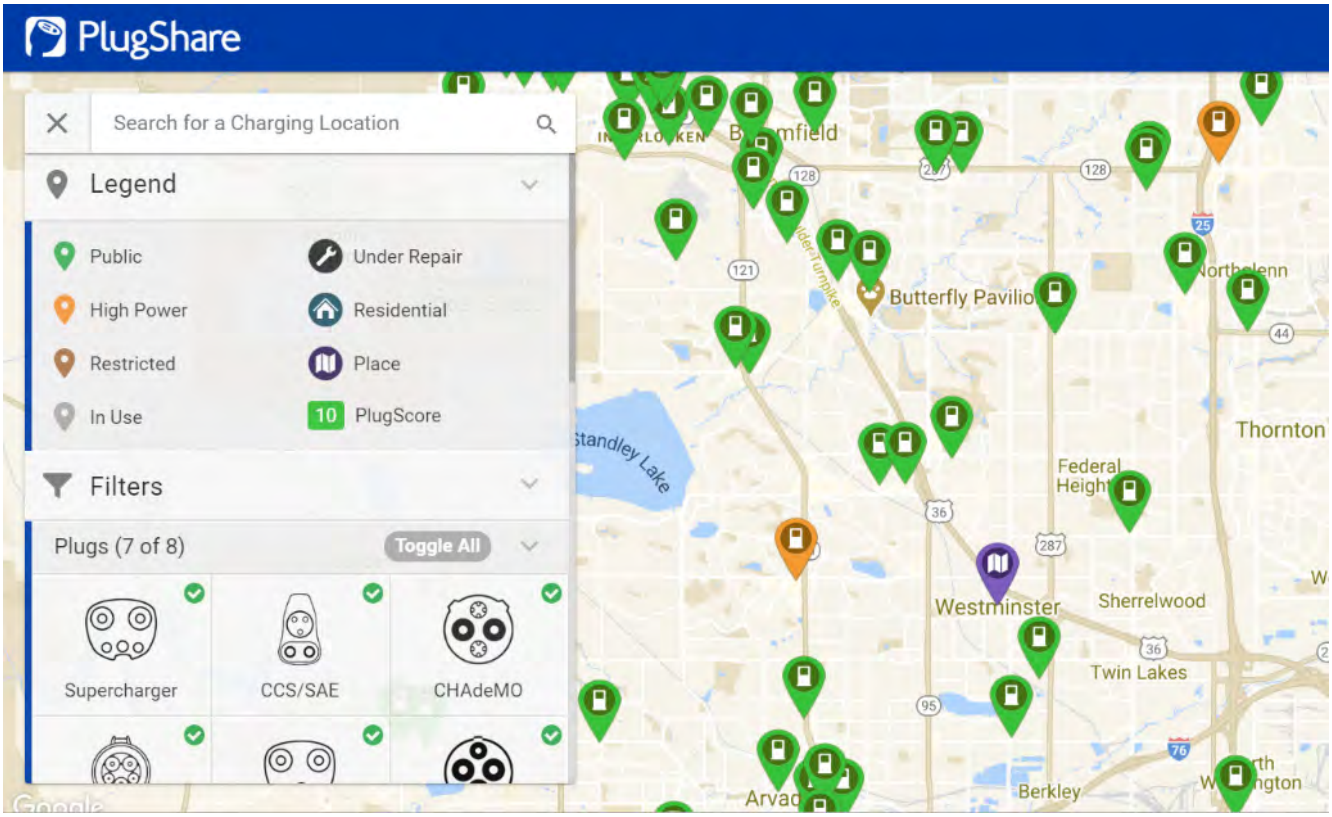
Example of a ride sourcing pick-up area




The ability to easily schedule and coordinate trips via carpooling, transit, taxi, ride sourcing (e.g., Uber or Lyft), car share, bike share, and other modes is rapidly changing the way people travel, which may result in a decrease in dependency on single occupancy vehicles and auto ownership. All these types of modes of transportation, except bike share, are present in Westminster. These services present challenges in safety as well as right-of-way, curbside, and sidewalk uses which many cities are managing through the development of policies, infrastructure improvements, and administrative solutions. Currently, the City has limited curbside management policies, including those for dockless mobility (e.g., scooters). Because these

services vary in levels of access, mobility, and costs and require different right-of-way and curbside uses, the City will evaluate this further during the development of TMP.

FIGURE 29. CHARGING STATION LOCATIONS IN WESTMINSTER




*Source: [www.PlugShare.com](http://www.PlugShare.com), April 2020.*

## INTELLIGENT TRANSPORTATION SYSTEMS

Intelligent Transportation Systems (ITS) include a wide range of technology and applications that process and share information to improve travel safety, traffic management, ease congestion, minimize environmental impact, and increase mobility. ITS improves transportation systems operations and maintenance by helping to provide timely and accurate information to operators and allow remote and automated control. Robust and reliable traffic infrastructure (e.g., traffic signal controllers, detection, communications devices) equates to safer and more efficient field operations and better overall operations. ITS tools can also be used to provide more timely information to transportation users.

Currently, the City has three staff – a transportation engineer, a transportation system coordinator, and a traffic signal technician – responsible for the continuous maintenance, operations, and expansion of the traffic and ITS infrastructure. In addition to traffic maintenance and operations and ITS duties, these staff have other roles and responsibilities, such as street lighting and design (including markings and signage). A contractor is also utilized to assist with maintenance of the traffic signal system.

# FUTURE CONDITIONS

## TRAVEL DEMAND FORECASTS

New development at Orchard Parkway and 144th Avenue

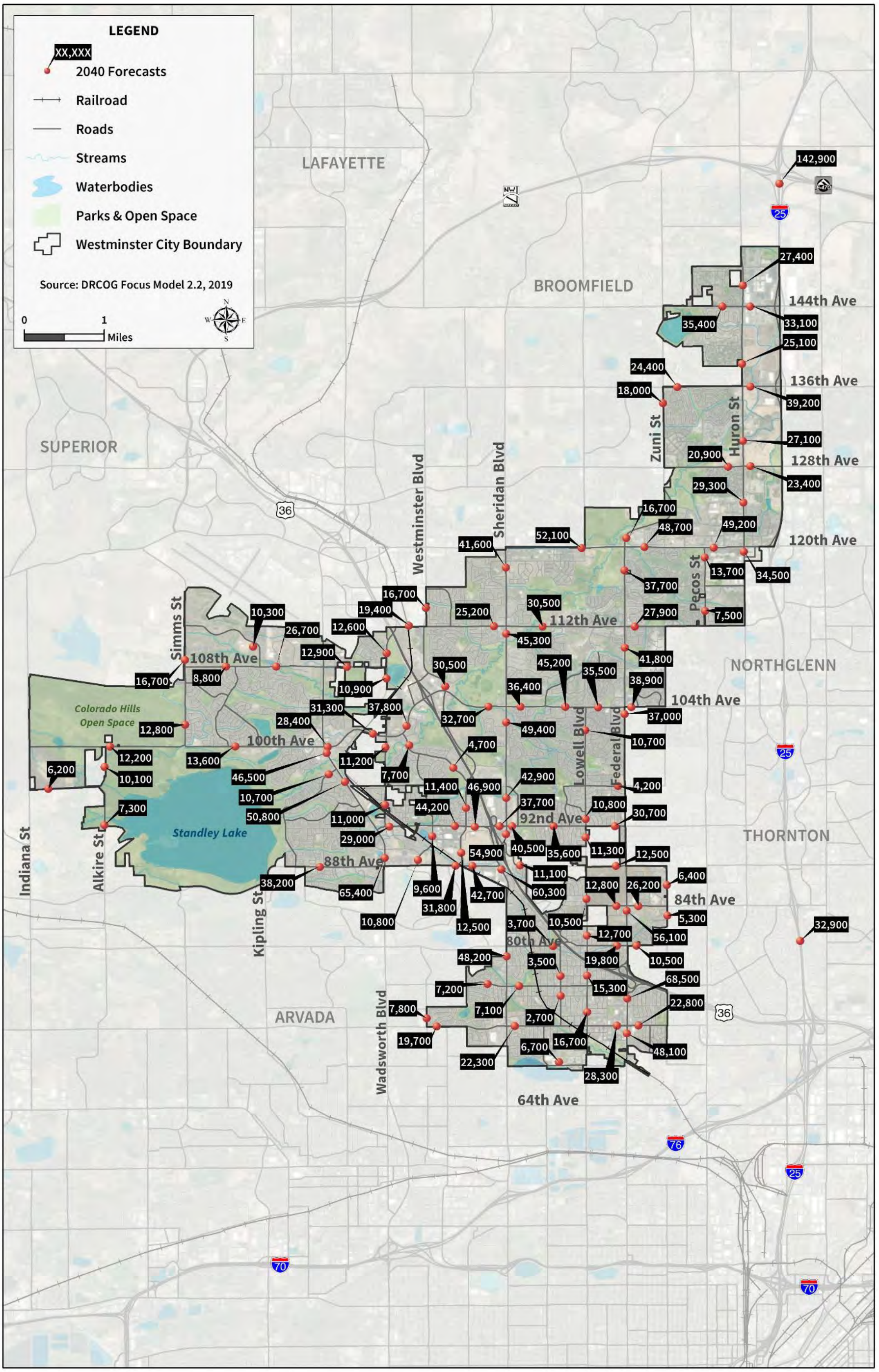
As Westminster and the region experience residential and employment growth over the next 20 years, traffic volumes are expected to increase. The analysis of future travel in Westminster is based on the DRCOG 2040 regional travel demand model. This computerized regional model accounts for anticipated growth of the seven-county Denver Metro Region and associated cities. Demographic data, including household and employment estimates and forecasts, form the basis for travel demand forecasting. The future travel demand patterns in Westminster and the metro region are based on the population and employment opportunities in the area and multimodal transportation infrastructure available for travel in the region. The DRCOG model includes those transportation projects that are expected to be funded and built by 2040. Westminster and other communities within the DRCOG region provide project updates to DRCOG to ensure the model reflects changes such as land use, funded projects, and street reconfigurations within the community.

The DRCOG model was used to develop a 2020 and 2040 refined street network within the City of Westminster to help inform the development of TMP recommendations and projects in the upcoming tasks. These refinements create baseline existing and future street networks that are used in conjunction with the employment and population growth described previously. To develop baseline travel demand forecasts for Westminster, several projects from the DRCOG 2040 fiscally constrained model were removed due to uncertainty of local funding, including: Jefferson Parkway, widening on Wadsworth Parkway, and widening on Sheridan Boulevard within the City of Westminster. Other projects were retained in the baseline 2040 model including the addition of managed lanes on I-25, widening on Huron Street, and widening of Sheridan Boulevard outside of the City of Westminster.

### 2040 DAILY TRAFFIC FORECASTS

The 2040 traffic forecasts that result from the future baseline street network and the household and employment growth previously described are shown on **Figure 30**. The model volumes have been post-processed using the methodology described in the *National Cooperative Highway Research Program Report 765* (NCHRP Report 765). This methodology compares current year model (2020) to the actual traffic counts and applies the relative difference to the forecasted 2040 traffic volume.

FIGURE 30. 2040 DAILY TRAFFIC FORECASTS



## 2040 VOLUME TO CAPACITY RATIOS

As traffic volumes increase over time, the street network in Westminster will experience more congestion. The 2040 V/C ratios are shown on **Figure 31**. The future street network experiences much higher demand and the volume to capacity ratios will reflect the congestion and impacts to traffic operations. By 2040, 49 miles (approximately 68 percent) of the arterial streets in Westminster are anticipated to operate with some congestion (V/C greater than 1.0). By 2040, Wadsworth Boulevard, 120th Avenue, Sheridan Boulevard, and Federal Boulevard are expected to experience even greater demand and most segments show that they will be over capacity. The congestion is expected to expand onto streets like 104th Avenue and 112th Avenue which are currently not experiencing congestion. Street segments that are over capacity may indicate a need for operational or capacity improvements, or increased investment in other modes such as transit.

Arterial streets in Westminster identified to have excess capacity are anticipated to remain under capacity in 2040. These street segments represent a potential opportunity for repurposing to better accommodate alternative travel modes such as bicycling, walking, and transit.

## 2040 SHORT TRIP ANALYSIS

The 2040 DRCOG model was used to identify corridors with high volumes of short trips, as shown on **Figure 32**. Corridors with high volumes of short trips (3 miles or less) represent potential for converting trips to bicycle trips, and corridors with high volumes of very short trips (1 mile or less) represent potential for converting trips to walking trips.

A commuting cyclist riding on the Little Dry Creek Trail near the Westminster Station

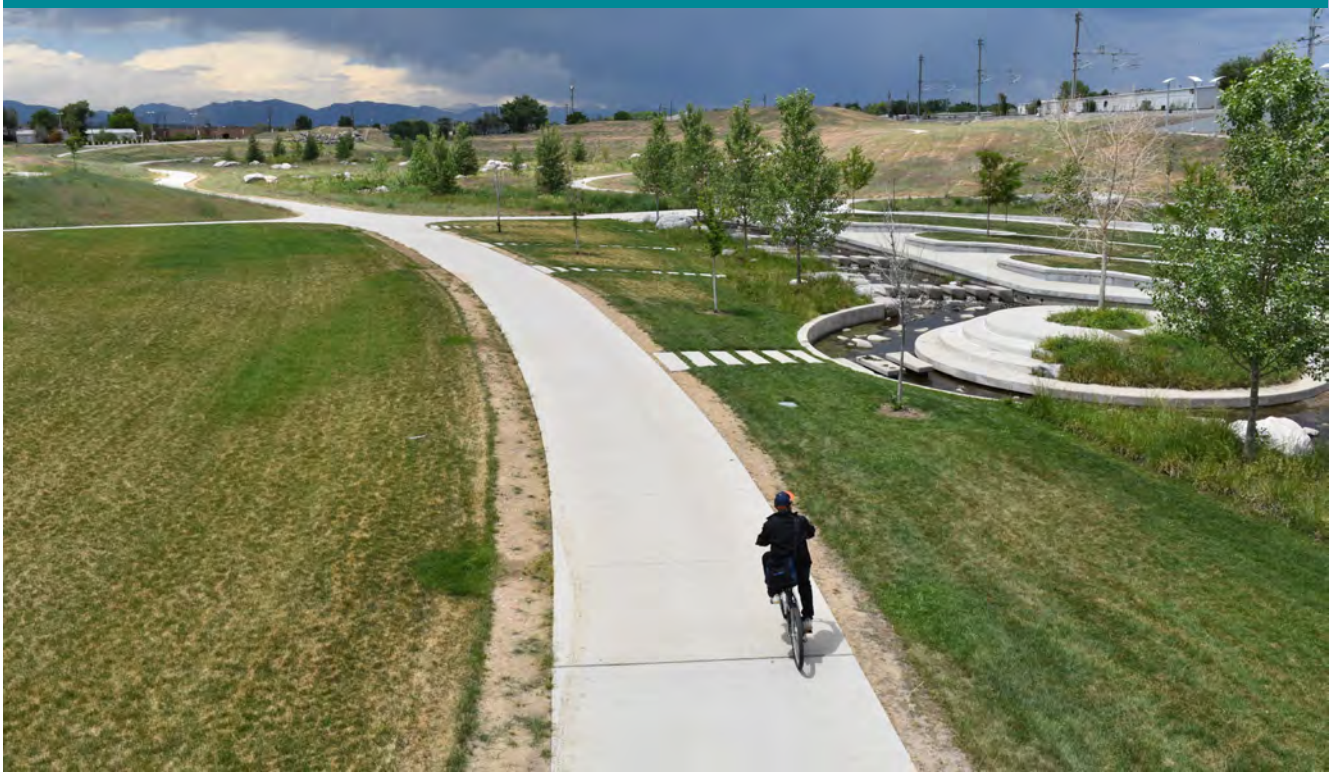


FIGURE 31. 2040 VOLUME TO CAPACITY RATIOS

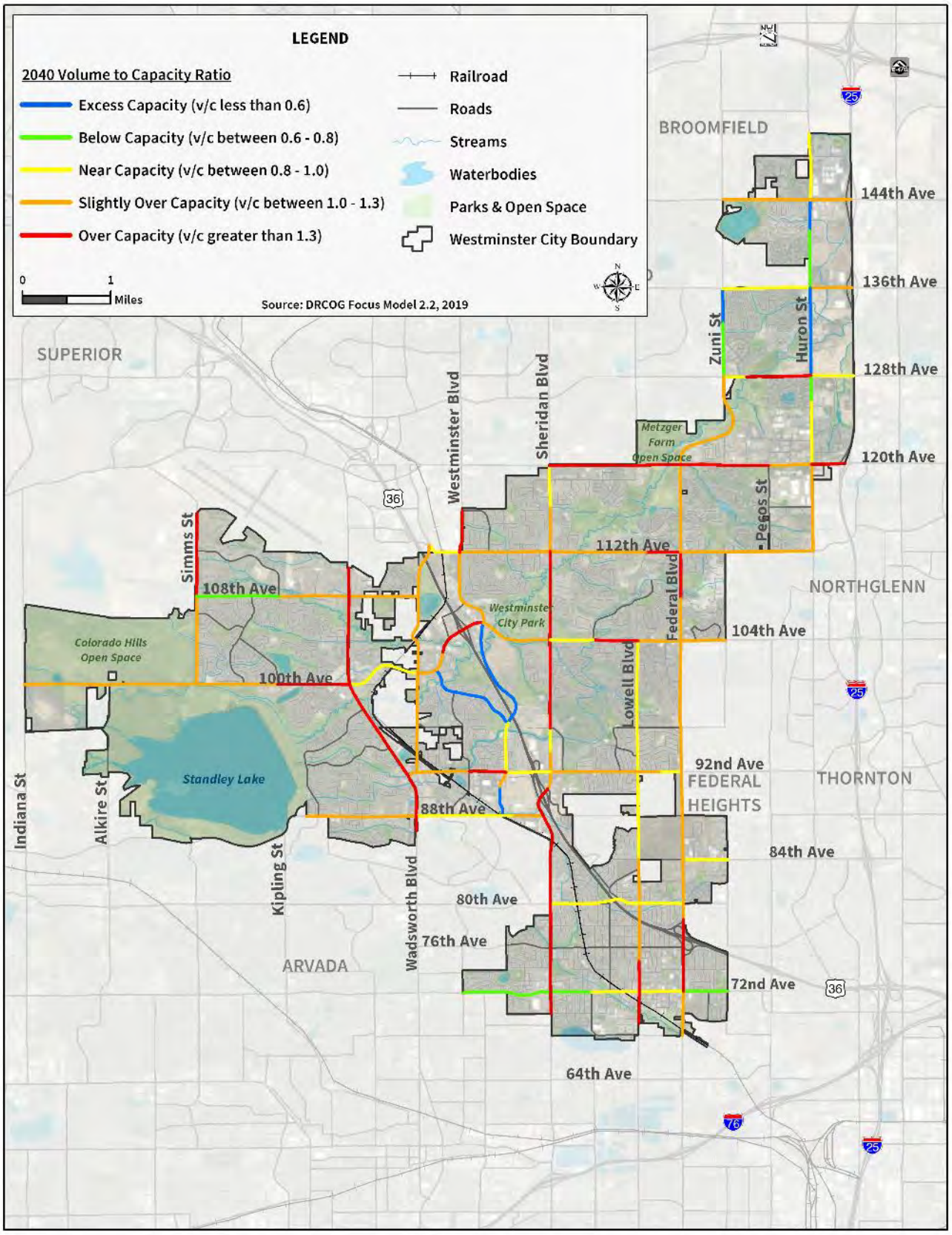
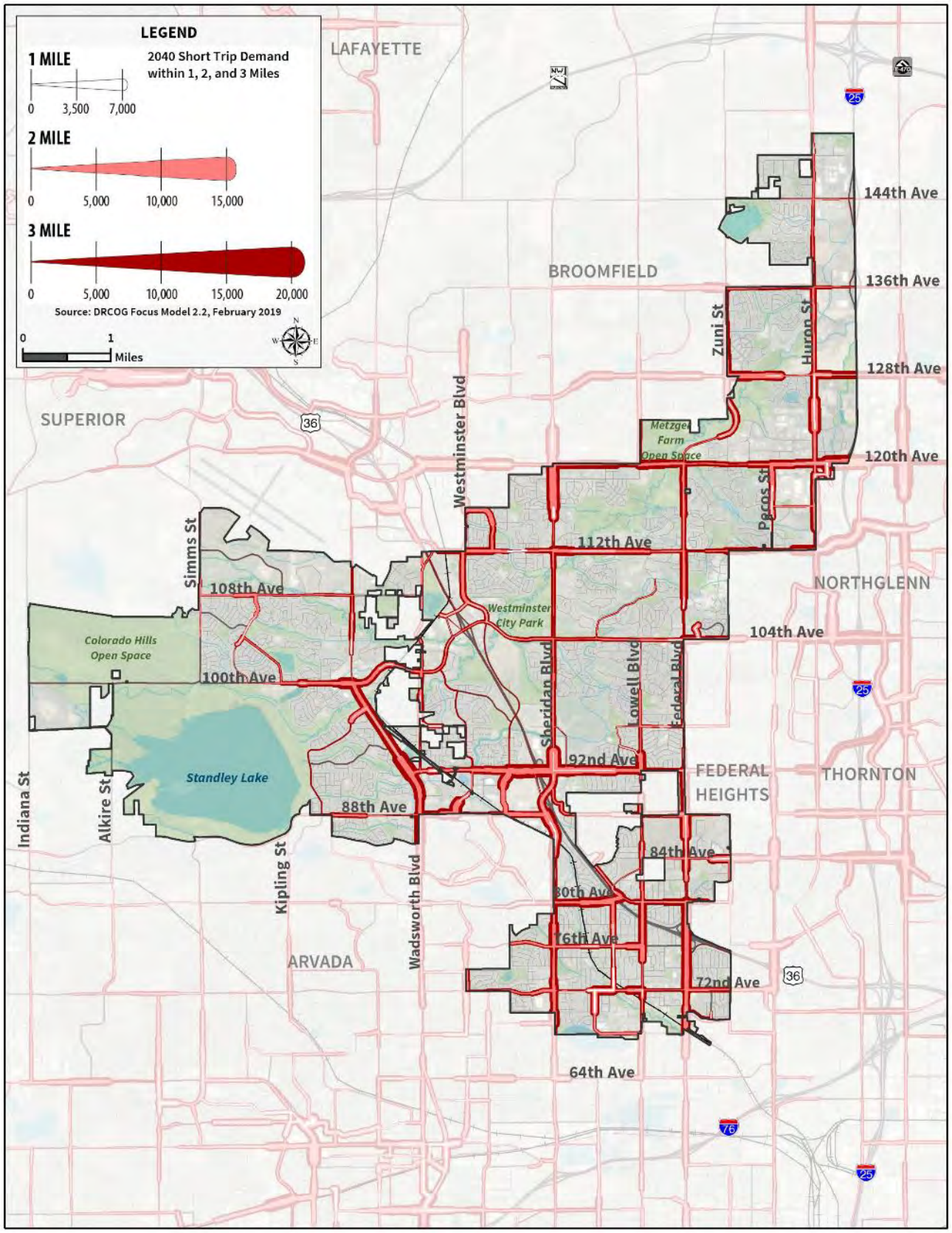


FIGURE 32. 2040 SHORT TRIP ANALYSIS



# INNOVATION & THE EVOLUTION OF TRANSPORTATION

New transportation technologies are advancing quickly, with technological innovations in vehicles, along the transportation network, and interactions between the two. Some advanced technologies are already seeing widespread implementation to improve safety and traffic flow in the Denver Metro Region. Although the specific forms and timing of emerging transportation technologies will vary and cannot be predicted with certainty, innovations with the potential to dramatically influence transportation are certainly on the horizon. It is important for jurisdictions to evaluate how technologies best serve their community as well as prepare for emerging technologies through development of policies, programs, and infrastructure.

## INNOVATION IN WESTMINSTER

The City strives to be innovative and prioritizes projects that focus on sustainable innovation. Sustainable innovation in the city balances viability, feasibility, and desirability. The City has established dedicated staff and internal committees, including Smart City and Future Technologies, to support the evaluation, creation and implementation of innovative programs that are sustainable and provide a strong return on investment.

One example of the City practicing sustainable innovation is using Capital Improvement Plan (CIP) funds annually to proactively replace structurally compromised traffic signal poles that show signs of heavy metal loss or metal fatigue. The program began after staff noted the costly emergency replacement of poles was occurring at a rate of 2 to 3 poles a year. The new signal pole and mast arm replacement program replaces about 15 to 20 poles a year, and after five years, 104 poles (66 percent) in the city have been replaced. The City anticipates the remaining 54 poles will be replaced by 2023.

## INTELLIGENT TRANSPORTATION SYSTEMS

The City operates and maintains over 100 traffic signals through a number of software systems. The Colorado Department of Transportation (CDOT) operates and maintains traffic signals along Federal Boulevard, 120th Avenue, and Wadsworth Parkway. Approximately 90 percent of the city-owned traffic signals are “on-system”, meaning the field controllers are remotely connected to the central traffic signal system via a mix of fiber and wireless communications. The City anticipates that all traffic signals will be on-system and connected by the end of 2020. The City adjusts traffic signal timing along major corridors as needed, but primarily in coordination with DRCOG’s regional signal timing coordination program. As technology advances allowing signals to respond to real time traffic conditions and communicate with other systems, there is a need to upgrade the City’s hardware and software.

### 2030 MOBILITY CHOICE BLUEPRINT

The Metro Denver Region developed the 2030 Mobility Choice Blueprint to help communities identify how best to prepare for and invest in the rapidly changing technology that is revolutionizing transportation mobility. One objective is to connect transportation systems and vehicles with smart technologies to improve safety and operations. Learn more here.

## MOBILITY AS A SERVICE

New trends in transportation are helping to increase mobility options and creating a shift in reliance on personal vehicles. Mobility as a service has grown as easy-to-schedule trips through services such as ride-sourcing services (e.g., Uber, Lyft, taxi), bike share, car share, transit, and carpooling, have increased in popularity. The ride-sourcing industry has especially grown rapidly in the past decade and is anticipated to continue to advance and play an increasingly larger role in mobility in the future. The City has limited curbside management policies and because of the variation in level of access, costs, and right-of-way requirements for mobility technologies, the City will evaluate this further during the development of the TMP.

## DOCKLESS/DOCKED MOBILITY (MICROMOBILITY)

Scooters parked in downtown Denver
*(Photo credit: Downtown Denver Partnership)*

More cities throughout the nation, as well as in the Denver Metro region, are allowing bicycle and scooter rentals (sometimes referred to as docked/dockless mobility or micromobility) to operate within their communities to offer residents, commuters, and visitors with additional flexible and affordable ways to travel to their destinations. These mobility options consist of small human- or electric-powered vehicles, including bikes, e-bikes, and e-scooters commonly deployed by independent operators as a shared-use fleet. Bicycle and scooter rentals can be both "docked" at a station where the vehicle can be rented and returned, or "dockless" where riders can rent a vehicle where it is currently parked and then park their vehicle at their destination. Riders can use a smartphone app or other technology to locate and rent a nearby bike or scooter.

This new mobility service can benefit the community by offering another transportation option; however, it must be strategically managed. As communities have begun to see an increase in technology and dockless/docked mobility devices, there is a need to coordinate with the region and modify regulatory frameworks to thoughtfully integrate dockless/docked mobility into the existing transportation system. Through the development and implementation of the Transportation & Mobility Plan, Westminster will begin to evaluate how docked/dockless mobility can be potentially effectively and safely integrated into Westminster's transportation system and land uses, including identification of resources and policies required to manage dockless/docked mobility.

# SUMMARY AND NEXT STEPS

The information presented in this report summarizes the overall understanding about Westminster's population and baseline existing and future conditions of Westminster's transportation network, including operations and services. The development of recommendations and actions for the TMP will be based on the evaluation of these conditions and additional data, community input, and industry best practices. These baseline conditions will also be used to development metrics to measure the implementation of the TMP.