



CURRENT AND FUTURE CONDITIONS REPORT

Northwest Aurora Mobility Study

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Introduction

The city of Aurora’s Northwest (NW) Aurora Mobility Study will evaluate the operational effectiveness of existing traffic control devices, as well as current and potential future multimodal connections. The study will analyze the transportation patterns of all modes to identify opportunities to enhance multimodal connectivity, increase public safety, and improve traffic operations.

Project Goals

The purpose of the NW Aurora Mobility Study is to improve mobility for all people in the neighborhood, including bicyclists, pedestrians, wheelchair users, strollers, skateboarders, drivers, and transit riders. Mobility is simply the ability to move freely and easily.

The project goals are to:

- ◆ Understand existing travel patterns for all users, including bicyclists, pedestrians, drivers, and transit riders.
- ◆ Evaluate the effectiveness of existing stop signs and traffic signals.
- ◆ Evaluate current and potential multimodal connections between the major activity centers in and near the study area, including school walking routes.
- ◆ Identify short-term and mid-term improvements to enhance the safety and quality of life in the neighborhood.
- ◆ Develop conceptual design and cost estimates for the recommended improvements.

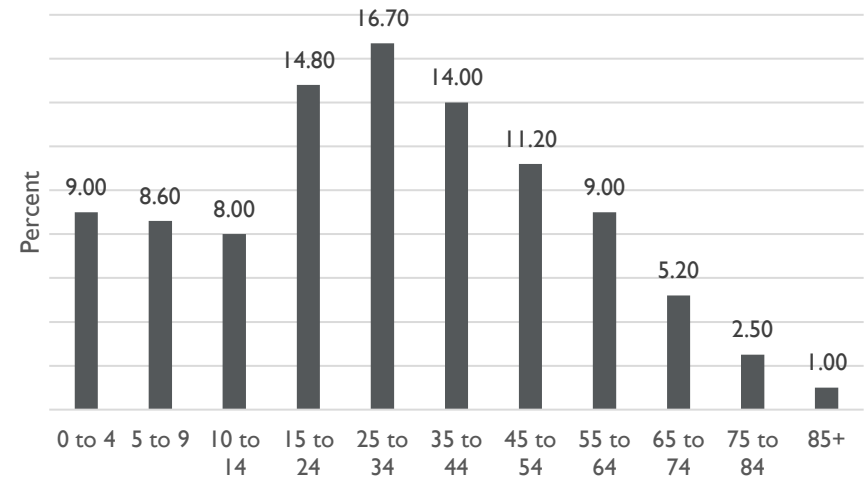
Study Area

The study area is bordered by Yosemite Street to the west, Peoria Street to the east, 26th Avenue to the north, and Montview Boulevard to the south, as shown on **Figure 1**. The neighborhood is built on a strong grid network but has long been physically disconnected from the surrounding areas to the west and north, originally due to the proximity of the Stapleton International Airport. This study will consider multimodal connectivity within the neighborhood, as well as to adjacent neighborhoods and locations adjacent to the study area.

Demographics

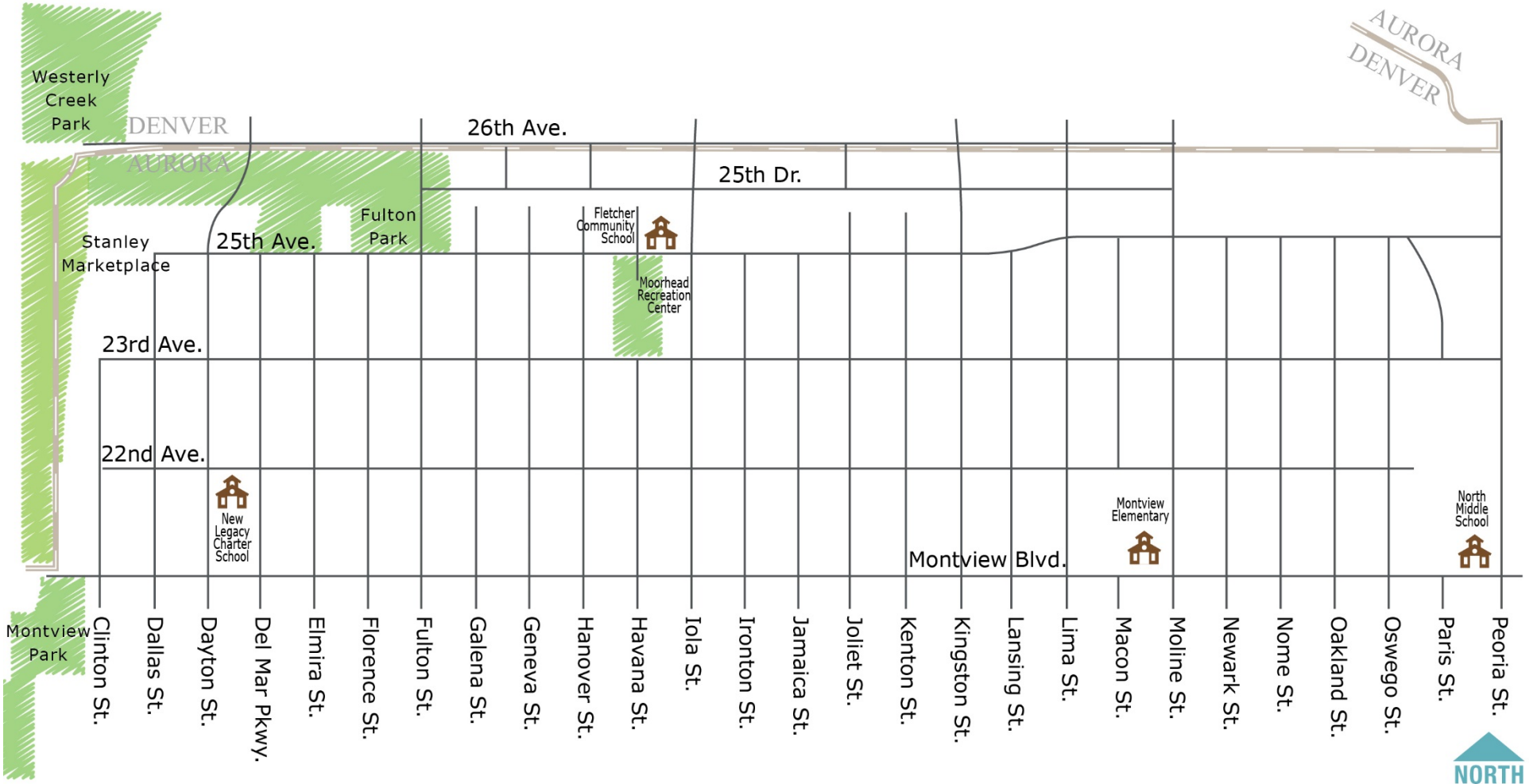
NW Aurora is a diverse neighborhood of approximately 5,800 residents. Approximately 40 percent of residents are 24 years old or younger. Approximately 9 percent of the residents are 65 years old or older. The median age of residents is 30.8 years.

2017 Study Area Population by Age



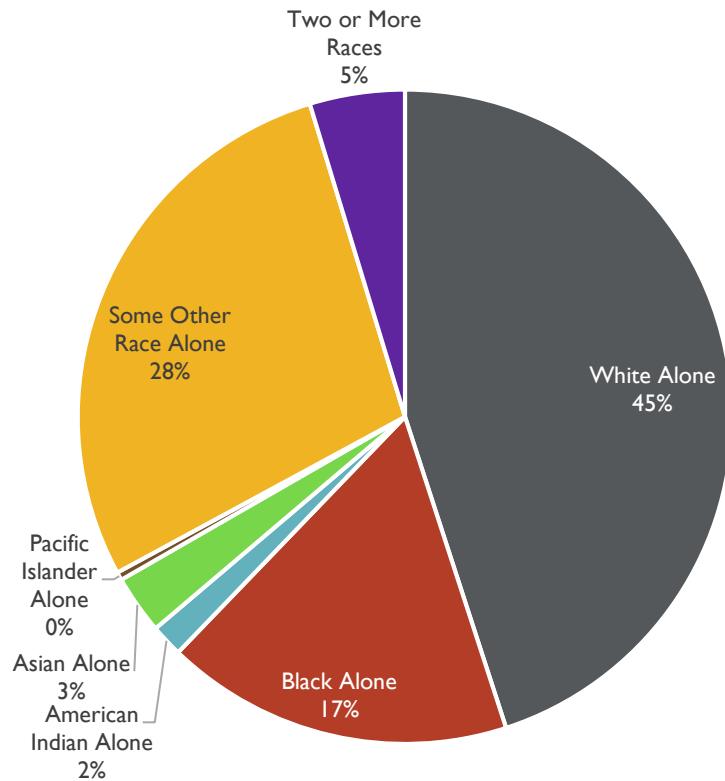
Source: ESRI. 2017. *Community Profile. Forecasts for 2017 and 2020 using US Census 2010 Summary File.* Accessed December 15.

Figure 1. Study Area



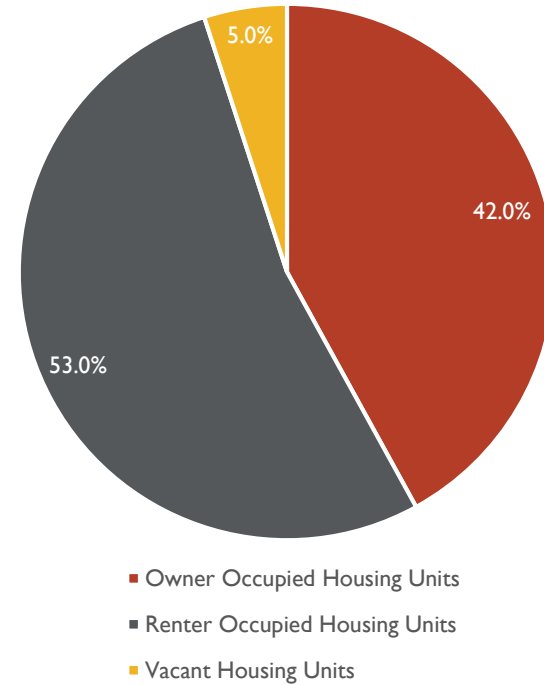
Residents are racially and ethnically diverse, with 45 percent of residents reporting as white alone, approximately 17 percent of residents as black alone, and another 28 percent reporting as some other race alone. Sixty percent of residents are of a Hispanic origin.

2017 Population by Race/Ethnicity



In 2017, the neighborhood contained approximately 1,900 housing units, of which 53 percent were renter-occupied, 42 percent were owner-occupied, and another 5 percent were vacant. The median self-reported home value was approximately \$163,000. The median household income was approximately \$39,000.

2017 Housing Units



Source: ESRI. 2017. Community Profile. Forecasts for 2017 and 2020 using US Census 2010 Summary File. Accessed December 15.

Source: ESRI. 2017. Community Profile. Forecasts for 2017 and 2020 using US Census 2010 Summary File. Accessed December 15.

Planning Context

The combination of a well-established residential neighborhood, major commercial areas, parks, schools, and public amenities provides a foundation to create a balanced network that benefits the community and optimizes mobility. While the recent residential and commercial developments are creating additional traffic and demand on the overall network and neighborhoods, they also provide an opportunity to expand mobility options and enhance the quality of life by connecting people to destinations, community amenities, schools, and parks.

Previous Plans

Many other plans and projects are underway that relate to the NW Aurora Mobility Study.



NW Aurora has experienced many recent redevelopments in and adjacent to the neighborhood

Aurora Places

Aurora Places is the current planning effort to update the citywide Comprehensive Plan. Aurora Places will outline the current challenges and opportunities in the city, describe future goals and objectives for development, and include an action plan on how to achieve these goals and objectives. Aurora Places will include policies related

to land use and development; residential, commercial, and industrial areas; transportation and mobility; parks, recreation, and environmental features; public facilities and infrastructure; sustainability, community image and tourism, public arts and cultural themes; and an implementation strategy. Aurora Places will detail a long-term vision for land use and development for the next 10 to 20 years.

Original Aurora Zoning Update

The city of Aurora is proposing a zoning update for Original Aurora (the area bordered by Yosemite Street, Peoria Street, East 6th Avenue, and East 26th Avenue). Zoning creates rules for what may be built on property and how that property may be changed. The proposed plan would update the zoning along key corridors in Original Aurora from single-use zoning (for example, commercial only) to mixed-use zoning. This zoning update could allow complementary uses. It would allow housing, shops, restaurants, and offices to be located closer together, creating more services, things to do and jobs close to home, and would put more “eyes on the street” to increase public safety. It would also potentially attract new businesses to the area, while at the same time protect single-family homes, increase options for property owners, improve property values and quality of life, and create new living options in Original Aurora.

Westerly Creek Village Community Plan

In 2010, the city of Aurora was a grant recipient of the Environmental Protection Agency’s Brownfields Area-Wide Planning Pilot Program. The grant program resulted in a guide for brownfield remediation and redevelopment possibilities for the Westerly Creek Village Community. In 2013, the city of Aurora conducted community meetings and extensive planning efforts to create an overall vision for the Westerly Creek Village Community. The plan envisions a thriving, vibrant, and safe community with a mix of shops, restaurants, and businesses. The redeveloped area will include enhanced bicycle and pedestrian friendly streets as the adopted Comprehensive Plan includes a strategy to, “improve pedestrian and bicycle routes within Northwest Aurora, Westerly Creek Village and the adjacent Westerly Creek Trail Corridor.”

Montview Connections

In 2016 and 2017, the city installed buffered bicycle lanes on Montview Boulevard in coordination with the street repaving program. On-street parking was eliminated to accommodate the new bicycle facilities. Before and after data collection indicates that vehicle speeds remain at pre-installation levels and cyclists and pedestrians feel

safer. The design was the outcome of a study prepared in 2015 and funded by a Walk & Wheel grant.

Recent and Planned Development

NW Aurora is an established residential neighborhood surrounded by significant redevelopment and transformation. The study area is surrounded by major activity centers or corridors, including Montview Boulevard, Westerly Creek Village and the Stanley Marketplace redevelopment, the Fitzsimons Campus, and Martin Luther King Jr. Boulevard (MLK) and the Stapleton neighborhood redevelopment. Other major regional corridors and destinations, such as Colfax Avenue and the Aurora Arts District, are also near the study area.

Figure 2 shows the recent and planned developments in the study area.

Montview Boulevard, Westerly Creek Village, & Stanley Marketplace

Westerly Creek Village is located in the northern portion of the NW Aurora neighborhood, between Yosemite Street, Iola Street, 25th Avenue, and 19th Avenue. The redevelopment will include new residential properties and enhance the multimodal trail connections from the NW Aurora Neighborhood to Westerly Creek.

The former Stanley Aviation airplane ejector seat factory has been repurposed into a retail/event center with bicycle and pedestrian connections to the Westerly Creek Trail system and the new 26th Avenue Park.

Anschutz Medical Campus

The Anschutz Medical Campus, located due east of the study area, is currently home to the University of Colorado Hospital, Children’s Hospital Colorado, and the soon to open Rocky Mountain Regional VA Medical Center, and is adjacent to the Fitzsimons Innovation Campus. Nearly 150 acres of developable land is available through the Fitzsimons Redevelopment Authority, which is working closely with the city of Aurora to identify land use concepts and a street layout that will guide the development in the coming years. The city has planned street connections of 22nd Avenue, 23rd Avenue, and 25th Avenue from the study area to the Anschutz Medical Campus and the Fitzsimons Innovation Campus. These new connections are anticipated to change travel patterns in and around the study area.



Stanley Marketplace located at Dallas Street and 25th Avenue

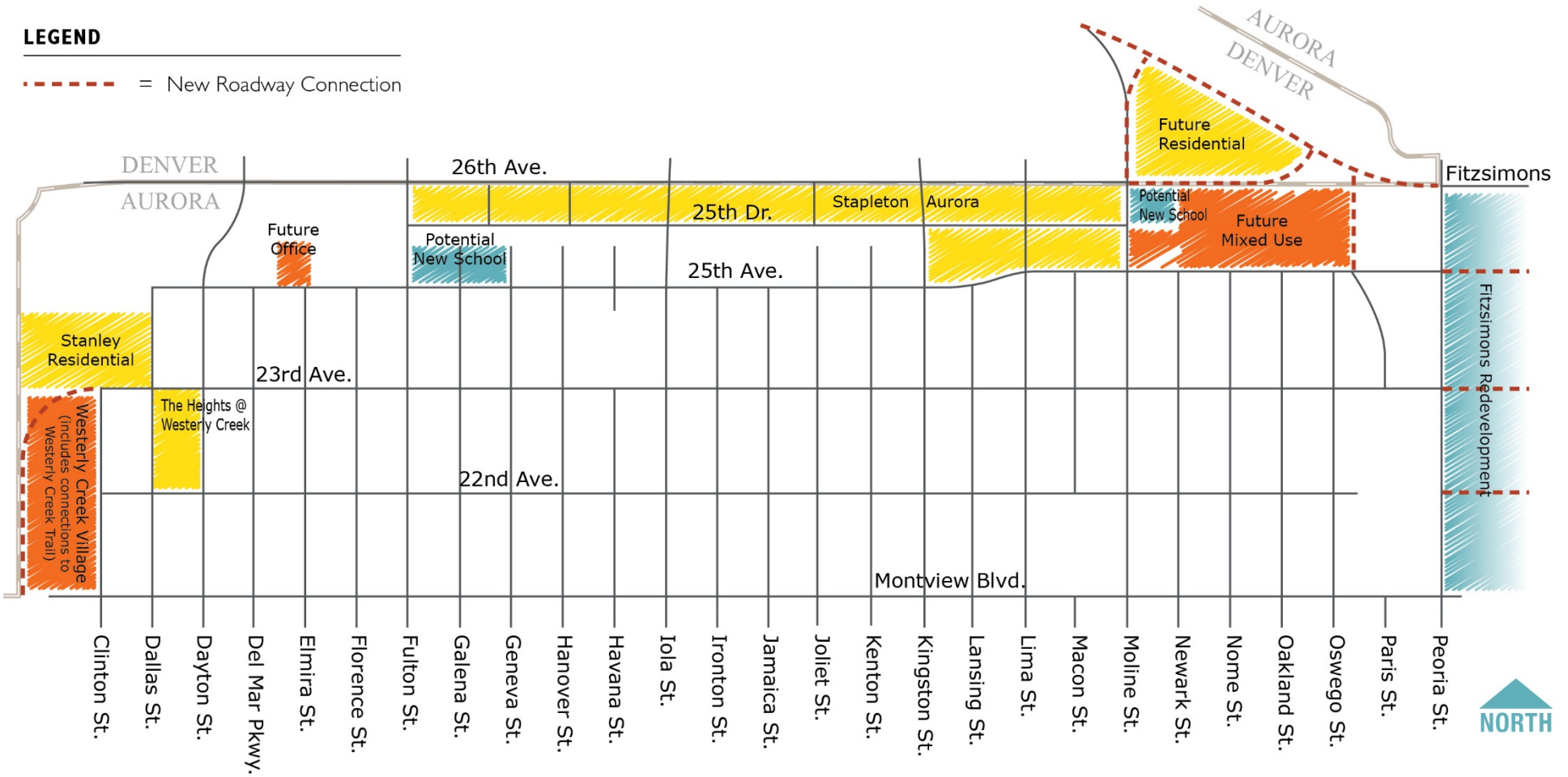
The Stapleton Redevelopment and Martin Luther King Jr. Boulevard

The Aurora phase of the Stapleton redevelopment project began in 2016. The Stapleton Aurora redevelopment has introduced new north/south roadway connections of Fulton Street, Iola Street, and Kingston Street, and more recently, new connections of Lima Street and Dayton/Emporia Street between the study area and the Stapleton neighborhood to the north. These new connections are changing traffic patterns and increasing travel along streets in the study area.

Figure 2. Recent and Planned Developments

LEGEND

--- = New Roadway Connection





N Dayton Way connection between NW Aurora and Stapleton

In addition to new connections to the NW Aurora neighborhood, construction of the extension of MLK from Havana Street east to Peoria Street in Stapleton is expected to be completed in 2018.

The project consists of:

- ◆ A new roadway between Havana Street and Peoria Street built to arterial standards, with two travel lanes and one parking lane in the eastbound direction and two travel lanes in the westbound direction.
- ◆ A paved bicycle/pedestrian path and a soft-surface equestrian trail on the north side of MLK between Havana Street and Peoria Street, separated from the roadway by a landscaped buffer.
- ◆ A raised median with landscaping between the eastbound and westbound lanes.
- ◆ A paved bicycle/pedestrian path on the south side of MLK between Havana Street and Peoria Street, separated from the roadway by a tree lawn.
- ◆ Reconstruction of Moline Street to 26th Avenue as a two-lane collector street.
- ◆ Traffic signals at Kingston Street, Moline Street, and 26th Avenue; street lighting; and signage for a 35-mile per hour speed limit.

Existing Roadway Characteristics and Traffic Operations

An inventory of the existing roadway cross sections was completed to understand travel lane widths, presence of on-street parking, sidewalks, bicycle facilities, and landscaping characteristics. The streets in the study area generally include a 2 1/2-foot attached sidewalk on each side, 8-foot parking on each side of the street, and one 12-foot travel lane in each direction. **Figure 3** shows the study area cross sections.

Posted and Observed Speeds

Speed limits promote public safety by informing drivers of the prudent travel speed. Crashes are less likely to happen when most drivers are traveling at consistent speeds. The posted speed limit in the NW Aurora neighborhood is generally 25 miles per hour (MPH). However, 25th Avenue is posted at 30 MPH, Moline Street north of 25th Avenue is posted at 30 MPH, and Iola Street north of 26th Avenue is also 30 MPH. Peoria Street and Montview Boulevard are posted at 35 MPH. **Figure 4** shows the posted speed limits.

An important consideration for determining the speed limit is the 85th percentile speed, which is the speed at or below which 85 percent of vehicles are traveling. Observed speeds in this area indicated that most vehicles are traveling at or below the posted speed limit. **Figure 5** shows the observed travel speeds.

Traffic Control

The existing traffic control in the area is primarily two-way stop control. Generally, in the study area, stop signs are oriented to allow vehicles traveling east-west to drive more freely, while north-south vehicles are often required to stop at intersections. **Figure 5** shows the stop sign orientation, as well as free-flow movements.

Neighborhood streets designed in a grid like the study area often have stop signs positioned in a “woven” pattern so that travelers must stop at roughly every other intersection, which can reduce cut-through traffic and speeding. Stop sign orientation can also be strategically modified to prioritize bicycles and/or pedestrians to make biking and walking easier along common routes.

Figure 3. Cross Sections

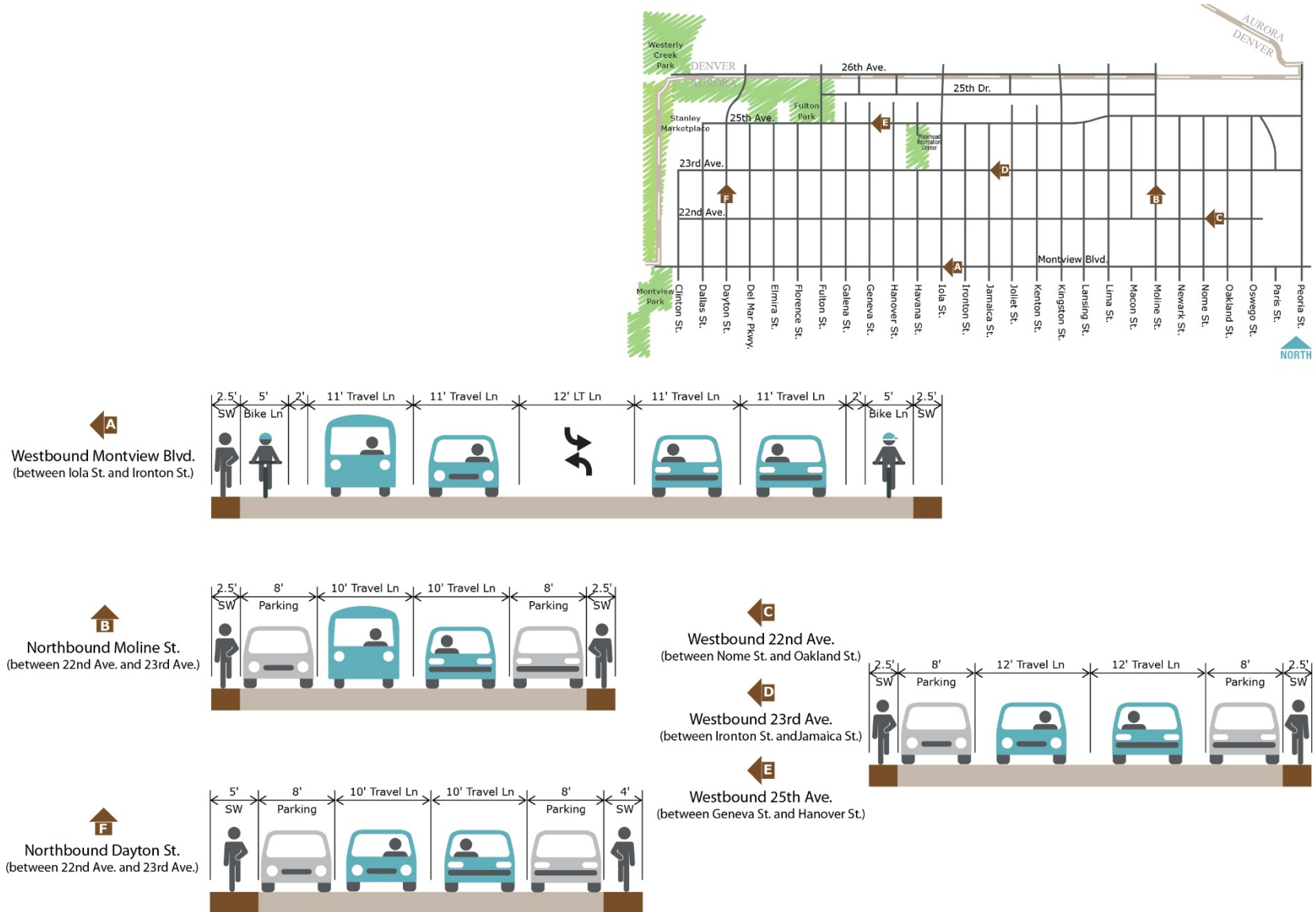


Figure 4. Posted Speeds Limits

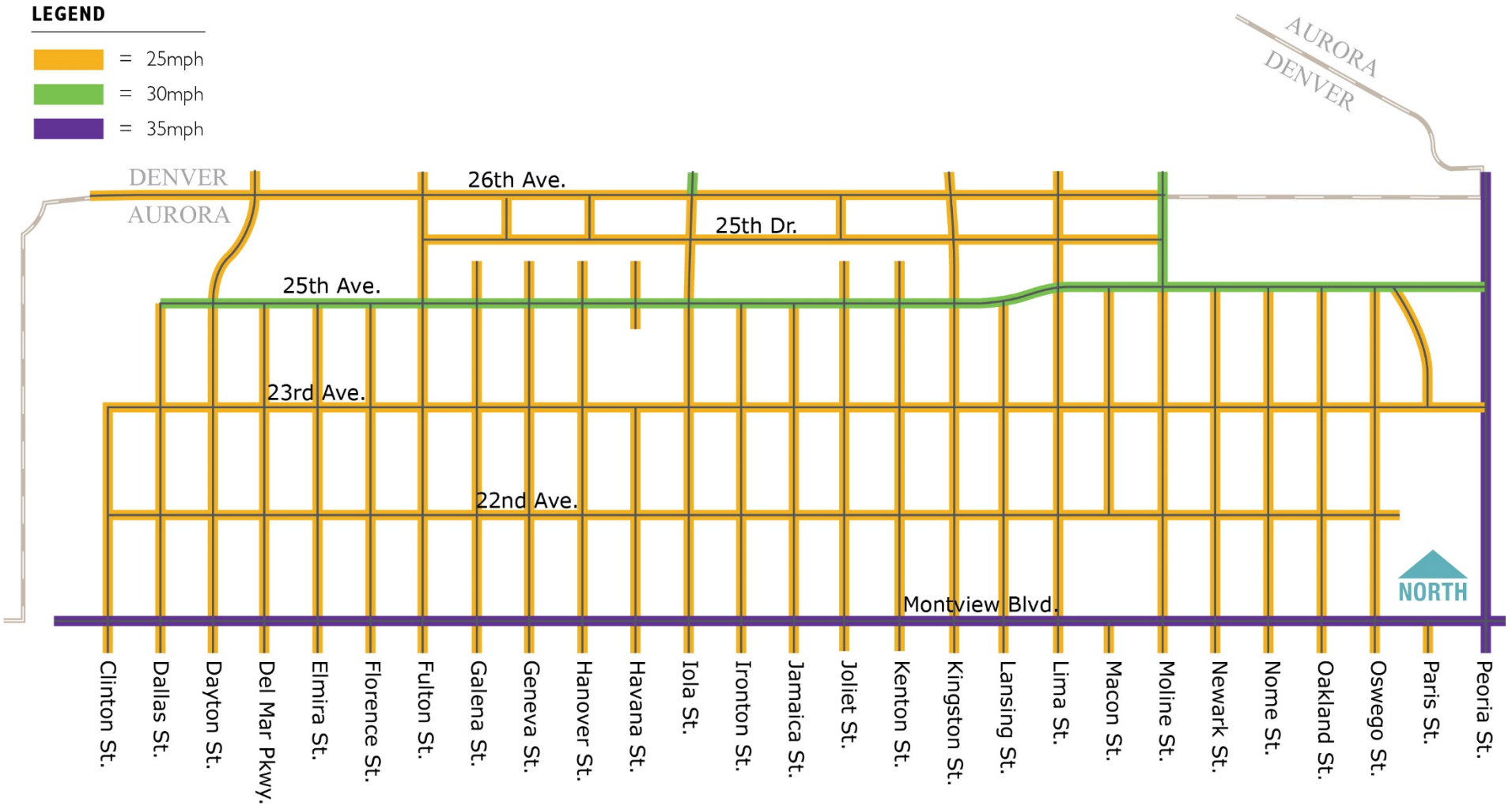
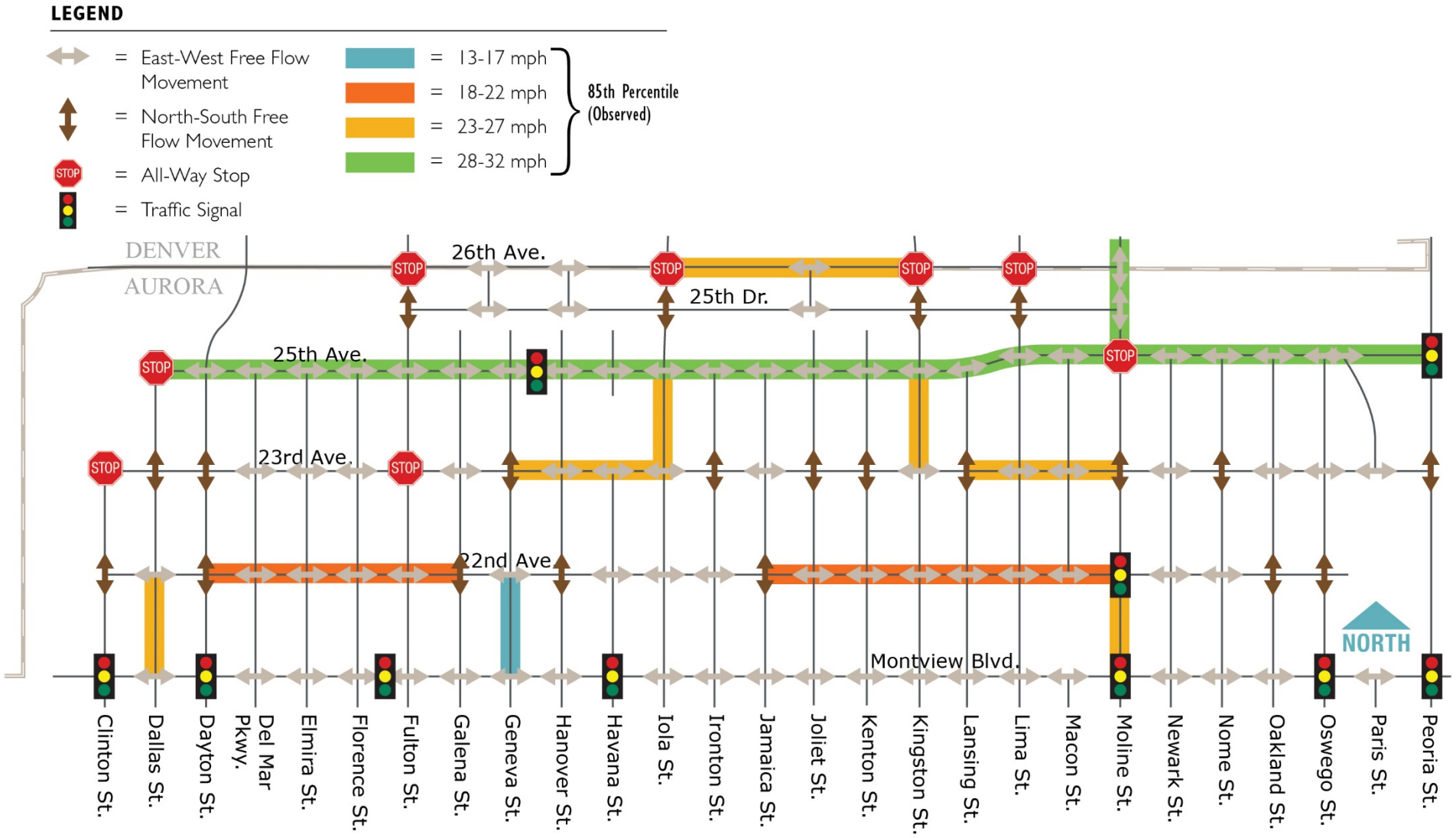


Figure 5. Traffic Control, Observed Speeds



Traffic Volumes and Operations

All streets in the study area are classified as local streets, with the following exceptions: Peoria Street and Montview Boulevard are classified as major arterials, 26th Avenue and Moline Street north of 25th Avenue are classified as a collector streets. The city of Aurora strives to keep traffic volumes on local streets less than 3,000 vehicles per day (vpd).

Daily traffic volumes and turning movement counts were collected on major streets in the study area in late November 2017. The counts indicate that 25th Avenue is the major east-west thoroughfare, with increasing volumes near Peoria Street. Similarly, Moline Street and Iola Street are the more major north-south routes through the study area. **Figure 6** shows the daily traffic volumes.

AM and PM peak hour traffic counts were collected at 19 intersections throughout the study area. **Figure 7** shows the turning movement counts.

Parking

On-street parking is provided on all local and collector streets within the study area. Parking is most utilized on the north-south streets and numerous locations of designated on-street handicap parking are present. Some limited parking restrictions are in place on streets near the Stanley Marketplace and near the schools.

Existing Bicycle and Pedestrian Facilities

As shown on **Figure 8**, the NW Aurora neighborhood includes multiple bicycle facilities, many identified school walking routes, and a sidewalk network that is almost fully connected.

Bicycle and pedestrian counts were collected in late November 2017. **Figure 9** and **Figure 10** show the counts.

Bicycle Facilities

Designated and marked bicycle facilities help establish a dedicated space for bicyclists and increase comfort and safety for cyclists. One east-west bicycle route in the study area runs along Montview Boulevard. The bike lane is buffered from Oswego Street to Havana Street and signed from Havana Street to the Westerly Creek Trail. Another buffered bicycle lane is available on 26th Avenue in the

Stapleton Aurora portion of the study area from Moline Street to the Westerly Creek Trail. The only north-south bike route in the study area is a signed bike route on Moline Street from Montview Boulevard to 26th Avenue.



Buffered bike lane on Montview Boulevard

Bike Share Programs

In 2017, the city of Aurora launched its Bike Share Permit Program to provide additional mobility options for its residents. Aurora was the first city in Colorado to offer dockless bike sharing. The program attracted three private dockless bike share companies, Limebike, Spin and ofo, who all began operating in October 2017. As of January 2018, there were approximately 1,200 bikes in service.

From October 9, 2017, to January 15, 2018, over 3,700 members had subscribed to one of the bike share programs, recording over 7,000 trips with over 6,000 total cumulative miles traveled. The average riding distance is 1.0 to 1.5 miles per trip with an average riding time of 8 to 10 minutes. Popular destinations in the city include Aurora Central High School, Del Mar Park, Martin Luther King Jr. Library, and the Aurora Metro Center Station. Within or near the study area, popular destinations include Stanley Marketplace, Moorhead Recreation Center, Montview Elementary School, Montview Park, City Park, and the Anschutz Medical Campus.

Figure 6. Daily Traffic Volumes

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XXXX = Daily Traffic Volumes

XX = Intersection ID

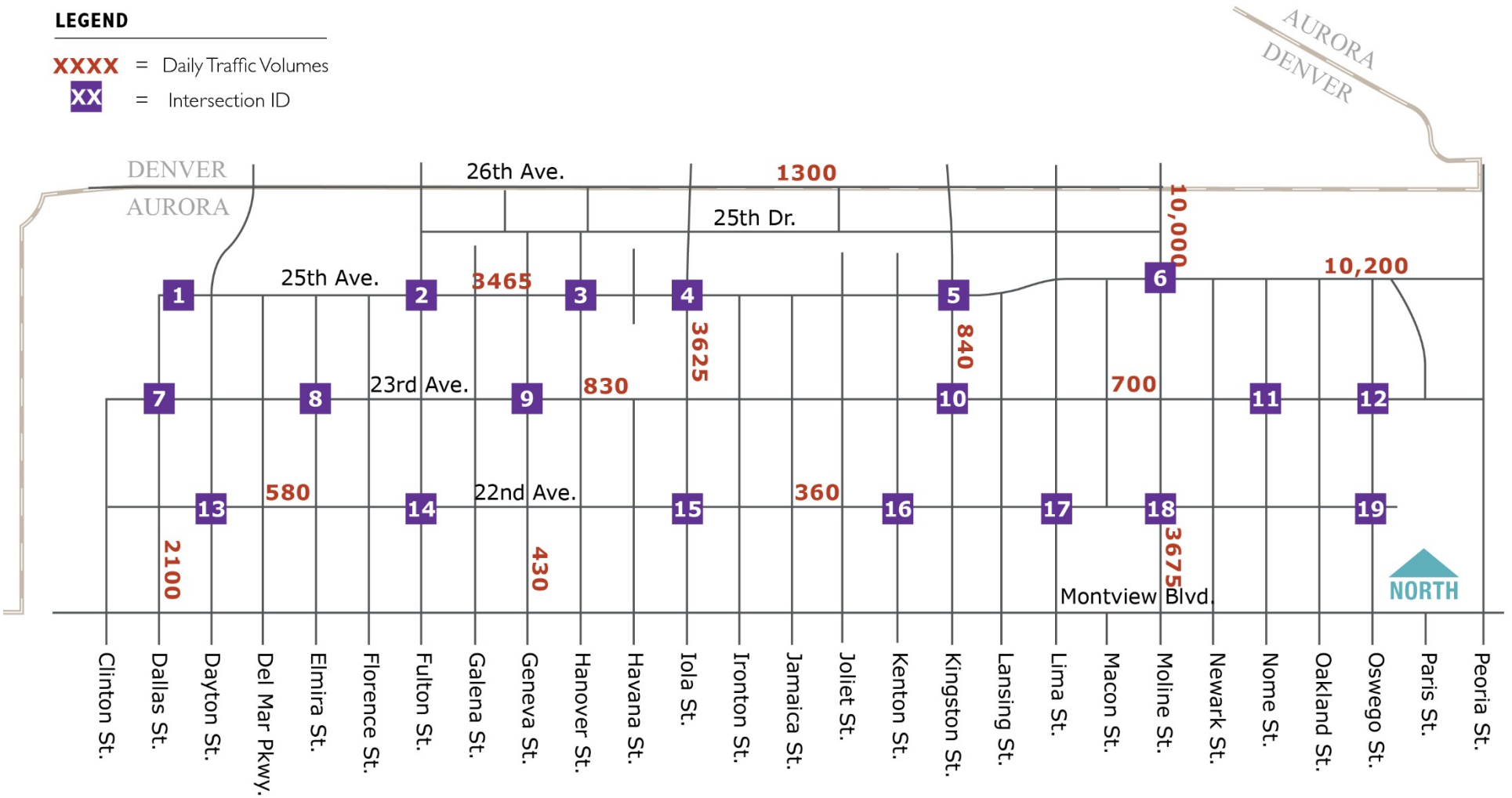


Figure 7. Intersection Traffic Counts

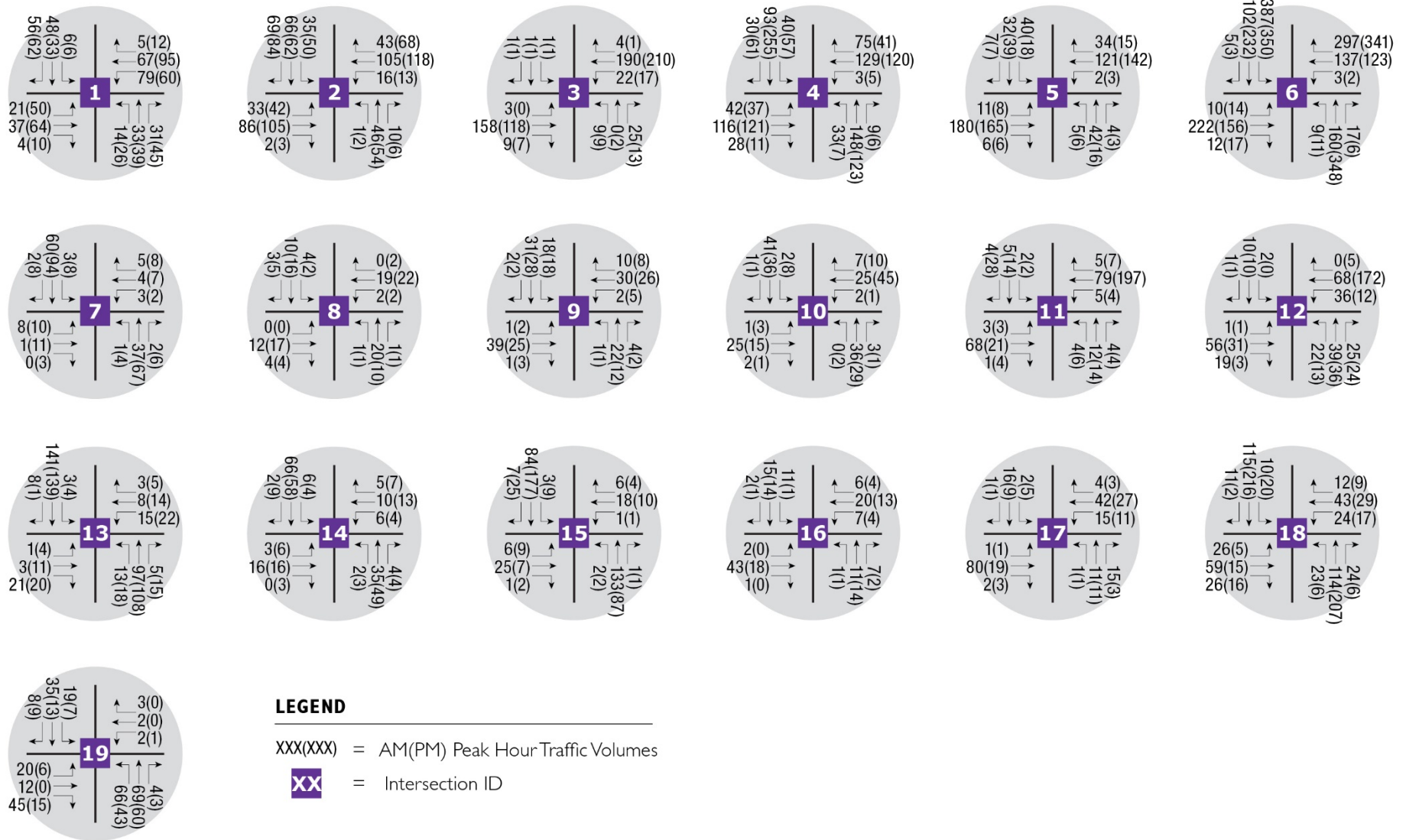


Figure 8. Existing Bicycle and Pedestrian Facilities

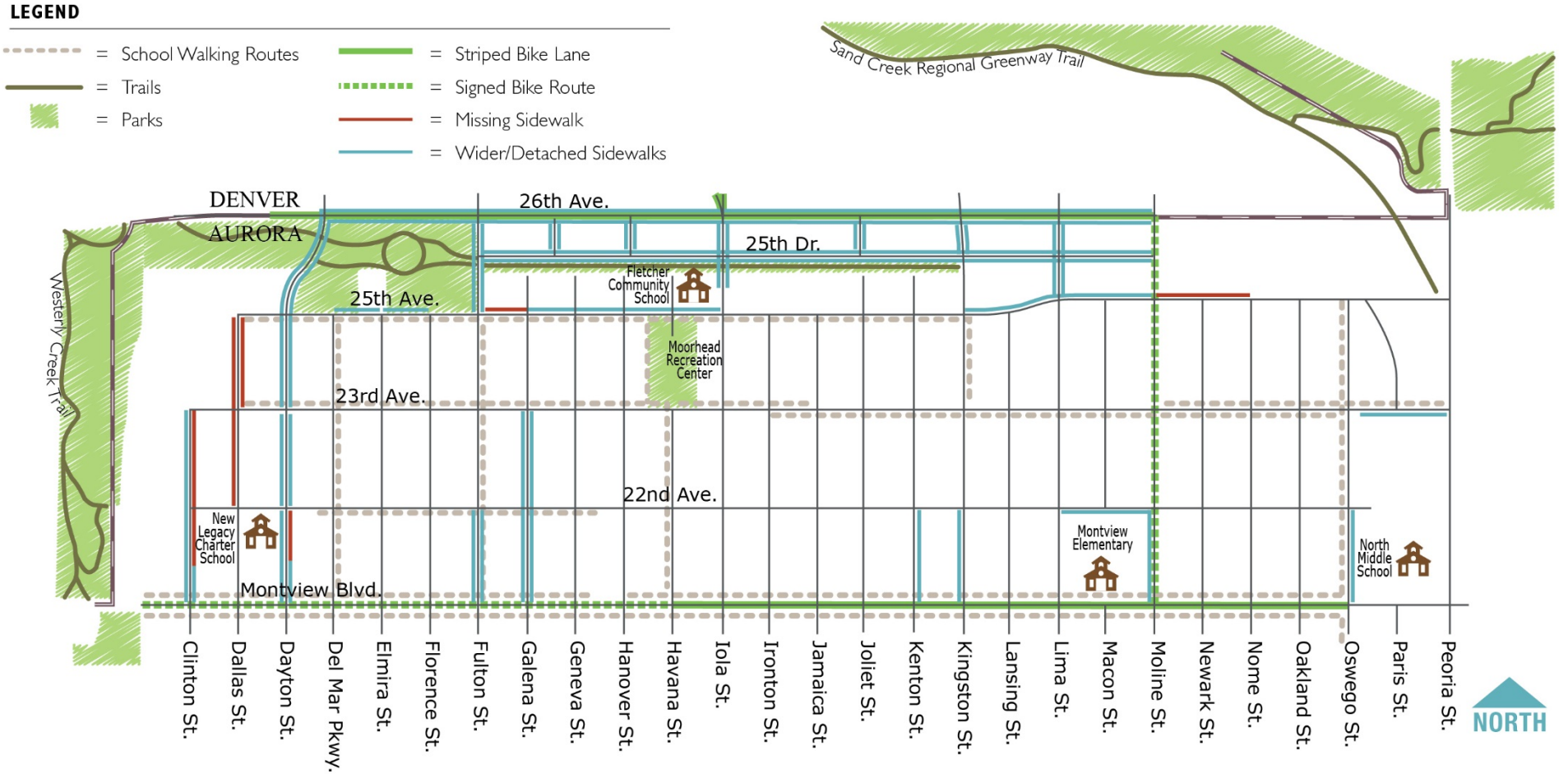


Figure 9. Daily Bicycle Volumes, Bicycle and Pedestrian Count Locations

LEGEND

- XXXX** = Daily Bicycle Volumes
- XX** = Intersection ID

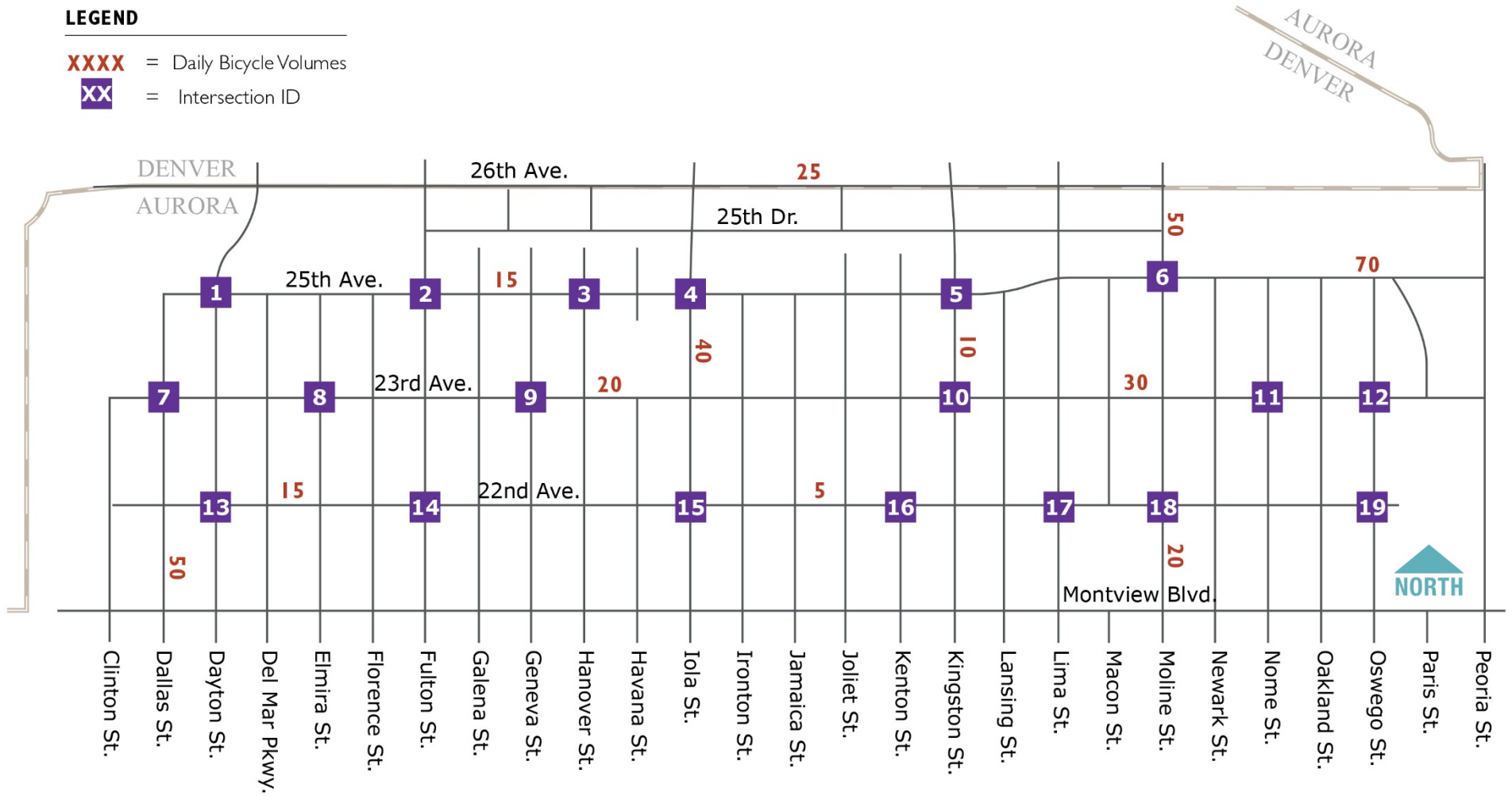
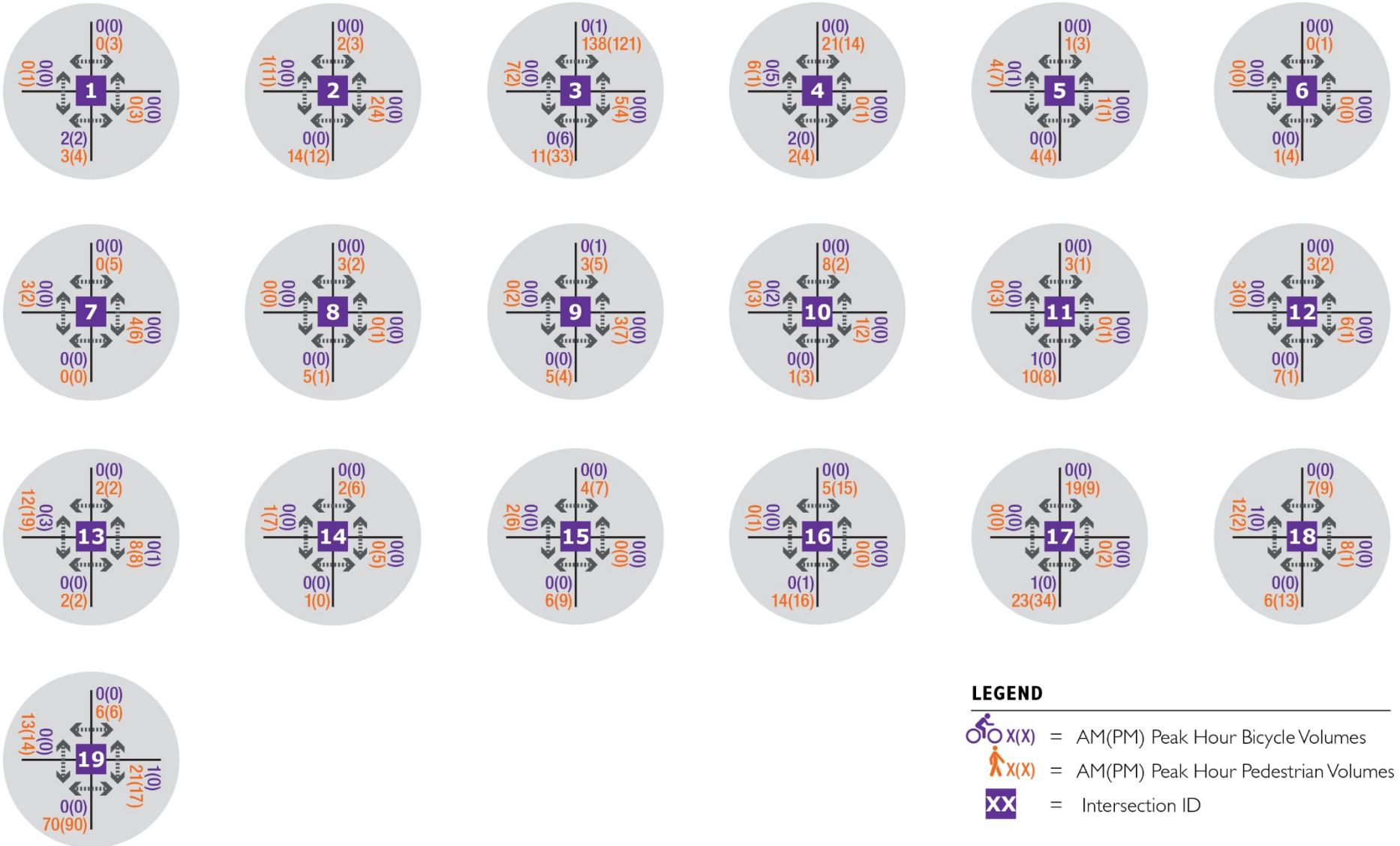


Figure 10. Bicycle and Pedestrian Counts



Pedestrian Facilities

The NW Aurora neighborhood has a nearly complete sidewalk network; however, many of the sidewalks are narrow, often only 3-feet wide or narrower. **Figure 8** identifies the multiple segments where sidewalks are wider than 3 feet. These wider sidewalks are generally located in the newer portion of the study area of Stapleton Aurora.

Sidewalks are missing on the west side of Dallas Street from 22nd Avenue to 25th Avenue, on the east side of Dallas Street from 23rd Avenue to 25th Avenue, and on the north side of 25th Avenue from Fulton Street to Galena Street, and from Moline Street to Nome Street.

Most sidewalks in the area are attached, often forcing pedestrians to walk single file and directly adjacent to passing vehicles.



Narrow sidewalks like these are characteristic in the NW Aurora neighborhood

School Walking Routes

The study area includes several identified school walking routes, as shown on **Figure 8**. New Legacy Charter School on Dallas Street is the only school not served by a school walking route.

Existing Transit Services

The NW Aurora neighborhood is served by bus, light rail, and commuter rail services, all operated by the Regional Transportation District (RTD).

Bus Service

RTD bus routes 20, 89, 105, and 121 travel through the area. **Figure 11** shows the bus routes and bus stops located within the study area. Route 20 services Montview Boulevard, route 89 services Moline Street and Montview Boulevard, Route 105 services Montview Boulevard to south on Havana Street, and Route 121 services Peoria Street.

Aurora Public School Bus Routes

In addition to public bus service, Aurora Public Schools (APS) provides limited bus service to district students. APS provides busing for Fletcher Community School/Rocky Mountain Prep Fletcher Elementary Charter School and Montview Elementary School students, specifically to provide a safe transportation crossing of Montview Boulevard. North Middle School is a walk-in school. Streets within the study area utilized by APS buses are identified in **Figure 11**.

Rail Service

The recent additions of the University of Colorado A Line commuter rail and the R Line light rail provide rail service through the heart of Aurora with connections to Downtown Denver and Denver International Airport. The A Line and the R Line both serve the Peoria Station, located northeast of the study area near 37th Avenue and Peoria. The Fitzsimons Station on the R Line is located on Fitzsimons Parkway, just east of Peoria, and serves the Anschutz Medical and Fitzsimons Innovation campuses.

Multimodal Connectivity Assessment

A multimodal connectivity assessment was completed to understand the overall connectivity of all modes to major neighborhood and regional destinations. The connectivity assessment is shown on **Figure 12**. Connectivity means being able to get from one place to the other through direct routes without having to go long distances out of the way. Good connectivity provides easy and safe access to key destinations and allows the efficient movement of bikes, pedestrians, and vehicles.



The NW Aurora neighborhood has strong connectivity to both neighborhood and regional destinations including the Stanley Marketplace, the Aurora Cultural Arts District, Anschutz Medical Campus, and commercial retail along both Montview Boulevard and Colfax Avenue. In addition, the neighborhood has access to many parks, open space, and trails, including Westerly Creek Park, City Park, and Central Park in Stapleton.

Figure 11. Transit Facilities

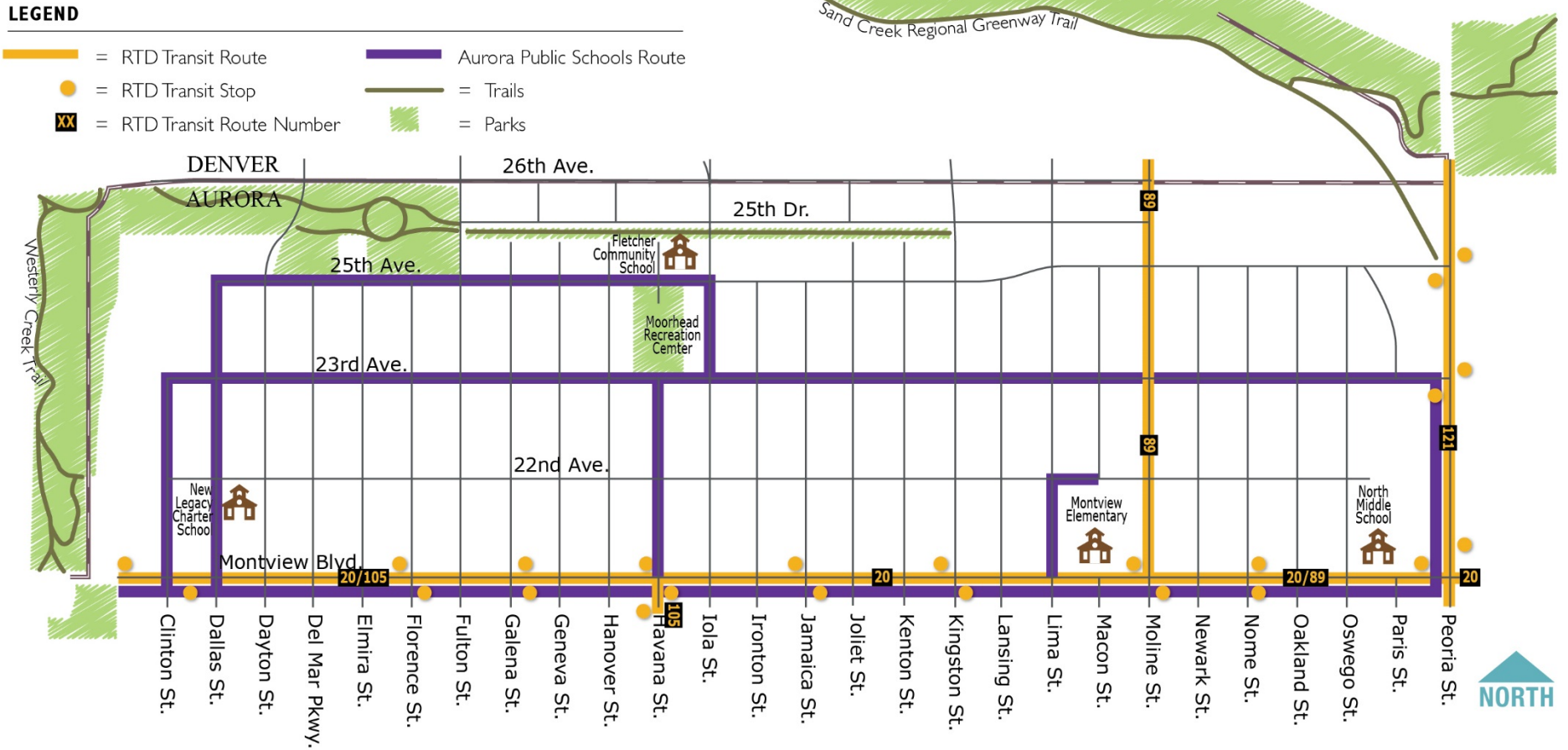
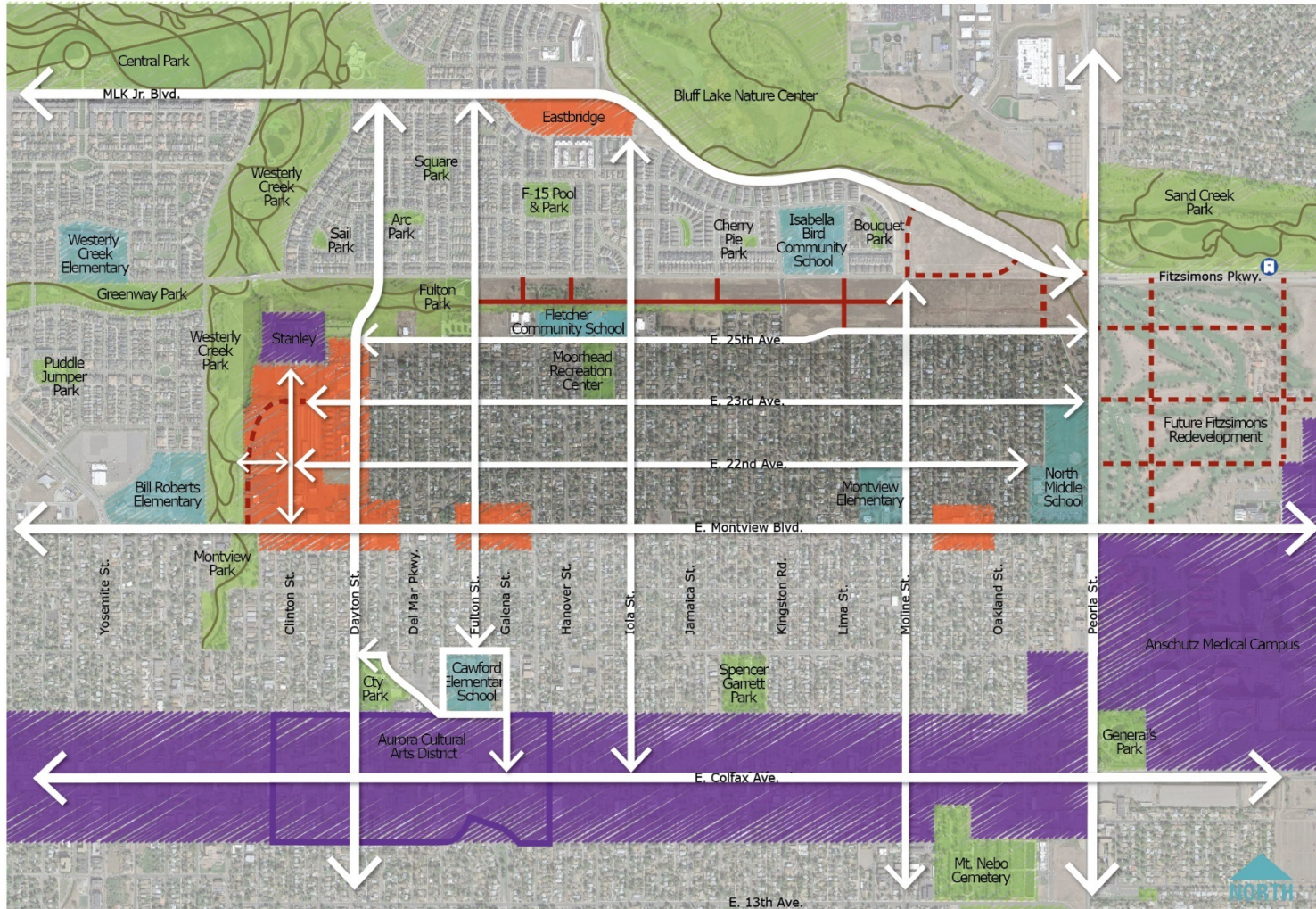











Figure 12. Connectivity Assessment



LEGEND

- | | | | |
|---|--|---|---|
|  Neighborhood Destinations |  Existing Parks |  LRT Station |  Major Routes |
|  Regional Destinations |  Existing Schools |  New Roadway Connections |  Trail Network |
| | |  Planned Roadway Connections | |

Future Transportation Conditions

The Denver Regional Council of Governments (DRCOG) 2020 and 2030 regional travel demand models were referenced for the development of the study area 2025 future year traffic projections. These models reflect the most up-to date population and employment projections for the study area. The models include projects with committed or identified funds for construction that would be built with or without any other improvements identified in this study.

Observed traffic counts were compared to the model's base year (2015) predicted traffic volumes to provide an estimate of error associated with the model's representation of travel conditions. The 2020 and 2030 model forecasts were adjusted to account for the differences between observed data and model outputs to provide more reliable forecasts. This post-processing adjustment process, as set in the Transportation Research Board's publication National Cooperative Highway Research Program (NCHRP) 765, has been used to estimate 2025 daily traffic volumes. The adjusted average annual growth rate was approximately 1.0 percent for study area roadways.

The MLK extension project, a 1.1-mile extension of MLK from Havana Street to Peoria Street, is a planned improvement within the Stapleton redevelopment to the north of the study area. The new roadway connects the city of Aurora and the City and County of Denver. The new roadway will provide a more direct connection between Stapleton and I-225. The demand for this connection is currently being served by Moline Street and 25th Avenue.

The 2025 volumes reflect the anticipated shift of traffic from Moline Street and 25th Avenue to MLK. Most of the improvements associated with the MLK extension project occur outside the NW Aurora project study area. These improvements are projected to generally reduce traffic volumes on study area streets.



Current conditions along 25th Avenue

The Fitzsimons redevelopment is anticipated to initially occur on the south side of the development area, near Montview Boulevard, in the short-term future. No future connections across Peoria Street have been assumed in the development of the 2025 traffic projections. Traffic forecasts completed as part of the Fitzsimons Redevelopment Authority traffic study indicate that future roadway connections across Peoria are anticipated at 23rd and 25th Avenues, with signalization of the 23rd Avenue intersection.

Operational analyses of study area intersections retained current intersection configuration and traffic control. Generally, all study area intersections are projected to continue to operate at acceptable levels of service.



Vision and Needs

An understanding of current and future conditions in the study area is the basis for establishing the study's vision and needs.

The vision for NW Aurora is a neighborhood with a sense of place where bicycle and pedestrian friendly streets are available for all age groups and abilities, making it an even better neighborhood in which to live, work, and play.

The greatest needs to be addressed include:

- ◆ Managing the flow of traffic within and through the neighborhood.
- ◆ Providing safe and comfortable sidewalks to encourage walking in the neighborhood.
- ◆ Identifying preferred routing for bicyclists and designate space for the bicycles.
- ◆ Enhancing the safety of school walking and biking routes to help eliminate barriers to children walking and biking to school.
- ◆ Increasing non-vehicular trips (such as biking, walking, and transit riding).
- ◆ Providing multimodal connections to neighborhoods and local regional destinations and amenities.
- ◆ Enhancing the neighborhood character through beautification and place making.
- ◆ Improving access to local and regional transit services.
- ◆ Connecting the neighborhood to parks and the regional open space and trail network.
- ◆ Accommodating all users through complete streets design.

The neighborhood vision and needs will help to identify potential improvements in the neighborhood and are based on community input from previous planning efforts.