

CHAPTER 2 FUTURE MOBILITY PLAN



2.1 - BIG IDEAS

This chapter summarizes the Transportation Master Plan's approach to developing each of the modal network recommendations—for walking, biking, taking transit, and driving—as well as programmatic and policy recommendations to support infrastructure improvements.

The mobility framework is developed based off multimodal network enhancements that are reflective of land use changes proposed in the Comprehensive Plan. The Transportation Master Plan applies a layered network approach to ensure each street is prioritized for the appropriate mode, ultimately creating a connected network for each mode, but acknowledging that every street cannot prioritize every mode.

Recommendations are developed with an emphasis on innovation and sustainability for the future of transportation, in order to move the County towards its goal of becoming the most innovative County in America. With an eye toward innovation, the Transportation Master Plan sets the County up to provide the transportation infrastructure and options to reduce reliance on the private automobile and improve quality of life.

Lastly, the Transportation Master Plan prepares the County for anticipated growth in travel demand, especially in the central and eastern portions of the County. In order to accommodate

this growth, the Transportation Master Plan proposes roadway capacity projects, opportunities to expand transit beyond the Regional Transportation District (RTD) service area, expansion of the bicycle network, and an updated prioritization process for paving gravel roads.

2.2 - MOBILITY FRAMEWORK

The Adams County Transportation Master Plan was developed using a layered network framework, which focuses on how the County's transportation network can function, as a system, to meet the needs of all users. The layered network concept is recommended by the Institute of Transportation Engineers (ITE) and emphasizes safety for all modes of travel, while supporting key County principles and policies.

Accommodating a range of users on a single roadway is a common transportation planning goal. While achieving a fully multimodal street may be possible in some instances, a layered network approach is often a more feasible mechanism for accommodating all users. A layered transportation network is based on the idea that different roadway and travel facility types can work together to provide mobility. A multi-lane arterial can provide opportunities for efficient vehicle travel while a parallel local street can provide comfortable facilities for walking and biking.

Layered networks are an extension of the Complete Streets philosophy, but clearly recognize that it can be inappropriate to accommodate all modes on all streets with a high level of service for all. The layered network concept serves as a strong planning framework for Adams County.

By designing streets for certain uses, incompatible uses are often discouraged. For example, a network of streets designated for freight can eliminate truck traffic cutting through residential neighborhoods or on low stress bicycle corridors. This chapter illustrates how the Transportation Master Plan applies the layered network concept to offer a future of modal networks that will support all users.

2.3 - PREFERRED MOBILITY SCENARIO

As described in **Chapter 1**, an alternatives analysis which integrated all three plans helped inform the recommendations for these plans. This process assessed the potential alternative future land use and transportation options and the implications of each. Based on community feedback and analyses, one preferred scenario was selected from this process.

The preferred mobility scenario identified high priority corridors for people walking, biking, taking transit, and driving. Selection of

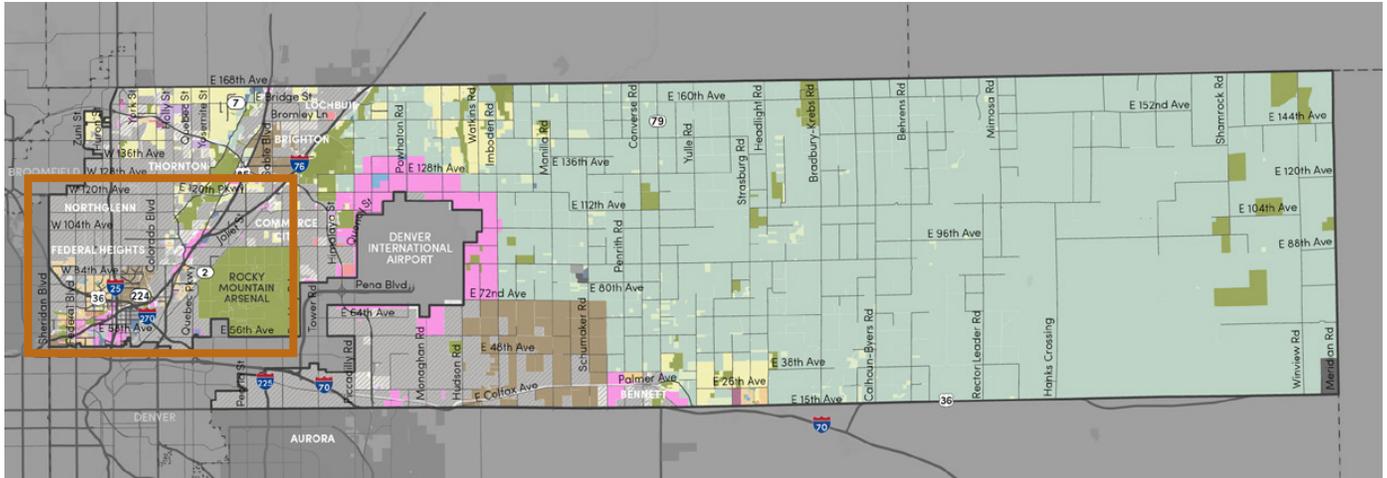


Figure 2.1: Existing Neighborhood in Adams County

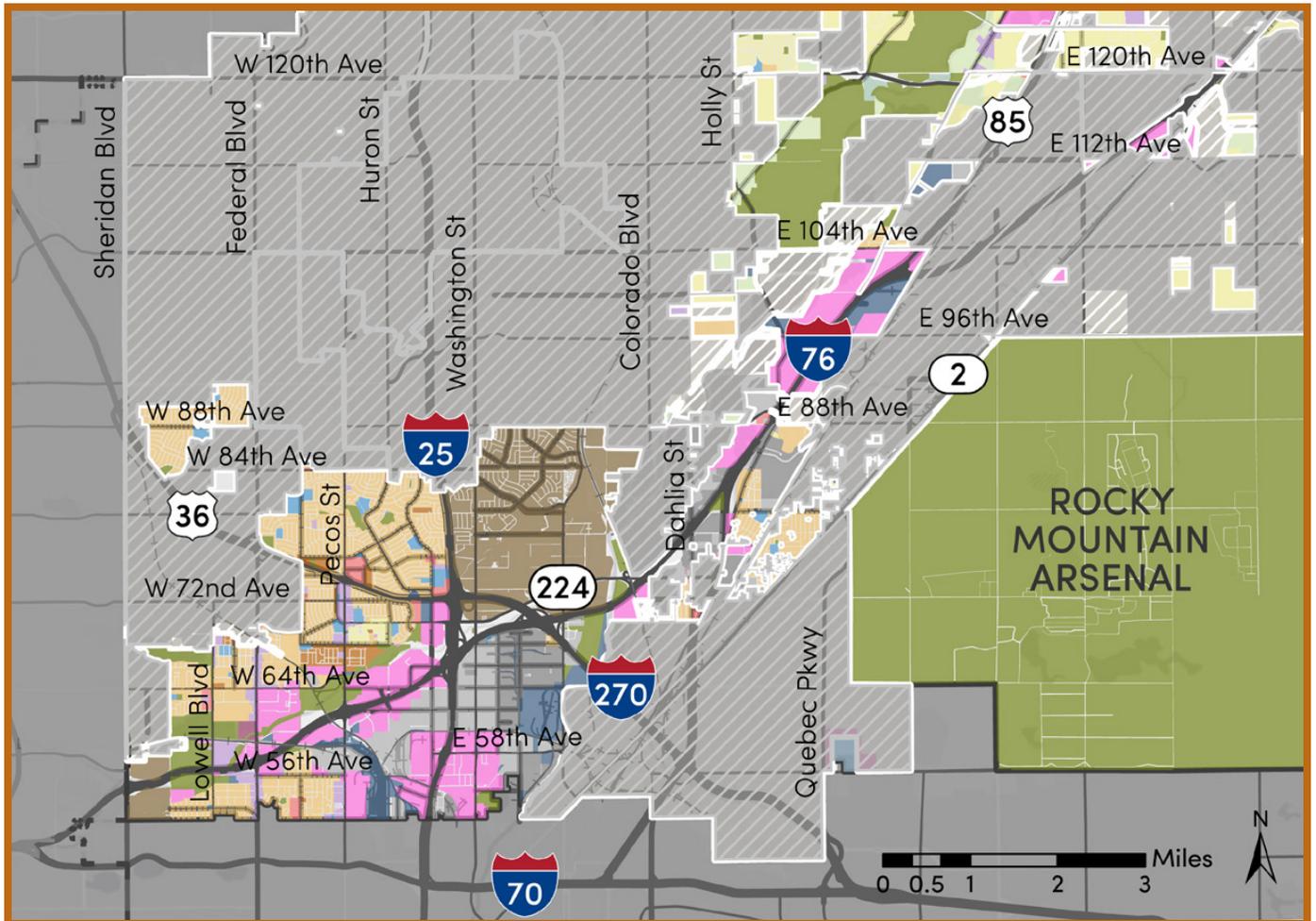
these corridors was driven in large part by the future land use plan to ensure that residents, employees, and visitors of the County can comfortably and conveniently travel to key destinations. As development and growth patterns evolve according to the Comprehensive Plan's future land use plan, investments in the multimodal transportation networks will be integrated with land use. This preferred scenario is shown in **Map 2.1**.

The outcomes of the preferred mobility scenario are evident throughout the Transportation Master Plan but most directly in the modal maps and recommendations for the Bicycle Network, Roadway Network, and transit system enhancements.

MAP 2.1: PREFERRED FUTURE LAND USE MAP



- | | | |
|----------------------------------|-------------------------|----------------------|
| Adams County Boundary | Agriculture Large-Scale | Mixed Use |
| Incorporated Places Adams County | Commercial | Mixed Use Commercial |
| City Boundaries | Industrial Low | Activity Center |
| Residential Low | Industrial Medium | Parks & Open Space |
| Residential Medium | Industrial High | See Subarea Plan |
| Residential High | Institutional | |
| Agriculture Small-Scale | Public | |



Inset of map above

2.4 - PROGRAMS AND POLICIES

This section highlights opportunities to meet the Transportation Master Plan’s vision using programs and policies that incentivize alternative travel modes to the private vehicle, implement bicycle and pedestrian infrastructure, and support health and safety outcomes. Beyond simply maintaining and building physical infrastructure, programs and policies ensure that roadways, active transportation facilities, and transit services are efficient, effective, and intuitive. These programs and policies also align the County’s transportation system with broader community values and move the County toward its vision for transportation.

2.4.1 - BICYCLING AND WALKING

Wayfinding

The Transportation Master Plan recommends that Adams County expand the existing bicycle wayfinding and signage and the recreational signage recommended in the Parks, Open Space, and Trails (POST) Plan. Wayfinding signage helps people biking for transportation as well recreation better navigate the existing bicycle network and feel more comfortable riding somewhere new. The County should develop and implement a Wayfinding Plan that will help people walking and biking intuitively navigate the County. This should include branding guidelines

that identifies key destinations to include in the signage. Wayfinding signage should be prioritized anywhere an off-street trail terminates. Signage in these locations should indicate where to go to continue on another low stress bicycle facility or give directions to major destinations nearby. An effective wayfinding system, especially one that is branded and includes distances or times, can encourage more people to bike because they can feel more confident navigating the system and staying on designated bicycle facilities.

Neighborhood Connections

Public input and an analysis of the existing transportation network highlighted the lack of connectivity between neighborhoods due to the curvilinear street network, especially for people walking or

Figure 2.2:
Bicycle or
Pedestrian trail at
the end of a cul-
du-sac



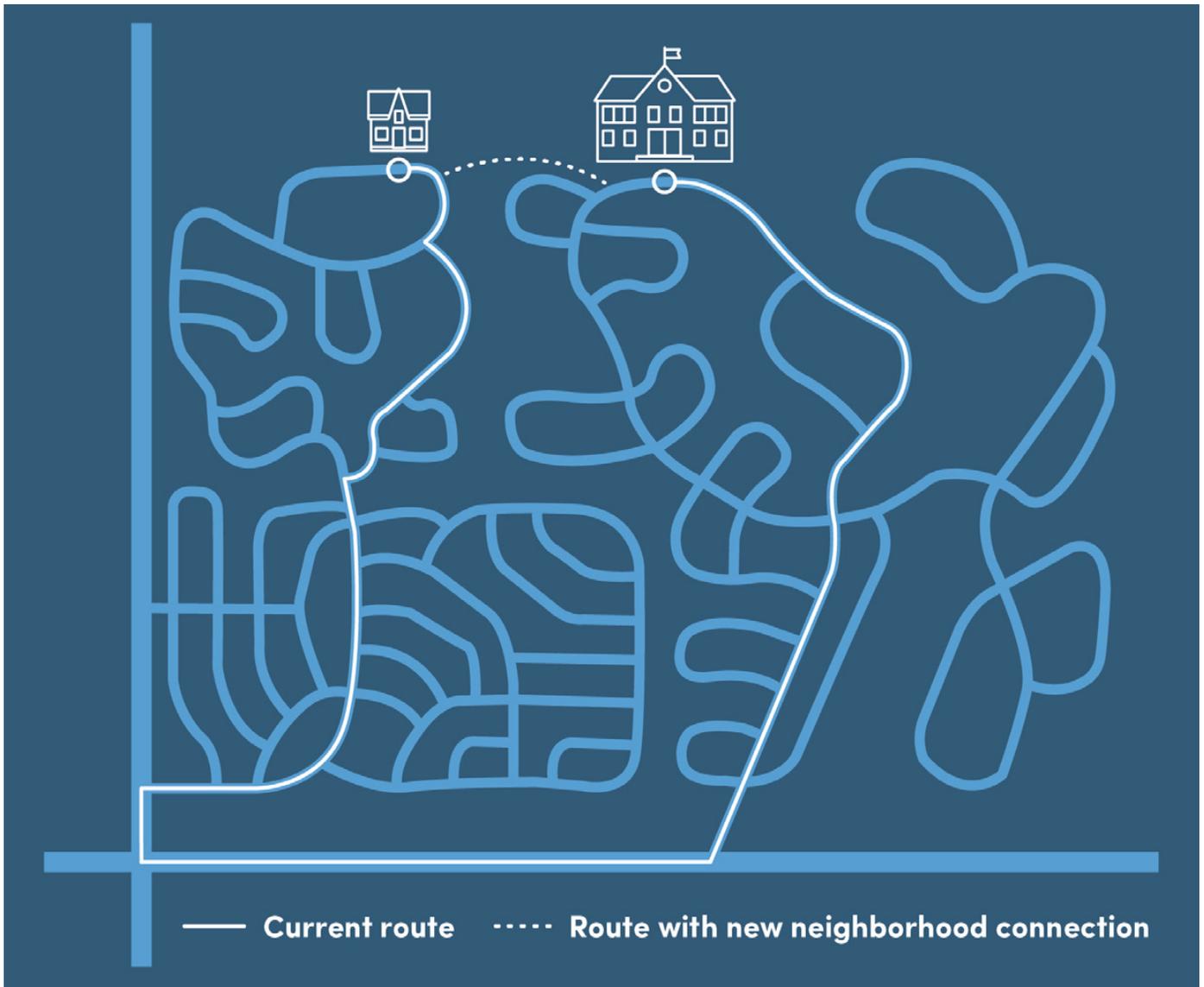


Figure 2.3:
Neighborhood
Connections
Concept

bicycling. Opportunities for new trail connections between neighborhoods should be considered (**Figure 2.2**). Creating a trail at the end of a cul-de-sac or between two unconnected streets can greatly decrease the trip lengths for people walking and bicycling (**Figure 2.3**). This can make taking trips by walking or bicycling easier and more feasible. In established neighborhoods these connections can be created by finding existing easements or right-of-way or

by acquiring new right-of-way if none currently exists. It is recommended that all new developments be required to provide pedestrian and bicycle connections where there is a lack of connectivity in the roadway network (e.g., cul-de-sac).

Complete Streets Policy

Per the USDOT, “Complete Streets are streets designed and operated to enable safe use and support mobility for all users. Complete Street policies



are set at the state, regional, and local levels and are frequently supported by roadway design guidelines.” Adams County does not currently have a Complete Streets policy. Consideration should be given to adopt a Complete Streets policy that strengthens specific recommendations for the type of low stress pedestrian and bicycle facilities for each street classification. By adopting a Complete Streets policy, the County would direct their transportation planners and engineers to routinely design and operate the entire right-of-way to prioritize safer, slower speeds for all people who use the road, over high speeds for motor vehicles. This policy should also address aesthetics, landscaping, and lighting to enhance appearance through better looking streets as well as provide safer streets for all modes. These revisions should be guided by the DRCOG Regional Complete Streets Toolkit.

Transportation Demand Management

Transportation Demand Management (TDM) is a set of strategies and policies for improving the efficiency of a transportation system by providing travelers with opportunities to choose modes other than a single occupancy vehicle and thus, improve air quality. Rather than focusing on meeting travel demand through expanded infrastructure, TDM identifies barriers to using existing, but often under utilized options, as well as generating a mechanism for addressing those

barriers. Adams County is a member of Smart Commute Metro North that works to implement TDM strategies across the north Denver metro region. The County should continue to work with Smart Commute Metro North to market their resources throughout Adams County. Education and information campaigns on transportation options will expose County residents to alternatives to driving, making it easier for them to plan trips using transit or bike. By facilitating and supporting the distribution of educational materials through County communication, Adams County can instill interest in active modes and teach residents how to use transit, how to bike safely, and how to connect with other interested community members. Adams County can also explore integrating bicycle awareness into drivers’ education classes and materials.

Bike Parking

Adams County should explore adding bike parking, particularly covered, secure bike storage – on County property and encourage the construction of additional bike parking in new developments and key destinations like RTD stations, major employment centers, and shopping areas. County staff should coordinate with RTD to add covered bike storage at the N Line commuter rail stations. The County should explore options for incentivizing existing developments to add secure bike parking, such as tax incentives or a grant program. Beyond



Figure 2.4:
Walking School
Bus

secure bike parking, the County should also accommodate alternative micromobility such as e-bikes and scooters by constructing micromobility parking in high-demand areas.

Safe Routes to School

The County should continue to coordinate with school districts and Smart Commute Metro North, promoting existing programs and seeking outside funding opportunities when possible. Safe Routes to School (SRTS) is a national program to enhance opportunities for students to walk and bike to school safely. Barriers to using active modes for getting to and from school can include a lack of comfortable and safe sidewalks and crosswalks, parent concern about children walking or biking alone, and travel distance. An SRTS program helps to document the concerns regarding travel safety, develop programs that can address some of these concerns, and chart a

path for implementing infrastructure improvements and upgrades that address concerns. Adams County has applied SRTS grant funding for educational campaigns in the past. The County should identify opportunities to apply for and distribute SRTS funding towards qualifying infrastructure projects. Smart Commute Metro North currently promotes “walking school buses” which are organized walking groups for students who live close enough to school to walk together.

Maintenance

Roadway maintenance should ensure bikeways are clear of debris and larger objects. Enforcement of illegal parking in bike lanes could extend beyond ticketing drivers to towing vehicles. Once the County installs additional multimodal infrastructure, routine roadway maintenance activities should also consider bikeway conditions. For example, the Street Paving Program can extend to bike lanes since uneven pavement, cracks, potholes, and other pavement quality issues impact people biking as well as people driving.

Pedestrian Crossing Guidelines

The County should adopt pedestrian crossing standards to ensure all future intersections or midblock crossings that are built are in line with national best practices for safe and comfortable crossings for all users.

2.4.2 - TRANSIT NETWORK FUTURE TRANSIT FEASIBILITY STUDY

Adams County Council of Governments (AdCOG) Subregional Forumh as previously discussed conducting a Transit Feasibility Study for Adams County. AdCOG should continue to strongly consider the value of initiating that study in order to provide clear direction and priorities on future investments in transit that can make transit a viable option for residents and employees across the County. This study could include a Transit Propensity Analysis and review of transit best practices in rural areas to guide recommendations and priorities for operational models that are appropriate for the population and land use in various portions of the County. **Chapter 6** of the Transportation Master Plan provides preliminary ideas that can be further assessed and defined as a part of this study.

Connect Transit to Other Modes

Adams County should invest in connecting public transit to other modes of travel through strategically located mobility hubs, near activity centers, where one or more transit routes and bicycle facilities intersect. These hubs will provide shared multimodal facilities and may include elements such as bicycle parking, bikeshare and car-share, multimodal information, park-and-rides, and

curbspace for shuttles and drop-off vehicles.

Transit Oriented Development

High-frequency transit is only viable with supportive land use patterns such as mixed-use with higher-density residential, employment and services. The plan, in combination with the Comprehensive Plan, supports a stronger stance on maximizing infill/ redevelopment potential where service exists or is planned. Adams County should continue to plan and development land use and transportation with special consideration to locations around high frequency transit.

2.4.3 - ROADWAY NETWORK

Paving Prioritization Process

The Adams County Public Works Department manages the Gravel Road Resurfacing Program for residents in eastern Adams County. The intent of this program is to fund safe and efficient gravel roads which have been identified as unstable and hazardous. Public Works – Operations Division currently applies a prioritization process inspects roads on a regular basis to evaluate road conditions and maintenance need. **Chapter 3** of the Transportation Master Plan updates this prioritization process based on staff feedback, national best practices, and lessons learned in Adams County. The County should apply this updated

prioritization process to inform prioritization of paving gravel roads.

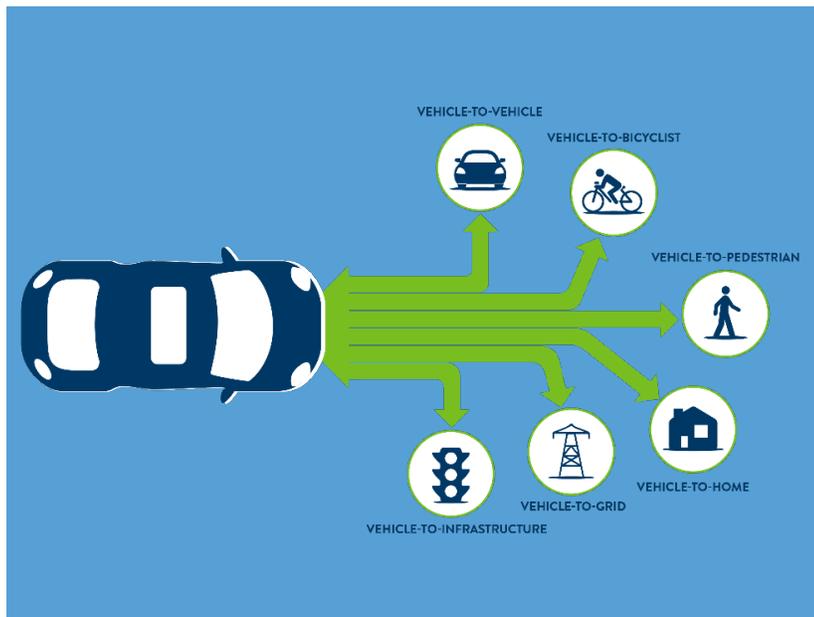
Regional Travel

The County should work cooperatively with regional partners including the Denver Regional Council of Governments, the Colorado Department of Transportation, other member jurisdictions, and neighboring counties to identify opportunities to provide multimodal regional connections along regionally significant transportation corridors and trail easements.

Freight Mobility

The County should develop and maintain a truck routing plan with designated truck routes to provide commercial access and minimize truck travel through residential neighborhoods. This should build on the upcoming update to the statewide Freight Plan.

Connected Vehicle Concept (source: Minnesota Department of Transportation)



2.4.4 - SAFETY AND INNOVATION

Electric Vehicles

The County should conduct a study identifying locations for EV charging stations at County facilities. The County can also encourage, prioritize, and support the purchase of electric vehicles through the design, management, outreach, education, policy updates, broad-based coordination, incentives and operations of streets and wayside infrastructure such as electric vehicle charging stations.

Vehicle Sharing

The County should encourage and support partnerships to provide vehicle-sharing opportunities. Programs should include a full spectrum of vehicle types (e.g., delivery trucks, pickup trucks, hybrid vehicles, scooters/ mopeds, etc.) with electrification of the shared fleet.

Autonomous and Connected Vehicles

Although autonomous and connected vehicles are only in their nascent stages, the County should begin to think about policy and program development that can ensure autonomous and connected vehicles move the County towards its goals. This can be done by ensuring that autonomous and connected vehicles and infrastructure reduce travel time, support and encourage public transit, reduce greenhouse gas emissions



(GHGs) and reduce low-occupancy trips during peak time. This can be done by prioritizing autonomous vehicles that are electrically powered, shared or operated as a fleet and by disincentivizing zero-occupancy vehicles.

Vision Zero

Vision Zero programs have been adopted by municipalities around the country at a growing rate. Communities are committing to eliminating traffic crashes that result in fatalities or serious injuries by providing safety training, implementing engineering solutions that are proven to slow vehicle speeds while reducing conflicts with other roadway users, and forming multidisciplinary initiatives for implementing safety programming. As a first step, Adams County should develop and adopt a Vision Zero Action Plan. The County currently participates in DRCOG's Vision Zero Work Group but should also consider joining Colorado's statewide program – Moving Towards Zero Deaths. The County could also consider having the Board of County Commissioners make a proclamation in support of the state initiative, demonstrating the County's commitment to the vision of zero traffic-related deaths.

FHWA Local Road Safety Plan

Adams County should develop and implement a FHWA Local Road Safety Plan. Leveraging opportunities to incorporate safety programming into all County transportation planning efforts is crucial. The Federal Highway Administration's (FHWA) Local Road Safety Plan (LRSP) program is one example of a road safety planning effort the County can undertake. The LRSP program focuses specifically on safety for local (non-highway) roadways, where fatality rates are often higher than on highways, even though traffic volumes are lower. Local roads tend to have more conflict points where crashes occur like intersections. In addition, local roads have less separation between modes, which can increase crash severity when speed limits are not observed. While safety initiatives can often focus on identifying opportunities for improving conditions on major roadways, an LRSP is an opportunity to focus on all streets within the jurisdiction's control.

2.5 - FIVE STRATEGIC CORRIDORS

To highlight specific opportunities for focused improvements in key areas, *Advancing Adams* selected five strategic corridors that were analyzed in greater detail as a part of the planning process—Federal Boulevard, Washington Street, Pecos Street, 104th Avenue, and 120th Avenue (**Map 2.2**). The *Advancing Adams* Existing Conditions and Opportunities Report in **Appendix A** profiled the current state of the corridors and provided opportunities for modifying the corridors to promote multimodal travel. The following section describes the transportation infrastructure (transit, bicycle, pedestrian, and vehicular) that exists on each corridor and shares opportunities for transportation improvements that would both enhance mobility and complement concepts put forward in the Comprehensive and Parks, Open Space and Trails Plans.

The *Advancing Adams* team considered a range of transportation opportunities for each corridor including road diets (the reallocation of vehicle travel lanes to other uses such as enhanced bicycle or pedestrian facilities), enhancing facilities for those walking or rolling, and leveraging new technologies for forming new connections or operating existing facilities with greater efficiency.

2.5.1 - OPPORTUNITIES ANALYSIS

Focus group sessions were convened for each strategic corridor. These sessions provided an opportunity for agencies such as the Colorado Department of Transportation (CDOT), the Regional Transportation District (RTD), City and County of Denver, and departments within Adams County to provide initial feedback on preliminary ideas. These conversations aided the project team in streamlining a list of initial ideas and focusing on opportunities that would address community needs as identified by stakeholders and be deemed feasible by agencies that will act as implementation partners.

In addition to conversations with stakeholders, a data-driven process was used to assess how each of the five corridors currently serves each transportation mode. In addition to the County-wide analysis described previously in this report, the corridor-specific analysis also included a preliminary assessment of peak hour roadway operations to determine whether ideas like reducing the number of travel lanes might be feasible. Operations were assessed by determining volume to capacity (V/C) ratios for portions of each corridor. V/C ratios were determined using the roadway segment capacities listed in the Denver Regional Council of Governments Focus Regional Travel Demand Model and the historic traffic volume data provided by Adams County. The traffic volume data

MAP 2.2: FIVE CORRIDORS CONTEXT MAP



-  Five Strategic Corridors
-  1 Federal Boulevard
-  2 Pecos Street
-  3 Washington Street
-  4 120th Avenue
-  5 104th Avenue

provided by the County represented Average Annual Daily Traffic (AADT); peak hour volumes were derived using the assumption that the peak hour of travel represents 10% of daily traffic.

The V/C ratio conveys the quantity of vehicles utilizing a roadway at a given time as a share of the overall traffic-

carrying capacity of that roadway. For the purposes of the five corridors analysis, it was assumed that a V/C ratio of less than 0.7 signifies the roadway segment has additional peak hour capacity and that some of the right-of-way currently dedicated to vehicle travel may be reallocated to other modes. A V/C ratio of between

0.7 and 0.9 signifies that the roadway is congested during the peak hour and drivers may experience some delays. It was assumed that some right-of-way reallocation might still be feasible under these conditions. A V/C ratio of over 0.9 signifies a location where existing peak hour congestion is an issue. A V/C ratio of 0.9 corresponds with a Level of Service E or F as illustrated in **Figure 2.5**.

It should be noted that this operational analysis was conducted using limited

data and was intended to serve as a high-level screening for potential feasibility of treatments like road diets. A more rigorous analysis would be needed to conclusively assess feasibility of the opportunities offered in this plan.

Table 2.1 displays the challenges that were identified on each corridor along with the potential opportunities for improvements. Each corridor is profiled in greater detail in the following sections.

Figure 2.5: Level of Service and Volume to Capacity Ratio Concept (source: Fehr & Peers)



TABLE 2.1: EXISTING CHALLENGES AND OPPORTUNITIES ON THE FIVE STRATEGIC CORRIDORS

CORRIDOR	CHALLENGES	OPPORTUNITIES
Federal Boulevard	<ul style="list-style-type: none"> • Autocentric, with high speeds • High freight volume • CDOT-owned • Sidewalk gaps or inadequate sidewalks • Infrequent pedestrian crossings • Crosses multiple jurisdictions • Multiple character areas 	<ul style="list-style-type: none"> • Connects to the Clear Creek Regional Trail • Commercial land uses with high bicycle/ pedestrian demand • Add pedestrian crossings • Expand pedestrian realm • Consider parallel corridor for bicycle facilities • High frequency transit (route 31); consider bus-only lanes and transit enhancements at intersections • Provides access to Clear Creek - Federal commuter rail station, and create transit-oriented development
Washington Street	<ul style="list-style-type: none"> • Autocentric, with high speeds • High freight volume • Sidewalk gaps or inadequate sidewalks • Infrequent pedestrian crossings • Crosses multiple jurisdictions • Multiple character areas 	<ul style="list-style-type: none"> • Opportunity to become a creative district • Welby neighborhood generates demand for walking and biking • Opportunity for road diet to enhance the pedestrian realm, bicycle facilities, or transit amenities • Transit (route 12) • Add pedestrian crossings
Pecos Street	<ul style="list-style-type: none"> • High freight volume • Crosses multiple jurisdictions • Segments with limited bicycle and pedestrian facilities 	<ul style="list-style-type: none"> • Connecting to the Clear Creek Regional Trail • High frequency transit (route 19); consider transit enhancements at intersections • Provides access to Pecos Junction commuter rail station; create transit-oriented development • Dense, mixed use development such as Midtown
104th Avenue	<ul style="list-style-type: none"> • CDOT-owned roadway • Limited bicycle and pedestrian amenities • Wide crossings, uncomfortable for pedestrians • -Infrequent transit service (route 104); low ridership due to land use and first/last mile gaps 	<ul style="list-style-type: none"> • Critical connection to Denver International Airport • Possible trail connection to the Front Range Trail and South Platte Trail • Could become an east-west Parkway with planted medians and rural feel • Opportunity to extend the pavement edges and install detached multiuse trails and enhanced transit amenities
120th Avenue	<ul style="list-style-type: none"> • Gaps in multimodal access to Riverdale Park • Railroad crossing • Infrequent transit service (route 120) 	<ul style="list-style-type: none"> • Leverage rural feel, and natural and cultural heritage • Existing adjacent multiuse trail • Become part of larger scenic trail loop • Add more multimodal connections • Critical east-west connection



2.5.2 – FEDERAL BOULEVARD

The existing conditions analysis found that Federal Boulevard has the opportunity to become a transit-oriented development (TOD) hub for Adams County, particularly with underutilized and vacant parcels around the Clear Creek RTD station area. Incorporating mixed-use and different types of housing on the corridor while providing connections to transit could help transform Federal Boulevard to the auto-centric thoroughfare of today into a multimodal facility. It was also found that Federal Boulevard lacks

a cohesive character; integrating streetscape elements like trees, plantings, pedestrian crossing treatment, public art, and other placemaking features can address this issue.

General recommendations for the corridor build off the work of the Federal Boulevard Multimodal Transportation Study completed in December 2021 and include:

- Establishing Federal Boulevard as an enhanced transit corridor
- Completing/upgrading the sidewalk network where feasible

to establish better pedestrian connectivity

- Making connections between Federal Boulevard and the Clear Creek Trail

Adams County should coordinate with CDOT on any potential improvements. The combination of CDOT’s jurisdictional oversight of the corridor along with the existing high volume of traffic within a constrained right-of-way impacts the County’s ability to fully reshape the corridor.

2.5.2.1 - Enhanced Transit Corridor

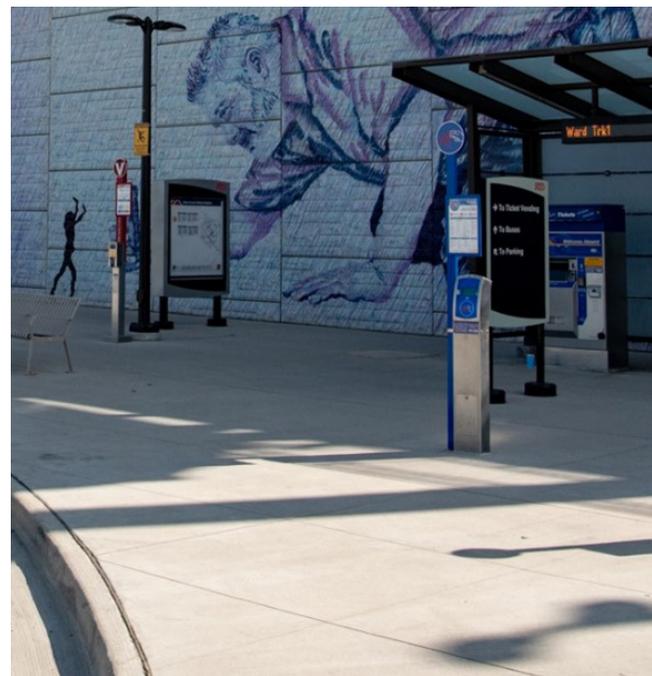
In the near-term, the County can reimagine Federal Boulevard as an enhanced transit corridor with dedicated bus lanes that operate either in both directions or south in the morning and north in the early

evening to match peak hour traffic flows (**Figure 2.6**). The bus lanes can be paired with enhanced bus stops that provide a comfortable shelter for riders, arrival times, and clear signage to support riders with trip planning (**Figure 2.7**). The County can also consider transit signal priority that improves reliability by ensuring buses can travel through an intersection on green signals and maintain scheduled arrival times at stops. The enhanced transit corridor would support the land use vision of transit-oriented development along Federal Boulevard. The recommendations for an enhanced transit corridor on Federal Boulevard align with opportunities that were explored through the Federal Boulevard Multimodal Transportation Study.

Figure 2.6: Example of a Dedicated Bus Lane in Downtown Denver (source: Fehr & Peers)



Figure 2.7: High Comfort Transit Stop (source: Design Workshop)



2.5.2.2 – Pedestrian Network Enhancements

Long-term needs on the corridor include completing the sidewalk network and upgrading existing pedestrian crossings while also adding additional crossing opportunities. While completion of the pedestrian network on Federal Boulevard is a longer-term improvement that will require coordination with multiple jurisdictions, there are recommended near term enhancements that would complete pedestrian connections to the Clear Creek – Federal commuter rail station. Specifically, adding a connection to the Clear Creek Trail from Federal Boulevard would provide pedestrian access between that key regional recreational corridor, the commuter rail station, and Federal Boulevard. In addition, the Federal Boulevard bridge over the Clear Creek should be upgraded to provide a wider facility for pedestrians.

Figure 2.8:
High Intensity Activated Crosswalk (HAWK)
(source: Denver Public Works)



In addition to near-term opportunities adjacent to the commuter rail station, pedestrian connections all along the corridor could be improved through implementation of enhanced crossings. This can be accomplished through installation of treatments like High Intensity Activated Crosswalk (HAWK) signals (**Figure 2.8**), which serve as a stop control for traffic while pedestrians cross. These can be paired with green-backed intersection markings for bicyclists like the example shown in **Figure 2.9**.

As a part of the Federal Boulevard Multimodal Transportation Study, CDOT and the County are upgrading crossings in order to ensure Americans with Disabilities Act (ADA)-compliance in the short-term. Intersections where crossing enhancements could be considered long-term include:

- 52nd Avenue
- 54th Avenue
- 56th Avenue
- 60th Avenue
- 64th Avenue
- Longfellow Place/65th Place
- 67th Avenue
- 70th Avenue
- 72nd Avenue



2.5.2.3 - Accommodating Bicyclists

Dedicated on-street bicycle facilities are likely not feasible on Federal Boulevard due to the high traffic demand and limited right-of-way. Lowell Boulevard is a parallel corridor where the City and County of Denver is considering investing resources for enhanced bicycle facilities. An enhancement of bicycle facilities on Lowell Boulevard in the southern portion of Adams County would provide a key north-south connection for people biking and connect Adams County seamlessly to Denver for people biking. There is an opportunity to establish more connectivity between Federal Boulevard and Lowell Boulevard through implementation of bicycle boulevards on east-west streets and wayfinding signage that communicates

opportunities for connecting to key destinations. Alternatively, if the County is able to coordinate with CDOT and property owners to modify the right-of-way, then implementing a ten-foot wide detached sidewalk along the corridor would allow bicyclists and pedestrians to share a travel facility that is separated from vehicle traffic.

Figure 2.9: Example of an Enhanced Crossing Treatment with Dedicated Bicycle Striping and Signals (source: Fehr & Peers)



2.5.3 - PECOS STREET

As noted in the Existing Conditions and Opportunities Report, Pecos Street is a Minor Arterial that connects Adams County and the City and County of Denver, terminating to the north at 104th Avenue. The existing conditions analysis found a number of transportation challenges along the corridor, including limited pedestrian and bicycle facilities, challenging connectivity to the Pecos Junction RTD commuter rail station, and high peak hour travel demand that results in congested conditions. Pecos Street has a clear and defined industrial character as well as some autocentric

commercial land uses on the southern portion of the corridor. The industrial land uses on the corridor as well as the direct connections to US-36 and I-76 contribute to a significant presence of truck traffic, which further decreases the comfort for people walking and biking. Given the high level of traffic demand, adding facilities for multimodal travel may require expanding the existing cross section rather than reallocating vehicle travel lanes to other modes.

Per the *Advancing Adams Comprehensive Plan*, Pecos Street has the potential to become a connected

and attractive employment center for Adams County. With a strong industrial presence and existing connectivity, this area can become a great location for logistic services for the larger region. At the same time, the corridor serves a number of neighborhoods and multi-family housing that would benefit from enhanced transportation options.

To improve transportation connectivity on Pecos Street, it is recommended that:

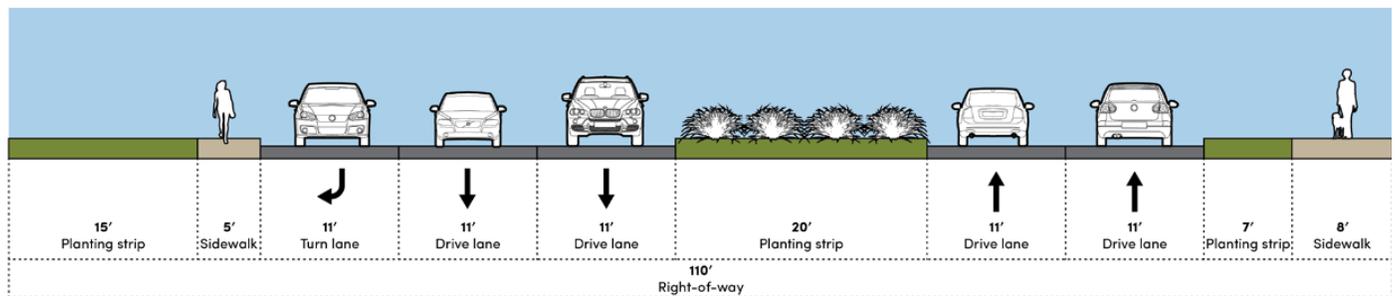
- Multimodal travel facilities are added while existing travel lanes are maintained
- Transit enhancements for improving connectivity to the Pecos Junction Station are considered

- Connections to the Clear Creek Trail are pursued

2.5.3.1 - Adding Multimodal Facilities

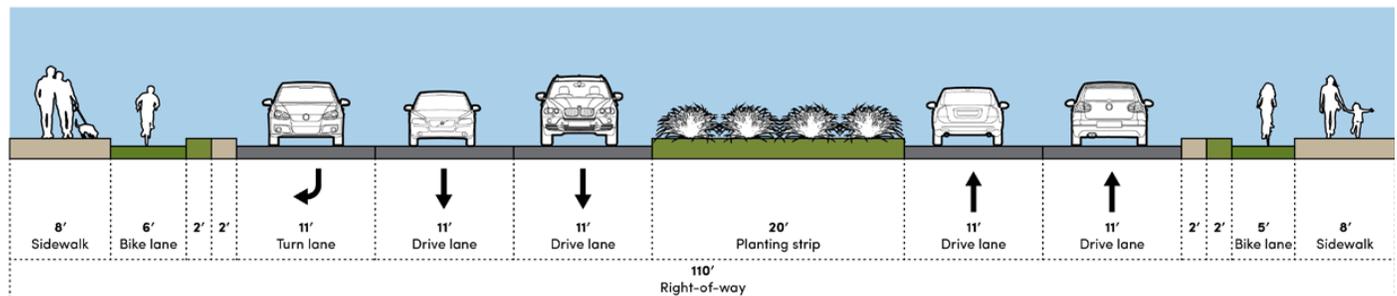
The existing cross section of Pecos Street (Figure 2.10) through the portion of the study area that is north of the Pecos Junction commuter rail station has an attached sidewalk on the west side of the street with an adjoining planting strip that is approximately 15-foot wide. If the planting strip is within the public right-of-way, then the County can pursue an expanded cross section that maintains the existing configuration of travel lanes while adding comfortable facilities for bicyclists and pedestrians.

Figure 2.10: Existing Cross Section of Pecos Street north of 64th Avenue



Source: Fehr & Peers

Figure 2.11: Potential Cross Section on Pecos Street North of 64th Avenue



Source: Fehr & Peers

In order to better accommodate people walking and bicycling on the corridor, the County can assess whether the under-utilized space adjacent to the sidewalk on the west side of Pecos Street can be modified to accommodate a six-foot wide bicycle lane and an eight-foot wide sidewalk (**Figure 2.11**). This would allow for enhanced bicycle and bidirectional pedestrian access while maintaining the existing number of vehicle travel lanes. On the east side of Pecos Street, the existing planting strip that serves as a buffer between the sidewalk and roadway could be reconfigured to provide a bicycle facility. Implementation of the proposed cross section north of Cargill Drive would bring a consistent cross section through the length of the corridor and provide connections to the Pecos Junction Station and the Clear Creek Trail. This proposed cross section modification would foster better connectivity between the Midtown development and destinations to the south. In addition, the modification would be one step towards transforming Pecos Street into a multimodal corridor from the Denver border at 52nd Avenue to the north. A critical remaining gap is the Pecos Street bridge between Cargill Drive and 62nd Parkway. *Advancing Adams* will investigate opportunities for upgrading the experience for people walking and biking on the bridge, though an additional detailed feasibility assessment should also be pursued due to the engineering and

cost constraints involved in upgrading major bridges.

2.5.3.2 - Enhancing Transit

RTD's route 19 travels along Pecos Street and serves two of the highest ridership stops in the County at 72nd and 76th Avenues. This route also connects to the Pecos Junction commuter rail station, serving the B and G Lines. Most bus stops along Pecos Street currently lack stop amenities like shelters and benches. Enhancing the bus stops could help improve the transit user experience along the corridor.

2.5.3.3 - Connecting to the Clear Creek Trail

Approximately one mile north of the station is a New Urbanist development, Midtown, with a wide, buffered multiuse trail along Pecos Street (**Figure 2.12**). Immediately south of the development, Pecos Street provides access to the Clear Creek Trail, an important regional connection for people biking and walking. The County is pursuing implementation of the wayfinding signage recommendations provided in the 2017 Clear Creek Corridor Master Plan in order to foster an enhanced sense of connectivity to the trail. In general, pedestrian connectivity is challenging on the corridor due to the high number of barriers including the rail lines and I-76 and should be explored further.



Figure 2.12: Multiuse Trail Adjacent to the Midtown Neighborhood (source: Design Workshop)

MAP 2.5: WASHINGTON STREET CORRIDOR

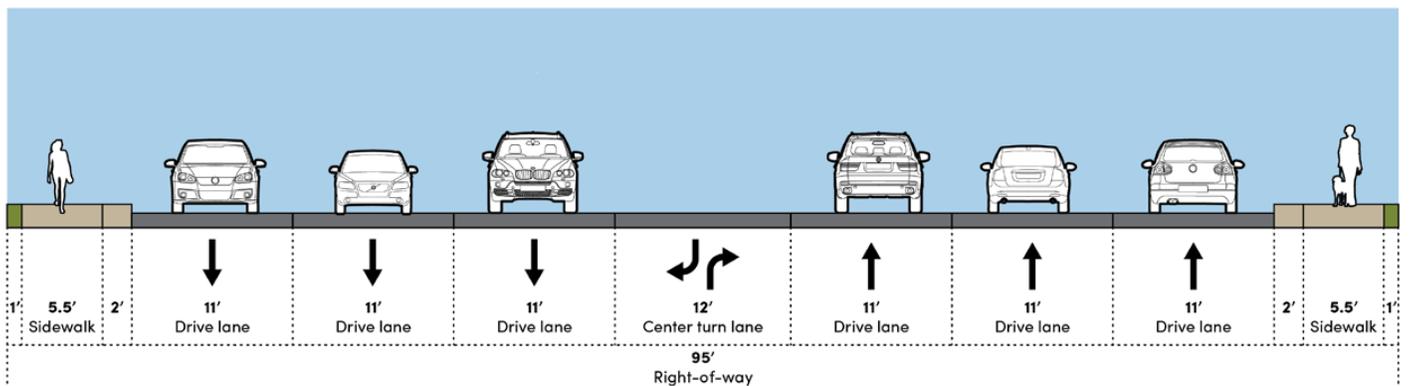


2.5.4 - WASHINGTON STREET

Washington Street is a north-south Principal Arterial with three distinct

characters across its extent—1. The northern segment has primarily auto-centric commercial land uses; 2. The section adjacent to the Welby neighborhood has a unique

Figure 2.13: Existing Cross Section of Washington Street Between 73rd Avenue and 78th Avenue



Source: Fehr & Peers



Figure 2.14: Washington Street Looking North from I-270 (source: Design Workshop)

character with a mix of uses; and 3. South of I-270 is primarily industrial. The existing cross section of Washington Street varies between four lanes and six lanes, with a two-way left turn lane and attached sidewalks. **Figure 2.13** shows the existing six lane cross section between 73rd and 78th Avenues.

Overall, the corridor has a unique mix of agricultural heritage and industrial uses. Bicycle and pedestrian facilities are inconsistent, and do not provide comfortable opportunities for those walking and biking, given the high vehicle speeds and volumes on the corridor. Sidewalks are generally present, but not Americans with Disabilities Act (ADA)-compliant and are narrow in width; there are utility poles interrupting the sidewalk, driveways that are not properly graded, and debris is often present. The corridor is not comfortable for

pedestrians due to high vehicle volumes and speeds, associated noise, lack of trees and vegetation, and excessive curb cuts (**Figure 2.14**).

Preliminary analysis of roadway operations on Washington Street suggests the corridor does not

TABLE 2.2: EXISTING PEAK HOUR VOLUME TO CAPACITY RATIOS ON WASHINGTON STREET

CROSS STREET	73RD AVENUE	78TH AVENUE
Lanes	6	6
Existing Daily Volume (Daily vehicles)	23,508	20,539
Peak Hour Capacity (Peak hour vehicles)	5,100	5,100
Existing Peak Hour Volume (vehicles)	2,351	2,054
Existing Peak Hour V/C Ratio	0.46	0.40

experience significant congestion during the peak hour (**Table 2.2**). Transit riders currently have limited bus service on the corridor with RTD route 12 providing 30-minute frequencies and with limited high comfort bus stops. Participants from an *Advancing Adams* focus group on Washington Street indicated that without substantial land use changes, ridership on the corridor would likely remain low, though the group also supported enhancing transit for existing riders through providing benches and shade at bus stops.

The main opportunities for Washington Street emerging from *Advancing Adams* are:

- Implementing a road diet from 73rd Avenue to 78th Avenue
- Exploring operational and infrastructure enhancements to transit service

2.5.4.1 - Road Diet

Given the operational analysis finding in Phase 1 that Washington Street may have capacity for vehicle traffic that exceeds forecasted future demand, it is recommended the County pursue a road diet between 73rd Avenue and 78th Avenue that would reduce Washington Street from six to four travel lanes through this portion of the corridor. Sufficient right-of-way exists for either:

- A narrow buffer on one side of the street that leaves room on the other side of the street for

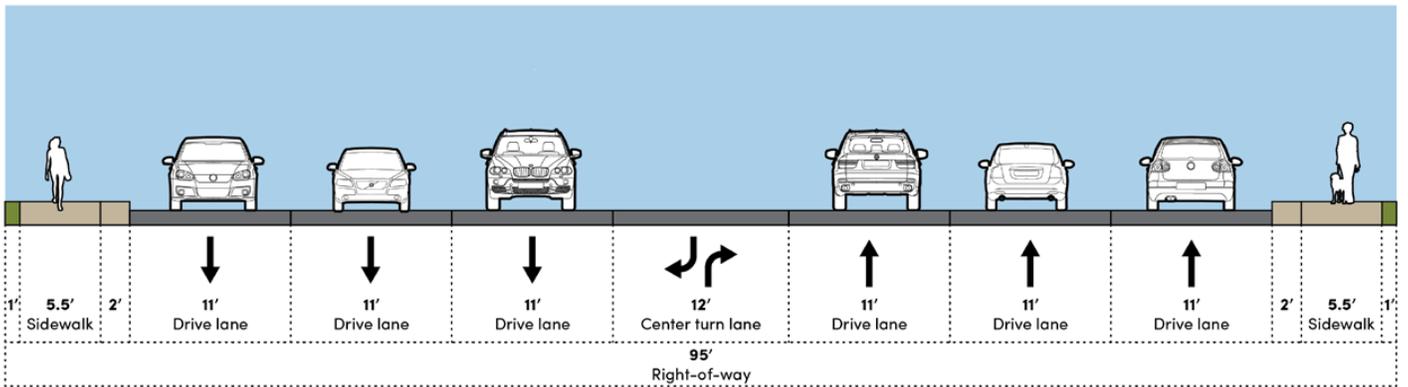
enhanced bus stops or trees in the buffer when a bus stop is not present (**Figure 2.16**).

- A wider buffer with space for street trees on both sides of the street (**Figure 2.17**).

The concepts shown are preliminary; further study would be required to select a design that will both work on Washington Street and meet the goals of this plan. Additional considerations to be analyzed further include whether the County has additional right-of-way on the west side of Washington Street to accommodate a wider sidewalk and planting zone, and, if not, whether there are any opportunities to acquire the needed right-of-way. As feasibility is studied further, a refined cross section should be developed.

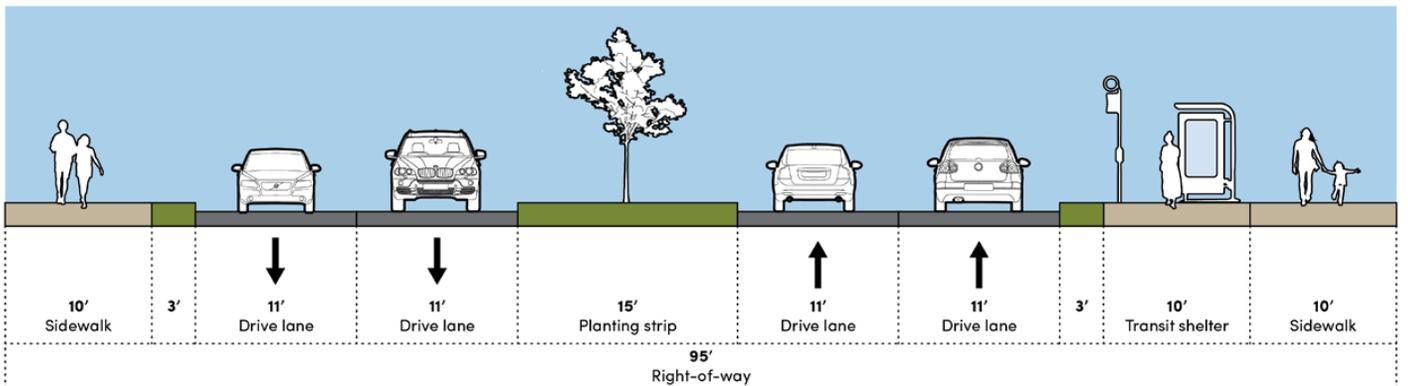
As noted during Phase 1, Washington Street's unique mix of light industrial, residential, and agricultural land uses gives the potential to strengthen its identity and become the Creative Center of Adams County. The Welby area, located east of Washington Street, and the industrial area south of I-76, offer a unique type of development potential that could lead to a Colorado Creative District if the infrastructure, capital improvements, and developer partners can be secured. The road diet on Washington Street would contribute to the placemaking that is needed for a destination district to be successful.

Figure 2.15: Existing Cross Section of Washington Street
(between 73rd Avenue and 78th Avenue)



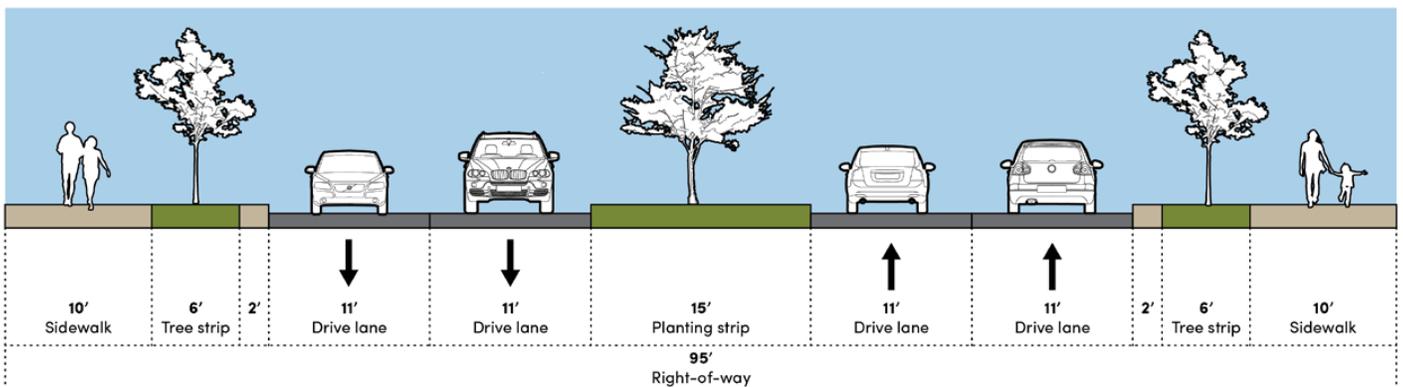
Source: Fehr & Peers

Figure 2.16: Proposed Option 1 Cross Section of Washington Street
(between 73rd Avenue and 78th Avenue)



Source: Fehr & Peers

Figure 2.17: Proposed Option 2 Cross Section of Washington Street
(between 73rd Avenue and 78th Avenue)



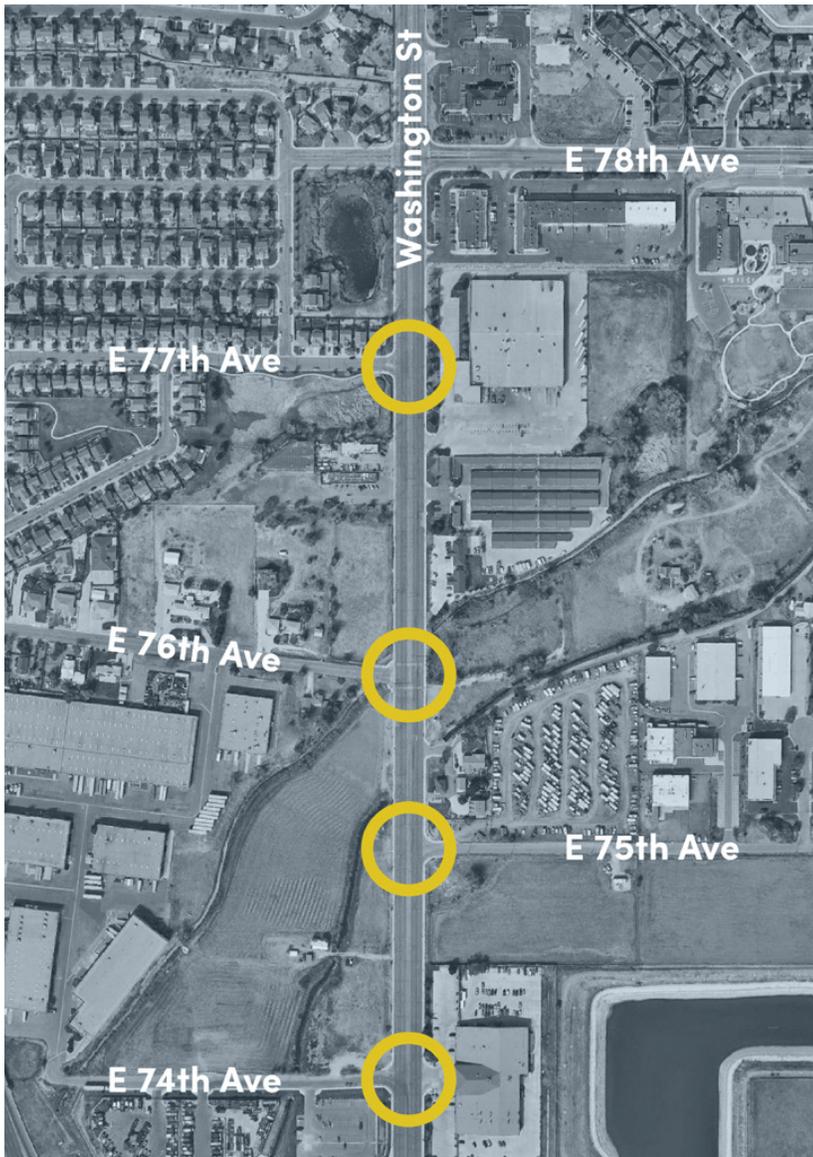
Source: Fehr & Peers



TABLE 2.3: PEAK HOUR VOLUME TO CAPACITY RATIOS ON WASHINGTON STREET

CROSS STREET	73RD AVENUE		78TH AVENUE	
	Existing	Post-travel lane reduction	Existing	Post-travel lane reduction
V/C Ratio	0.46	0.69	0.40	0.60

Figure 2.18: Opportunity Locations for Enhanced Pedestrian and Bicycle Crossings on Washington Street (source: Fehr & Peers)



The road diet would result in Washington Street becoming a more uniform corridor for vehicles while also introducing opportunities for multimodal travel. According to preliminary analysis, this could be accomplished without generating a prohibitive amount of peak hour traffic congestion (**Table 2.3**). A reduction in the number of travel lanes would enable reallocation of right-of-way towards ten-foot wide sidewalks that adhere to the County standards for pedestrian facilities on Major Arterials. A buffer separating the sidewalk from the roadway could be included in the design to both observe County standards and provide a more comfortable pedestrian environment. This proposed cross section leaves opportunities for a dedicated bicycle facility and enhanced bus stops.

The cross section could include a center median with periodic breaks for left turn pockets or implementation of pedestrian refuge islands and enhanced crossings. Potential locations for crossing enhancements are shown in **Figure 2.18**. Since there are infrequent pedestrian crossing opportunities



on Washington Street between 73rd Avenue and 88th Avenue, better connections would be made possible through crossing treatments like High-Intensity Activated crossWalk (HAWK) signals and green-backed intersection markings for people biking across a high volume roadway like Washington Street.

2.5.4.2 - Bus Service Enhancements

The existing bus stops on Washington Street do not provide riders with a comfortable place to wait for the bus. The attached sidewalks leading to the bus stops means that transit riders must wait for the bus adjacent to high speed, high volume traffic (**Figure 2.19**). It is recommended that

during road diet implementation, all bus stops on the corridor be upgraded to include shade, benches, a landscape buffer, and other amenities. Since the existing land uses and urban design can make transit a challenging mode choice, the County will investigate opportunities to create nodes of greater density and pedestrian-oriented design that can support more sustainable travel options. An example may include a mobility hub at 73rd Street, which can be tied to commercial land uses that make multimodal travel on the corridor more attractive. Mobility hubs are described in greater detail in **Chapter 7**.

Figure 2.19: Sidewalk and RTD Bus Stop on Washington Street (source: Design Workshop)





2.5.5 - 120TH AVENUE

Figure 2.20: Aerial View of 120th Avenue (source: Design Workshop)

120th Avenue is two-lane Principal Arterial that serves as a major east-west corridor across Adams County. The roadway transitions between four, five, and six travel lanes as it

travels across the County. The corridor provides access primarily to residential areas as well to regional interstates. The corridor has a rural feel due to the surrounding open space, with potential to serve as a scenic byway (Figure 2.20). The section of 120th Avenue that serves unincorporated Adams County has a multiuse trail that provides comfortable opportunities for those walking and biking. These paths provide some access to the recreational and programmed opportunities at Riverdale Regional Park. However, the County has identified 120th Avenue as one of the strategic corridors due to gaps





Figure 2.21: Existing At-Grade Multiuse Trail Crossing on 120th Avenue (source: Google Earth)



Figure 2.22: Sample At-Grade Rail Crossing Treatments (source: Trimet)

in multimodal access to the park, which serves as a critical recreational amenity for County residents and visitors.

To improve travel conditions for all users on 120th Avenue, it is recommended that Adams County spearhead an effort to establish a regional partnership that can identify a uniform vision for the corridor.

2.5.5.1 - Regional Coordination to Establish a Vision for 120th Avenue

The major opportunity for this corridor is to create partnerships with adjacent municipalities to determine a common vision for the roadway and facilitate coordinated implementation including multimodal access. 120th Avenue could become part of a larger scenic trail loop that connects a variety of

destinations of natural and cultural heritage and creates a memorable experience for residents and visitors. This regional trail loop could connect the Denver International Airport, Rocky Mountain Arsenal, National Western Center, South Platte Trail, Clear Creek Trail and the Colorado Front Range Trail.

The regional partnership for 120th Avenue would help maintain 120th Avenue as a critical east-west corridor for vehicle travel while also promoting more consistent multimodal connections. In addition, challenges like the at-grade rail crossings could be addressed through adoption of crossing gates, signage, and tactile ground surface indicators as shown in **Figure 2.22**. These treatments would help make at-grade multiuse trail crossings more comfortable.



2.5.6 - 104TH AVENUE

104th Avenue is a state-owned roadway that carries between 15,000 and 21,000 vehicles per day. This Principal Arterial has two to three travel lanes between Riverdale Road and I-76, and five travel lanes between Colorado Boulevard and Riverdale Road (**Figure 2.23**). The corridor is a critical connection to Denver International Airport, serving both travelers and airport employees. There are limited bicycle and pedestrian amenities along this corridor, as it takes a more rural feel. A new trail connection is being implemented near Brighton Road and

104th Avenue that will connect to the Front Range Trail and South Platte Trail. *Advancing Adams* presents an opportunity to build upon that upcoming connection.

Transit service on the corridor is provided by RTD’s 104 route, which has relatively low ridership. Transit access on the corridor is limited due to both the existing low-density land uses but also a lack of sidewalks and comfortable places to wait for the bus (**Figures 2.24 & 2.25**).

CDOT and the City of Thornton are planning a roadway widening of 104th Avenue between Colorado Boulevard

and the Platte River. For Adams County, the chief initiative moving forward will be seeking alignment with those plans where possible.

2.5.6.1 - Regional Collaboration on 104th Avenue

Given the current road configuration and existing character that is present between US-36 and Federal Boulevard, 104th Avenue could become an east-west Parkway with planted medians and other elements that would support a smaller scale feel and more rural appeal. A land use vision for this corridor will require inter-jurisdictional partnerships and coordination, given most of the development is driven by municipal entities. The opportunity also exists to establish new connections to the east side of US-85 and connect those neighborhoods with the existing trail system and parks. It is recommended that Adams County be an active partner to the City of Thornton and CDOT in defining final designs for the widening of 104th Avenue.

While the upcoming trail connection between Brighton Road and the Colorado Front Range Trail will be valuable, there is an opportunity to expand bicycle and pedestrian facilities further east and west as shown in **Figure 2.26**. A potential cross section for 104th Avenue between Riverdale Road and Belle Creek Boulevard is shown in **Figure 2.27**. This concept could be accomplished by replacing the existing two-way left turn lane with a planted median,



Figure 2.23:
Varying Number of Travel Lanes on 104th Avenue (source: Design Workshop)



Figure 2.24:
Existing Sidewalk on 104th Avenue



Figure 2.25:
Existing Bus Stop at 104th Avenue and Brighton Road (source: Google Earth)

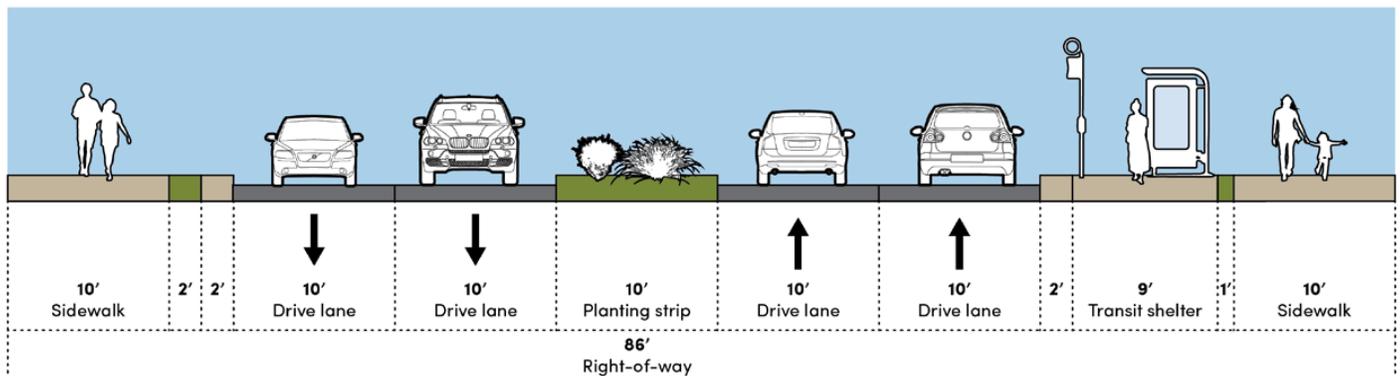
which would help foster a parkway character and slow speeds through the corridor. There is an opportunity to extend the pavement edge north and to install a detached multiuse trail and enhanced bus stops. Where bus stops are not present, a wide buffer is suggested between the travel lane and multiuse trail to provide a

more comfortable experience for people walking and biking along 104th Avenue. This potential treatment would maintain 104th Avenue as a corridor that emphasizes vehicular travel while also providing space for people walking or bicycling and increase comfort for those accessing and waiting for the bus.

Figure 2.26: Colorado Front Range Trail Opportunity to Improve Connectivity
(source: Fehr & Peers)



Figure 2.27: Potential Cross Section for 104th Avenue



Source: Fehr & Peers

