CONNECTING CROSSROADS

LONG-RANGE TRANSPORTATION PLAN UPDATE

FINAL PLAN

JANUARY 2020

CASPER AREA
METROPOLITAN PLANNING ORGANIZATION
Casper - Mills - Evansville - Bar Nunn - Natrona County

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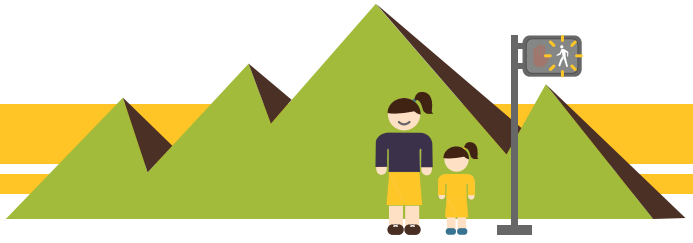
GLOSSARY

ADA	Americans with Disabilities Act
ADT	Average Daily Traffic
BDW	Bighorn Divide & Wyoming Railroad
BNSF	Burlington Northern Santa Fe Railway
CATC	Casper Area Transportation Coalition
CLH	Casper Logistics Hub
CPR	Casper-Natrona County International Airport
DAR	Dial-A-Ride (Demand Response services / Paratransit)
DOT	Department of Transportation
FHWA	Federal Highway Administration (also FHA)
FTA	Federal Transit Administration
HSIP	Highway Safety Improvement Program
LOS	Level of Service
LRTP	Long Range Transportation Plan
MAP-21	Moving Ahead for Progress in the 21st Century
MPO	Metropolitan Planning Organization
MTIP	Metropolitan Transportation Improvement Program
NHS	National Highway System
ROW	Right-of-Way
SOV	Single Occupancy Vehicle
SRTS	Safe Routes to School
STIP	State Transportation Improvement Program
STPU	Surface Transportation Program Urban
TAC	Technical Advisory Committee
TAP	Transportation Alternative Program
TIP	Transportation Improvement Program
VMT	Vehicle Miles Traveled
WBC	Wyoming Building Council
WYDOT	Wyoming Department of Transportation



ACKNOWLEDGEMENTS

CASPER AREA MPO

- Technical Committee
- Policy Committee
- Citizen's Committee
- Infrastructure Subcommittee

PROJECT TEAM

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INTRODUCTION:

EXECUTIVE SUMMARY

Connecting Crossroads is a three-decade horizon guiding document for transportation investments throughout the Casper Area. The plan is an update of the 2040 Long Range Transportation Plan (LRTP) that was published in July 2014 for the Casper Area Metropolitan Planning Organization (MPO). The Casper MPO includes the City of Casper, Towns of Bar Nunn, Evansville, and Mills, and portions of Natrona County. The plan identifies transportation projects, programs, and policies that improve transportation options for people of all ages and abilities based on documented community values and available financial resources.

COMMUNITY INVOLVEMENT

A long-range plan would not be meaningful without input from the community, stakeholders, and local officials. Over thirty meetings were held throughout the Casper Area to gather input on transportation issues and opportunities and to obtain feedback on goals, evaluation metrics, and project prioritization. In addition to meetings with the Policy Committee, Citizens Committee, Technical Committee, and Infrastructure Sub-committee, visioning and input sessions were held with representatives of the Casper Area Economic Development Alliance (CAEDA), Casper-Natrona County Health Department, Casper Area Transportation Coalition (CATC), Platte River Trails Trust, Wyoming Medical Center, and Wyoming Department of Transportation (WYDOT). A comprehensive survey was distributed online and in paper format so that everyone's issues and priorities could be voiced comfortably. Feedback was also solicited from the community through pop-ups at various events like the Casper Chocolate Walk in the winter and David Street Farmers Market in the summer. In addition, a series of workshops open to the public and decision makers were held to craft visions for the future of active transportation, safety, congestion management, growth, and development in the Casper Area.

VALUES BASED GOALS

Project goals were developed based on review of previous Casper Area plans, input from stakeholders, and feedback provided by MPO advisory committees. The goals were then presented to and refined with input from community members. The goals were developed with the intention to be able to tie them to performance measures later in the planning process as required by federal legislation, such as the FAST Act. The final goals established for Connecting Crossroads are as follows:

- Increase Transportation Options for All Modes
- Improve Safety and Health for All Residents
- Enhance the Region's Distinct Character
- Support the Region's Diversifying Economy
- Promote Affordable and Easy Mobility Solutions

NEEDS ASSESSMENT

Transportation system needs were assessed through a review of existing conditions in the Casper Area including demographics, population and job growth, commuter patterns, transit ridership and performance, and collision and traffic data. Issues and opportunities of the existing roadway, pedestrian, and bicycle networks were gathered from previous plan review, stakeholder interviews, and on the ground audits. Future travel demand was analyzed through growth scenarios applied to the regional TransCAD model.

EVALUATION

Evaluation occurred by first screening a long list of recommended projects from previous plans and input from MPO committees. Projects were then scored based on their ability to achieve a number of objectives related to plan goals and performance measures. This allowed for development of a preliminary prioritization list that was distributed to MPO committees and members of the community for feedback. The projects were then inserted into the travel demand model to see how they would perform for future year 2048 growth under a "compact" and "sprawl" land use scenario.

RECOMMENDED PROJECTS

From the findings of the evaluation process a final list of projects was developed based on the estimated funding available to the Casper Area MPO through 2048. While the prioritization scoring played a key role in forming the final list of projects, careful consideration was placed on providing projects in the near-term that MPO member jurisdictions documented were a priority, had identified funding sources, or planning work was under way. In general, projects that provide the most benefit per dollar and push forward all the goals of Connecting Crossroads were selected for near-term implementation. Higher cost roadway expansion or new connection projects that would not serve all modes, detract from some plan goals, and/or represent a significant increase in asset management costs were recommended for later years when need will have been further assessed from subsequent LRTP updates.

SUPPORTIVE PROGRAMS & POLICIES

In addition to capital projects, Connecting Crossroads provides recommend programs to ensure the ongoing success of the transportation system, and ideas for policies to further address sustainable growth, health, safety, and equity. A vital component of this is designating more than half of estimated funding through 2048 for asset management to ensure maintenance and preservation of the transportation system.

PERFORMANCE MEASURES

Performance measures are a key component of the federally mandated LRTP process. Connecting Crossroads provides performance measures and metrics tied to the established plan goals in order to achieve progress towards regional access and mobility, economic development, health, safety, and equity.

SECTION ONE:

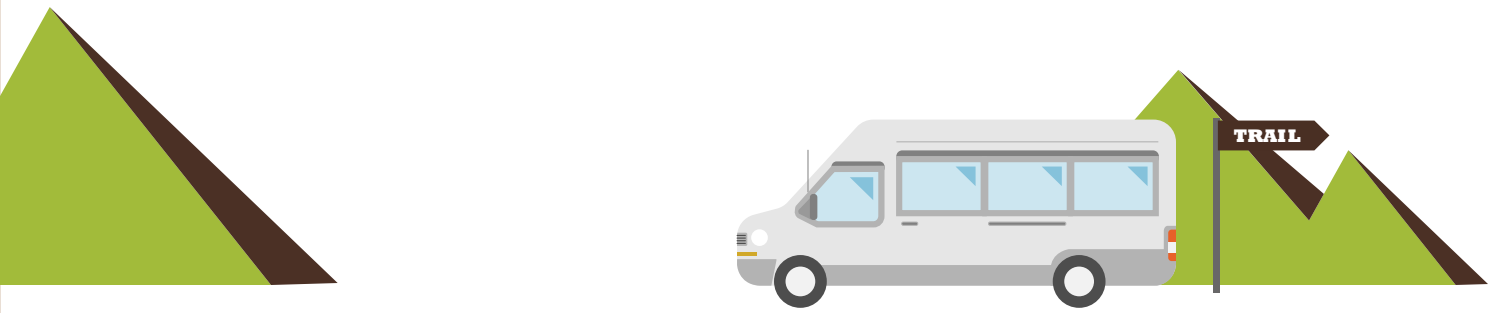
CONNECTING CROSSROADS

OUR CHARGE

The Casper Area is growing, creating challenges for our current transportation system. And our population is changing—the number of older adults is growing, and young people are driving less than their parents. People are asking for a wider range of mobility options, and they want safe connections that help them get to where they need to go.

As we developed Connecting Crossroads, we learned about your vision for the future of the Casper Area and your ideas for solutions to help respond to these changes. We heard that Casper Area residents want safe, comfortable, and reliable ways to get around the region. For some that means better biking connections or safer walking conditions; for others, that means a reliable way to drive or an efficient trip to work and services on the bus. We also know that when transportation is tied to land use, we can support future growth and catalyze the local economy in a way that does not strain the transportation system or threaten public finances and the environment for future generations.

We heard that you want to prioritize a transportation system that helps people safely and comfortably walk, bike, take the bus, and drive. Your input guided our work.



OUR PLAN

Connecting Crossroads is our three-decade plan for transportation investments throughout the Casper Area. It identifies transportation projects, programs, and policies that improve transportation options for people of all ages and abilities. Connecting Crossroads is the Long-Range Transportation Plan (LRTP) update for the Casper urbanized area. Developing a long-range transportation plan is a federal requirement carried out by the Casper Area MPO. This plan helps prioritize how we should spend limited transportation funds on projects that best serve the values identified by the community.

WHAT IS THE CASPER AREA MPO?

Connecting Crossroads is led by the Casper Area Metropolitan Planning Organization (MPO). An MPO is the policy board of an organization created and designated to carry out the metropolitan transportation planning process. MPOs are required to represent localities in all urbanized areas (UZAs) with populations over 50,000, as determined by the U.S. Census. The Casper Area MPO provides cooperative, comprehensive, and continuous transportation planning to the Casper urbanized area which includes the City of Casper, and the Towns of Bar Nunn, Evansville, and Mills.

In addition to the LRTP, the MPO is responsible for creating annual updates to the Unified Planning Work Program (UPWP) and Transportation Improvement Program (TIP). These documents, informed by the recommended plan in the LRTP, provide a fiscally constrained framework for the MPO's allocation of funding for capital, planning, and administration projects over the next one and four Federal Fiscal Years (FYs). The projects included in the UDWP and TIP documents are reevaluated each year based on community need and are removed if they are complete, under construction, or no longer necessary.

COLLABORATION

Casper Area MPO facilitates regional and local surface transportation planning through cooperative, comprehensive, and continuous collaboration among the public and government agencies. The MPO is governed by the Policy Committee which includes representatives from member jurisdictions in addition to the County of Natrona, the Wyoming Department of Transportation (WYDOT), Casper/Natrona County International Airport, and the Casper Area Transportation Coalition (CATC). The Policy Committee is aided by a Technical Committee staffed with planners, engineers, and public works officials from each jurisdiction, and a Citizens Committee comprised of members of the public who are interested in transportation and provide a resident's perspective on planning issues.

FUNDING

Casper Area MPO directs federal funds towards projects that increase access to opportunity and prosperity, while promoting the health, wellness, and distinct character of the Casper Area's people and environment through regional policymaking.

To learn more about the MPO, go to: **https://www.casperwy.gov/residents/roads_and_parking/metropolitan_planning_organization**


TRAIL

SECTION TWO:

OUR PROCESS

PROJECT TIMELINE

Connecting Crossroads is a vision for our transportation needs and opportunities over the next three-decades to ensure that our community is connected by a safe, efficient, and sustainable transportation system. The project team—made up of MPO staff and consultants—engaged with the community at key milestones along the way to ensure this final plan matches Casper Area values and priorities.

PROJECT LAUNCH

We kicked off in September 2018 by developing a project brand and met with various Casper Area MPO committees.

COMMUNITY VALUES & OPPORTUNITIES

We held two pop-up events and created an online survey to understand your priorities when it comes to getting around the Casper Area.

PROJECT GOALS, EVALUATION FRAMEWORK, & EXISTING CONDITIONS

Based on the values you shared with us, we developed an evaluation framework to prioritize projects. This was approved by the MPO to guide the next phases of work. Concurrently, we explored publicly available data to better understand the demographics and existing conditions in the area.

COMMUNITY WORKSHOPS & FACILITY TOURS

We held a three-day charrette with informal workshops and work sessions at Casper College. We also visited problematic intersections and various bicycle and pedestrian "pain points" in the Casper Area.

CALL FOR PROJECTS

We sought input from town planners, community groups, the MPO, and an online survey, to gather your input on the bicycle, pedestrian, transit, and auto projects needed to make it easier and safer to move around the Casper Area.

PROJECT PRIORITIZATION

Using the evaluation framework, we scored projects and identified scenarios to illustrate different ways for the Casper Area to explore and prioritize investments in the LRTP.

RECOMMENDED SCENARIOS & FUNDING OPTIONS

We developed a final preferred scenario that best supports the values identified by the community, responds to financial constraints, and reflects past planning processes.

DRAFT & FINAL LONG-RANGE TRANSPORTATION PLAN

Connecting Crossroads includes a final list of projects, along with metrics to monitor performance. The plan will be adopted by the MPO to guide funding decisions moving forward.

SECTION THREE:

WHAT WE HEARD

YOU GUIDED OUR WORK

The Connecting Crossroads team worked closely with the community over the last fifteen months to make sure your mobility priorities are reflected in this plan. We gathered input from you, Casper Area residents, throughout our process. Through pop-up events in the winter and summer, community meetings, topic area workshops, and a survey available online and on paper, we heard your ideas to improve getting around the Casper Area today and in the future. The following pages share the highlights of what we learned.

ONLINE & IN-PERSON SURVEYS

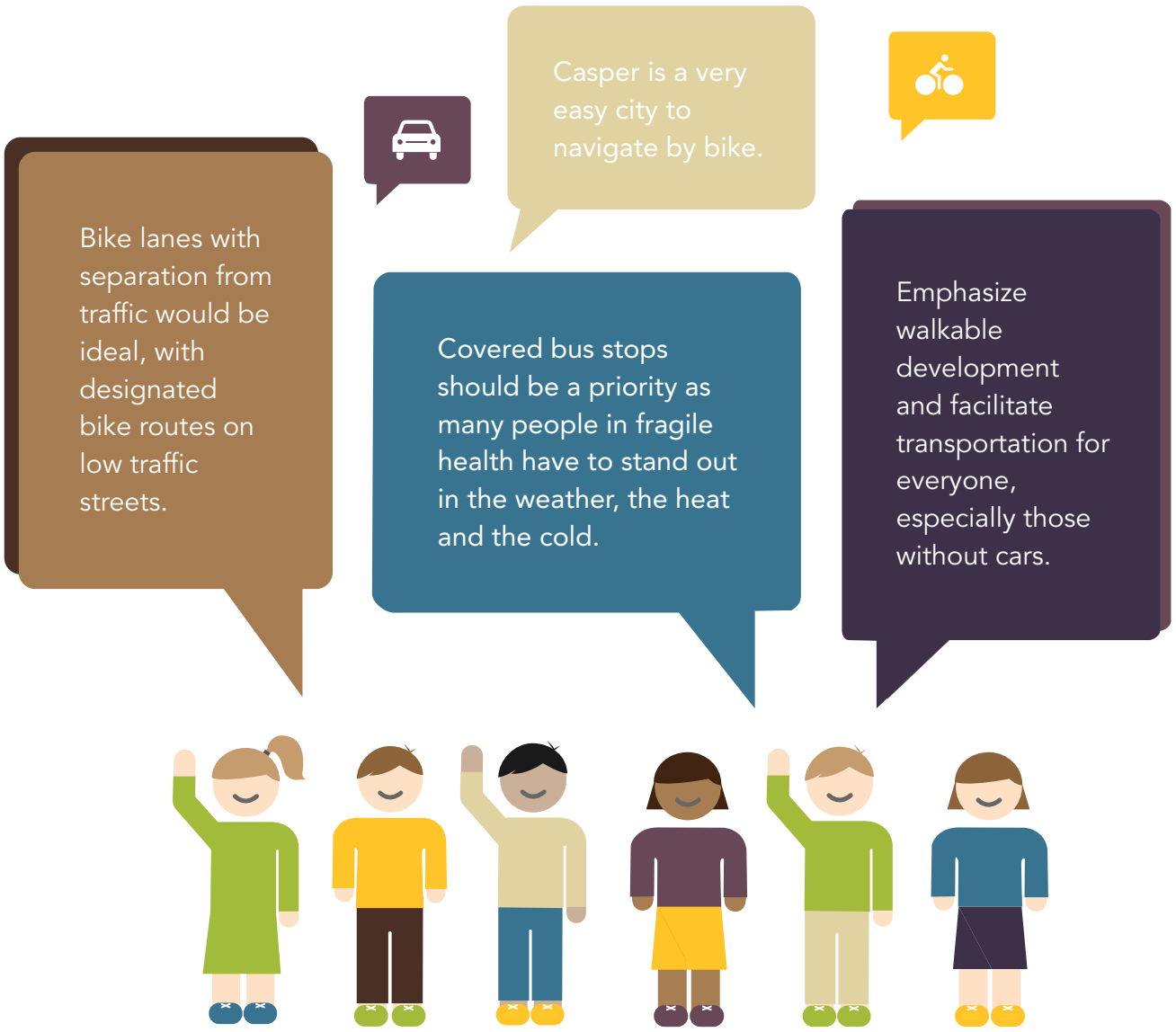
We heard from Casper Area residents through our online and in-person surveys. Shared on the project website, through social media, MPO partners, and at community events, the Connecting Crossroads survey invited residents to share their mobility values and identify opportunities for improving travel by foot, bicycle, automobile, and transit throughout the Casper Area. People from all parts of the Casper Area provided input to shape our recommendations.

WORKSHOPS & POP-UP EVENTS

Meeting people where they are is one of the best ways to reach a broad audience. The project team popped up at community destinations such as the Casper Chocolate Walk and the David Street Station Summer Market to share project updates and gather feedback. We also gave presentations at community meetings and held a series of public workshops in Spring 2019 to walk through transportation planning concepts and treatments with members of the public and draw out desired networks for future implementation. We had people of all ages stop by and speak to us, representing a wide range of the neighborhoods, professions, and personal experiences that make up the community.

WHAT WE HEARD

Through Connecting Crossroads social media, surveys, meetings, and pop-up events around the community. You helped the project team understand the Casper Area's transportation opportunities and challenges, and helped to develop brand new solutions. Examples of public comments from our survey and pop-up events include:

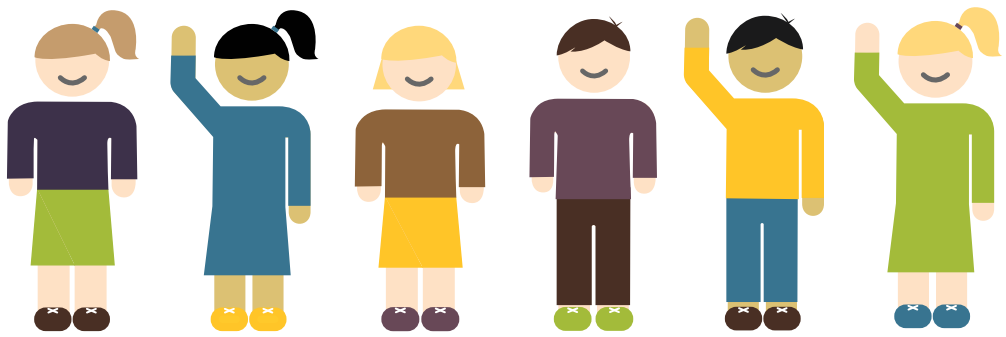


We need better connections to existing trails

The more biking and walking paths, the more chance folks will choose a healthy option to getting around.

We need to close gaps in sidewalks and make crossing Wyoming Blvd and CY Avenue safer.

It would be nice if the stop lights in the downtown and other areas were coordinated to create a better traffic flow especially at peak times.



OUR TRANSPORTATION OPPORTUNITIES

CASPER AREA MOBILITY VALUES

We heard from you that the top five most important factors for getting around the Casper Area are:

1. SAFETY
2. AFFORDABILITY
3. GETTING WHERE I NEED TO GO IN LESS TIME
4. EASE OF USE
5. IMPROVING HEALTH

MOST DESIRED PEDESTRIAN IMPROVEMENTS

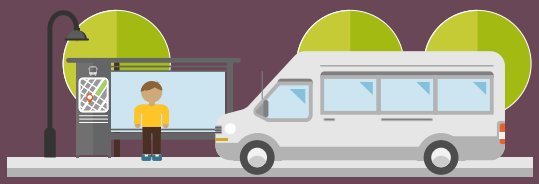
1. More sidewalks and trails
2. More lighting and landscaping
3. Well-marked crossing at intersections

MOST DESIRED BICYCLE IMPROVEMENTS

1. Bike lanes and facilities that provide physical separation from cars
2. Trails and greenways
3. Traffic signals that recognize bikes

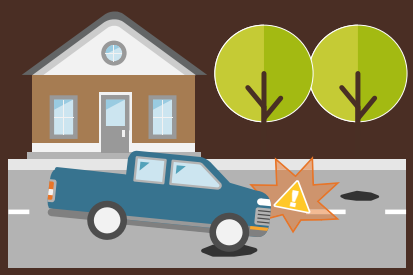
MOST DESIRED TRANSIT IMPROVEMENTS

1. Shelters and places to wait
2. More maps and information
3. More frequent weekend service



MOST DESIRED ROADWAY IMPROVEMENTS

1. Fewer potholes
2. Clear spaces for cars, bikes, and pedestrians



SECTION FOUR:

OUR GOALS

GOALS BASED ON VALUES

The values you shared with the project team are the foundation of Connecting Crossroads. Each recommendation in this long-range plan—whether a major project or a new program—has a hand in moving the Casper Area toward a more multimodal future. And together, these individual projects and programs will achieve a mobility vision, rooted in our values.

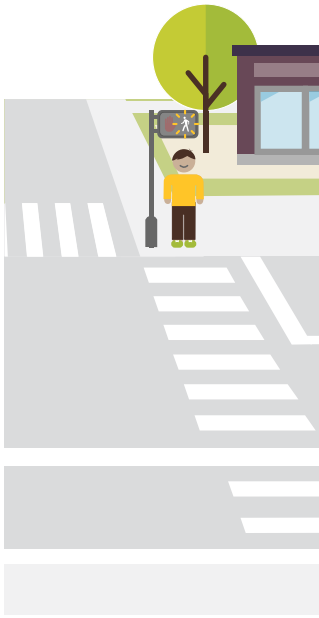
Federal legislation and setting goals that allow for developing performance measures was another key consideration. Since 2012, the US Department of Transportation has focused on a performance-based planning approach to transportation systems. The Moving Ahead for Progress in the 21st Century (MAP-21) bill established the first federal performance and outcome-based measures for transportation at a national level. This was followed in 2015 by the Fixing America's Surface Transportation (FAST) Act, which requires transportation performance management to be incorporated into the plans produced by MPO's. Topics that performance measures must address include:

- Roadway Safety
- Pavement and Bridge Conditions
- Performance of the National Highway System (NHS) for People and Freight

Connecting Crossroads includes five goals to reflect today's needs and priorities and the outcomes we want to achieve in the next three decades. The goals are also the basis for the project and scenario evaluation process that helped us refine our priorities. Our goals were formed by those of the previous LRTP, Generation Casper, and input meetings with the MPO advisory committees. Our draft set of goals was presented to the public for feedback, from which we adjusted Goal 5 to better consider the ease of use that mobility solutions provide to the community. The goals and the process we followed are described in the following pages.

OUR GOALS

The Connecting Crossroads goals are described below to explain the role each of them plays in shaping our mobility future.



GOAL 1 INCREASE TRANSPORTATION OPTIONS FOR ALL MODES

Improve reliability and connections in our transportation network and increase the number of mobility options available. Focus transit service to meet policy objectives. Enhance off-street trail network and connect with on-street bike facilities.

GOAL 2 IMPROVE SAFETY AND HEALTH FOR ALL RESIDENTS

Develop a data-driven approach to spending that prioritizes safety and provides solutions in areas of greatest need. Develop infrastructure that will safely accommodate vulnerable users and encourage the use of active modes. Enhance ability for pedestrians, bicyclists, and transit users to access community assets such as parks, schools, and healthy food sources.

GOAL 3 ENHANCE THE REGION'S DISTINCT CHARACTER

Develop a transportation system that respects the context of the Casper Area and protects and enhances our cultural and natural resources for future generations. Reduce transportation-related emissions and adopt a land use pattern of growth that discourages urban sprawl.

GOAL 4

SUPPORT THE REGION'S DIVERSIFYING ECONOMY

Maintain roads and services to support the regional economy, local industry, and goods movement. Provide multimodal access to job opportunities and employment centers. Bring existing assets into a state of good repair and recommend a balanced set of investments for the future.

GOAL 5

PROMOTE AFFORDABLE AND EASY MOBILITY SOLUTIONS

Develop mobility recommendations that ensure affordable regional access and consider cost and benefits for their entire lifecycle. Ensure mobility options are well communicated to all residents and reach those most in need.


TRAIL

SECTION FIVE:

CASPER TODAY

WHO WE ARE

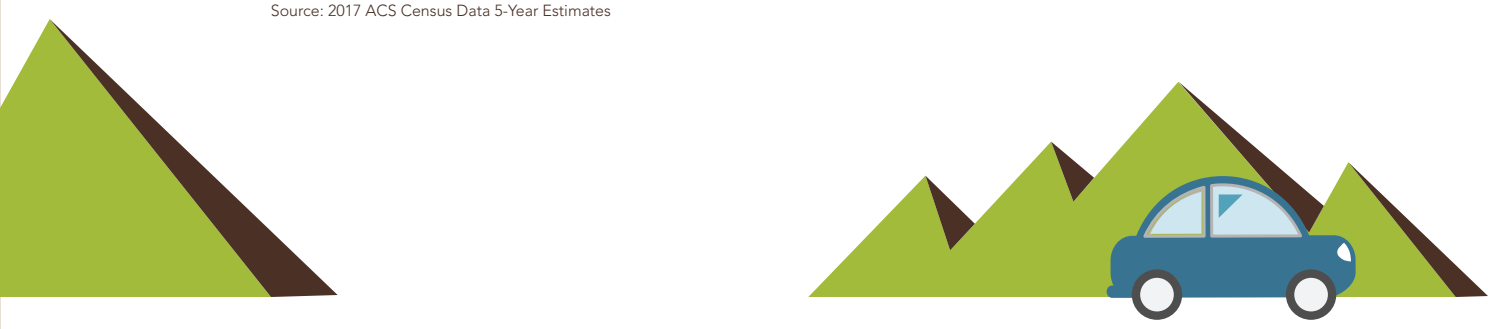
The Casper Area is central Wyoming's hub of commerce and culture, where residents and visitors alike can spend an afternoon in the downtown business district or enjoy a wealth of outdoor activities and revel in the charming Western scenery. With the abundance of activities and access to nature, people are increasingly choosing to reside in the Casper Area. As a result, the region is sprawling, presenting opportunities and challenges for the people that live, work, and visit here. Connecting Crossroads identifies investments and improvements that help all people connect to home, school, work, and the beautiful outdoors.

CASPER AREA BY THE NUMBERS

The statistics presented below include all areas within the Casper Metropolitan Planning Organization (MPO) boundary and in some cases, Natrona County.

80K	2.25	36K	67%	33%
Total Population	Average Household Size	Total Housing Units	Owner-Occupied Units	Renter-Occupied Units

Source: 2017 ACS Census Data 5-Year Estimates

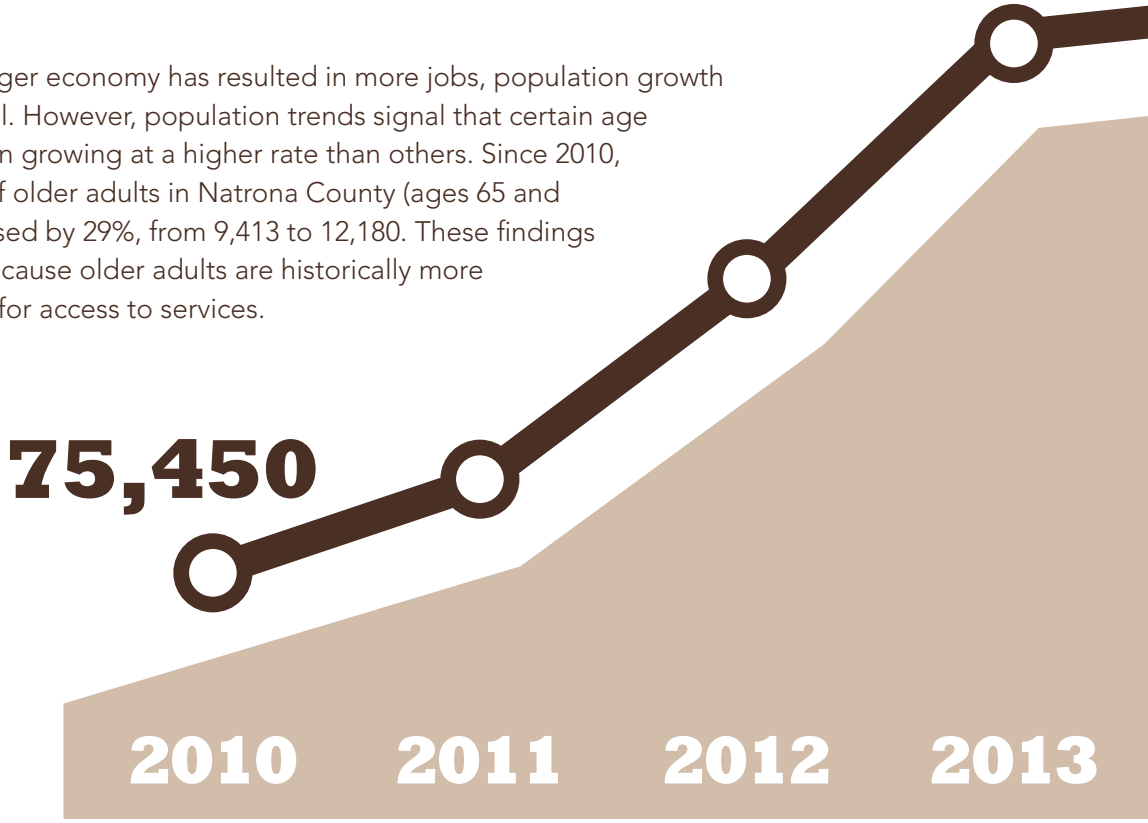


HOW MANY PEOPLE LIVE IN THE CASPER AREA?

Approximately 80,000 people live in the Casper Area, an eight percent increase from 2010. The average household size is 2.25 people, slightly lower than the national average of 2.6. The area remains less ethnically diverse than the nation, with the non-white population representing only seven percent of the total population.

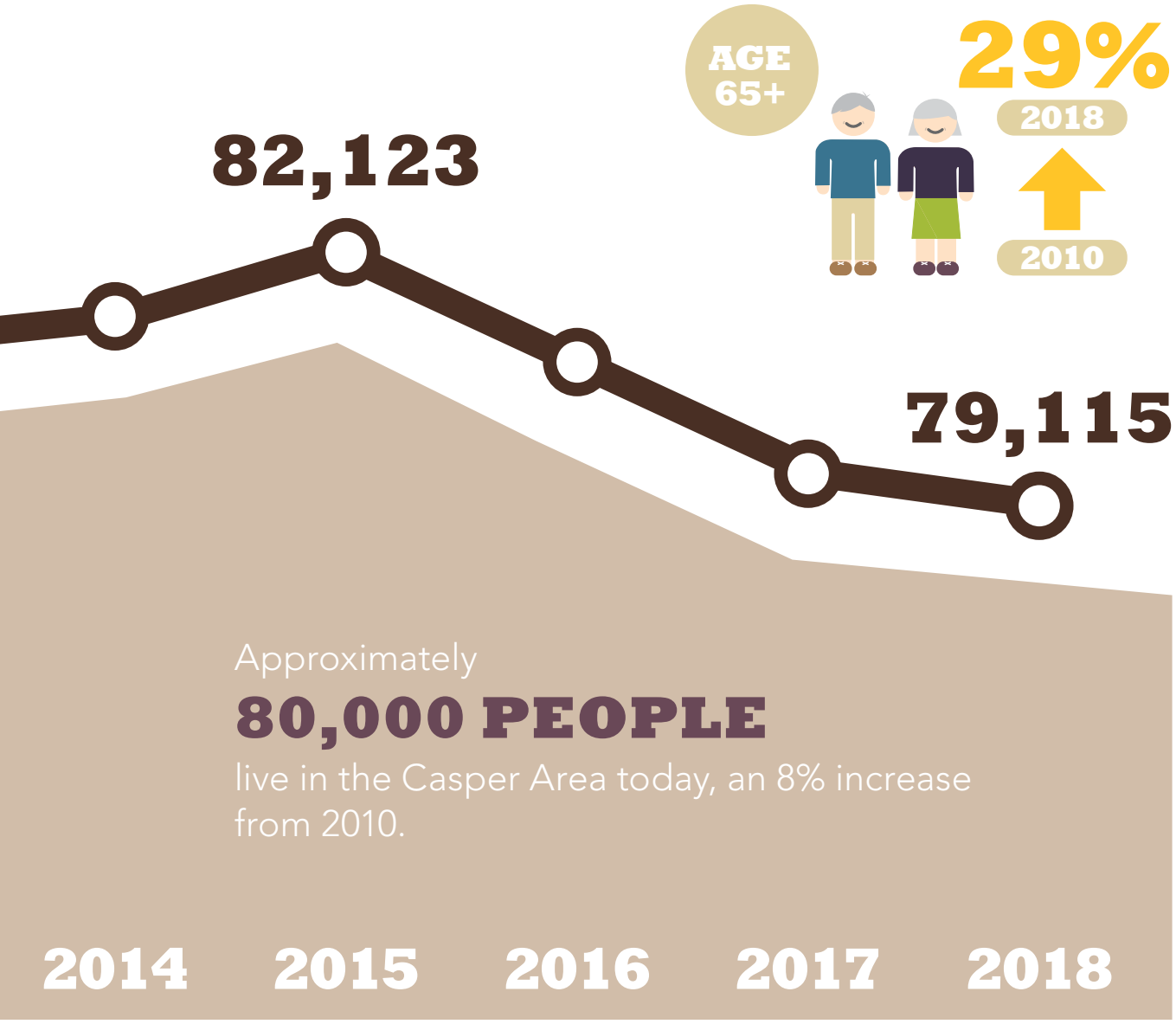
Population growth in the Casper Area is traditionally driven by the energy industry, making it challenging to plan for future growth. A major energy downturn in 2016 resulted in a population loss of 1,000 people in the Casper Area, placing it among the worst ten housing markets in the country.[1] Since then, oil and gas production has increased and the local economy has bounced back. Home values increased by 1.4 percent between August 2018 and August 2019, and 400 new jobs were added in 2019 alone.

Although a stronger economy has resulted in more jobs, population growth has been minimal. However, population trends signal that certain age groups have been growing at a higher rate than others. Since 2010, the population of older adults in Natrona County (ages 65 and older) has increased by 29%, from 9,413 to 12,180. These findings are significant because older adults are historically more reliant on transit for access to services.



[1] Nationwide Economics. (2016). Nationwide's Health of Housing Markets Report. Retrieved from https://blog.nationwide.com/wp-content/uploads/2015/03/HoHM-Report-2016Q3-NFM-13575AO.2.pdf

Older adults are also more likely to have a physical disability that requires a higher level of service, such as a life-equipped vehicle or door-to-door service. As the older adult population continues to increase, transit in the Casper Area has the opportunity to gain more riders. Service, however, must be convenient and reliable to attract and retain these new customers.



Approximately

80,000 PEOPLE

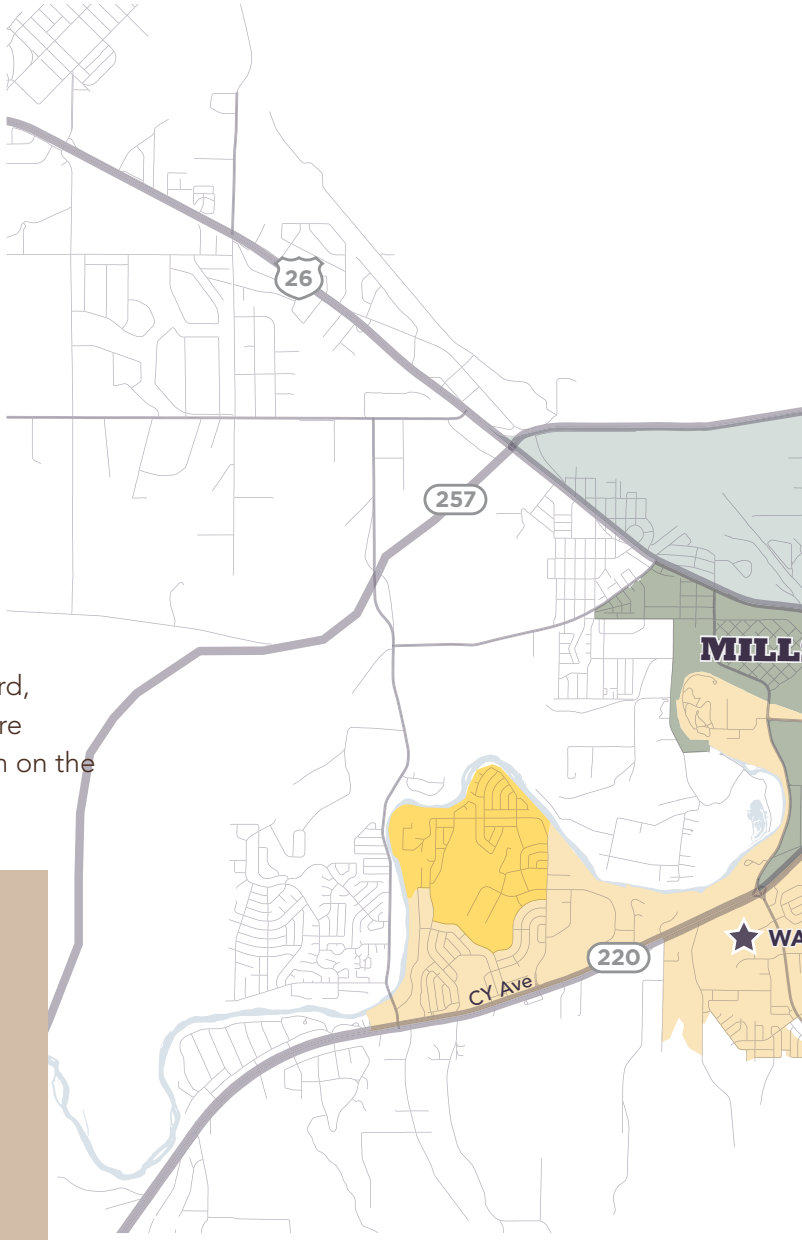
live in the Casper Area today, an 8% increase from 2010.

Source: U.S. Census Bureau, Population Division, June 2019

WHERE DO PEOPLE LIVE & WORK?

People and jobs in the Casper Area are concentrated in a handful of areas. The darker areas on the map show parts of the Casper Area with more housing or more jobs. The darkest green areas are those with a mix of many homes and many jobs.

- Downtown Casper and the areas surrounding Eastridge Mall and Casper College have higher employment.
- There are high concentrations of residents along 12th Street and south of 15th Street.
- The area slightly east of downtown Casper and south of Evansville near Walmart have a relatively high concentration of people and jobs, likely due to Wyoming Medical Center and hotel or retail jobs west of Wyoming Boulevard.



As the Casper Area continues to grow outward, thoughtful land use policies can facilitate more compact growth, ultimately putting less strain on the transportation network.

DID YOU KNOW?

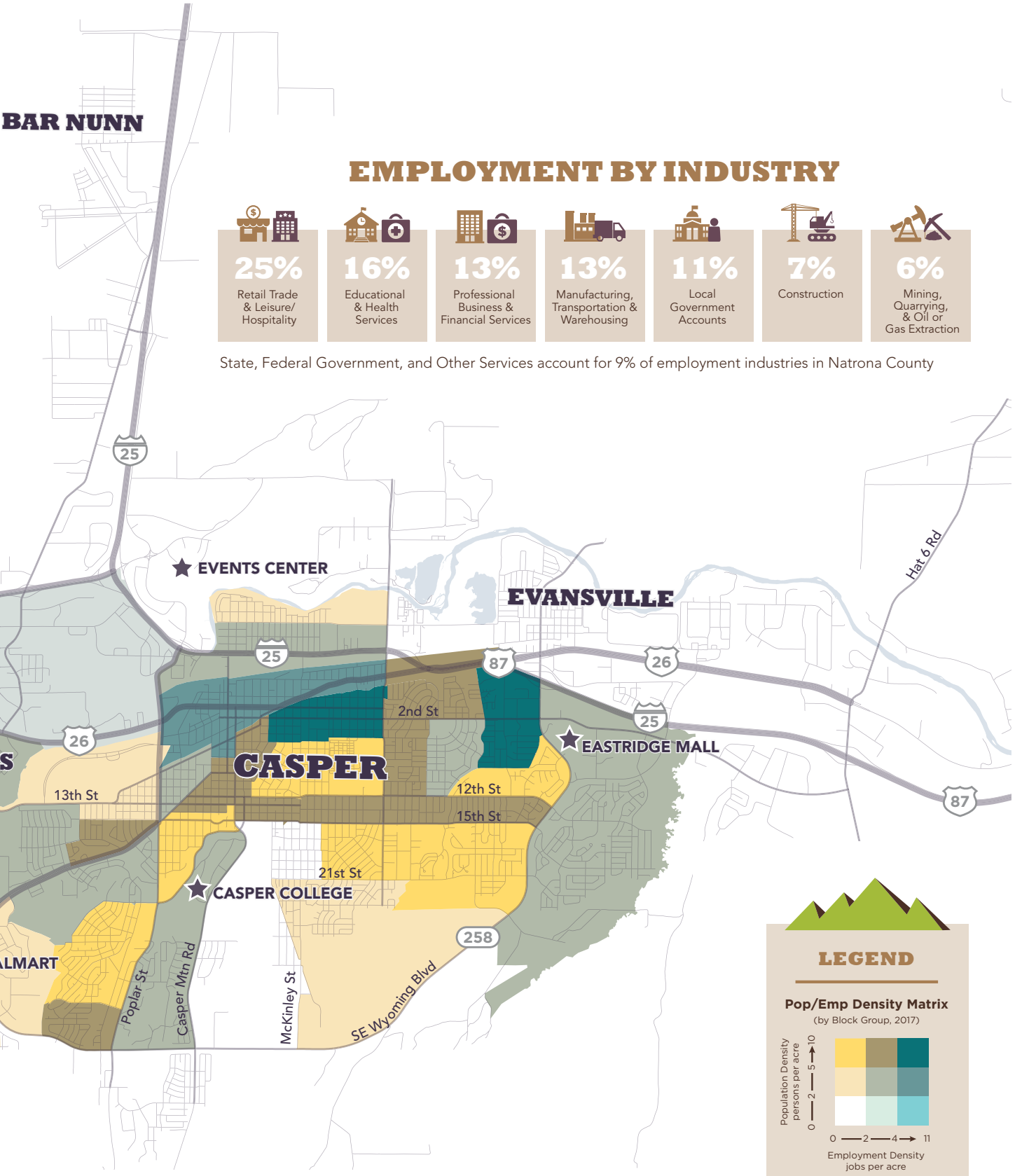
43%

of workers earn at least **$40,000** a year.

EMPLOYMENT BY INDUSTRY

25%	16%	13%	13%	11%	7%	6%
Retail Trade & Leisure/ Hospitality	Educational & Health Services	Professional Business & Financial Services	Manufacturing, Transportation & Warehousing	Local Government Accounts	Construction	Mining, Quarrying, & Oil or Gas Extraction

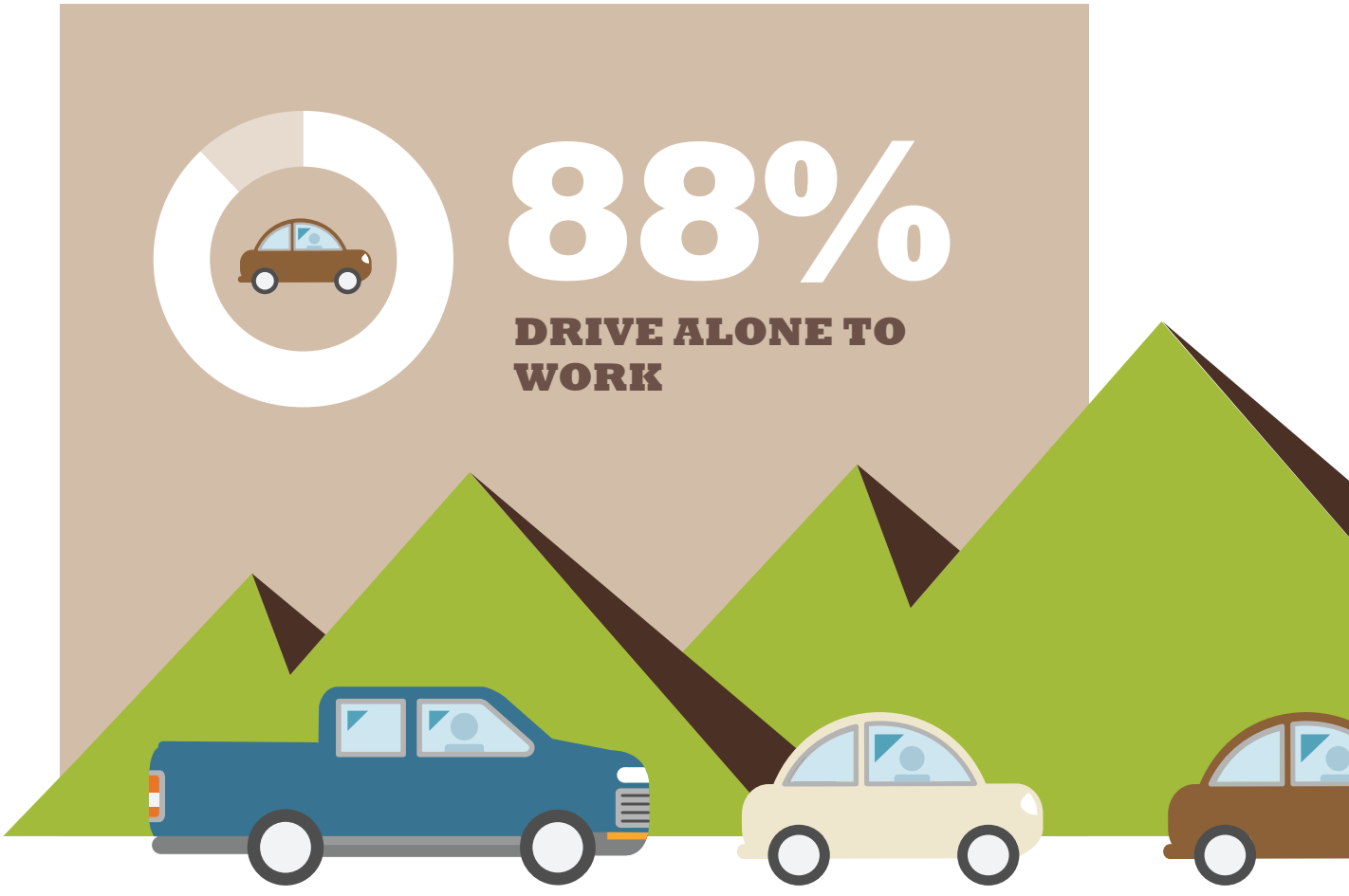
State, Federal Government, and Other Services account for 9% of employment industries in Natrona County



HOW WE GET AROUND

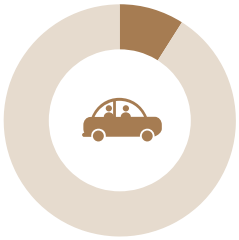
The way people get around today—and the ways they want to move in the future—point to opportunities for Connecting Crossroads to guide the next three decades of transportation. This section looks at the movement of people and goods in the Casper Area today, focusing on the places they need to go and the connections they are making.

COMMUTING IN THE CASPER AREA



Source: 2017 ACS Census Data 5-Year Estimates

COMMUTE BY MODE



CARPOOL
9%

WALK
2%

TAXI, MOTORCYCLE, BIKE, OR OTHER
1%

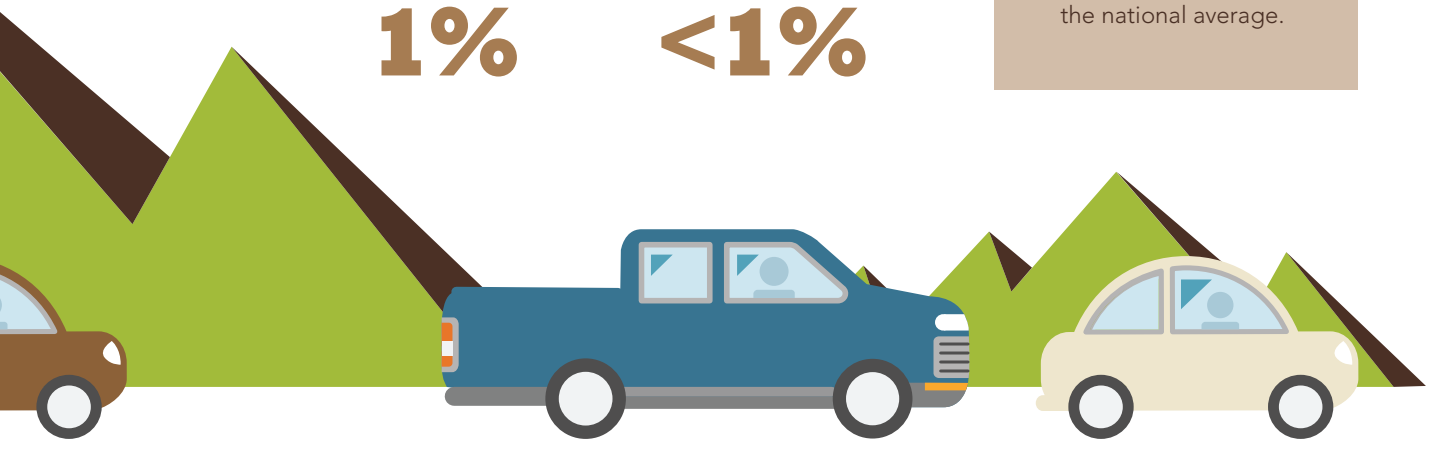
TRANSIT
<1%

DID YOU KNOW?

Nearly ¾ of commuters in the Casper Area can get to work in

LESS THAN 20 MINS

which is a 75% greater share than the national average.



TRANSIT IN THE CASPER AREA

Casper Area Transportation Coalition (CATC) has provided Dial-A-Ride services since 1982 and fixed-route services (known as "The Bus") since 2005. Understanding how existing service operates is important for identifying ways to make CATC and The Bus easier for everyone to use. In the spring of 2019, minor transit and stop improvements were implemented to make routes more direct and to reduce travel times for passengers. More changes to the system will be made in the coming years.

6 BUS ROUTES

Help move people throughout the Casper Area six days a week.

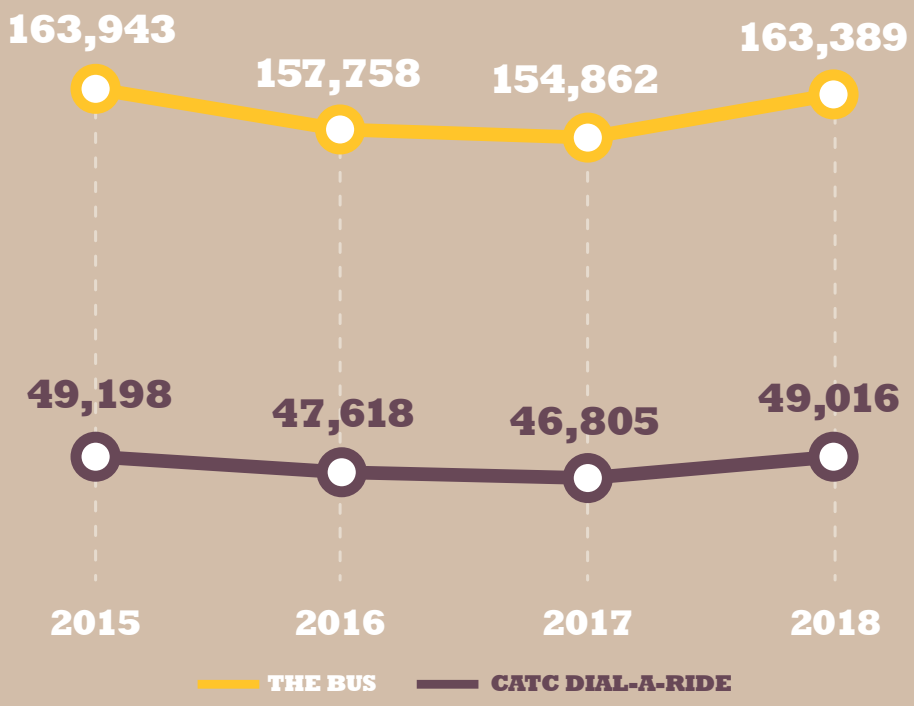
1 DIAL-A-RIDE SERVICE

Provides low cost, door-to-door service for riders who are disabled, elderly, or disadvantaged. Rides must be reserved at least two to three days in advance.

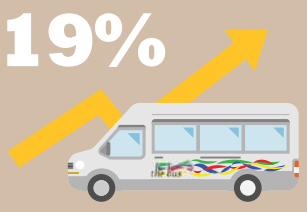
1 MAJOR TRANSFER HUB

At the Downtown Transfer Station on 2nd and Beech streets connecting four of six routes.

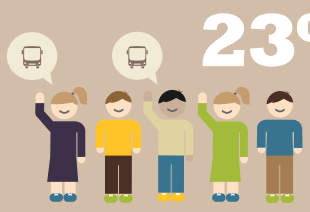
ANNUAL RIDERSHIP



- Ridership on The Bus is up 19% from 2018 (as of July 2019)

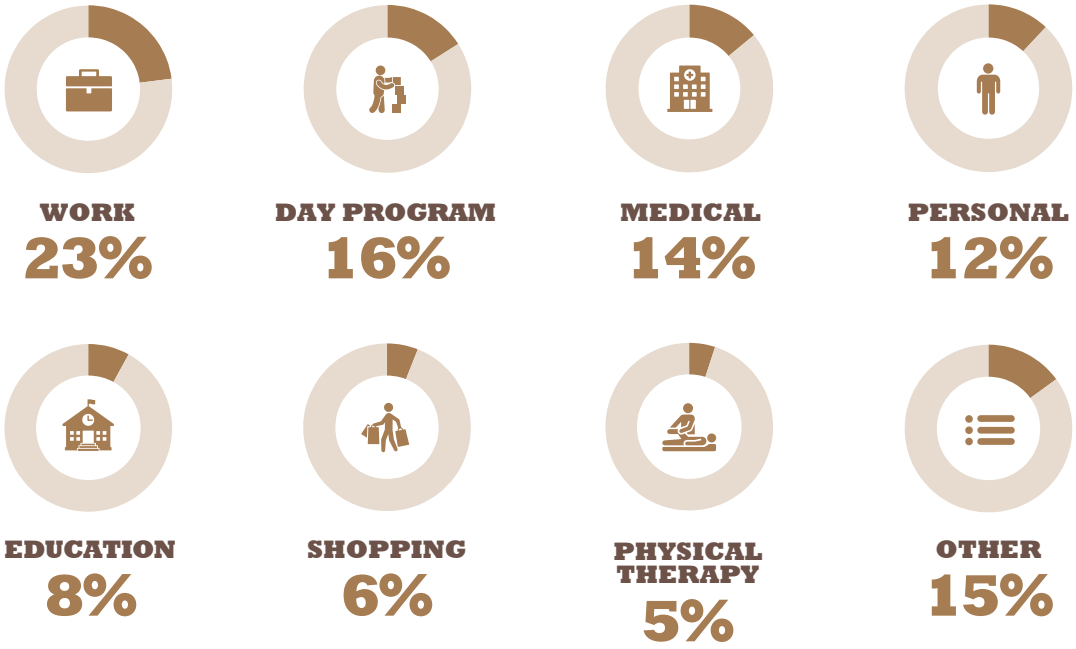


- 23% of online survey respondents are willing to use The Bus to get around the Casper Area



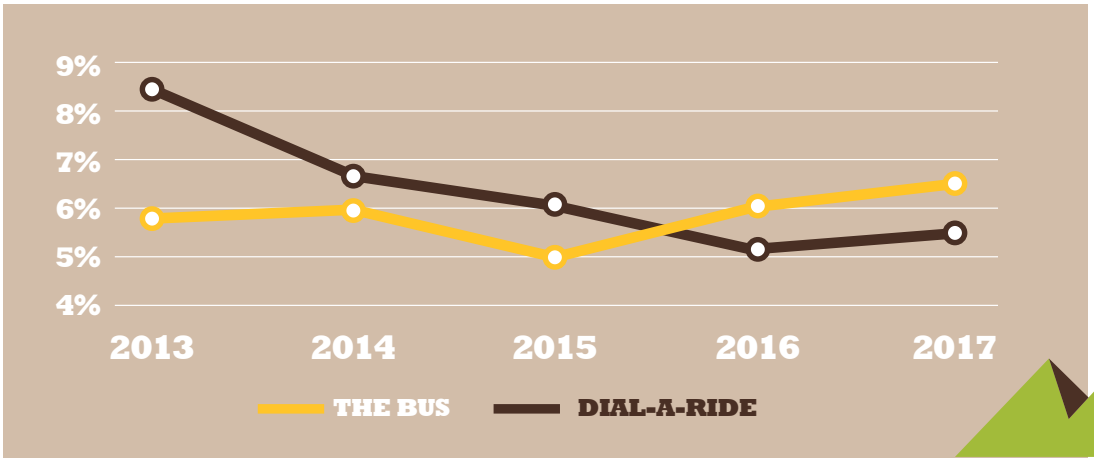
Source: CATC (2018) and LRTP online survey (2019)

DIAL-A-RIDE TRIP PURPOSES



Source: CATC, October 2018.

FAREBOX RECOVERY RATIO



Farebox recovery ratio is the percent of a trip's operating costs recovered through passenger fares. CATC's reported ratios are typical for systems of its size.

Source: National Transit Database, 2017

INTERCITY BUS SERVICES

There are three existing intercity bus services in the Casper Area: Express Arrow, Greyhound, and Amtrak Thruway Bus Service. All three services pick up and drop off passengers at the Casper Bus Depot on Center Street. These companies provide transportation within Wyoming and to nearby cities such as Denver, CO. Other destinations may require a transfer to another intercity bus or rail service. While limited in frequency, intercity buses are an integral part of providing regional access at a lower cost compared to other modes such as air travel.

WALKING IN THE CASPER AREA

Each day, people walk and bike to move around the Casper Area. Whether getting to the bus stop, to their parked car, or within the community, people should feel safe and comfortable getting around the Casper Area.

Providing safe places to walk requires careful consideration of and respect for the context of the environment. While sidewalks are not needed along every major highway in the Casper Area, providing safe places to walk to schools, downtown Casper, and other local destinations is critical. In more rural areas, creative design approaches can be used, such as crushed gravel paths away from the side of the road, to avoid disrupting the natural environment.

The Casper Area has a robust off-street trail network but there are opportunities to improve safety at roadway crossings

LEFT: Ongoing improvements to the Old Yellowstone District are making downtown Casper a safer and more inviting place to walk. RIGHT: Lathrop Rd provides a vital link to jobs and services for Evansville residents south of the Yellowstone Hwy. "Desire paths" were observed in the grass along the side of the roadway from Curtis St. revealing that the segment is frequently used by pedestrians despite a lack of safe facilities.

Some larger intersections, such as E. Second St and Wyoming Blvd shown here, have long crossing distances with a lack of pedestrian safety counter measures such as curb extensions, high visibility crosswalks, and refuge islands.

BIKING IN THE CASPER AREA

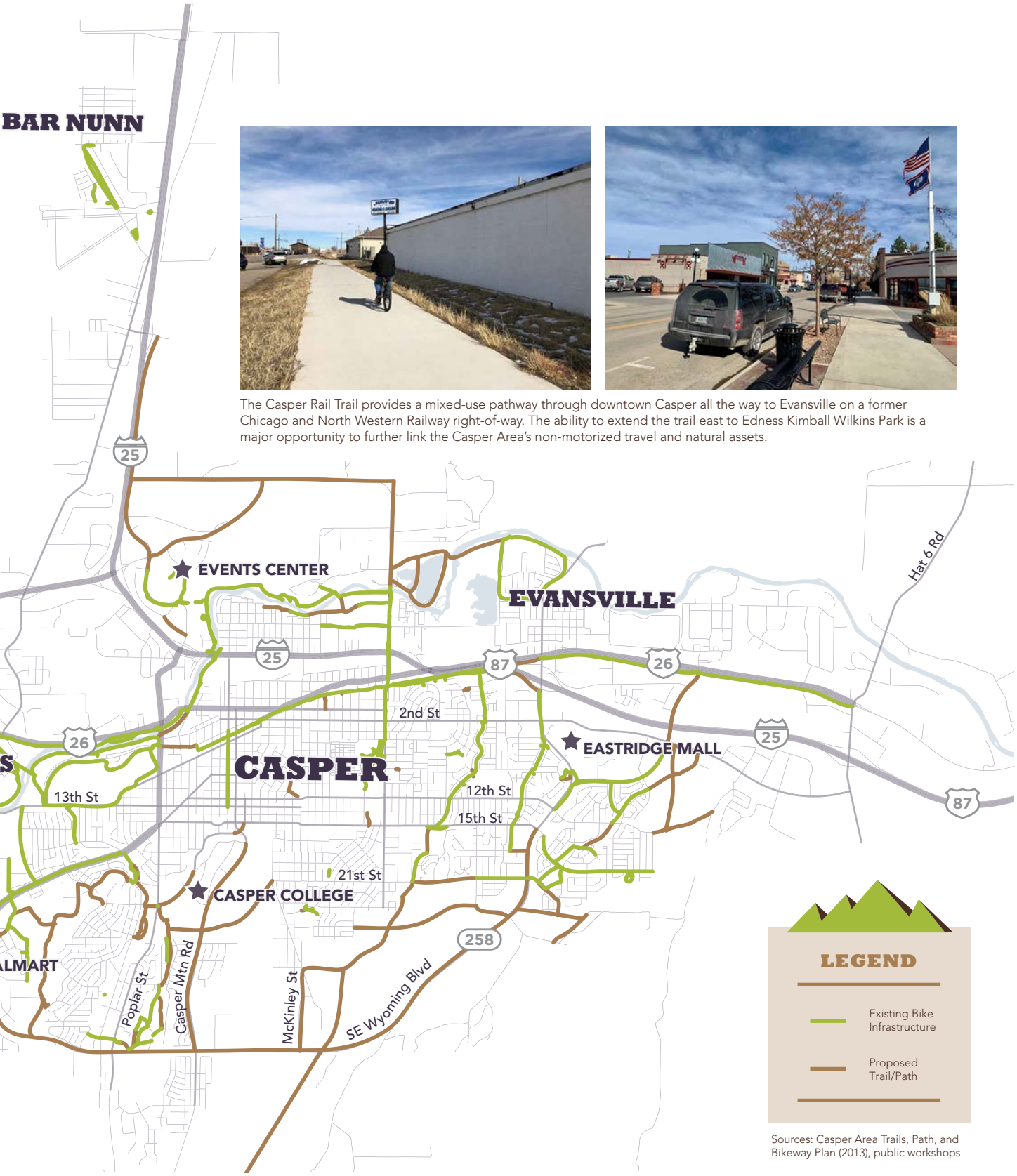
Bicycling in the Casper Area is popular among residents. However, creating a bikeable community that makes it easier and safe to ride for all types of trips requires a more intentional approach to bicycle infrastructure.

- 19% of respondents to the online survey said they are willing to bike around the Casper Area.

PLATTE RIVER TRAILS TRUST

The Platte River Trails Trust is a non-profit 501(c)3 organization that works with many community partners to develop, enhance, and maintain the 11-mile trail system in the Casper Area. Incorporated in 1982, the Platte River Trails Trust is led by a volunteer board that is committed to expanding the trail network for all users.

The Casper Rail Trail provides a mixed-use pathway through downtown Casper all the way to Evansville on a former Chicago and North Western Railway right-of-way. The ability to extend the trail east to Edness Kimball Wilkins Park is a major opportunity to further link the Casper Area's non-motorized travel and natural assets.

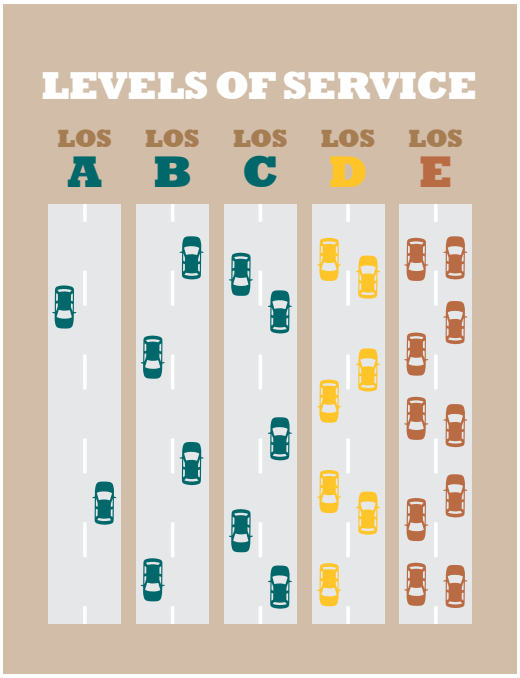


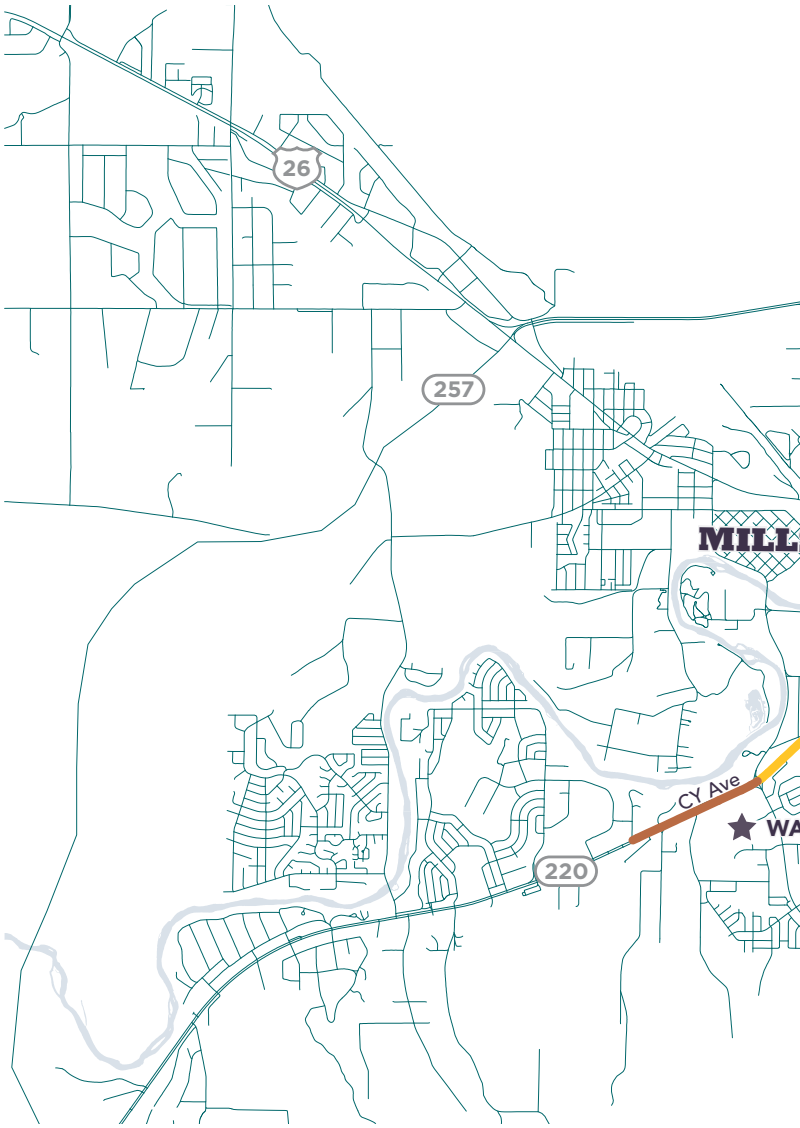
Sources: Casper Area Trails, Path, and Bikeway Plan (2013), public workshops

DRIVING IN THE CASPER AREA

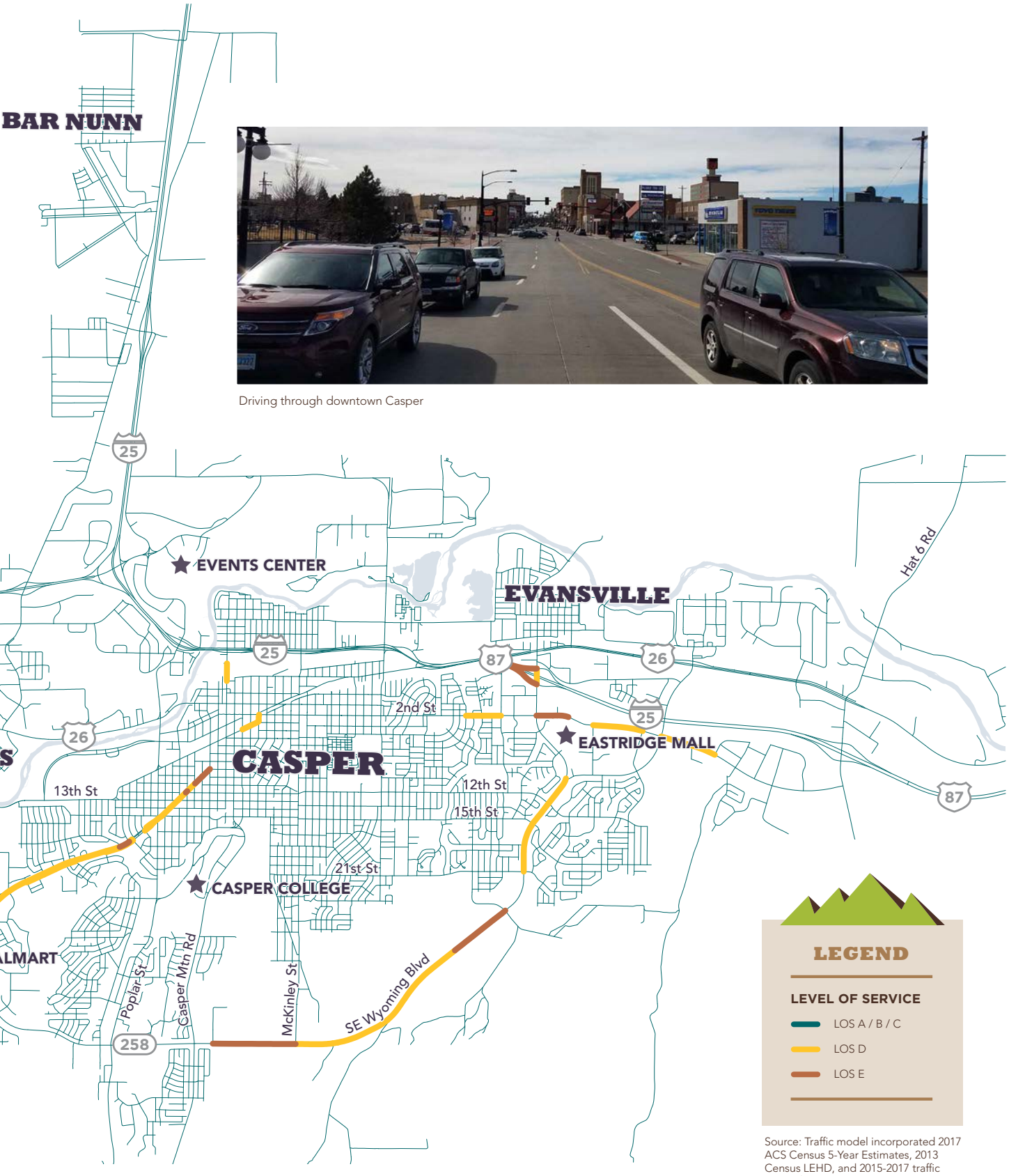
According to Census data, about 97% of people use a car to get to work in the Casper Area, whether they drive alone or carpool. Results from the Connecting Crossroads online survey were less one-sided, with 68% of respondents saying they typically drive and 25% saying they use The Bus around the Casper Area. Regardless, this reliance on driving leads to congestion, increases the need for roadway maintenance, and adds greenhouse gases and other pollutants to the air.

This map illustrates the Level of Service (LOS). LOS is a letter designation that rates the congestion conditions on a street facility. Scores range from "A" to "F," where an "A" implies that vehicles can travel on the road with minimal congestion. Overall, the LOS in the region is very good. No roads function at a LOS of F. The most congestion is seen along Wyoming Boulevard, CY Avenue, and 2nd Street.





Driving through downtown Casper



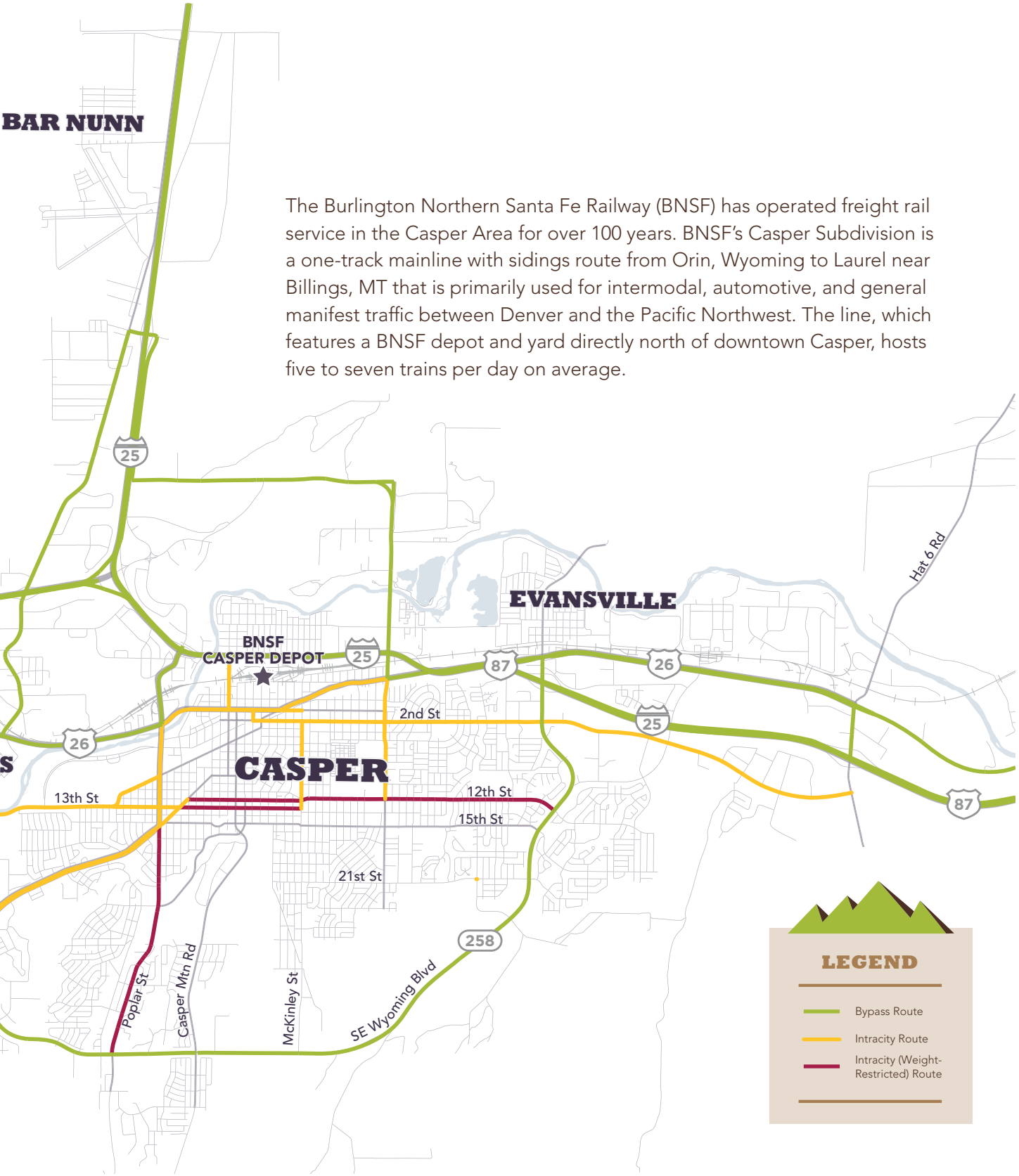
Source: Traffic model incorporated 2017 ACS Census 5-Year Estimates, 2013 Census LEHD, and 2015-2017 traffic count data

GOODS MOVEMENT

Interstate-25, which transverses the Casper Area, serves as the primary north-south conduit of highway hauled freight in the Mountain States. From the Casper Area, I-25 provides connectivity to the greater interstate highway system and critical east-west conduits of highway freight via I-80 in Cheyenne and I-90 in Buffalo.

The Casper Area is also served by the Bighorn Divide & Wyoming Railroad (BDW), a short-line railroad that performs transloading and transports products from local industry to BNSF mainline interchanges. The BDW operates the Casper Logistics Hub (CLH), a transloading, trucking, erecting, storage, and warehousing facility, near the Casper-Natrona County International Airport (CPR). The facility, which features room for transloading of up to 500 railcars, can accommodate products such as lumber, petroleum, coated pipe, soda ash, and wind turbines. CLH is the largest transloading facility along the BNSF network between Denver, CO and Billings, MT and offers key connections to CPR and US26.

The Burlington Northern Santa Fe Railway (BNSF) has operated freight rail service in the Casper Area for over 100 years. BNSF's Casper Subdivision is a one-track mainline with sidings route from Orin, Wyoming to Laurel near Billings, MT that is primarily used for intermodal, automotive, and general manifest traffic between Denver and the Pacific Northwest. The line, which features a BNSF depot and yard directly north of downtown Casper, hosts five to seven trains per day on average.



AVIATION

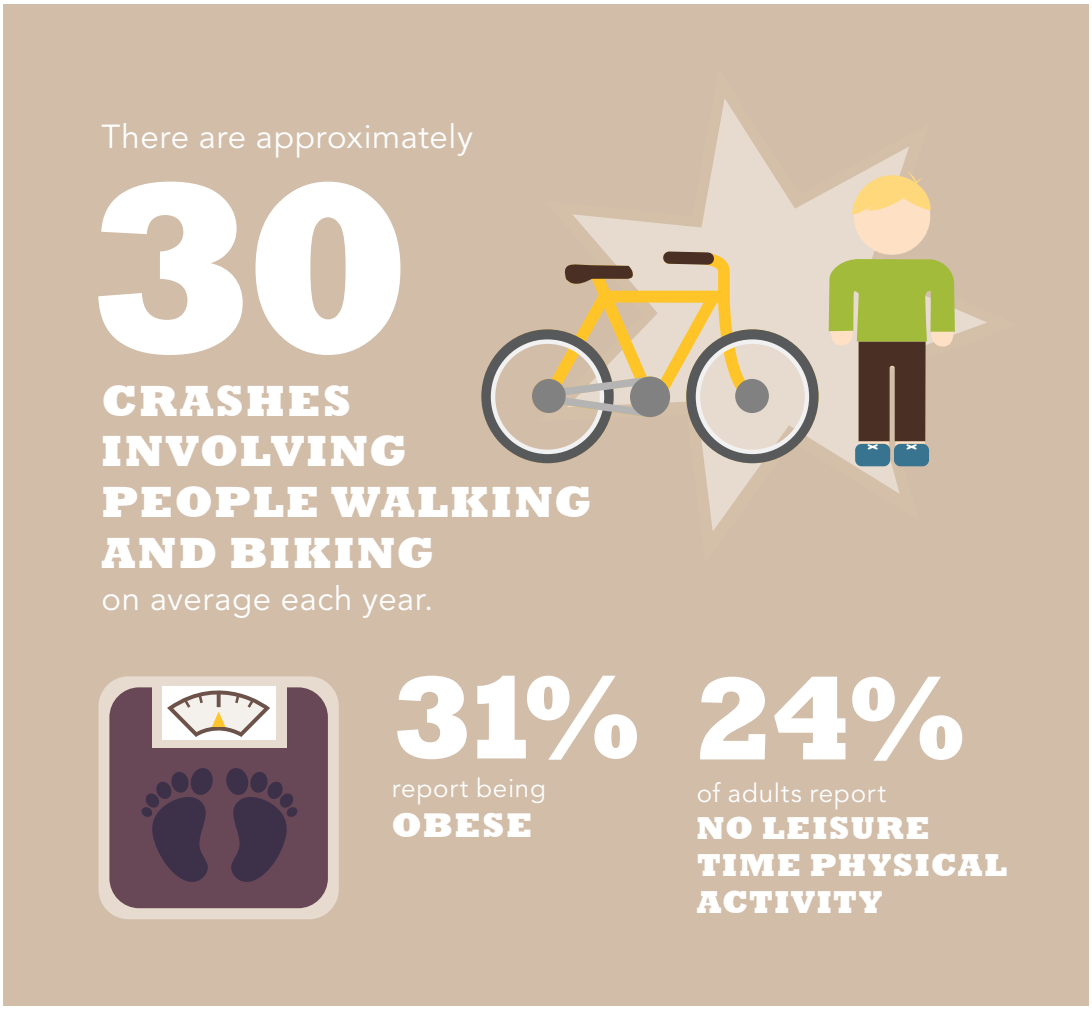
The Casper-Natrona County International Airport (CPR), located approximately seven miles northwest of downtown Casper, is the primary aviation facility within the Casper Area. The Airport is designated as a Non-hub Primary Commercial Service Airport, with two active runways, 75 T-hangars, and 13 corporate hangars. The Airport is currently served with multiple daily scheduled flights to Salt Lake City on Delta Connection and Denver on United Express by a combination of Canadair CRJ 200/700 and Embraer ERJ-145 regional jets. FedEx and UPS both have cargo operations at the airport that receive and send packages to their nationwide hubs in addition to rural locations in Wyoming, Colorado, and Nebraska. Located on the property is the C/NCIA Business Park which consists of almost 200 acres of land with business park and industrial facilities with an additional 200 acres available for future development. A new roadway connection between the Airport and Bar Nunn/I-25 has been cited as a priority from Airport representatives in order to support future growth of the Business Park.

Inside lobby of Casper-Natrona County International Airport

HEALTH & SAFETY

Having safe ways to move around is one of the top priorities of residents in the Casper Area. People worry about fast-moving vehicles and limited facilities for people walking and biking. Those same concerns have an impact on the health of Casper Area residents, as a lack of safe and connected bicycle and pedestrian facilities impacts our individual and community health.

WHAT WE KNOW:



Source: Natrona County Community Health Status Report (2018)

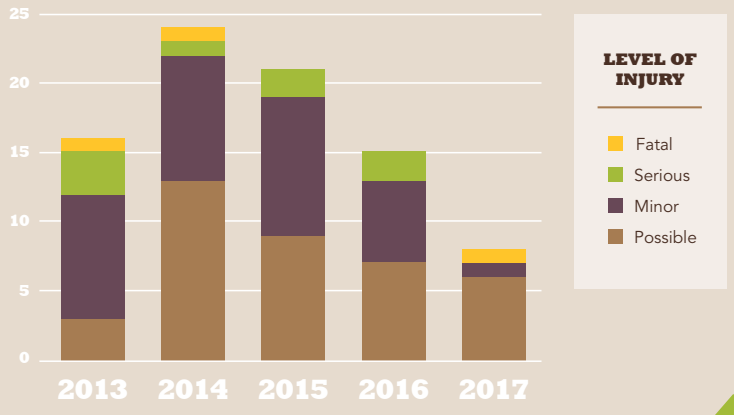
MISSING AND DISCONNECTED FACILITIES

There is desire in the Casper Area for viable transportation options other than the single occupancy vehicle. A strong active transportation network promotes physical activity and wellbeing, allowing people to get from point A to point B without the use of a car. Despite the Casper Area's strong trail system, there are a number infrastructure and policy shortcomings that prevent the Casper Area from truly being walk- and bike-friendly.

PEDESTRIAN SAFETY ISSUES

- **Long and exposed crossings distances** leave pedestrians unshielded in the roadway
- **Indirect paths of travel** add unnecessary travel time
- **Lack of ADA provisions** make walking a hostile endeavor for people with disabilities
- **Narrow sidewalks** with mountable curbs impede pedestrian flows

PEDESTRIAN COLLISIONS BY SEVERITY

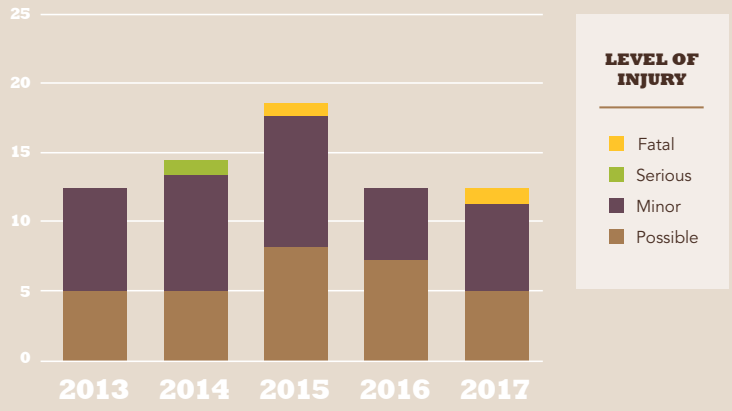


Source: Natrona County Community Health Status Report (2018)

BICYCLE SAFETY ISSUES

- **Few protected facilities** leave cyclists exposed to vehicle traffic
- **Lack of bicycle signals** makes biking through street intersections more dangerous and inefficient
- **Dangerous crossings at intersections** and trails put bicyclists at risk with crashing into other road users
- **Lack of connectivity to trail network** results in missed opportunities for increased connections within the Casper Area
- **Driver education** on how to interact with bicyclists is lacking, leaving the responsibility on bicyclists to ensure safety measures are being followed

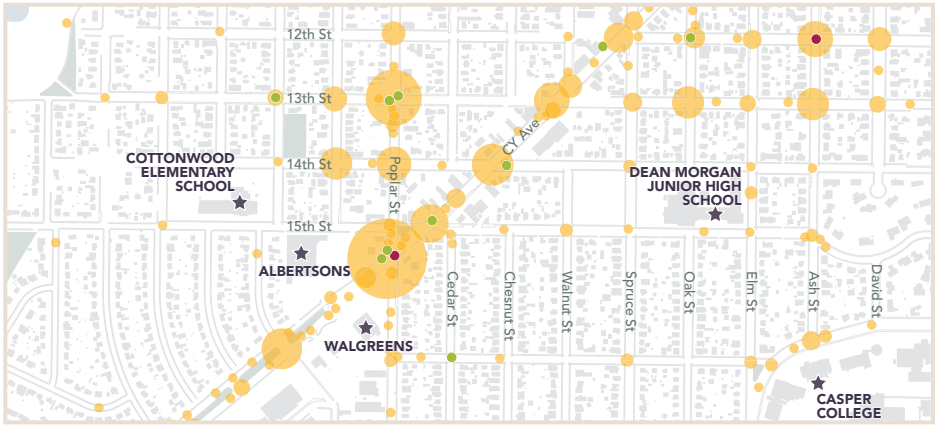
BICYCLE COLLISIONS BY SEVERITY

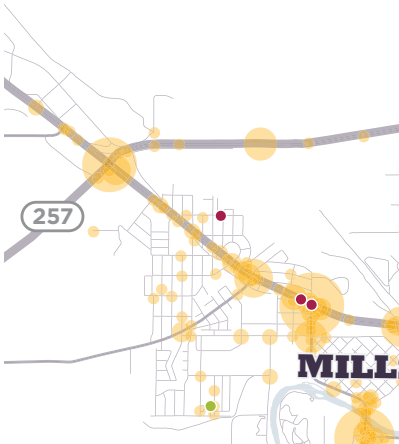


TRAFFIC SAFETY

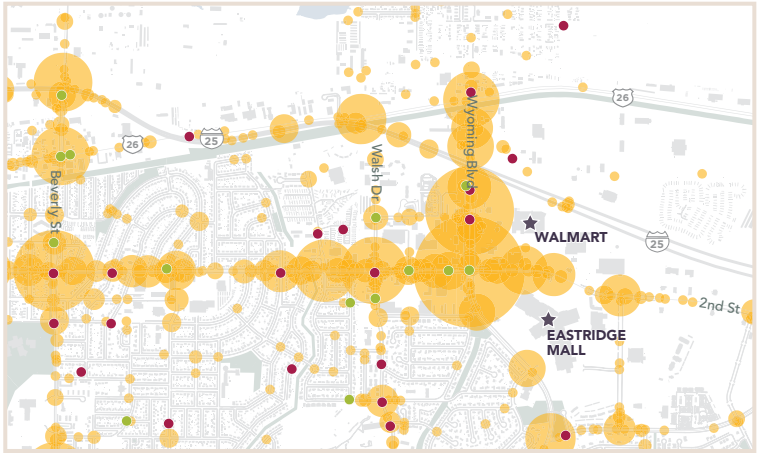
Between 2013 and 2017, the Casper Area experienced a total of 6,324 crashes. Of those, 21% resulted in injuries ranging from minor to severe. Most crashes (78%) did not involve injuries and resulted only in property damages. The intersection of 2nd Street and Southeast Wyoming Boulevard saw 29 crashes in the five-year period, the second-highest of any intersection in the region (CY Avenue and Wyoming ranked number one with 34 crashes). CY Avenue and Poplar Street ranked fifth-highest, with 21 crashes, but also had a high concentration of bicycle-involved collisions. The highest concentration of pedestrian-involved crashes occurred in downtown Casper, which is one of the most walkable areas in the region. At least 15 pedestrian-involved crashes occurred in Downtown Casper, with seven incidents on 1st Street alone.

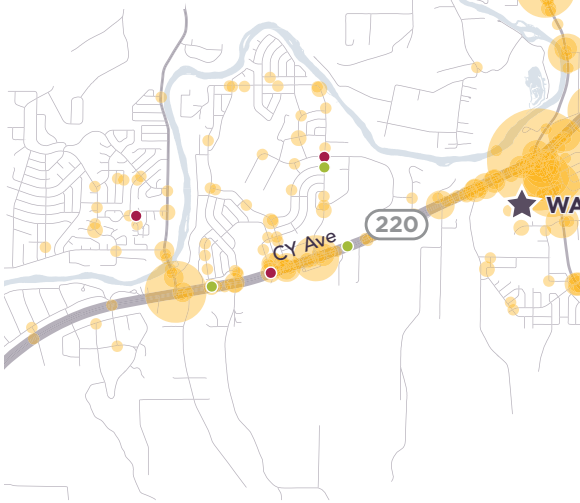
CY AVE AND POPLAR ST

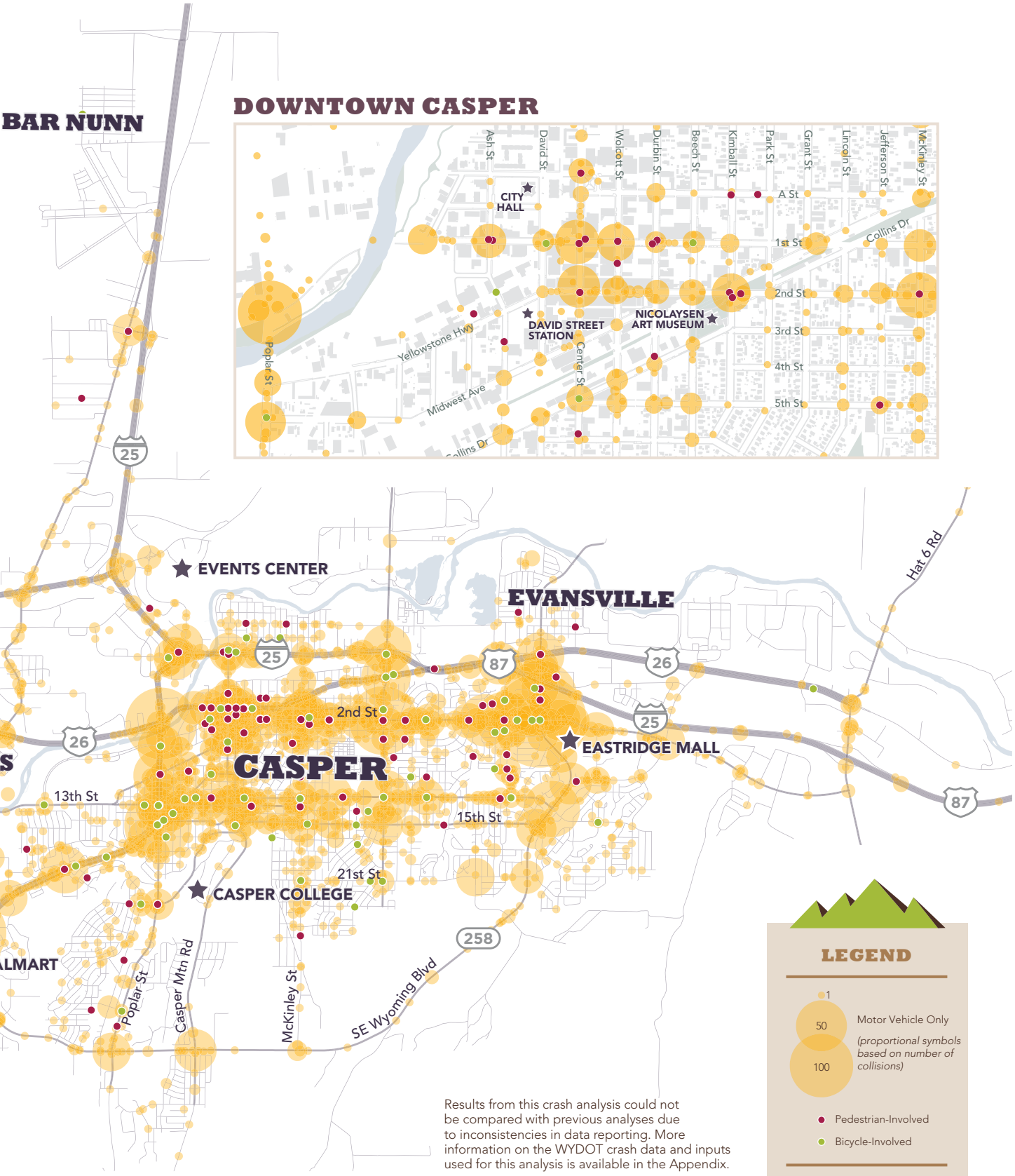




2ND ST AND WYOMING BLVD







Results from this crash analysis could not be compared with previous analyses due to inconsistencies in data reporting. More information on the WYDOT crash data and inputs used for this analysis is available in the Appendix.

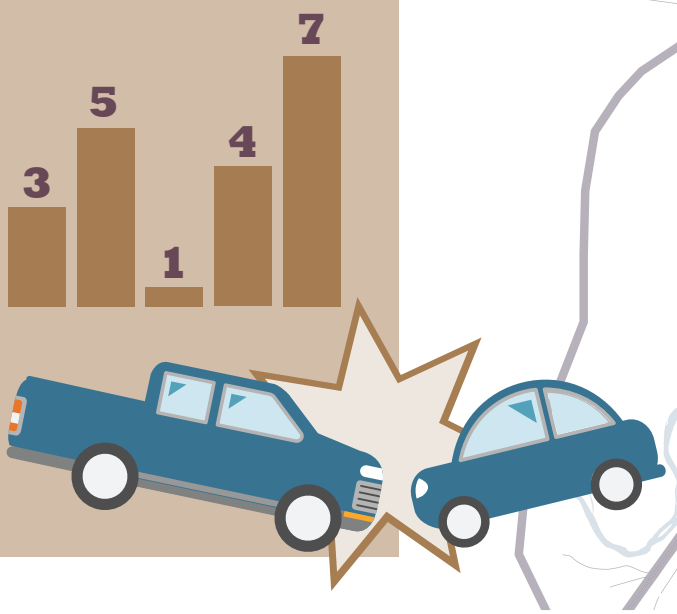
FATAL CRASHES AND HIGH COLLISION CORRIDORS

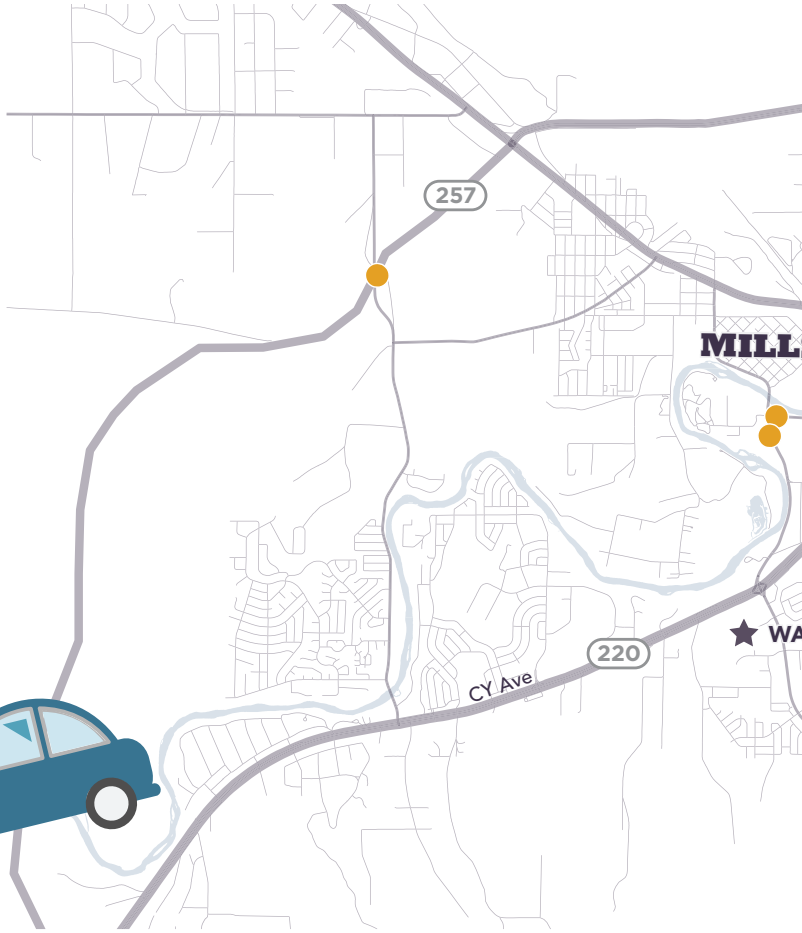
Over the five-year period from 2013 to 2017, the Casper Area experienced 16 collisions that resulted in 20 fatalities. Of those where a cause is known, three of the fatal crashes involved alcohol use. Four crashes involved pedestrians or bicyclists.

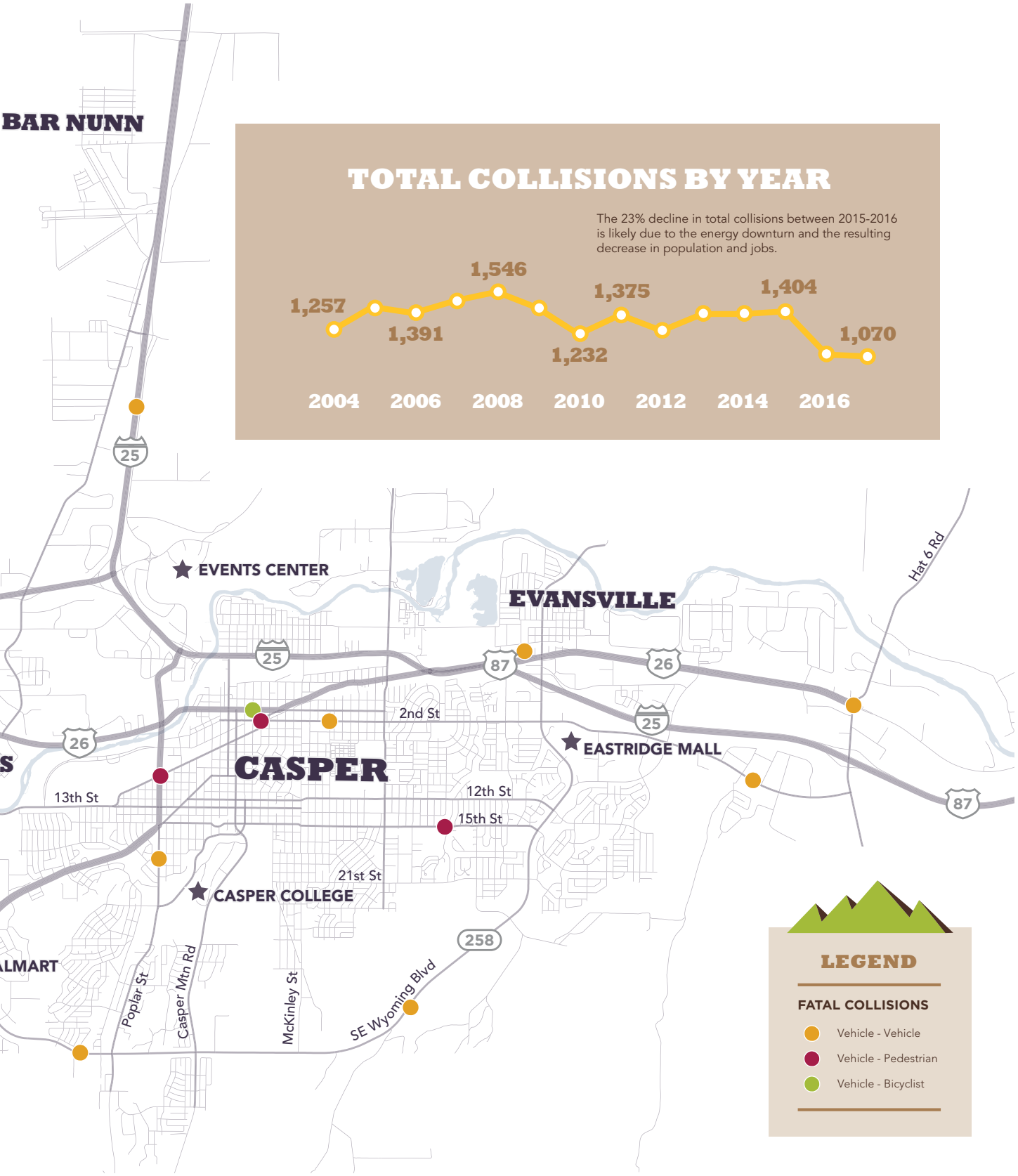
A crash analysis conducted along corridors revealed that 2nd Street has the highest number of crashes, with 205 crashes per mile over the five-year period. The second highest corridor was CY Avenue, with 155 crashes per mile during the same timeframe. Wyoming Boulevard ranked third highest with 97 crashes per mile. It is important to note that these corridors also have the highest roadway volumes, thus increasing the likelihood for crashes to occur.

TRAFFIC FATALITIES BY YEAR

Over a five-year period, 2017 saw the highest traffic fatalities.






BAR NUNN
TOTAL COLLISIONS BY YEAR
The 23% decline in total collisions between 2015-2016 is likely due to the energy downturn and the resulting decrease in population and jobs.
1,257
1,391
1,546
1,232
1,375
1,404
1,070
2004
2006
2008
2010
2012
2014
2016
25
EVENTS CENTER
EVANSVILLE
Hat 6 Rd
87
26
2nd St
EASTRIDGE MALL
CASPER
13th St
12th St
15th St
21st St
CASPER COLLEGE
258
Poplar St
Casper Mtn Rd
McKinley St
SE Wyoming Blvd
LEGEND
FATAL COLLISIONS
Vehicle - Vehicle
Vehicle - Pedestrian
Vehicle - Bicyclist

A LOOK AHEAD

The transportation landscape is changing daily. New technologies are making it easier for people to connect to transportation options, and people are demanding new travel choices. Connecting Crossroads considers the influence of these trends—and the ways that the Casper Area can help to shape them—throughout the planning process.

TECHNOLOGY

New technology is changing the ways people connect, how information is shared, and what services are offered. Real-time travel information available via smart phone helps people make travel decisions at a moment's notice. Apps connect people to new services and improve the experience of using current services, such as riding The Bus.

SHARED MOBILITY

Shared mobility options provide new ways for people to get around without owning a vehicle. Car share and bike share systems make vehicles and bicycles readily available and accessible via smartphone; rideshare services support carpooling; shuttles connect people to transit or destinations; and ridehailing services, like Uber and Lyft, expand upon traditional taxi services.

AUTONOMOUS VEHICLES

Autonomous vehicles will have numerous potential benefits for roadway users, such as safety, mobility, and access.

- **SAFETY.** Reducing (potentially completely removing) human error from vehicle operation can reduce the number and severity of roadway crashes.
- **MOBILITY.** Without the need for a driver, automated cars can enhance mobility for everyone, particularly youth, persons with disabilities, and older adults.
- **ACCESS.** With reduced transportation costs, people may be more willing to reside in areas far from central destinations or employment centers. Additionally, automated vehicles will have the ability to travel faster potentially increasing people's willingness to travel longer distances.

Fully automated self-driving vehicles are expected to be made available to consumers by 2025 but consumer acceptance remains an unknown element to the full adoption and integration of the technology.[2] The Casper Area must be prepared to address potential challenges, including safety, integration with existing systems, and increasing congestion.

[2] David Levinson, Adam Boies, Jason Cao, Yingling Fan. The Transportation Futures Project: Planning for Technology Change. January 2016. Retrieved from http://www.aamva.org/PlanningForTechChanges_MNDOT_012016/

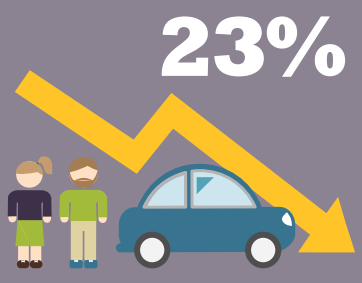
GENERATIONAL PREFERENCES

The lifestyle preferences and buying habits of the nation's largest generations also affects economic trends. Nationwide, the population of older adults is increasing as the Baby Boomer generation ages. Older adults (65+ years old) represent 13% of the total population in the Casper Area, whereas Baby Boomers represent about 21% of the Casper Area population (23% nationwide). While some Baby Boomers want to age in place, others are planning to downsize to smaller homes in communities where they can walk and use transit to get around. A 2013 survey by the National Association of Realtors found that 60% of Baby Boomers preferred to live in neighborhoods with a combination of shopping, restaurants, and parks, as compared to 35% who preferred traditional residential neighborhoods.

According to the 2017 American Community Survey, Millennials make up about 20% of the Casper Area population. Nationally, Millennials' transportation patterns are changing. Millennials are:

DRIVING LESS

People ages 18 to 34 drove 23% fewer miles in 2009 than in 2001.[3]



BIKING, WALKING, AND TAKING TRANSIT MORE

Millennials use transit, bicycle, and walk more than young people have in the past two decades. From 2001 to 2006, bike trips increased by 24% among 16- to 34-year-olds.[4] Between 2001 and 2009, the number of public transit passenger miles traveled by this age group also increased by 40%.[5]

[3] American Public Transportation Association. "Millennials & Mobility: Understanding the Millennial Mindset." http://www.apta.com/resources/reportsandpublications/Documents/APTA-Millennials-and-Mobility.pdf

[4] U.S. PIRG. "A New Direction." 2013 http://uspirg.org/sites/pirg/files/reports/A%20New%20Direction%20vUS.pdf.

[5] Ohio Department of Transportation. Statewide Transit Needs Study. Demographic Trend Analysis.

PURCHASING FEWER CARS

From 2007 to 2011, the number of cars purchased by 18- to 34-year-olds fell almost 30%.[6]

NOT OBTAINING THEIR DRIVER'S LICENSES

The percent of young people with a driver's license is on the decline. According to the Federal Highway Administration, from 2000 to 2010, the share of 14- to 34-year-olds without a driver's license increased from 21% to 26%.[7]

PLACING MORE VALUE & ACCESS TO TECHNOLOGY

Millennials choose to spend resources on technology, such as smart phones, tablets and computers. New mobile apps provide easy trip planning tools and real time information. Transit systems that allow them to stay connected while they travel are highly valued.[8]

On the contrary, some research suggests that Millennials are driving less due to a decrease in trips overall.[9] Therefore, a reduction in automobile use may be the result of Millennials increasingly going fewer places. Regardless of the current trends, Millennials clearly think about transportation differently than previous generations, and Baby Boomers are being forced to think differently due to physical limitations.

[6] American Public Transportation Association. "Millennials & Mobility: Understanding the Millennial Mindset." http://www.apta.com/resources/reportsandpublications/Documents/APTA-Millennials-and-Mobility.pdf

[7] Federal Highway Administration, Highway Statistics 2010—Table DL-20, September 2011.

[8] Ohio Department of Transportation. Statewide Transit Needs Study. Demographic Trend Analysis.In a survey administered by zipcar, 25% of those18 to 34 reported that mobile transportation apps (such as taxi apps, real-time transit information, and car sharing) had reduced their driving frequency, compared with only 9% of those 55 and older.

[9] Noreen C. McDonald. Journal of the American Planning Association. Are Millennials Really the "Go-Nowhere" Generation? July 2015. Retrieved from http://dx.doi.org/10.1080/01944363.2015.1057196


TRAIL

SECTION SIX:

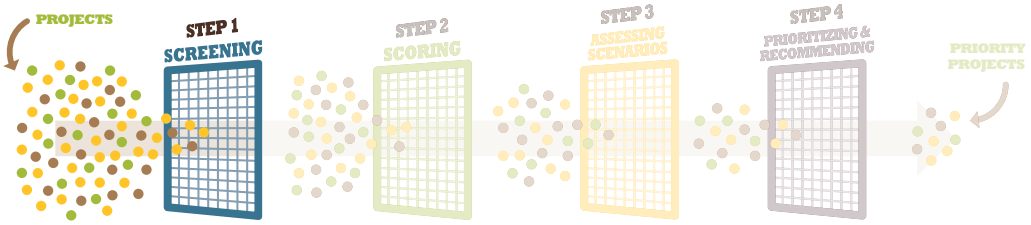
EVALUATING PROJECTS

OUR PROCESS

The previously described goals informed our evaluation process that shaped the Connecting Crossroads recommendations. This process used your input and areawide data to screen, score, assess, and prioritize a long list of projects that came from previous plans, guidance from technical experts, and conversations with the public.

Our evaluation process:

- **SCREENED** a long list of recommended projects from past plans and community input.
- **SCORED** projects based on community values, identifying transportation projects in the Casper Area that best meet these goals.
- **ASSESSED** the relative strengths of two scenarios—which focused on different types of projects—in meeting the plan's goals.
- **PRIORITIZED** projects from the two scenarios to develop an near-, medium-, long-term list of recommended investments.

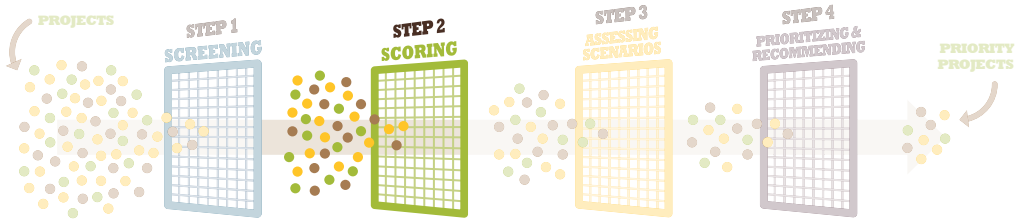


STEP 1: SCREENING

The project team worked with various MPO committees to develop a comprehensive list of transportation projects in the Casper Area. This list drew from several sources:

- Past planning efforts (i.e., 2014 LRTP and previous Metropolitan Transportation Improvement Plans)
- Ideas developed by the team and the community during the project workshops
- Feedback from the community.

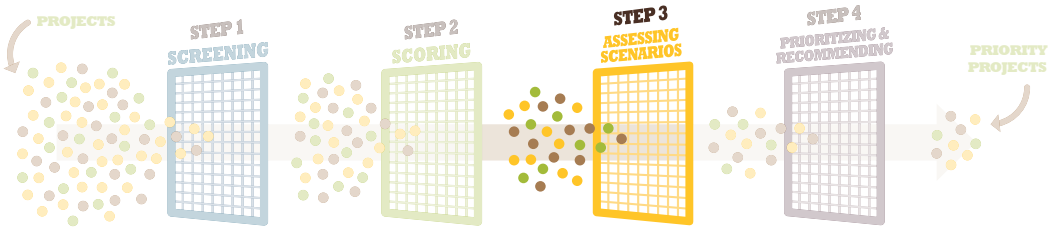
That full universe of projects was then cross-checked with staff and policymakers from the municipalities within the region to remove any that no longer met community needs or had been superseded. The resulting list of screened projects were then assigned to analysis scenarios.



STEP 2: SCORING

With a screened list of projects in hand, the project team used geographic criteria to score the remaining projects. A focus on geographic criteria at this stage made it possible to evaluate numerous projects quickly, adjusting criteria weighting to best match the community's values, needs, and technical priorities. The criteria used for scoring were based on the project goals. A detailed evaluation methodology can be found in the Appendix.

PROJECT GOALS	METRIC	PROJECTS SCORE HIGHLY IF THEY...
GOAL 1 Increase Transportation Options for All Modes	Modal options	Improve bicycle/pedestrian/transit access without increasing SOV capacity
	Street congestion	Reduce travel time
	Street network and connectivity	Provide new connections to an existing street network
	ADA accessibility	Address specific ADA problems
GOAL 2 Improve Safety and Health for All Residents	Operational safety	Minimize the likelihood of crashes and/or bicycle/pedestrian conflicts
	Community accessibility	Offer non-SOV connections to multiple community facility types (e.g., schools, libraries, parks, recreation centers)
	Density of modal options	Expand the active transportation or transit network density
	Access to healthy food sources	Provide a non-SOV connection to more than one healthy food source
GOAL 3 Enhance the Region's Distinct Character	Appropriateness to context and placemaking	Improve current and future surrounding land use.
	Consistency with community plans	Show consistency with previous plans and address larger need
	Contribution to Complete Streets	Improve access for non-SOV modes
GOAL 4 Support the Region's Diversifying Economy	Facilitate goods movement	Facilitate truck movements and connect to the freight network/intermodal transfer facilities
	Parking facilities in redevelopment areas	Increase on-street parking potential
GOAL 5 Promote Affordable and Easy Mobility Solutions	Unique financing	Combine public and private funding sources
	Project cost	Have a low per mile cost or are categorized as an intersection improvement
	Maintenance responsibility	Include a bridge addition/replacement



STEP 3: ASSESSING SCENARIOS

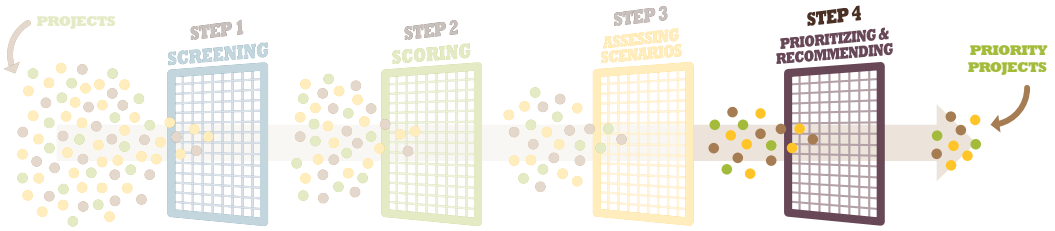
Once a score was assigned, projects were placed into a travel demand model. A population growth of 50,000 people (equivalent to 20,833 households) was assigned among Traffic Analysis Zones (TAZ)[10], which is higher than expected growth. This assumption helps illustrate significant differences between scenarios and allows for planning further into the future.

Two future land use scenarios were modeled to give a snapshot of how population and employment growth in the Casper Area could potentially be distributed in the future. The **COMPACT SCENARIO** focuses on infill development, development in urban centers, and growth along major corridors. The **SPRAWL SCENARIO** follows historical trends, with population residing along the edges. Most growth still occurs along the edges in the compact scenario, although more focus is placed on growth occurring in appropriate infill locations.

Within each growth scenario, three network types were modeled: No Build, Auto-Oriented, and Multimodal. No Build assumes the status quo, Auto-Oriented includes projects that focus on increasing SOV capacity or roadway maintenance/repair, and Multimodal includes projects that accommodate or improve access for non-SOV modes.

Arriving at these scenarios required research and collaboration. In addition to reviewing land use plans, the project team sought input from town planners and private developers to determine where population and employment growth is occurring or is predicted to take place. Maps showing results of the modeling exercise for the compact and sprawl scenarios are displayed at the end of this section. A detailed methodology can be found in the Appendix.

[10] A TAZ is an area delineated by state or local transportation officials. It is used to analyze traffic-related data and usually consists of one or more census blocks, block groups, or census tracts.



STEP 4: PRIORITIZING AND RECOMMENDING

Based on results from the model, the project team developed a recommended project list including high-scoring projects from each of the initial scenarios. The various project types include:

- **COMPLETE STREETS PROJECTS** to provide travel options and promote health
- **MULTIMODAL IMPROVEMENTS** that improve non-SOV access
- **SAFETY PROJECTS** to address high-crash areas
- **INTERSECTION IMPROVEMENTS** to improve traffic flow
- **ROADWAY CONSTRUCTION** to provide new connections and to connect network gaps

The recommended project list meets Connecting Crossroads' goals and supports different ways of traveling around the Casper Area. The following chapters describe the recommended projects in more detail, including the potential phasing.

COMPACT SCENARIO

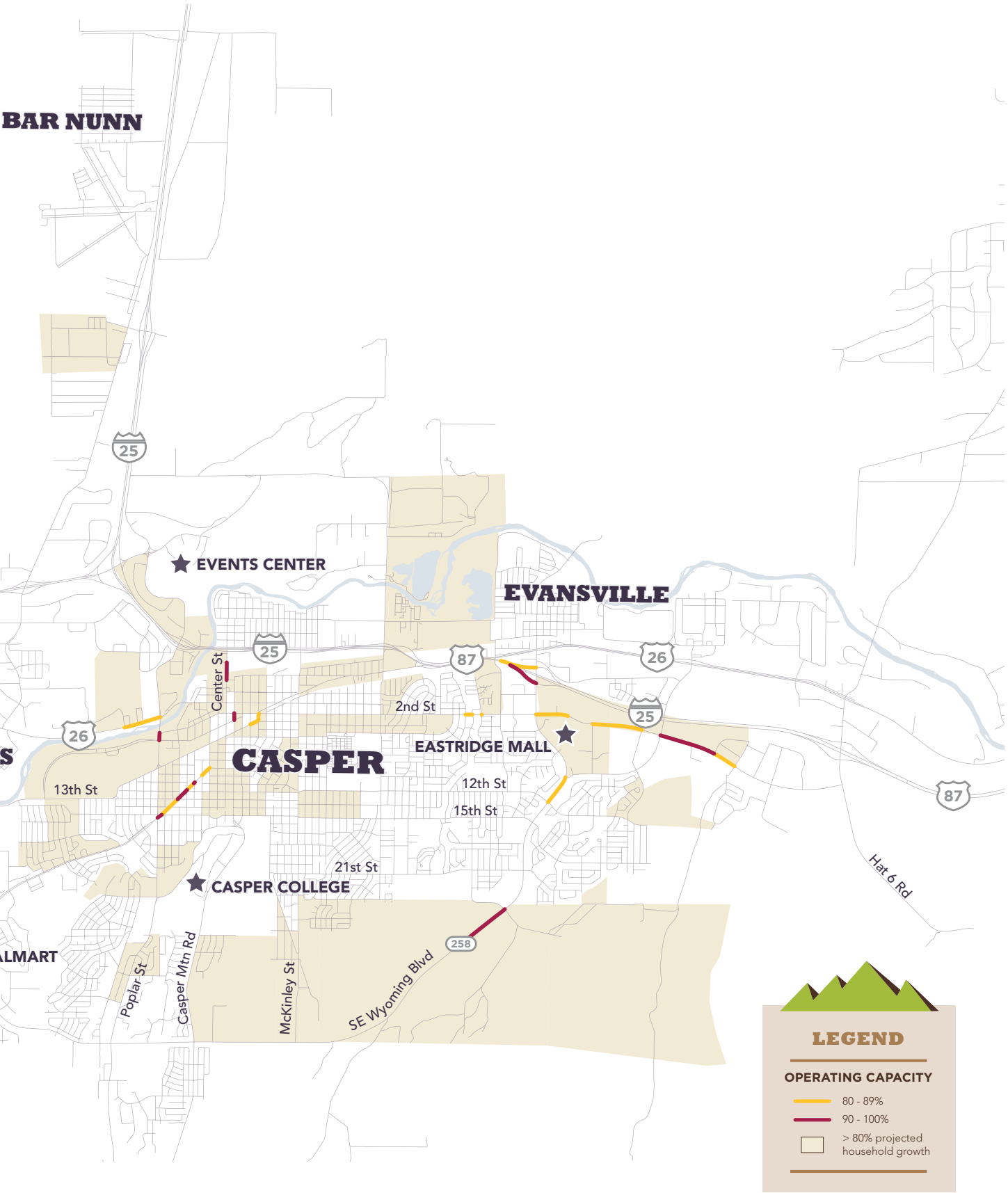
The focus on infill development in the compact scenario results in slight increases in operating capacity on roads across the region, especially when compared with the sprawl scenario. The beige areas on these maps indicate TAZs that are projected to experience more than 80% growth in the number of households when compared with the base year. The road network shown on this and the following three maps is the 2048 network.

MULTIMODAL NETWORK

Projects in the multimodal network accommodate or improve access for non-SOV modes. Due to the addition of bike lanes, intersection improvements, pedestrian enhancements, and a mixed-use path, 2nd Street, Wyoming Boulevard, and CY Avenue are projected to experience more congestion in this scenario.

KEY TAKEAWAYS FROM THE MODEL

- There are projected to be significantly higher trip rates per household per day than the base year.
- Travel time only has small effects on destination choice, likely because traveling across the Casper Area is fairly quick in relative terms.

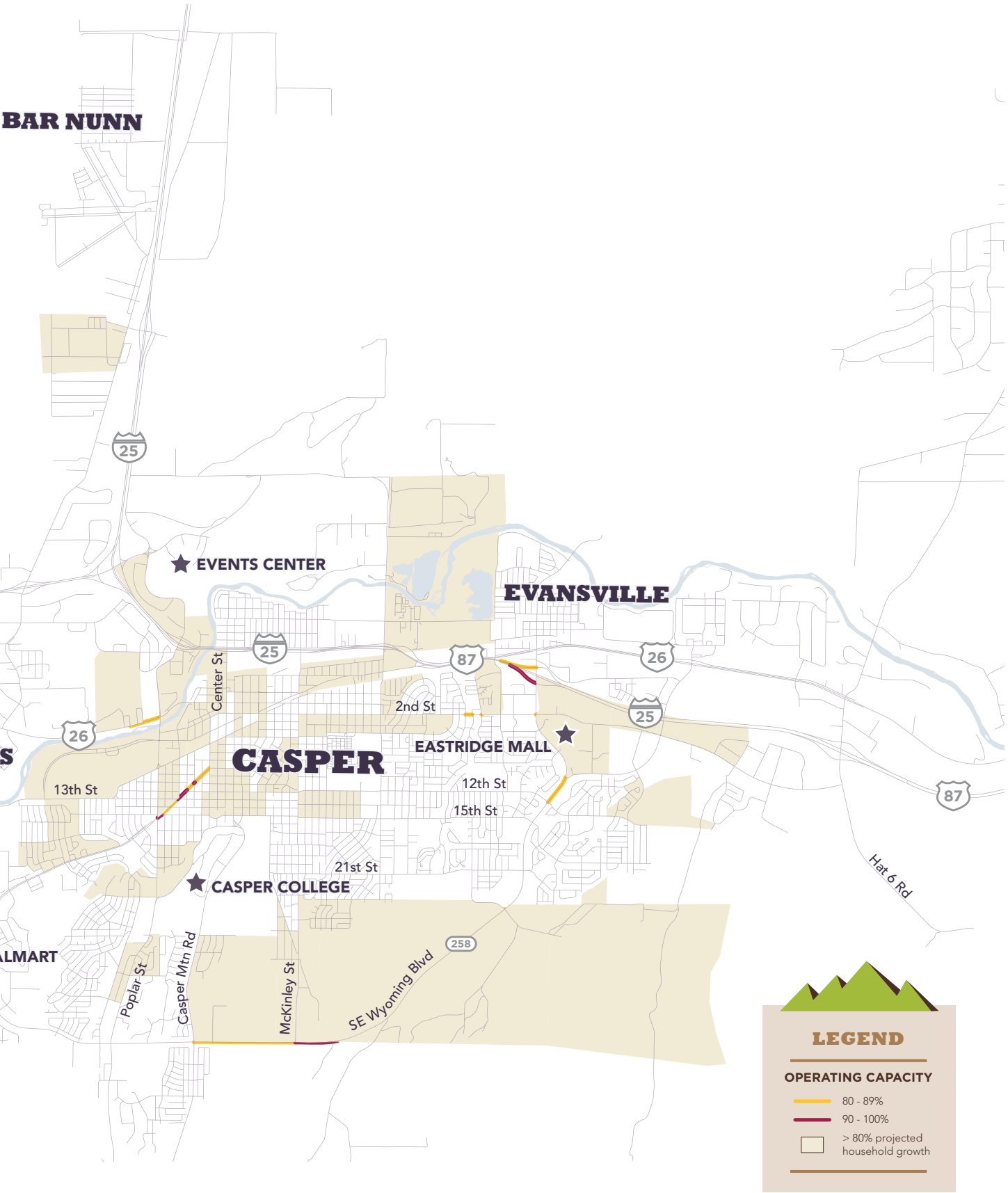

BAR NUNN
25
EVENTS CENTER
EVANSVILLE
25
87
26
Center St
2nd St
25
26
CASPER
EASTRIDGE MALL
13th St
12th St
15th St
87
21st St
CASPER COLLEGE
Hat 6 Rd
ALMART
Poplar St
Casper Mtn Rd
McKinley St
SE Wyoming Blvd
258
LEGEND
OPERATING CAPACITY
80 - 89%
90 - 100%
> 80% projected household growth

AUTO-ORIENTED NETWORK

The auto-oriented network includes projects that focus on increasing SOV capacity or roadway maintenance and repair. In this scenario, Wyoming Boulevard and CY Avenue are projected to experience more congestion despite roadway widenings along both corridors.

KEY TAKEAWAYS FROM THE MODEL

- VMT (vehicle miles traveled) is up 65 percent in compact scenarios and almost doubles in sprawl scenarios.
- VHT (vehicle hours of travel) is projected to be up 68 to 70 percent in compact scenarios and up 102 to 105 percent in sprawl scenarios.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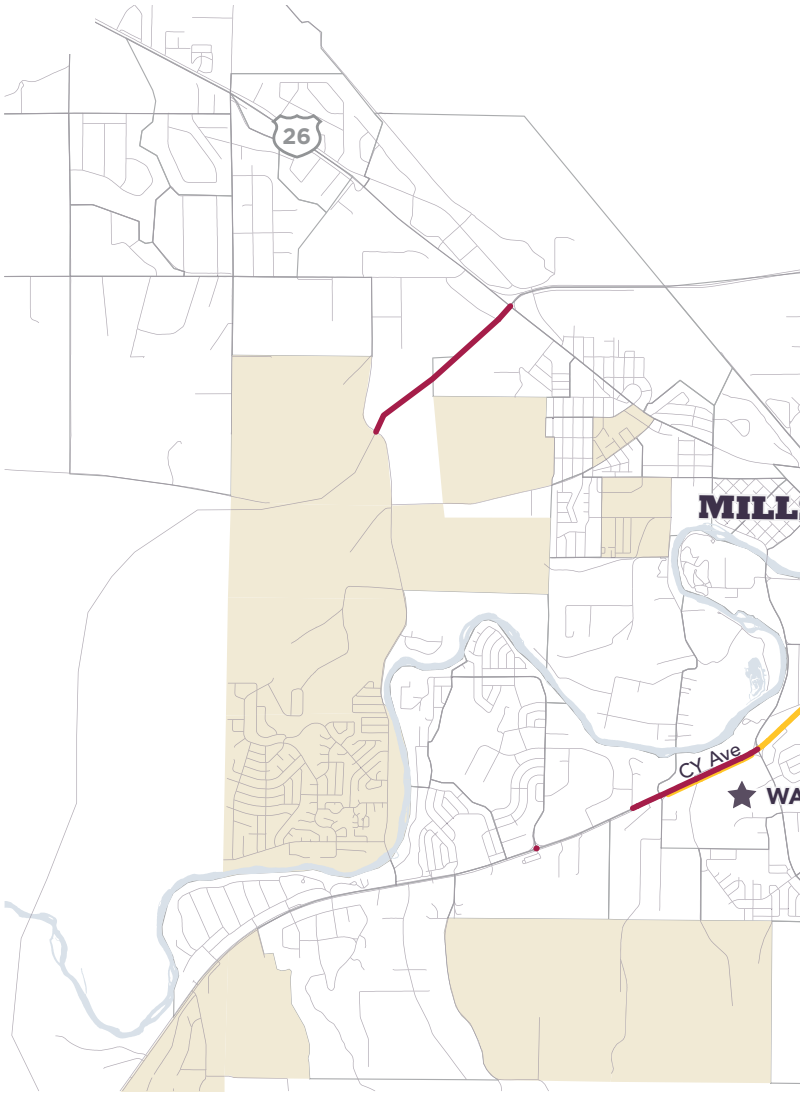
21st St
Hat 6 Rd
Poplar St
Casper Mtn Rd
McKinley St
SE Wyoming Blvd
LEGEND
OPERATING CAPACITY
80 - 89%
90 - 100%
> 80% projected household growth

SPRAWL SCENARIO

The sprawl scenario sees more congestion than the compact scenario due to the volume of jobs and housing along the edges of the region. Similar to the previous set of maps, the beige areas indicate TAZs that are projected to experience more than 80% growth in the number of households when compared with the base year. The proposed sidepath along Wyoming Boulevard and pedestrian enhancements to the underpass along Center Street may not relieve congestion without widening.

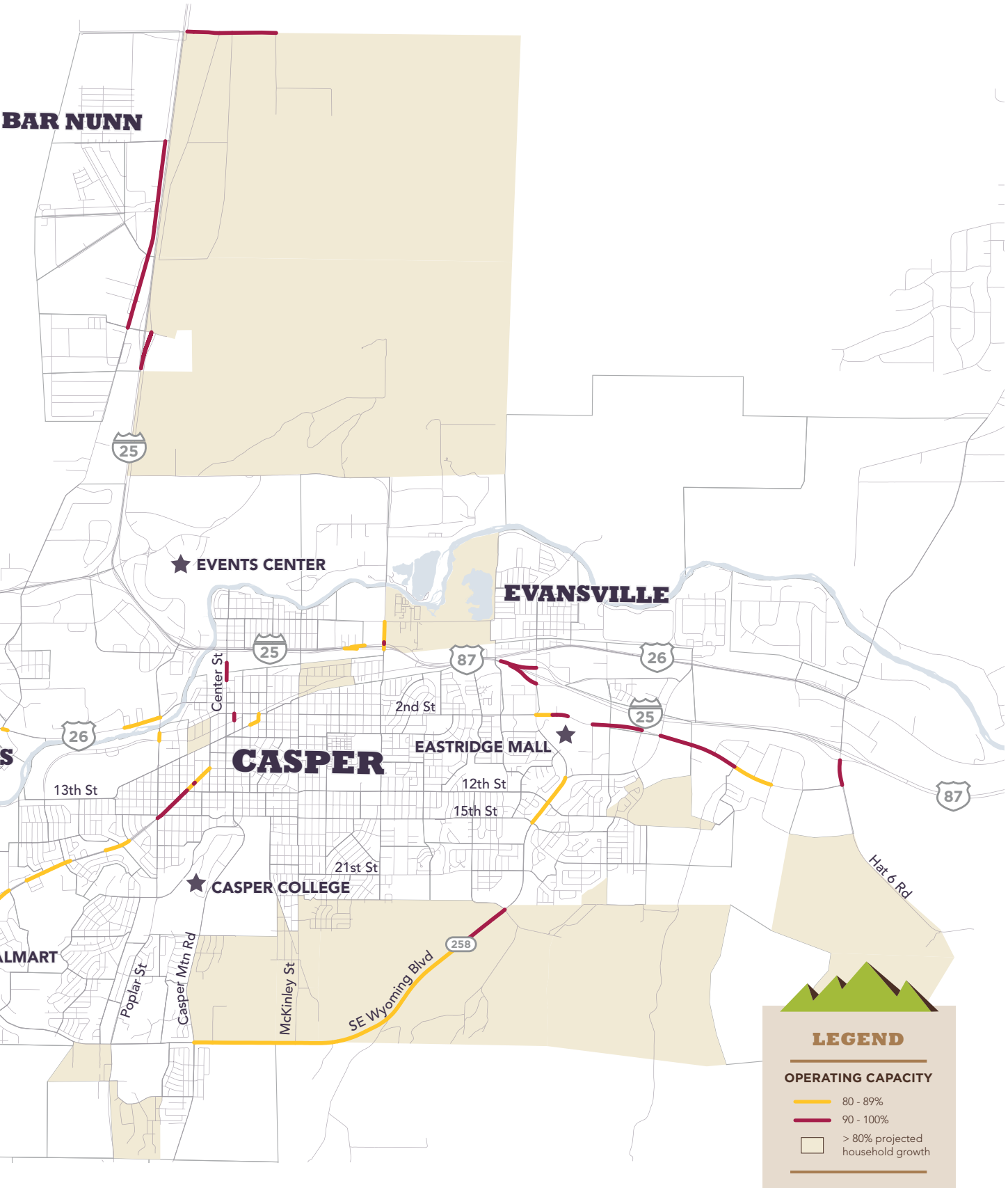
MULTIMODAL NET

Under the multimodal network in the sprawl scenario, 2nd Street, Hat 6 Road, and CY Avenue are projected to experience more congestion due to bike lane additions. An increase in jobs and housing result in a projected increase in congestion along Poison Spider Road and Salt Creek Highway.



KEY TAKEAWAYS FROM THE MODEL

- Person trips are projected to be slightly higher in the sprawl scenarios due to an increase in the number of vehicles accompanying population growth.
- Average speeds are somewhat lower in all scenarios.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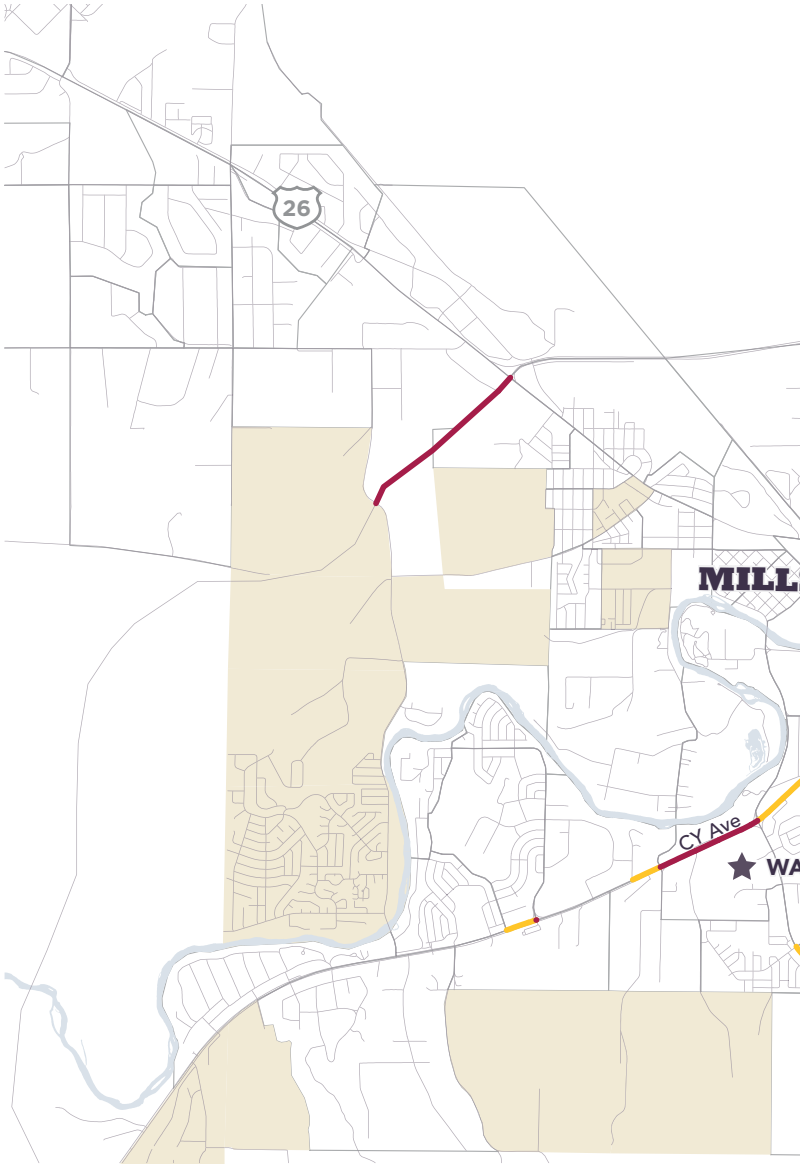
15th St
21st St
Poplar St
Casper Mtn Rd
McKinley St
SE Wyoming Blvd
Hat 6 Rd
LEGEND
OPERATING CAPACITY
80 - 89%
90 - 100%
> 80% projected household growth

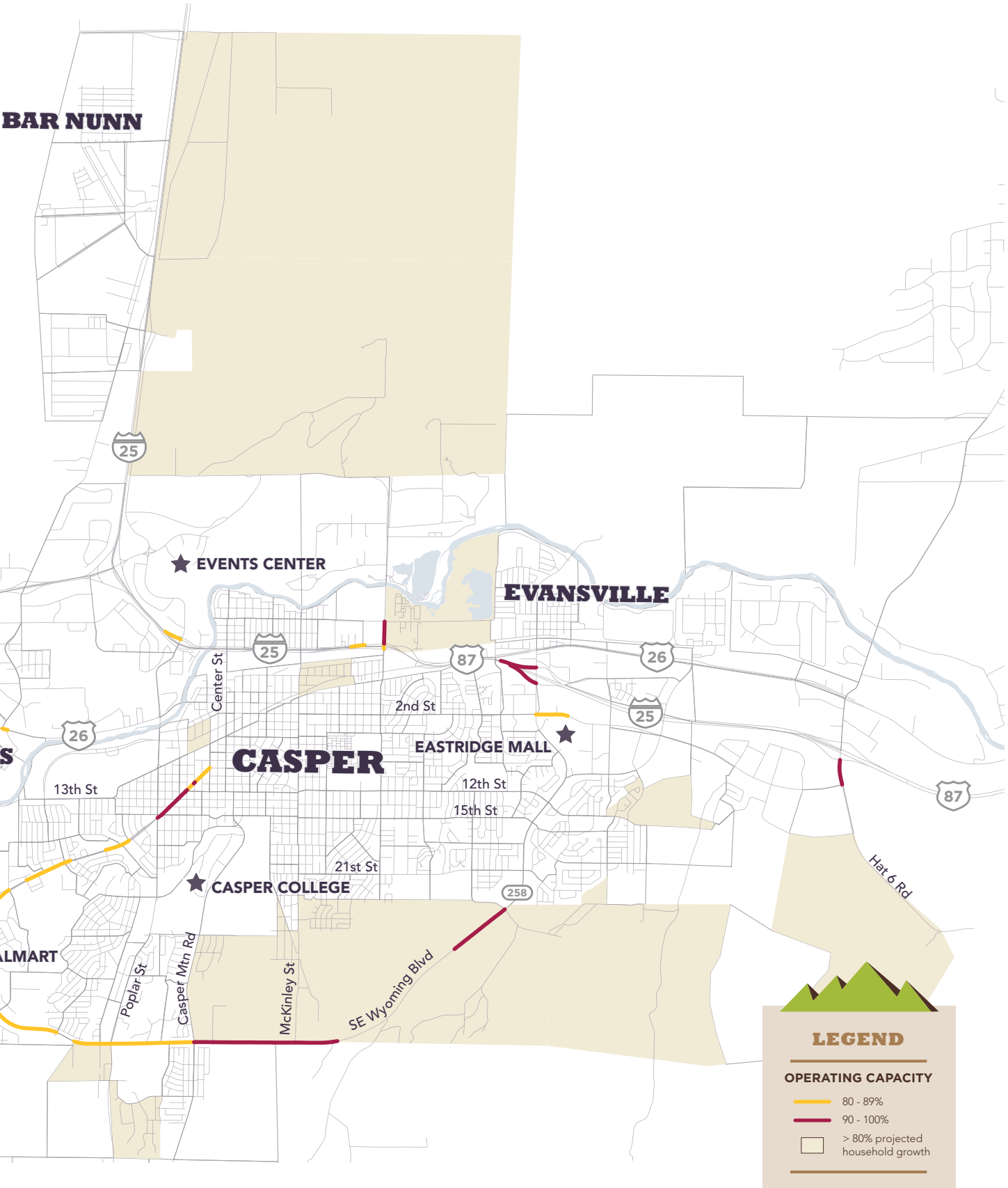
AUTO-ORIENTED NETWORK

Similar to the auto-oriented network within the compact scenario, Wyoming Boulevard and CY Avenue are projected to experience more congestion despite roadway widenings along both corridors. Highway 257 (northwest of Mills) is projected to experience more congestion due to an increase in jobs and housing west of Mills.

KEY TAKEAWAYS FROM THE MODEL

- The share of walk trips is projected to increase even in sprawl scenarios due to increased employment density.
    - This increase occurs more in the compact scenarios. The model showed that expanding roadways minimally reduced the share of walk trips.

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Hat 6 Rd
Poplar St
Casper Mtn Rd
McKinley St
SE Wyoming Blvd
LEGEND
OPERATING CAPACITY
80 - 89%
90 - 100%
> 80% projected household growth

SECTION SEVEN:

RECOMMENDED PROJECTS

OUR TRANSPORTATION FUTURE

We used the results of the evaluation process and what we heard from you to develop a list of projects that best meet the Connecting Crossroads goals with the resources available. It includes:

- **56 PROJECTS**, ranging from mixed used paths to roads
  - **7 COMPLETE STREETS PROJECTS**
  - **20 MULTIMODAL PROJECTS**
  - **4 INTERSECTION IMPROVEMENTS PROJECTS**
  - **20 ROADWAY CONSTRUCTION PROJECTS**
  - **5 BRIDGE REPLACEMENT PROJECTS**

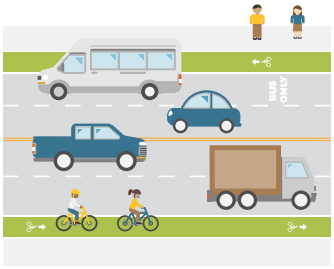
The projects included in this list are all eligible for Federal, State, or County funds and there may be other funding sources that can be used in the future (see Funding the Plan for more information). Recommended projects and maintenance spending include all committed projects identified in the Casper Area MPO FY 2020 – 2023 Metropolitan Transportation Improvement Program (MTIP). Additional projects beyond those committed to 2023 are also included to address future year mobility needs and network preservation throughout the Casper Area. Together these projects are the blueprint we will follow to improve the Casper Area's transportation system over the next three decades.

PROJECT PRIORITY

The recommended projects will be implemented in order of prioritization phases as funding allows. While the project scoring process was a vital component in developing the recommended project plan, the final list was informed by additional factors such as feedback on scored projects, near-term design and implementation feasibility as discussed with local planning staff, and the allocation timelines of the MPO's MTIP and WYDOT's STIP. The following pages describe the recommended list of projects including costing and potential phasing.

PROJECT TYPES

Connecting Crossroads recommendations includes projects in each of the following categories:



COMPLETE STREETS PROJECTS

Supports the access and safety of all users and modes

MULTIMODAL IMPROVEMENTS

Enhances connectivity and safety for pedestrians and/or bicyclists

INTERSECTION IMPROVEMENTS

Improves operations and reduces conflict potential at hotspots

ROADWAY CONSTRUCTION

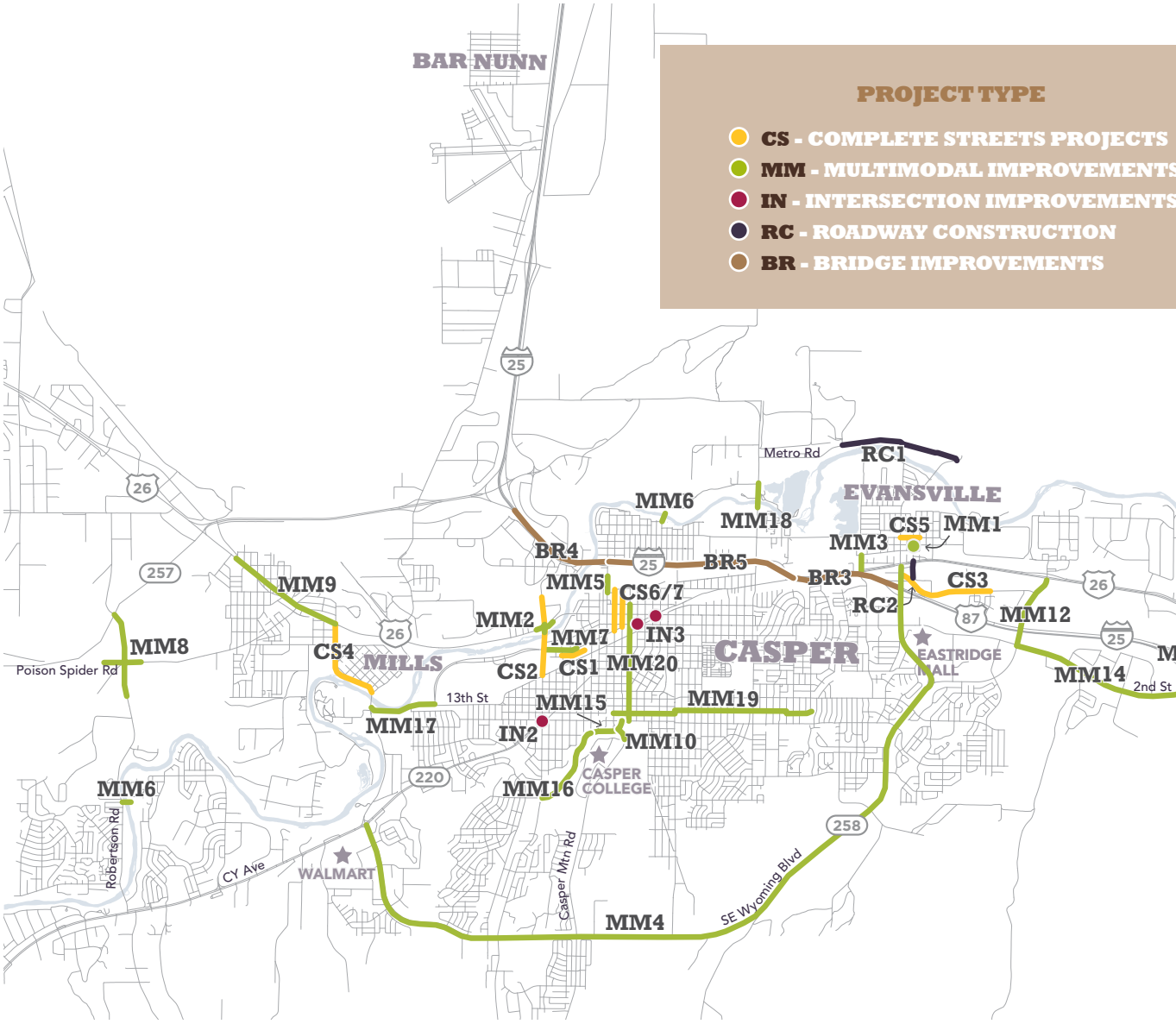
Provides increased vehicular connectivity and/or capacity

BRIDGE IMPROVEMENTS

Replaces structures near the end of their lifetime to ensure existing system performance

PROJECTS FOR ALL THE CASPER AREA

NEAR-TERM PRIORITIES



MAP ID	PROJECT TYPE	PROJECT NAME	TO	FROM	LENGTH (MI)	ESTIMATED COST
CS1		Midwest Avenue reconstruction	Elm St.	Poplar St.	0.23	$6,350,000
MM1		Evansville sidewalk gap installations	King, Evans, Leavitt, Williams (N. of 4th St.) 4th St (E. of Williams) 2nd St (E. of Williams and 1st St.)		N/A	$434,000
CS2		Poplar and 1st reconstruction and bridge widening	W. 1st St.	W. Collins Dr.	0.74	$18,316,000
MM2		Poplar and 1st sidewalk widening and landscaping	Star Ln. / W. 1st St.	Pronghorn St. / W. Yellowstone Hwy.	0.29	$790,000
MM3		Western Avenue sidewalk Improvements	Iron St.	E. Yellowstone Hwy.	0.15	$217,000
BR1		CR402 Bates Creek Road bridge replacement	CR402 at Bates Creek		N/A	$768,000
RC1		Metro Road extension	Metro Rd.	Cemetery Rd.	1.12	$1,131,000
BR2		CR106 bridge replacement	CR106 at Notches Road/Powder River		N/A	$1,540,000
CS3		Lathrop Road reconstruction	Curtis St.	Aspens MHP	0.91	$1,631,000
BR3		I-25 Casper marginal reconstruction / Walsh Dr structure replacement	Yellowstone Hwy.	Wyoming Blv.	1.02	$26,441,000
IN1		Hat 6 Road traffic signals	Hat 6 Rd.	E. 2nd St.	N/A	$303,000
CS4		Mills Main Street Corridor (Wyoming Boulevard)	W. Yellowstone Hwy.	W. 13th St.	0.86	$2,317,000
MM4		Wyoming Boulevard Sidepath	CY Ave	Rail Trail at Curtis St. & US26	8	$9,111,000
IN2		CY and Poplar Intersection Safety Improvements	CY Ave	Poplar St.	N/A	$323,000

NEAR-TERM PRIORITIES

MAP ID	PROJECT TYPE	PROJECT NAME	TO	FROM	LENGTH (MI)	ESTIMATED COST
MM5		Center Street Underpass Improvements	W. D St.	W. B C St.	0.16	$551,000
MM6		Trail system pedestrian bridges (north and west Casper)	N. Lincoln St., Roberston Rd.	North Platte Park, Paradise Valley	N/A	$661,000
MM7		Midwest Avenue bike lane to Casper Rail Trail	Poplar St.	Casper Rail Trail	0.32	$60,000
MM8		Robertson Road sidewalks, lights, and beautification	Robertson Rd.	Poison Spider Rd.	1.15	$566,000
MM9		Old Yellowstone Highway sidewalks, lights, and beautification	N. 6th Ave	SW. Wyoming Blv.	1.13	$1,156,000
MM10		Durbin Street bike lanes extension	Campus Dr.	15th St.	0.21	$38,000
MM11		Casper Rail Trail Extension	Hat 6 Rd.	Edness Kimball Wilkins Park entrance	2.59	$1,287,000
IN3		E. Yellowstone Hwy intersection improvements	E. 1st St.	E. 2nd St.	N/A	$804,000
MM12		Blackmore Road Bike Lanes	E. 2nd St.	Casper Rail Trail	0.75	$126,000
MM13		Hat 6 Road Bike Lanes	E. 2nd St.	Casper Rail Trail	0.75	$135,000
MM14		E 2nd Street Bike Lanes	Blackmore Rd.	Hat 6 Rd.	1.73	$308,000
CS5		2nd Street reconstruction	Curtis St.	Williams St.	0.18	$493,000

Footnote: Baseline project costs not derived from the latest MTIP have been adjusted from previous plans and studies using an inflation calculation based on the US Consumer Price Index. This method accounts for the cumulative inflation rate from year of original project estimate to October 2019. This methodology provides a cumulative inflation rate of 8.7% for projects that were included in the previous LRTP but not yet built. Where new projects have been developed as part of Connecting Crossroads feedback, cost estimates are based on a composite of similar projects in Wyoming and industry best practice. Connecting Crossroads feedback and multimodal projects include a design, engineering, and contingency estimate of 25%, unless those were already accounted for in specific unit costs of project elements derived from a comparison example. Costs for projects derived from the previous LRTP include design, engineering, and contingency, whereas projects from the MTIP account for these if they have not already been completed.

MAP ID	PROJECT TYPE	PROJECT NAME	TO	FROM	LENGTH (MI)	ESTIMATED COST
RC2		Texas Street extension	Miracle Dr.	E. Yellowstone Hwy.	0.16	$493,000
MM15		College Drive bike lanes and intersection treatments	Ash St.	Wolcott St.	0.26	$56,000
MM16		College Drive mixed-use path to Casper College	Ash St.	Poplar St.	0.82	$441,000
BR4		I-25 Casper marginal reconstruction / Structure replacement over Platte River	Center St.	Poplar St.	1.08	$25,366,000
MM17		13th Street Platte River Parkway extension	SW. Wyoming Blv.	King Blv.	0.62	$308,000
MM18		Brian Stock Trail sidepath	south of North Platte River	McKenzie Park	0.23	$119,000
MM19		E. 14th Street and Farnum Street Bike Boulevard	Wolcott St.	Sage Creek Path	1.93	$336,000
MM20		Beech Street Bike Lanes/Bike Boulevard	A St.	15th St.	1.1	$116,000
CS6		Wolcott Street 2-way conversion, streetscape improvements	Midwest Ave.	C St.	0.39	$426,000
CS7		Durbin Street 2-way conversion, bike lanes extension	Midwest Ave.	C St.	0.36	$402,000
BR5		Reconstruct I-25 Casper marginal structure	Center St.	Yellowstone Hwy.	1.76	$25,600,000

Project costs are listed in future value based on their recommended funding priority phase and estimated build year within those periods. To calculate future value, the Project Team reviewed publicly available information from regional and national institutions that publish economic data such as the Wyoming Department of Administration & Information, the Wyoming Department of Workforce Services, and the United States Department of Labor's Bureau of Labor Statistics. The Wyoming Department of Administration & Information, through the Economic Analysis Division, develops the Wyoming Cost of Living Index ("WCLI"). The WCLI is an estimate of overall inflation rates for Wyoming and is based on price data collected semiannually in 28 cities and towns across the state. The Project Team applied the compound annual growth rate formula below to calculate the annual inflation assumption (3.25%) used in the estimate of future value of Recommended Projects:

Annual Inflation Rate = (Cumulative Inflation Factor)^(1/years)

Annual Inflation Rate = (2.612)^(1/30) -1 =3.25%

Cumulative Inflation Factor means the price index of the Wyoming Cost of Living Index for the last 30 years (e.g., for the period 1989-2019).

NEAR-TERM PROJECT SPOTLIGHT

POPLAR & 1ST STREET RECONSTRUCTION AND IMPROVEMENTS

A combination of bridge replacement and complete streets projects, this effort will revolve around WYDOT widening the Poplar Street bridge over the North Platte River in 2021. In addition to reconstruction of S. Poplar Street from W. 1st Street to Collins Dr., the intersection of S. Poplar and W. 1st Street will be reconstructed to accommodate additional turning lanes that will significantly increase capacity. Critically, widening the bridge will allow for sidewalks on both sides, addressing a major safety and equity issue as pedestrians and bicyclists currently do not have a safe point of passage between the 1st Street bridge and the Tate Pumphouse. Recommended design proposed by Connecting Crossroads includes 10-ft sidewalk widths along the bridge to establish a safe and comfortable right-of-way for nonmotorized users, extension of sidewalks south to W. Yellowstone Highway, and decorative lightening and streetscaping as funds are available.

WYOMING BOULEVARD SIDEPATH

This project was identified as a priority by the community during our active transportation workshop where the public was able to draw their ideal bicycle network, and in stakeholder feedback of the list of prioritized projects from the evaluation and scoring exercise. The project would provide a continuous sidepath for nonmotorized users of all ages and abilities from CY Avenue to E. Yellowstone Highway in Evansville, where it would intersect with the Casper Rail Trail. A feasibility and conceptual design study of the project was completed for the MPO in 2013. The feasibility assessments included an offset of 20 to 27 feet to accommodate the potential future widening of Wyoming Boulevard. The proposed alternative used for Connecting Crossroads cost estimates would provide a 10-ft wide, detached, two-way multi-use path on the north side of Wyoming Boulevard that would have the fewest right-of-way impacts, connect to the future multimodal network, and provide more comfortable refuge from prevailing winds than the southern side.

MILLS MAIN STREET CORRIDOR (WYOMING BOULEVARD)

Wyoming Boulevard serves as the primary arterial through the Town of Mills for both residents and local business. Auto-oriented in design, the existing configuration of the corridor lacks thorough consideration for access and safety for all modes, public space, and support for community serving retail and land uses. Given the existing conditions there is a strong desire by both Mills residents and Town leadership for a redesign of the corridor that fosters greater commercial and public space destinations. This project is currently under study and would look to enhance the corridor by improving connectivity to the existing River Trail, improve crossings for pedestrian safety, and implement arterial speed management measures while maintaining vehicular capacity for future demand. The project has catalytic economic development potential if it is provided in a way that attracts outside investment for commercial mixed-use development and placemaking as identified in the Mills River Front Concept Development (2016) feasibility study.

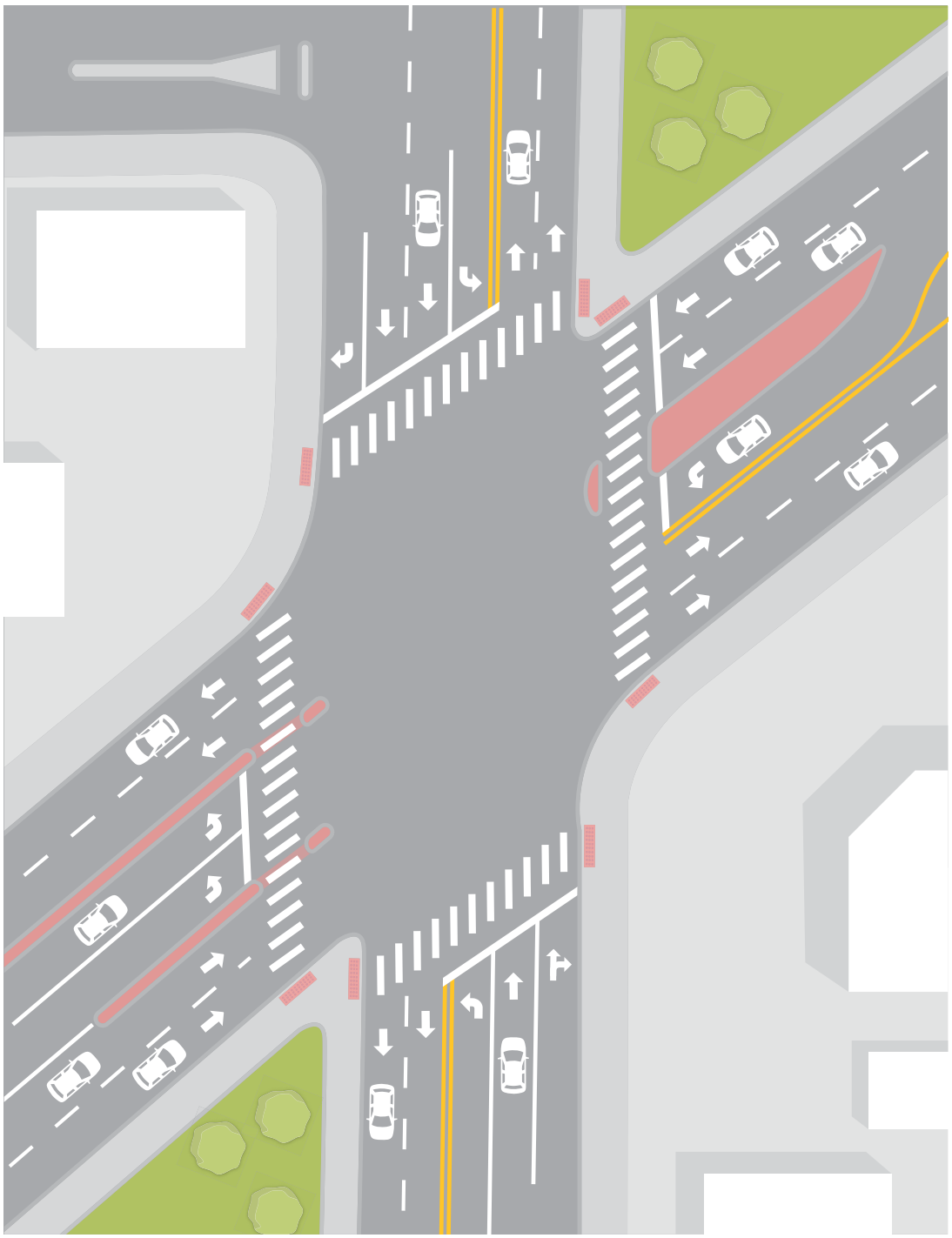
EVANSVILLE GAP PROJECTS

Several projects in Evansville are recommended for the near-term phase based on the scoring evaluation, community feedback, and suggestions from Town representatives. These projects include a number of locations where sidewalks would be improved or added where gaps exist. Reconstruction of Lathrop Road would allow for provision of new sidewalks to The Aspens mobile home park, hotels, and restaurants that currently do not have safe nonmotorized access. Extending Metro Road to fill the gap between Station Road and Cemetery Road north of the North Platte River, would provide Evansville with an alternative access route to the existing roadway network that can improve emergency response times.

CY/POPLAR INTERSECTION IMPROVEMENTS

Issues at this intersection were identified during an active transportation audit with stakeholders and policymakers during Spring 2019 workshops. This project proposes treatments at a collision hotspot that would "complete the intersection," including extended curbs with tightened radii, additional medians and refuge islands, and high-visibility crosswalks. Implementing these measures would:

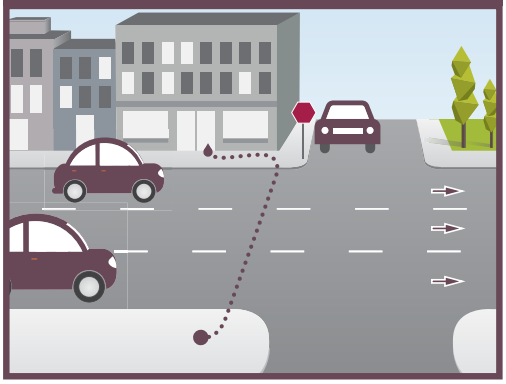
- Reduce crossing distances and exposure for pedestrians and bicyclists
- Reduce turning speeds
- Enhance user comfort
- Improve user visibility
- Activate existing pocket parks



DOWNTOWN 2-WAY CONVERSIONS

One-way streets have a history of damaging downtown retail. The higher speeds of one-way streets detract from the experience of walking along them and makes drivers less likely to notice or stop at adjacent retail. While there are exceptions, successful commercial activity is typically located on two-way streets. Wolcott and Durbin Streets provide ideal candidates for 2-way conversion as they go through the heart of downtown, intersect with existing improvements along 2nd Street, and intersect with the Casper Rail Trail just south of where they transition to one-way. Recommended implementation of this projects would also extend the existing bike lanes on Durbin Street that end at the Rail Trail.

ONE-WAY STREET



Traffic Safety ▼
Faster traffic speeds and fewer signalized intersections

Business Access ▼
Frustrating; circle back to your destination and turning delays

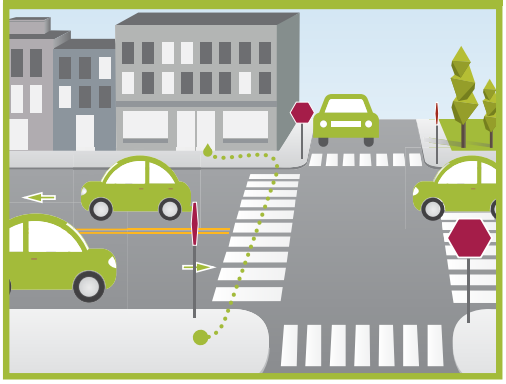
Emergency Services Access ▼
Only one direction for entry

Economic Development ▼
Limited visibility and unforgiving if you pass business

Bicycle Access ▼
Limited network

Walking Access ▼
High speeds make it difficult to cross street

TWO-WAY STREET



Traffic Safety ▲
Slower traffic speeds and more signalized intersections

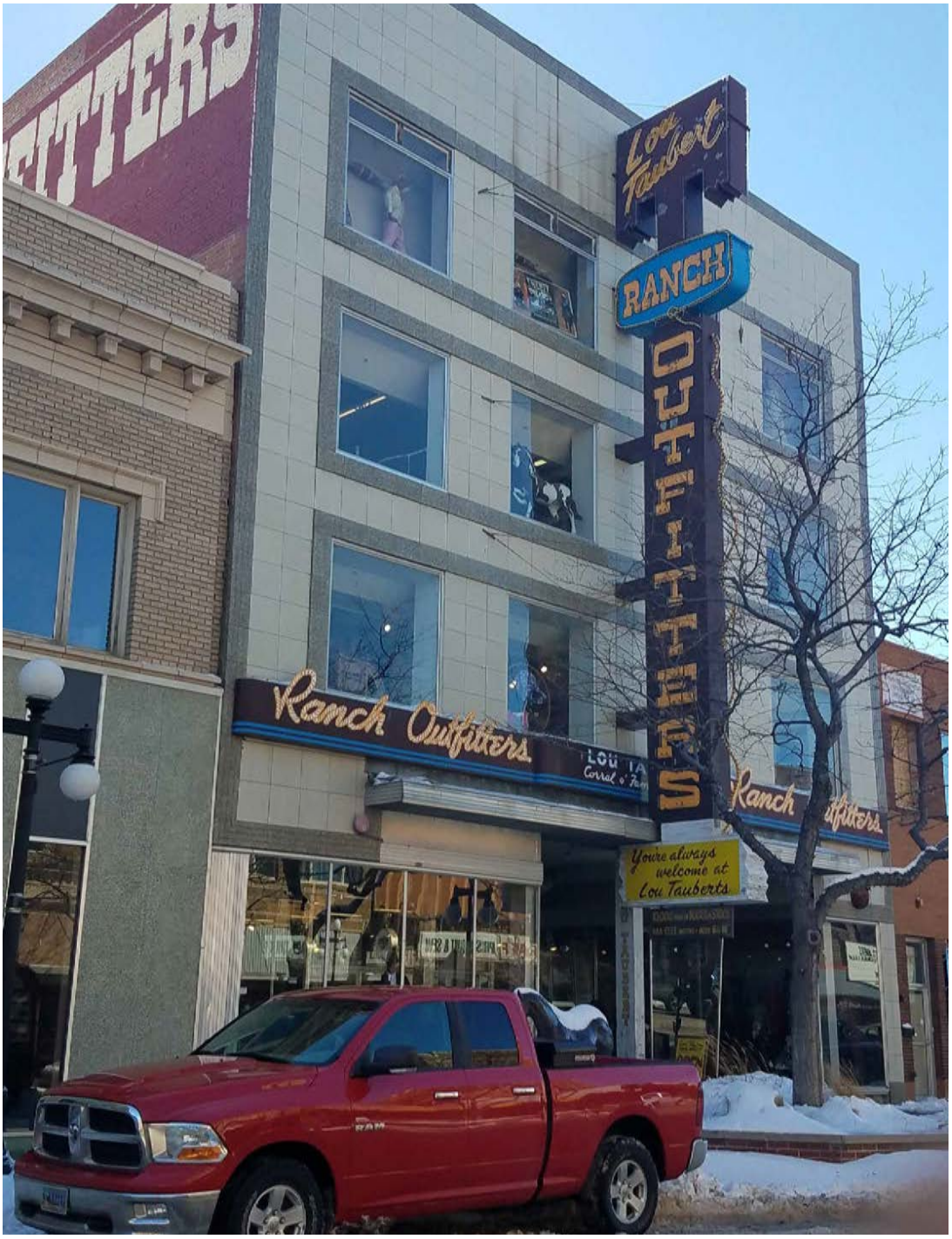
Business Access ▲
Customer-friendly; less unnecessary circulating traffic

Emergency Services Access ▲
Double direction for entry

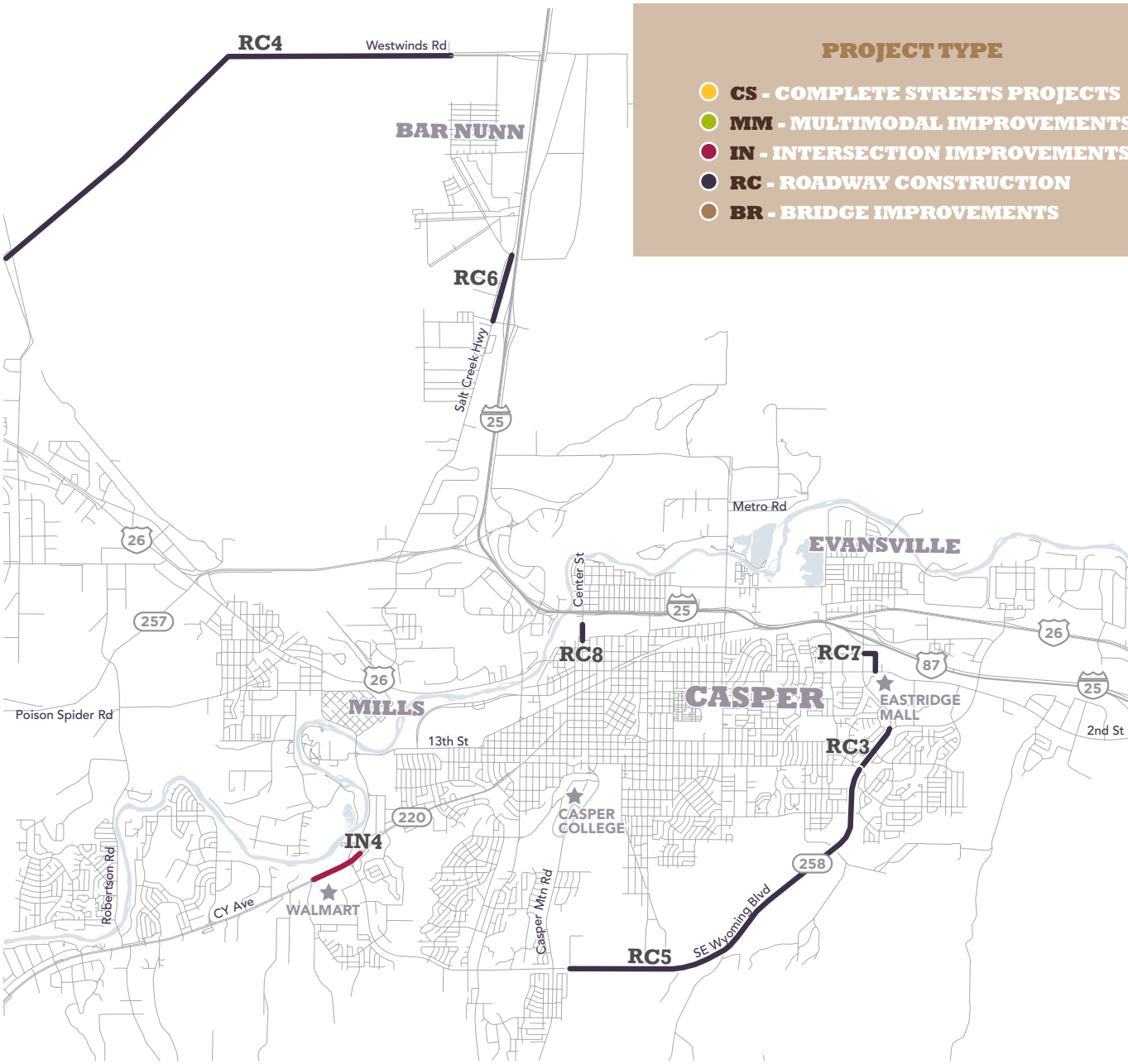
Economic Development ▲
Double the storefront visibility

Bicycle Access ▲
2-way demand met in safer, traffic-calmed environment

Walking Access ▲
Predictable crossings in traffic-calmed environment


Lou Tauberts
RANCH
OUTFITTERS
Ranch Outfitters
You're always welcome at Lou Tauberts

MEDIUM-TERM PRIORITIES



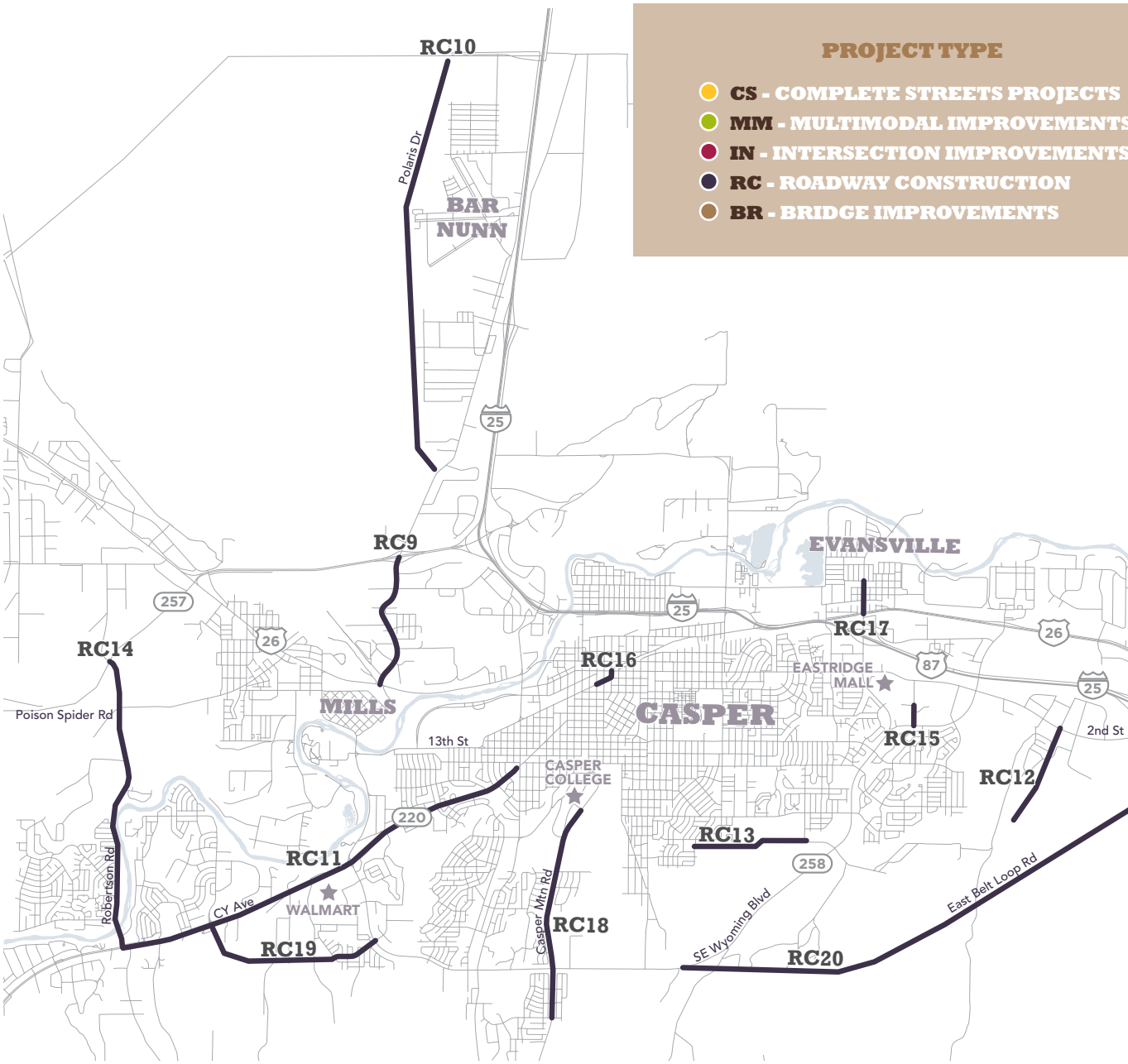
MAP ID	PROJECT TYPE	PROJECT NAME	TO	FROM	LENGTH (MI)	ESTIMATED COST
IN4	●	CY/Wyoming Boulevard intersection and approach redesign	Wolf Creek Rd.	Denis Dr.	0.53	$39,238,000
RC3	●	SE Wyoming Boulevard widening (northbound)	E. 15th St.	Blackmore Rd.	0.5	$2,011,000
RC4	●	Westwinds Road extension to Airport	end of Westwinds Rd. (north of Bar Nunn)	CR 119	5.15	$21,099,000
RC5	●	SE Wyoming Blv widening	Casper Mtn Rd.	E. 15th St.	3.89	$12,210,000
RC6	●	N. Salt Creek Hwy widening	Howard St.	Antelope Dr.	0.67	$2,235,000
RC7	●	Legion Lane Extension	Wyoming Blv.	E. 2nd St.	0.28	$1,224,000
RC8	●	N Center St railroad underpass widening	E. B C St.	W. D St.	0.16	$14,827,000

MEDIUM-TERM PROJECT SPOTLIGHT

CY AVENUE/WYOMING BOULEVARD INTERSECTION AND APPROACH REDESIGN

This project was developed as part of Connecting Crossroads workshops to provide a capacity solution for future year congestion while reducing points of conflict between all modes. The project would raise CY Avenue above Wyoming Boulevard eliminating one of the most dangerous intersections in the Casper Area while mitigating long-term congestion. An access road may be considered on the south side to accommodate ingress to the Walmart Supercenter plaza while accommodating additional throughput on CY Avenue with reduced conflicts from turning movements. Building the project should also result in reassessing the need of the long-term recommended project (RC11) to widen CY Avenue from Robertson Road to Westridge Drive. Options for nonmotorized users would be improved by linking the existing trail and sidewalk, that are currently unconnected, at the north by an underpass. A separated north-south sidepath would be provided with the vision of linking to the proposed Wyoming Boulevard Sidepath (Project MM4).

LONG-TERM PRIORITIES



MAP ID	PROJECT TYPE	PROJECT NAME	TO	FROM	LENGTH (MI)	ESTIMATED COST
RC9	●	N. Salt Creek Hwy northbound expansion	W. Yellowstone Hwy.	Hwy 20/26 off-ramp	1.33	$4,568,000
RC10	●	Polaris Drive (new minor arterial)	Westwinds Rd.	Salt Creek Hwy	4.15	$36,004,000
RC11	●	CY Ave widening	S. Robertson Rd.	Westridge Dr.	4.32	$41,696,000
RC12	●	New connection (E. of Blackmore Rd to 2nd St)	East of Blackmore Rd.	E. 2nd St.	1.02	$5,746,000
RC13	●	26th St extension	Sagewood Ave.	Casper Country Club Rd.	1.13	$4,045,000
RC14	●	Roberston Rd widening	CY Ave.	West Belt Loop	2.9	$12,236,000
RC15	●	Landmark Dr widening	Blackmore Rd.	Caseda Dr.	0.2	$1,250,000
RC16	●	E. Collins, S. Kimball, and E Yellowstone Widening	Durbin St.	E. 2nd St.	0.22	$1,748,000
RC17	●	Curtis St widening	E. Yellowstone Hwy	3rd St	0.32	$2,476,000
RC18	●	Casper Mtn Rd widening	Goodstein Dr.	T-Bird Dr.	2.11	$11,544,000
RC19	●	New connection (CY Ave to Wyoming Blv)	CY Ave (near Paradise Dr.)	Wyoming Blv. (near Arroyo Dr.)	1.86	$18,413,000
RC20	●	East Belt Loop Road	Wyoming Blv.	Hat 6 Rd.	5.12	$60,735,000

LONG-TERM PROJECT SPOTLIGHT

POLARIS DRIVE

Polaris Drive is a new connection roadway project that would provide a minor arterial running north-south along the western extent of Bar Nunn from Westwinds Road to Salt Creek Highway (near Sundown Pl.). The roadway would provide residents of Bar Nunn with an alternative primary access route and reduce emergency response times. The roadway would create a logical barrier around the western extent of the Town that would accommodate future housing growth without expanding beyond the furthest existing development to the west. The project would also assist in addressing future year congestion along Salt Creek Highway as well as providing a detour route for maintenance and reconstruction activities. As identified in the Town of Bar Nunn Transportation Plan, the facility should be built with sidewalks and bike lanes. In order to maximize utility of the facility, some east-west streets, such as McMurry Boulevard and Sunset Boulevard, would need to be slightly extended. To support construction costs of the road, an agreement between Bar Nunn and WYDOT may be explored where the Town takes responsibility for maintenance in exchange for capital funds.

EAST BELT LOOP

The 2014 Long Range Transportation Plan identified the creation of East Belt Loop Road, a 4.7 to 5.1-mile arterial extending from Wyoming Boulevard to Hat Six road as a high priority. In 2018, the Wyoming Department of Transportation (WYDOT) commissioned a Pre-National Environmental Policy Act (NEPA) Corridor Study to evaluate several route alignment alternatives as well as a no-build alternative to provide recommendations on the best-fit route. The corridor study indicates that half of the 10 sections of Wyoming Boulevard currently operate below desired capacity standards, which suggests congestion relief improvements may be needed to address current and anticipated travel demands. The main objective of the East Belt Loop project is to improve connectivity between Wyoming Boulevard and Interstate 25 and to alleviate existing and projected congestion resulting from anticipated growth in south Casper. In addition, the roadway would serve future development of land tracts located southeast of Casper. Modeling efforts for Connecting Crossroads revealed that future 2048 congestion on SE. Wyoming Boulevard would be considerably worse if future land use growth is spread across the undeveloped areas where the East Belt Loop would transverse as opposed to focusing future growth inward.

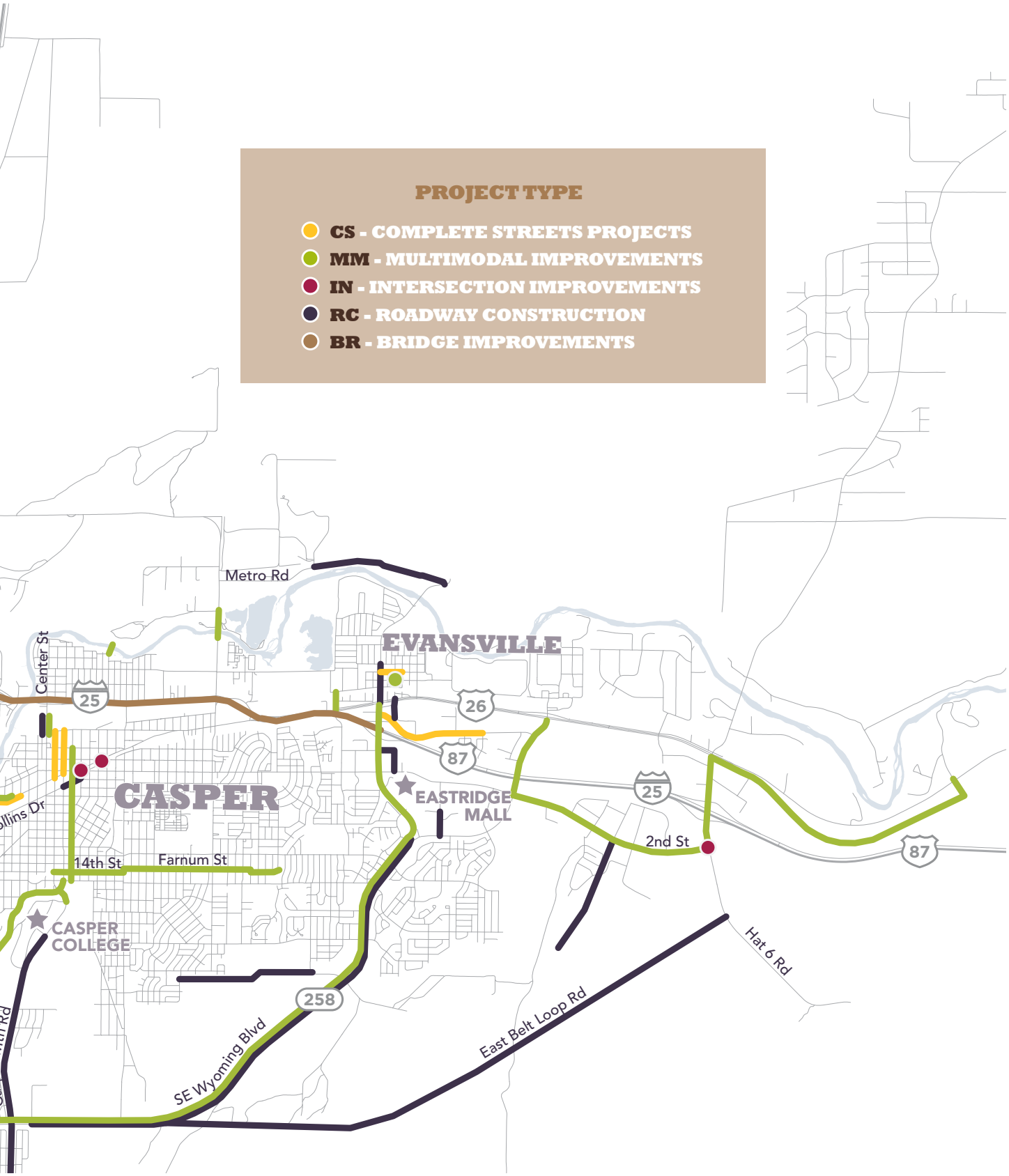
The East Belt Loop project has been met with backlash from the City of Casper, Casper Area residents, and environmental advocates. From the City's perspective, the East Belt Loop project is not reflective of the City's long-term goals and policies as reflected in several adopted plans. The City is concerned that the arterial is designed to facilitate traffic flow and relieve congestion rather than enhance connectivity within the Urban Growth Boundary. The adopted Comprehensive Land Use Plan promotes a fine-grain street network, small blocks, and primarily residential neighborhoods with limited neighborhood-serving small commercial centers. The recommended route alignment, which allows for just 18 intersections along the corridor, provides inadequate cross connections that would limit property access and alter the type of land uses that the City wishes to encourage in the area.

There is also concern that premature construction of the proposed East Belt Loop may result in premature development of the area. Services and amenities are currently centralized within the Urban Growth Boundary. Premature development southeast of Casper would impact the provision of services, which has financial implications for the City. Some have also questioned the projected regional growth and travel demand that is partly motivating this project; population growth within the region has remained stagnant following the Recession.

The proposed project also detracts from community values and the goals which frame Connecting Crossroads. During recent public engagement for the Comprehensive Land Use Plan and workshops for this plan, citizens repeatedly prioritized safety and the need for increased connectivity for pedestrians and bicyclists over alleviating traffic congestion. The community also expressed a desire to better utilize existing infrastructure and to reinvest in the downtown rather than constructing new roads and opening new areas of development. Additionally, the community highly values Casper's natural assets, particularly waterways and Casper Mountain. The proposed by-pass would detract from the Casper Area's natural beauty and may pose impacts to wildlife, Elkhorn Creek, and adjacent wetlands.

Given the above, and high fiscal cost of the proposed project, the East Belt Loop has been moved to the lowest priority on the fiscally-constrained list of long-term projects in this update of the LRTP. It should be noted that there will be multiple iterations of LRTP updates required before the long-term phase occurs. This allows for further feasibility analysis and community input to be gathered. In addition, Connecting Crossroads recommends a Wyoming Boulevard sidepath in the near-term and widening of SE. Wyoming Boulevard (if need is confirmed by observed demand at a later date) in the medium-term, which may diminish the East Belt Loop's utility as a congestion relief project.

ALL PROJECTS BY TYPE


PROJECT TYPE
CS - COMPLETE STREETS PROJECTS
MM - MULTIMODAL IMPROVEMENTS
IN - INTERSECTION IMPROVEMENTS
RC - ROADWAY CONSTRUCTION
BR - BRIDGE IMPROVEMENTS
Metro Rd
Center St
25
EVANSVILLE
26
87
CASPER
EASTRIDGE MALL
25
2nd St
87
14th St
Farnum St
CASPER COLLEGE
258
SE Wyoming Blvd
East Belt Loop Rd
Hat 6 Rd

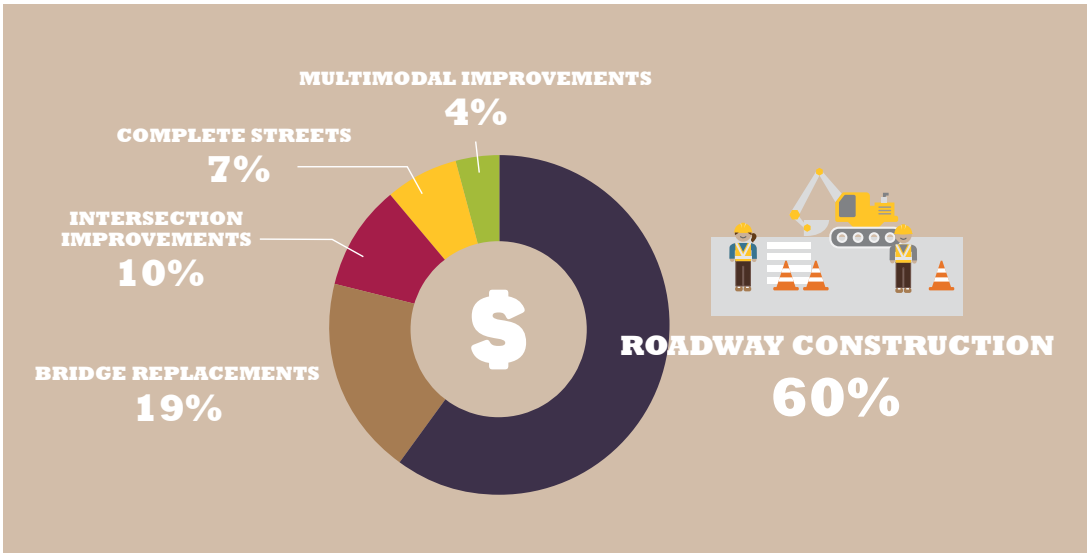

TRAIL

SECTION EIGHT:

FUNDING THE PLAN

It is recommended that over half (54%) of available funds are used towards an Enhanced Asset Management Program that ensures the maintenance and preservation of the existing and future transportation network. From the remaining funding available, the Recommended Plan provides a list of 56 capital projects for construction at a cost of approximately $423 million through 2048.

CAPITAL PROJECT FUNDING BREAKDOWN



COST BY PHASE

NEAR TERM	MEDIUM TERM	LONG TERM	TOTAL
PROJECT COSTS	PROJECT COSTS	PROJECT COSTS	PROJECT COSTS
$129.5M	$92.8M	$200.5M	$423M
ASSET MANAGEMENT PROGRAM COSTS	ASSET MANAGEMENT PROGRAM COSTS	ASSET MANAGEMENT PROGRAM COSTS	ASSET MANAGEMENT PROGRAM COSTS
$94M	$127.9M	$272.5M	$494.4M

TOTAL RECOMMENDED PLAN COSTS

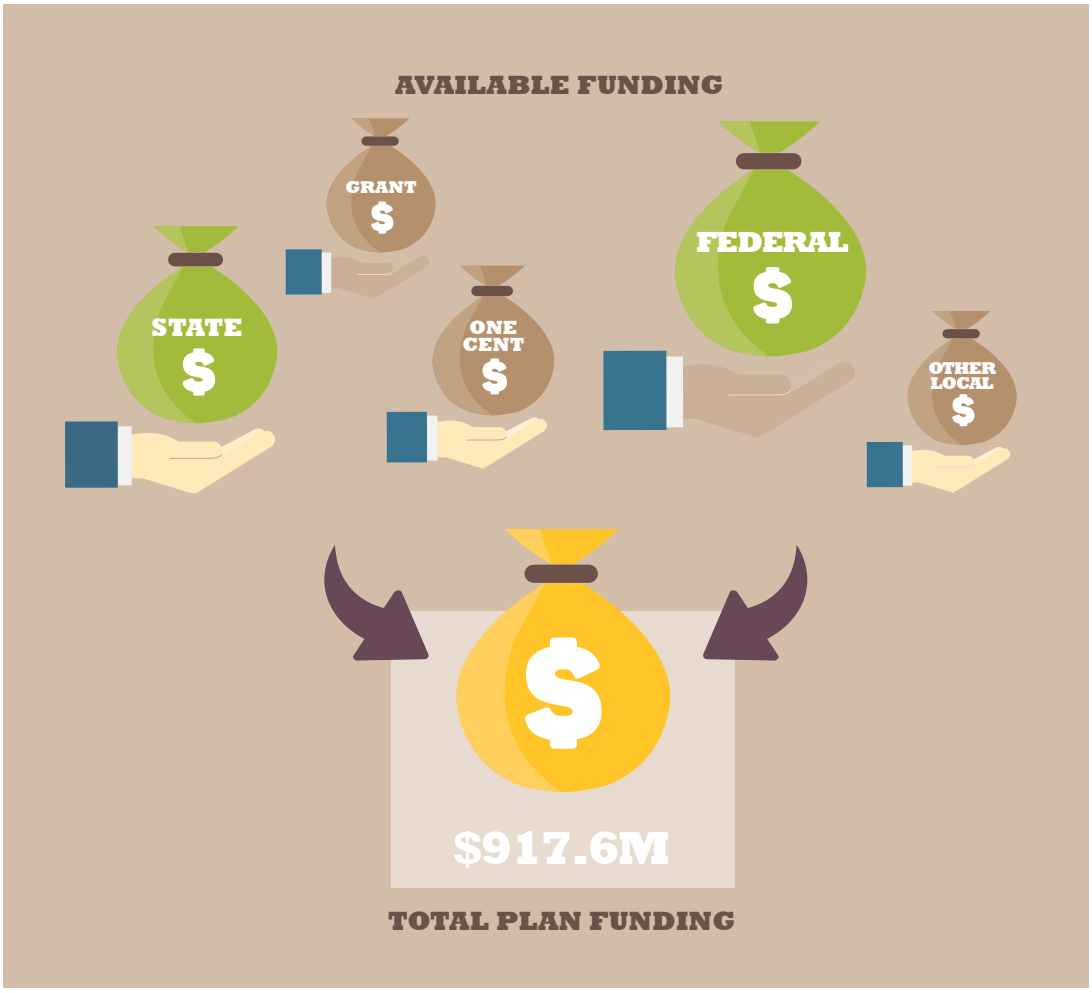
$917.4 MILLION

These costs were developed using a combination of existing cost estimates from the MPO's Transportation Improvement Program, the Wyoming Department of Transportation's capital programs and custom estimates based on recent studies and industry standard practice.

To the extent available, project costs represent the total amount of funding that will be needed to plan, design, and construct a project. Project costs are represented as future value (estimated build year within funding phases) based on a cumulative inflation factor of Wyoming building costs (see Recommended Projects).

PAYING FOR CONNECTING CROSSROADS

Funding of Connecting Crossroad's projects and programs will take a coordinated effort of federal, state, local, and other funding sources. With federal, state, and local funds combined, there is an estimated $917.5 million available to fund projects and programs between 2020 and 2048. Expected revenue from federal, state, and local sources were estimated based on historic averages for the Casper MPO.



STATE AND FEDERAL TRANSPORTATION FUNDING SOURCES

One of the roles of the Casper Area MPO is to help direct federal funds to projects identified in Connecting Crossroads. Federal funding in the Casper Area comes through the Wyoming Department of Transportation (WYDOT) from two primary sources: the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA).

The State Transportation Improvement Plan (STIP) allocates a combination of funds appropriated to WYDOT by the FHWA and state-levied transportation taxes for capital improvement projects. State sources are comprised of a combination of user and registration fees, fuel tax, mineral and gas taxes, general funds, and other sources. WYDOT STIP funds allocated to the Casper MPO fall under the categories of the National Highway Performance Program (NHPP), Highway Safety Improvement Program (HSIP), and Surface Transportation Program (STP). NHPP funds, which constitute a majority of revenue for the Connecting Crossroads project plan, can only be used on the National Highway System – interstate and principal arterials streets. Surface Transportation Program – Urban Systems (STP-U) are additional federal funds distributed to WYDOT for road construction within urban areas (defined as a census population greater than 5,000). STP-U funds may be used within urbanized areas, such as the Casper Area, for roadway project classified as collectors or higher.

LOCAL FUNDING SOURCES

Local funding is based on a combination of property taxes, sales taxes, and special assessments at the County and municipal level. The One Cent Tax, also known as 5th cent tax, is a "general purpose" optional sales tax that can be used for any local government function, including large infrastructure projects, "special" projects, or general operating expenses under Wyoming State Statute W.S. 39-15-203 and W.S. 39-15-204. While no portion of the tax has to be dedicated to transportation projects, some portion of the funding is usually spent for roadways. The Optional One Cent must be re-approved by the voters every four years. The current authorization of the Optional One Cent was approved in 2018 by voters.[11] One Cent funds are collected and distributed to each of the local governments in Natrona County based on their respective populations and spent based on surveys to determine priorities.

[11] Note this tax will need to be reapproved by voters multiple times over the lifespan of the LRTP. Voters in the City of Casper have approved the tax 15 times since its inception in 1975. Funding estimates assume that this tax allocation will remain in place.

COMPETITIVE FUNDING SOURCES

TRANSPORTATION ALTERNATIVE PROGRAM/ SURFACE TRANSPORTATION BLOCK GRANT (TAP/STBG)

The Transportation Alternative Program awarded federal funds for community-based projects that expand travel choices and enhance the transportation experience by integrating modes and improving the cultural, historic, and environmental aspects of the transportation network. The FAST Act eliminated the MAP-21 mandated TAP and replaced it with a set-aside of Surface Transportation Block Grant (STBG) program for funding of transportation alternatives. These set-aside funds include all projects and activities that were previously eligible under TAP, encompassing a variety of smaller-scale transportation projects such as pedestrian and bicycle facilities, recreational trails, safe routes to school projects, community improvements such as historic preservation and vegetation management, and environmental mitigation related to stormwater and habitat connectivity. While the name changed at the federal level, states and MPOs can still use the name TAP in their Transportation Improvement Programs. States have the right to allocate or opt out of assigning the first portion of the funds to a Recreational Trails Program (RTP), with half of the remaining funds are allocated by population to MPOs and more rural areas. The remaining funding is awarded by state DOTs (i.e. WYDOT) through a competitive grant process.

INDUSTRIAL ROAD PROGRAM (IRP)

The Industrial Road Program (IRP) is a State-funded road construction program created to assist counties and communities with economic development efforts. IRP funding is equally matched with private industrial development funds and/or locally generated match funding. The intent of the program is to provide supplementary funding for the construction and reconstruction of roadways that serve industrial facilities which provide a benefit to the county as a source of employment, tax generation, property valuation, or resource refinement. A previous example of IRP fund usage in the Casper Area was the extension of E. 2nd Street to support business park growth.

WYOMING BUSINESS COUNCIL (WBC)

The Business Ready Community (BRC) Grant and Loan Program provides financing for publicly owned infrastructure that serves the needs of businesses and promotes economic development within Wyoming communities. Cities, towns, counties, joint powers boards and tribes are eligible to apply for funding. Transportation infrastructure eligible for funding includes roads, airports, rights of way, landscaping and other physical projects in support of primary economic development. BRC grants have supported a number of projects in the Casper Area including the I-25/ Westwinds Road interchange in Bar Nunn; David Street Station, Platte River restoration, and multimodal improvements for the Old Yellowstone District in Casper.

ESTIMATED CASPER AREA TRANSPORTATION FUNDING (2020 – 2048)

	FEDERAL & STATE	ONE CENT	OTHER LOCAL	GRANTS	TOTAL
NEAR TERM	$165.8M	$36.3M	$15.7M	$5.8M	$223.6M
MEDIUM TERM	$167.3M	$31.2M	$16.1M	$6.2M	$220.8M
LONG TERM	$358.5M	$66.9M	$34.5M	$13.3M	$473.2M
2020-2048	$691.6M	$134.4M	$66.2M	$25.3M	$917.6M

ADDITIONAL FUNDING SOURCES

Federal and state funding sources are not guaranteed and are constantly in flux. Provided below are a number of additional sources that may be explored for funding future transportation projects and programs.

IMPACT FEES

Impact fees are a financing mechanism assessed on developers to fund improvements that will mitigate project impacts on the transportation system. While the feasibility of impact fees has been studied, none of the municipalities in the Casper Area have adopted such a policy, as there is concern that such a fee would deter development or encourage developers to move projects to jurisdictions where fees are not assessed. Implementation of a "reasonable impact fee on building permits for adequate construction of future roadways" is a strategy recommendation in the City of Casper Comprehensive Plan.

PUBLIC-PRIVATE PARTNERSHIP

Public-private partnerships involve a private entity, such as a local business owner, working with a public agency to fund a project (e.g., bus stop shelters, sidewalk maintenance, circulator shuttles that serve specific areas). In addition, there are number of private foundations that play a key role in supporting pedestrian and bicycle infrastructure improvements and programming such as the Platte River Trails Trust locally and the Kresge Foundation nationally.

SPECIAL PURPOSE EXCISE TAX (SPET)

SPET, also known as 6th and 7th cent tax, is a mechanism that can be used by a jurisdiction in addition to the One Cent Tax to finance specially identified improvements with identified cost amounts. Once the designated project has been financed the SPET expires. Unlike the one cent "5th cent tax," efforts to approve a SPET in the Casper Area have gained mixed reactions including multiple iterations where the mechanism has been rejected by voters to fund a new public library. As of November 2019, the Wyoming Association of Municipalities is considering lobbying the State Legislature to make the 5th cent tax permanent for counties and mechanisms to make SPETs easier to pass with the collection period limit extended from two years to four.[12]

TAX INCREMENT FINANCING (TIF)

TIFs are used to capture additional property taxes generated in the vicinity of transportation-specific improvements or areas. This type of funding can also be used to capture a portion of property value increase caused by a particular investment.

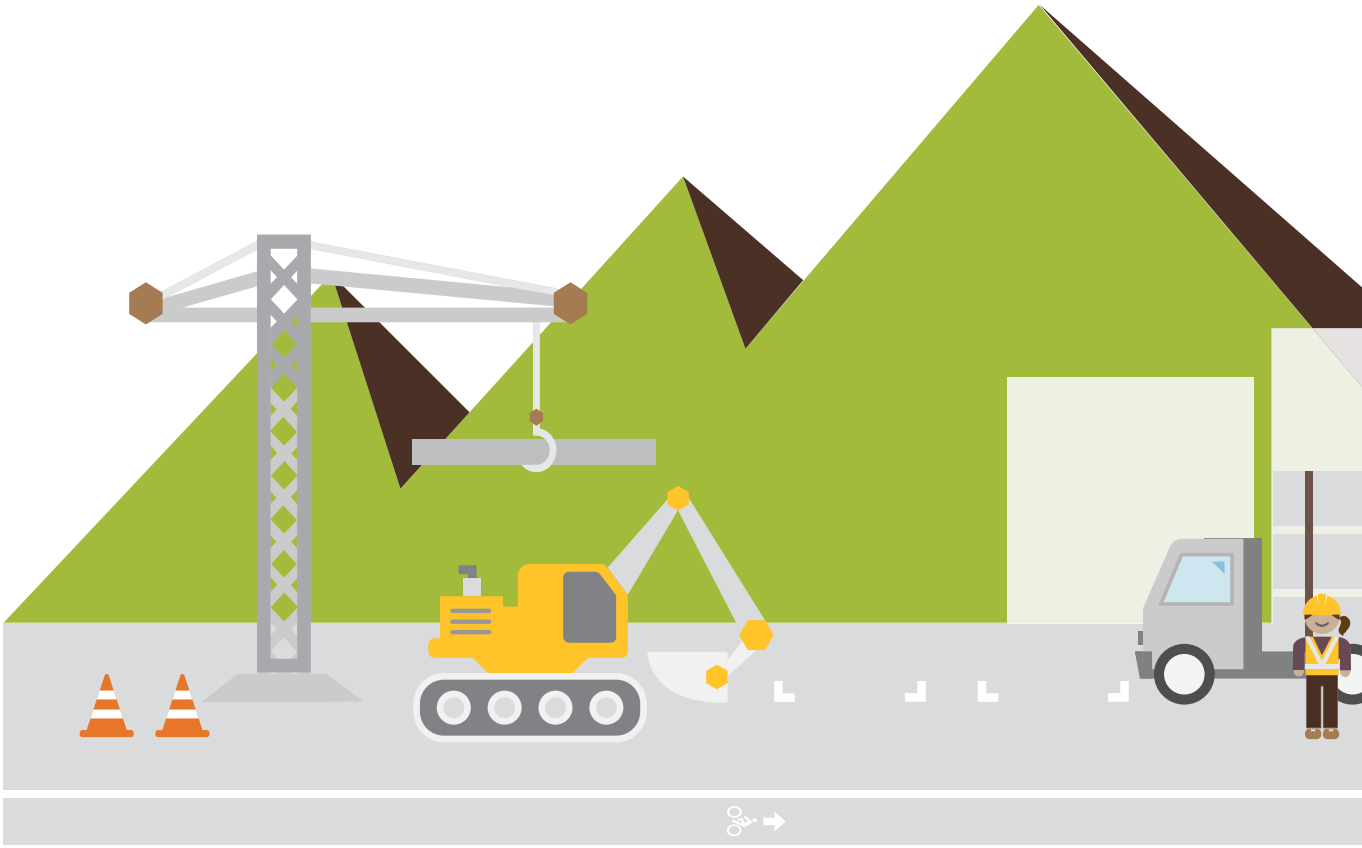
VMT TAX

WYDOT has explored the feasibility of a Vehicle Miles Traveled (VMT) tax based on roadway use per mile as an addition or replacement of the State Fuel Tax for either all vehicles or commercial trucks. Given the long distances between destinations in Wyoming, this tax may be overly burdensome to rural drivers and face significant statutory challenges. The trucking industry, which is mostly not based in the state but provides a vital contribution to the economy, would also likely object to such legislation.

[12] Oil City News, "Legislation for Optional 7th Cent Sales Tax for Wyoming Municipalities Proposed," 2019.

BUILD GRANTS

The U.S. Department of Transportation's Better Utilizing Investments to Leverage Development (BUILD) Transportation Discretionary Grants program funds investments in transportation infrastructure, including bridges and transit. The program is highly competitive and is best suited for signature multimodal projects that produce a significant community benefit. Project awards vary but can be as much as $25 million. The most recent example of a successful BUILD grant application in Wyoming was awarded to WYDOT for a series of protected wildlife crossings over roadways in Sublette County.



SPECIAL IMPROVEMENT DISTRICTS (SIDS) & BUSINESS IMPROVEMENT DISTRICTS (BIDS)

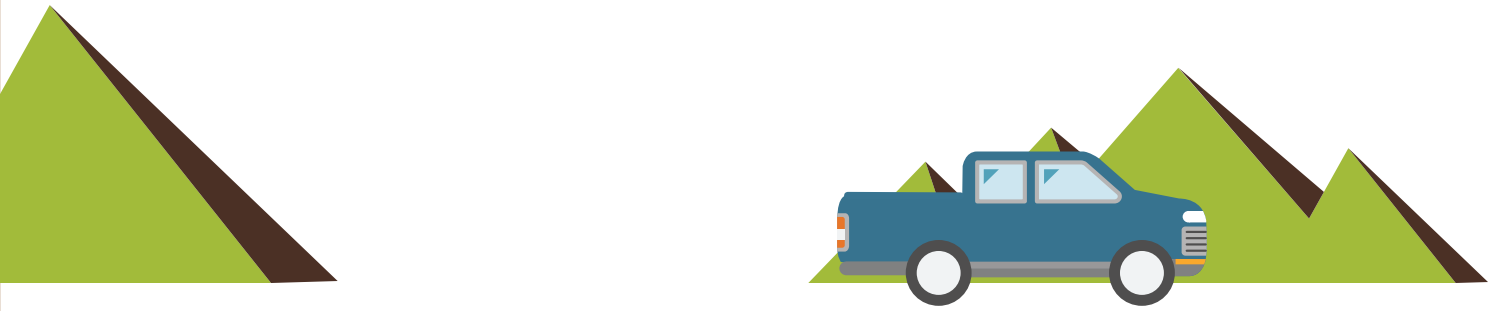
SIDs and BIDs are special assessment districts within a city or neighborhood that are formed by property and/or business owners to fund and implement local improvement projects, such as streetscaping, wayfinding, or bicycle amenities. These districts are able to secure low-interest financing through the sale of bonds. Incremental assessments are collected from the stakeholders over several years to fund the collective costs of area projects that will have a mutual benefit for the district. Casper's Downtown Development Authority (DDA) is a successful example of an improvement district that has helped secure millions of dollars in private sector donations, grants, and development investments to enhance the quality of life in the Casper Area's central business district. Although not relevant for the Casper Area today, similar mechanisms can be used to direct revenue from on-street parking fees to landscape and transportation improvements within a downtown business district.

SECTION NINE:

RECOMMENDED PROGRAMS & POLICIES

PROGRAMS & POLICIES

Building new projects is just one element of providing a transportation network that meets the Casper Area's future needs. Recommended Programs group certain types of investments – such as repaving the roadway network – to allow flexibility in how funds are programmed in the coming years. Recommended Policies are concepts that can help to improve community awareness of transportation choices, coordinate with regional partners, and prioritize investments that will improve health and safety outcomes in a sustainable and equitable manner.



RECOMMENDED PROGRAMS

ENHANCED ASSET MANAGEMENT

Asset management, i.e. the maintenance, preservation, repair, rehabilitation, and replacement of transportation infrastructure, is vital to ensuring the ongoing performance and long-term viability of the existing network. Project types classified as asset management in this plan include chip and seal work, mill and overlay, microsurfacing, resurfacing, and concrete rehabilitation. As stated in WYDOT's 2020 State Transportation Improvement Program, system preservation with the objective of maintaining the State's transportation network at the highest possible level given finite funding is a key priority. Maximizing available resources towards allocations that promote long-term asset sustainability is also necessary to achieve the performance measures outlined by this Plan (see Measuring Success) and national performance targets established by MAP-21 related to infrastructure management, system reliability, and freight movement and economic vitality. For pavement conditions, WYDOT has set a performance target for its interstate system at greater than 40% in good condition, and less than 5% in poor condition. For the non-Interstate NHS system, WYDOT's target is to have greater than 40% in good condition, and less than 10% in poor condition. Bridge targets have been set to 10% of NHS bridges in good condition (by area of deck square footage), and less than 10% in poor condition.

Connecting Crossroads recommends an allocation of $494.4 million for the Enhanced Asset Management Program over the three-decade planning horizon.[13] In addition, this amount includes approximately $69 million for bridge repair and replacements.[14] Additional funding was favored for this program over recommending low priority roadway extensions that would detract from the ability to maintain the existing system over the long-term. As funds are available, asset management should include sidewalk repair, restriping of crosswalks, and addressing identified gaps in the sidewalk and on-street bicycle network. The following tables show sidewalk and bicycle projects prioritized in the Casper Area Trails, Path and Bikeway Plan (CATPBP) that remain unbuilt today. While these projects were unable to be included in the fiscally-constrained list of Recommended Plan projects, it is recommended that these lists are used to address gaps when asset management activities occur as funds are available. The list of projects included in the Asset Management Program can be found in the Appendix.

[13] Maintenance estimates were developed by Casper Area MPO jurisdictions based on historical outlay and confirmation of resurfacing, rehabilitation, and repair projects in the 2020-2023 MTIP. In addition, the near-term outlay for asset management covers all of these type of projects that are listed in WYDOT's 2020 STIP within the MPO area. Estimated funding need for bridge replacement for years after 2023 is based on the average annual value that has been committed to bridge and overpass repair and replacements in the Casper Area.

[14] Committed bridge replacements are included as projects in the Connecting Crossroads Recommend Plan as they have been recognized as locations for near-term need with funding estimates developed.

REMAINING CATPBP SIDEWALK GAPS

GAP SEGMENT	FEET
Path from Casper Rail Trail to Fenway Street	49
Wyoming Boulevard from Wyoming/CY Avenue to Outer Road	1359
Northwest crossing of Wyoming Boulevard and Cy Avenue	192
Thelma Drive from 2nd to Gannett St	952
15th from Carriage Ln to Wyoming Blvd	488
Legion Lane from N Walsh Drive to Wyoming Blvd and 150 feet south of Legion on Thelma Dr	1936
Connector Path from Birch Street to Meadow Park	49
Crossing of Cy Avenue at Talon Drive	125
E 12th St from Jefferson St to McKinley St	209
Paradise Valley Parks Path Improvements	337
Medicine Bow St/S Walsh Dr from Wind River Ave to Gannett St	489
Melrose St sidewalks from E A St to E 1st St (upgrade to sidepath)	435
E 3rd St, Lenox St, E 4th St from 100 ft W of Lenox to Kenwood and E 4th	902
Beverly from 750 Feet south of Bryan Stock Trail to Casper Rail Trail (upgrade to sidepath)	2123
7th Street Connector from Jefferson St to McKinley St	432
2nd Street Sidewalks Near Mall/Walmart	1342
Path from Casper Rail Trail to E A/Melrose St	154
College Drive from W 15th St through intersection with Casper Mountain Rd	682
Meadowlark Link trail from Pheasant Drive to Central Drive (upgrade to sidepath)	268
E 4th from 100 ft east of Pennsylvania to 100 ft east of Illinois St	776
Path from Camellia Street end to Paradise Valley Pool	208
15th from Beverly to Nebraska	375

REMAINING CATPBP SIDEWALK GAPS

GAP SEGMENT	FEET
Casper St from Fairgrounds Rd to 500 feet east of Fairgrounds Rd	445
Bruhn Way from N Sun Drive to Provence Court	506
E 18th Street Improvements from Long Creek Path to Outer Drive	805
Werner Court from Poplar to Wilkins Circle	1323
Sidewalk improvements from Northwestern Drive/1st Street south to existing trail	230
Path from Northeastern Ave 200 feet northwest of 4th street to existing path	90
11th Street Connector from S Mitchell St to McKinley St	515
Bruhn Way from N Sun Drive to Provence Court Alternate Configuration	147
N Poplar St from 500 ft north of Werner Ct to 100 feet south of Werner Ct	636
Missouri from E 18th St to Lynn Ln	596
Path South of Sunrise Shopping Center from Coffman Street to Poplar Street (upgrade to sidepath)	610
Centennial Park Path from Centennial Park to Wyoming Boulevard Path	526
Frog Pond Connector (Washington Park 400 feet North of E 10th St) from Jefferson to McKinley	435
8th Street Connector from Nebraska Ave to 8th Street end east of Beverly Street	144
Lillian Lane Path from Trigood Drive to Sage Creek Path	145
Trail from Casper Events Center to National Historic Trails Center (upgrade to sidepath)	634
Buckboard Walk from Whispering Springs Lane to Buckboard Park	425
Kelly Walsh High School Connector Trail from Sage Creek Path to High School	104
Buckboard Walk from Trevett Lane to Buckboard Park	630
Whispering Springs Walk from Cold Springs Road to Herrington Drive	208
Path from Cottonwood Estates to Buckboard Park	160
Beverly from Sagewood Ave to Amherst Ave	243

REMAINING CATPBP BICYCLE NETWORK GAPS

PROJECT	FACILITY TYPE	MILEAGE
Fairside from Wyoming Blvd. to Fairgrounds	Bike Lane	0.17
Eagle Dr. from Talon to Wyoming Blvd.	Bike Lane	0.41
13th from Collins to CY	Bike Lane	0.51
McKinley from E K St to E A St.	Shared Lane Markings	0.66
Talon/Aspen from Plaza to W 38th	Bike Lane	0.43
Aspen/W38th from Wolf Creek to Eagle Drive	Shared Lane Markings	0.74
Talon from CY Ave. to Plaza	Shared Lane Markings	0.32
E 5th/Sun Dr./Bruhn/Huber from Country Club to Rail Trail	Shared Road	1.08
W 17th St. from Poplar to College Dr.	Shared Lane Markings	0.42
E A from Wolcott to Yellowstone	Bike Lane	0.58
W 15th St. from Sheridan to Wolcott	Shared Lane Markings	1.47
Walnut/Spruce/Oak Shared Lanes from Collins to 17th	Shared Lane Markings	1.37
Wolcott from E B St. to E 15th St.	Bike Lane	1.14
Talon from Aspen to Central	Bike Lane	0.46
W F Street from Poplar to Center	Mixed	0.42
E 5th from Collins to Conwell	Shared Lane Markings	0.9
Collins from 13th to Wolcott	Bike Lane	1.27
Ash from W B St to College Drive	Shared Lane Markings	1.26
Kingsbury from 15th St. to 21st St.	Bike Lane	0.47
W 1st St. from Star to Pronghorn	Bike Lane	0.27
Poplar from 19th to 25th	Bike Lane	0.47
Bellaire from Brigham Young to CY Ave	Shared Lane Markings	0.94
Casper from Fairgrounds to Brigham Young	Shared Lane Markings	0.17

REMAINING CATPBP BICYCLE NETWORK GAPS

PROJECT	FACILITY TYPE	MILEAGE
Blue Spruce/E 18th from end to Long Path	Shared Road	0.57
Center from Midwest to W B St.	Mixed	0.43
Durbin St. from E A St to Midwest Ave	Bike Lane	0.22
Collins from King to 13th	Bike Lane	0.64
Hickory from CY to Coffman	Bike Lane	0.22
Jefferson from E 1st to E 14th	Bike Boulevard	0.95
E 13th/Center Shared Lane Marking	Shared Lane Markings	0.14
Elk from Rail Trail to E 4th St.	Shared Lane Markings	0.44
Kit Carson from Bellaire to CY Ave	Shared Lane Markings	0.21
E 4th from Conwell to Beverly	Bike Lane	0.48
25th from Poplar to Ridgecrest	Mixed	0.49
E 21st from Beverly to Kingsbury	Bike Lane	0.82
College Drive from Wolcott to W 18th	Buffered Bike Lane	0.41
E 15th/Centennial Hills Blvd from Country Club to Centennial Ct	Bike Lane	1.06
Conwell from E 1st to E 12th	Mixed	0.78
W A St/W B St. Shared Lanes and Bike lanes from Nichols to Wolcott	Mixed	0.37
Walsh from Yellowstone to E 12th	Mixed	1.23
E 3rd/Wanton/E 8th from Beverly to Wyoming	Mixed	1.79
Conwell from E 12th to Alta Vista Park	Shared Lane Markings	1.05
Country Club Road from E 2nd to E 15th	Shared Lane Markings	0.93
Paradise from CY to Magnolia	Mixed	0.77
Valley/Marigold from Indian Paintbrush to Paradise	Shared Road	1.12
Aster from Daffodil to Robertson	Shared Road	1.36

PROJECT	FACILITY TYPE	MILEAGE
Beverly from Amherst to E24th St.	Bike Lane	0.34
Kingsbury from 12th to 15th	Shared Lane Markings	0.23
Coffman from Wyoming to Skyridge	Bike Boulevard	2.14
Fox/Eagle Dr from Wyoming to 38th	Shared Lane Markings	0.84
E 12th from Country Club to Wyoming	Bike Lane	1.14
E 21st from Oakcrest to Beverly	Mixed	0.98
E K St from Center to Beverly St	Bike Lane	1.4
Valley from Amrigold to CY	Mixed	0.3
E 12th form Wyoming to Elkhorn Valley	Bike Lane	0.94
Fairwood Common from 21st to end	Shared Road	0.38
Newport from E 12th to E 21st	Shared Road	0.39

Existing bike lane in the Casper Area

ENHANCED TRANSIT

Many residents of the Casper Area rely heavily on transit. For some, it is the only viable means of transportation. The recommended transit program discussed on the following pages is the result of numerous discussions with CATC staff, stakeholders, and transit riders. They are grouped into three focus areas: Financial Sustainability, Organizational Structure, and Transit Service Efficiency.

FINANCIAL SUSTAINABILITY

ADVERTISEMENTS

Advertisements onboard buses and at the transit center from local businesses can serve as an additional revenue stream for CATC.

EXPLORE PARTNERSHIPS

Partnering with human service transportation agencies, Casper College, Wyoming Medical Center, schools, or senior centers in the area can help CATC establish a consistent ridership base.

VOLUNTEER DRIVER PROGRAMS

Volunteer Driver Programs provide agency funding for volunteer drivers to provide transportation to friends, family members, or neighbors. The drivers can be reimbursed at a per-mile rate and may be organized to provide service to specific customers (e.g., seniors, people with disabilities, or limited income) or to the general public. These trips are often for critical needs such as medical and nutrition, and are for passengers who need more support than other types of transportation offered.

The TRIP model is a lower cost alternative to the traditional volunteer driver program. Instead of hiring a coordinator to recruit volunteers and manage ride schedules, the TRIP model assists passengers with recruiting their own drivers.[15] Scheduling costs are non-existent, because passengers and volunteers arrange their own rides, and liability concerns are greatly reduced. Potential customers are eligible for rides if it is determined that the needed transportation is unlikely to occur without TRIP assistance.

[15] TRIP model programs originated in Riverside, California, and are replicated in numerous locations. TRIP was historically an acronym but is now more of a brand.

TRANSIT SERVICE EFFICIENCY

TRANSIT DEVELOPMENT PLAN

The 2015 Casper Transit Development Plan (TDP) presented several recommendations to streamline services and improve efficiency. Some of these recommendations included ADA certification, aligning The Bus and CATC service hours, reducing Sunday Service on CATC, discontinuing route deviation on The Bus, and making transit information available through Google Transit.

These recommendations will be explored in future updates. Funding has already been set aside to update the 2015 TDP. The future TDP should revisit CATC's fare policy, refine CATC's eligibility criteria for demand response service, and look for ways to reduce the footprint of the fixed-route system.

MARKETING STUDY

The 2015 TDP also highlighted the importance of marketing to promote the benefits of transit to the community. Marketing materials such as pamphlets, social media advertisements, or radio and television advertisements can raise awareness of The Bus and CATC and serve as resources on how to use transit in the Casper Area. In order to determine the best marketing strategies given the demographics of the region, a marketing study is needed.

ORGANIZATIONAL STRUCTURE

EXPLORE RESTRUCTURING

Transferring the responsibilities of CATC to the City of Casper could result in an array of benefits, including reducing the administrative burden and increased assistance with FTA compliance and reporting. A deeper assessment is needed to explore the benefits and disadvantages of operating CATC within a city department, as opposed to maintaining nonprofit status.

BROADEN GOVERNING BOARD

A Board that reflects various members of the community can help ensure transit needs are being met. Giving additional key stakeholders a voice in the decision-making process can help establish new partnerships while also strengthening existing partnerships.

FUNDING

The table below illustrates the estimated costs of the recommend transit program. Currently, Federal Transit Administration (FTA) 5307 funds support 80% of CATC's preventative maintenance expenses and 50% of operating costs. Capital expenses are 80% funded through FTA 5339 funds, which require a 20% local match. The estimated funding available for transit in the FY 2020-2023 Metropolitan Transportation Improvement Program is highlighted in the graphic below.

FY2020-FY2023 MTIP TRANSIT FUNDING

	2020	2021	2022	2023	TOTAL
SECTION 5307	$1.02M	$1.05M	$1.08M	$1.11M	$4.26M
WYDOT CATC	$111K	$111K	$113K	$113K	$449K
WYDOT MILLS/ EVANSVILLE	$110K	$110K	$111K	$111K	$442K
TOTAL	$1.25M	$1.27M	$1.30M	$1.34M	$5.16M

RECOMMENDED TRANSIT PROGRAM WITH ESTIMATED COSTS

	2020	2021 AND EACH YEAR THEREAFTER
ADVERTISEMENTS	($13,000)	($13,000)
MARKETING STUDY	$65,000	--
MARKETING STUDY (IMPLEMENTATION ASSISTANCE)	--	$15,000
VOLUNTEER DRIVER PROGRAM	$51,400	$46,400
TRANSIT DEVELOPMENT PLAN	$100,000	--
ESTIMATED COSTS	$218,240	$48,400

RECOMMENDED POLICIES

COMPACT GROWTH

Most people can see the benefits of compact growth. Simply stated, if things are closer together, people need less travel to move between them. This means time savings, less congestion, and more options to walk or bike for those who wish to do so. But compact growth does not happen by accident. Communities must take proactive steps to cause this outcome. And like anything, the benefits of compact growth are accompanied by some complications that communities often wish to mitigate.

ENCOURAGING COMPACT GROWTH

INFRASTRUCTURE POLICY

As a matter of policy, a decision to extend water and sewer service out toward the edges of a community creates a massive incentive to develop at the edges. What may initially feel like a market-friendly move to open up land for development and affordable housing, usually becomes a substantial public obligation to build and widen roads, stretch police and fire resources, build more schools and find transportation solutions for people who need access to health services that may be far away. This basically amounts to a shifting of public resources and benefits to those people who are buying or renting this seemingly affordable housing.

In the case of the Casper Area, there is ample land available for development and redevelopment within the currently approved water and sewer boundaries to last for many, many years. By staying disciplined and encouraging growth a bit closer in, the majority of taxpayers in the community will be able to control costs and enjoy some of the other benefits that come from keeping land uses closer together.

AFFORDABLE HOUSING POLICY

Spiraling cost of living is an issue usually associated with bigger cities but encouraging development in a more compact form can lead to some rising costs to individuals even in smaller communities. While this is manageable for most people, some who have more limited means or fixed incomes can be stressed by even moderate increases to living expenses. It may be worth putting some policies in place to head off these issues:

- **ACCESSORY UNITS** – Within more compact residential neighborhoods, affordable housing can be achieved through accessory units – often apartments above a garage or in an out-building on a main home site.
- **PROPERTY TAX CONTROL** – Capping the rate of property tax increases for long-time residents can help people stay in place affordable. Such caps last as long as a resident stays put, and reset when someone moves.

Land Assembly, Acquisition and Incentives – In some cases (such as in downtown) the cost of acquiring and improving land can drive up housing costs. Many cities have found that public acquisition of key parcels and partnerships with the private sector to develop in a beneficial way can cost less than the public infrastructure and servicing costs associated with development at the edges.

MITIGATING THE COMPLICATIONS

To some, compact development can feel too urban, can create daily inconveniences or can lead to fears of too much growth. Some tools to mitigate this include:

TRANSFER DEVELOPMENT RIGHTS

If a community worries that compact growth is just going to be followed by edge growth later, creating more problems, there is a market-based solution. In short, a system is created that assigns entitlements (allowable future growth) to every property in the community. Those development rights can then be bought and sold to create compact nodes in some locations (receiving zones) and preserve open space in others (donor zones). The local government sets up where those receiving zones, or areas appropriate for compact growth, should be located. Then those owners can find willing sellers in the donor zones who have no interest in developing but would like to be compensated for their land value. This has lead to the preservation and protection of farm and ranch land at the edges of communities that helps to preserve rural edges and open views that can define the character of a place.

NEIGHBORHOOD PARKING POLICIES

Compact areas with policies such as allowable accessory units can find they have problems with things such as parking availability. If these issues arise, tools such as neighborhood parking permits (that limit the number of street-parked cars per home), shared parking agreements, and timed parking restrictions may be considered.

A land use and growth session was held with the development community in December, 2018

HEALTH & EQUITY

TRANSPORTATION EQUITY

Equitable transportation systems provide mobility in a way that strives to meet the unique needs of all members of the community. Equity is distinct from equality—equity seeks to provide underserved populations with mobility options necessary to reach fair levels of access, whereas equality would provide the same amount of mobility options for all regardless of existing service levels. Equity facilitates social and economic opportunities for populations that have historically been underserved, including low-income persons, persons of color, older adults, children, persons with limited English proficiency, and persons with disabilities.

Equitable transportation systems reduce costs and improve economic opportunity and overall quality of life for low- and moderate-income households in several ways, including the following:

- They help facilitate multiple mobility options such as riding a bike or taking the bus, which are generally less costly than driving an automobile. Transportation accounts for a large share of household costs.
- They can enhance economic opportunities by improving access to jobs and job training opportunities.
- They can provide safety, air quality, and other benefits to low-income populations and/or minority populations who have historically been subjected to adverse or disproportionately high and adverse human health and environmental impacts.
- They can improve access to grocery stores, health care, greenspace, and provide recreation opportunities.
- They can improve accessibility and mobility for people with disabilities by adhering to tenets of universal design and the Americans with Disabilities Act (ADA) design requirements.

WOMEN'S TRANSPORTATION NEEDS

Historically, women's transportation concerns, needs, and preferences have not been accounted for in the planning of the transportation system. Existing research has found that women are responsible for a disproportionate share of the household's transportation burden. They often "chain" their activities, making multiple stops because of their household responsibilities like caregiving or grocery shopping.[16] Walking trips or trips on transit, for example, become more difficult for women with groceries in hand or when traveling with children.

Safety is another major issue that disproportionately affects women and impacts their willingness to use transit. Specifically, more women than men report experiencing harassment or personal security issues while walking, waiting for, or riding transit.

Transportation planning must account for women's travel needs. According to 2018 data from the U.S. Census Bureau, 49.6% of the population in Natrona County is female. Women benefit most from improvements that prioritize and emphasize safety (e.g., better lighting at transit stops and along sidewalks, protected bike lanes), bus stop and vehicle design, transit frequency, and transit reliability. By aiming to serve the travel preferences and patterns exhibited by women, the transportation experience is better for all users.

[16] Los Angeles Metropolitan Transportation Authority. (2019). Understanding How Women Travel. Retrieved from http://libraryarchives.metro.net/DB_Attachments/2019-0294/UnderstandingHowWomenTravel_FullReport_FINAL.pdf

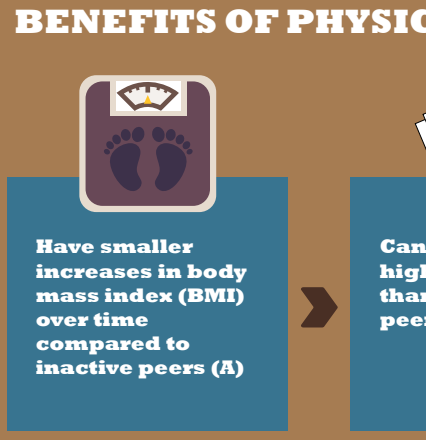
SAFE ROUTES TO SCHOOL (SRTS)

SRTS policies and programming improve the ability for kids to walk and bike safely to school. The project prioritization process within an SRTS program helps inform funding for safety improvements near schools. In addition to the physical improvements, a Safe Routes to School initiative educates children—and their caregivers—and improves awareness of the health benefits of walking and biking to school. Formal adoption of an SRTS policy between the MPO, jurisdictions, and school district may improve regional coordination and improve ability to seek funding sources for SRTS measures. Regardless of policy adoption, Casper Area transportation projects around schools should look to mitigate the following issues that were identified in the Casper Wyoming Safe Routes to School report:

- Vehicles traveling too fast in school zones (consider neighborhood speed management)

PUBLIC HEALTH

According to the Natrona County Community Health Status Report (2018), 31% of Casper Area residents are obese and 24% report no leisure time physical activity. Multimodal thoroughfares support public health by improving air quality, reducing injuries, and enabling and encouraging active transportation and recreation, including walking and bicycling. Expanding the region's existing trail network, points of access, and establishing more on-street facilities will provide residents with more opportunities to live a healthy and active lifestyle.



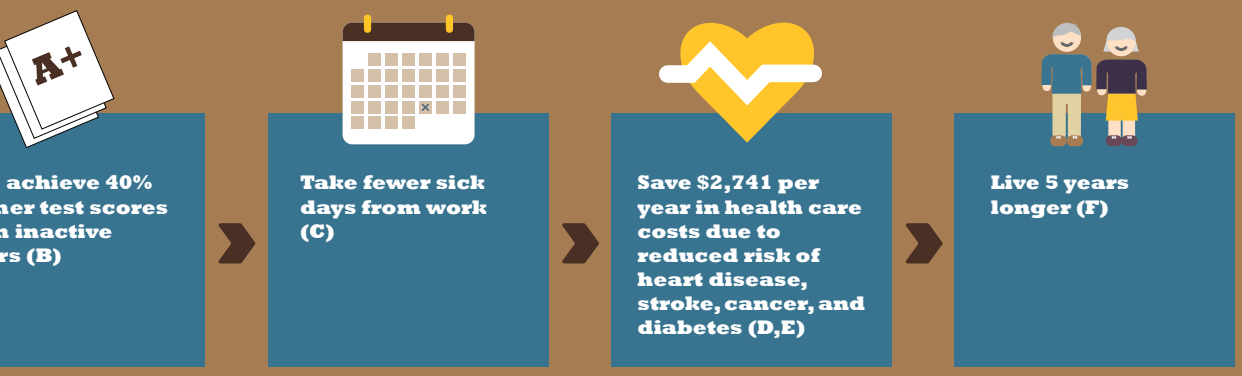
[A] Moore, L., et. al. "Does early physical activity predict body fat change throughout childhood?" Preventive Medicine 37, (2003): 10-17.

[B] Grissom, J. "Physical Fitness and Academic Achievement." Journal of Exercise Physiology 8, No. 1 (2005): 11-25.

[C] Proper, K.I., et. al. "Dose-response relation between physical activity and sick leave." British Journal of Sports Medicine 40, No. 2 (2006): 173-178. doi:10.1136/bjsm.2005.022327.

- Wyoming weather detracts from active transportation in winter months (clear snow from essential walking paths and consider plowing techniques that do not create snow banks at school access points)
- Darkness during late sunrise in fall and winter (address lighting gaps on school access routes)
- Wide roads, dangerous intersections, and sidewalk gaps near schools (implement complete streets measures and complete intersections to reduce pedestrian exposure and points of conflict near schools)

CAL ACTIVITY OVER A LIFETIME



[D] U.S. Department of Health and Human Services. "Physical Activity Guidelines for Americans." 2008. http://www.health.gov/paguidelines/default/aspx.

[E] Cawley, J. and C. Meyerhoefer. "The medical care costs of obesity: An instrumental variables approach." Journal of Health Economics, 31, Iss. 1 (January 2012): 219-230.

[F] Olshansky, S.J., et. al. "A Potential Decline in Life Expectancy in the United States in the 21st Century." New England Journal of Medicine 352, No. 11 (2005): 1138-1145.

ACCESS TO HEALTHY FOOD

Having reasonable access to fresh, nutritious food, is often associated with a better diet and a lower risk for obesity. Many Casper Area residents, especially those further from town centers or who may not own a car, lack access to reliable transportation and are not able to afford the high prices of healthy food at grocery stores. As a result, they must shop where produce selection is low-quality or wherever it is more cost-effective to purchase cheaper and more unhealthy food. Transportation policies can make it easier for low-income families, seniors, and others with mobility challenges to access healthy food sources and improve the overall well-being of Casper Area residents.

SAFE ROUTE FOR SENIORS

Safe Routes for Seniors policies identify and implement pedestrian improvements for older adults to improve access to services and enhance pedestrian safety and comfort. Older adults represent 13% of the population in the Casper Area and this number is expected to grow. This type of policy would prioritize safety for some of the region's most vulnerable pedestrians, improve access to services, and encourage physical activity among older adults.

COMPLETE STREETS

As defined by the U.S. Department of Transportation, Complete Streets are streets designed and operated to enable safe use and support mobility for all users. Those include people of all ages and abilities, regardless of where they are traveling as drivers, pedestrians, bicyclists, or public transportation riders.[17] Complete streets allow for design that is unique and responsive to community context. A complete street in a rural area will look different from one in a downtown area but both are designed to accommodate the safety and needs of all users. Another way to consider complete streets is through the concept of "8 to 80 cities" which suggests that if a city's transportation network is designed for the use and needs of an eight year old and that of an 80-year old then it should be safe and comfortable for the use of everyone. These principals are reinforced by the evaluation metrics of Multimodal Level of Service (MMLOS) and Level of Traffic Stress (LTS). MMLOS accounts for the overall system performance of all modes by considering the delay and carrying capacity of transit, bikes, and pedestrians in addition to motor vehicles. LTS is a method to evaluate bicycle facilities by recognizing that there are varying levels of experience and comfort between bicycle riders. LTS accounts for elements such as traffic speed and volumes, facility width, and level of protection from motor vehicles.

The values and potential benefits of Complete Streets address all five Connecting Crossroads goals. These objectives can be pushed forward by adopting an official Complete Streets Policy and multimodal street design guidelines. This is in line with the Generation Casper Comprehensive Plan that recommends "Adopt a Complete Streets policy, designed to equally prioritize walking, biking, and driving; and implement while ensuring the infrastructure design and placement protects residential character. Best practices for local governments to develop and adopt Complete Streets policies are provided in Smart Growth America's Complete Streets Local Policy Workbook.[18]

[17] https://www.transportation.gov/mission/health/complete-streets

[18] https://www.smartgrowthamerica.org/app/legacy/documents/cs-local-policy-workbook.pdf

STREET DESIGN GUIDANCE

The following street design guidance is provided to assist with the implementation of Connecting Crossroads projects in accordance with complete streets principles that suit the context of the Casper Area. The measures included are not meant to be exhaustive, but rather a starting point. Where applicable, citations have been provided to additional resources to help inform decision making. In the longer term, the Casper Area MPO may consider development of complete streets design guidelines with measurement requirements in close coordination with public works departments and WYDOT.

DESIGN PRINCIPLES

SPEED

Vehicle Speed is a significant determinant of crash severity, especially between modes. The operating speed along a street must reflect not on the roadway but also the context. Reducing vehicle speeds opens up a range of design options that allows a street to resemble less a speedway and more a neighborhood street. Narrower streets, smaller intersections, leading pedestrian intervals, protected bicycle facilities all achieve this. Streets with consistent speed profiles, intersections with predictable signal operations, and low-speed streets where drivers make eye contact with each other, bicyclists and pedestrians are generally safer streets.

As speeds increase, there is more kinetic energy, which means more energy to be dissipated in the event of a crash. As speeds increase, the distance traveled by a vehicle during the driver's reaction time and braking also increases exponentially. As speeds increase, the human brain processes less of what is "seen" in our peripheral vision. This is most problematic on wider streets with activity (parking, cycling, children chasing balls in the street) on the side of the roadway.[19]

[19] Muller, Alexandra S and Lana Trick. "Driving in Fog: The effects of driving experience and visibility on speed compensation and hazard avoidance." Accident Analysis & Prevention. 2012.

EXPOSURE

Exposure risk is the amount of time that a person is exposed to potential conflicts. Examples include the amount of time that it takes a person to cross the street, or the amount of time it takes to drive through an intersection. Minimizing exposure risk generally increases safety as it reduces the amount of time users are exposed to a possible crash. Compact intersections, short crossing distances, and intuitive design all reduce exposure. Shorter crossings have the added traffic benefit of less clearance time needed during the flashing don't walk phase.[20]

SIGHT TRIANGLES AND VISIBILITY

Sight triangles are used to determine where vertical elements are prohibited within an intersection in order to maintain adequate sightlines, but they often create wide setbacks and designs that encourage speeding and endanger pedestrians. In multimodal environments, intersection corners tend to become gathering places; pedestrians wait at corners to cross the street, and bus stops are often placed at corners. In these areas it becomes less important to focus on clearing sightlines, but more important to slow traffic speeds and facilitate eye contact between motorists and other street users. At lower speeds a motorist can make eye contact with other users (motorists or otherwise) and decrease the potential for crashes.[21]

Source: Tefft, Brian, 'Impact speed and a pedestrian's risk of severe injury or death' (Accident Prevention and Analysis, 2013)

[20] AASHTO recommends use of "simple designs that minimize crossing widths and minimize the use of more complex elements such as channelization and separate turning lanes." Source: American Association of State Highway Transportation Officials. "A Policy on Geometric Design of Highways and Streets." 6th ed. (2011): 2-79.

[21] Guéguen, Nicolas, et al. "A pedestrian's stare and drivers' stopping behavior: A field experiment at the pedestrian crossing." Safety Science. June 2015.

NEIGHBORHOOD STREET SPEED MANAGEMENT

CHICANE

Chicanes are curb extensions that alternate from one side of the street to the other, forming S-shaped curves. Vehicles slow their speeds to pass through the series of curves. A chicane-like effect can be achieved sometimes at less cost, by alternating on-street parking from one side of the street to the other. Chicanes can be landscaped to provide visual amenity and neighborhood identity, as well as to provide mid-point refuge for pedestrian crossings at crosswalks.

DESIGN CONSIDERATIONS

- The number of chicanes required depends on the length of the street, but generally a series of at least three bulb-outs are needed to create the S-shaped curves needed to slow vehicle speeds.
- The shifts in alignment should be at least one lane width, with deflection angles of at least 45 degrees, and center islands to prevent drivers from following a straight "racing line" path through the feature.
- Chicanes should be placed midblock and may be used in conjunction with other traffic calming measures.

PREFERRED DIMENSIONS

Widths should not narrow any bike or general traffic lanes to an unsafe width. Where application of chicanes impact drainage a one to two-foot gap may be placed between the treatment and the curb.

E. 2nd Street in downtown Casper is an example of a chicane

MORE INFORMATION

- AASHTO: Guide for the Planning, Design, and Operation of Pedestrian Facilities, 2004: Section 2.6.2: Traffic-Calming Methods; Section 3.3.1: Curb Radii; Section 3.3.2: Crossing Distance Considerations
- Ewing, R. and J. Brown: U.S. Traffic Calming Manual. 2009
- NACTO: Urban Street Design Guide, 2013

DIVERTERS

Diverters are physical or regulatory barriers that restrict access and movement. They may prevent particular turning or through movements or restrict access to local traffic only, while allowing passage of bicycle and pedestrian traffic. Diverters can create opportunities for landscaping and street trees. Depending on the situation, diverters can be appropriate for use on all street types. Sometimes called a "half street closure," semi-diverters prevent vehicles from crossing an intersection in one direction of a street while permitting traffic in the opposite direction to pass through. It is an alternative to one-way street operation for a block and it allows residents on the block limited two-way travel opportunity.

DESIGN CONSIDERATIONS

- A semi-diverter should be located at the end of a block to prevent vehicles from entering, but allowing exits.
- Diagonal diverters can be installed across an intersection blocking through movement, and are usually staggered to create circuitous routes through neighborhoods.
- Diverters should be designed to allow for the passage of pedestrians and bicycles.

PREFERRED DIMENSIONS

The length of a diverter should be long enough to prevent bypass attempts by vehicles. Gaps should be provided at a minimum of four feet for passage of bicycles and where pedestrian crosswalks occur.

Neighborhood street traffic diverter in Albuquerque, New Mexico

MORE INFORMATION

- AASHTO: Guide for the Planning, Design, and Operation of Pedestrian Facilities, 2004
- AASHTO: Guide for the Development of Bicycle Facilities, 2012
- FHWA: Small Town and Rural Multimodal Networks, Chapter 2: Mixed Traffic Facilities

TRAFFIC CIRCLES

Traffic circles are small roundabouts used at the intersection of local streets to slow the speed of traffic. They may or may not be used in conjunction with stop signs. Traffic circles provide advantages for all road users as they reduce the need for a full stop and enable continuous progression when conflicting traffic is not present. An ideal treatment for uncontrolled intersections, traffic circles can reduce vehicle speeds and crashes in low volume areas. They can be installed using simple markings or raised islands, but they also provide great opportunities to include stormwater management facilities or pieces of art.

DESIGN CONSIDERATIONS

- Regulatory and/or warning signage should be provided to remind traffic to proceed counterclockwise around the circle.
- Street trees located in traffic circles should avoid blocking sight lines to ensure safety. A neighborhood partner should be identified for maintenance of any plantings.
- If plantings are incorporated, they should require minimal maintenance; access paths for maintenance crews should be incorporated into the overall design.

PREFERRED DIMENSIONS

Provide approximately 15 feet of clearance from the corner to the widest point on the circle.

Traffic circle in Centennial Hills Village

MORE INFORMATION

- ITE: Designing Walkable Urban Thoroughfares: A Context Sensitive Approach, 2010
- AASHTO: Guide for the Development of Bicycle Facilities, 2012
- NACTO: Urban Street Design Guide, 2013

CHOKER OR NECK-DOWN

Chokers are midblock curb extensions that narrow the street by expanding the sidewalk or adding a planting strip and often are installed at midblock pedestrian crossings. Neck-downs are curb extensions at intersections that tighten the curb radii at the corner, reducing the pedestrian crossing distance and the speeds of turning vehicles. Both treatments are particularly useful on streets with longer block lengths where motorists tend to pick up speed.

DESIGN CONSIDERATIONS

- Neck-downs and chokers may be coupled with on-street parking bays and crosswalks.
- Neck-downs should not be used on streets with separated bike lanes or other separated facilities where they would result in moving bicyclists into the traffic flow.

PREFERRED DIMENSIONS

Widths should not narrow any bike or general traffic lanes to an unsafe width.

MORE INFORMATION

- AASHTO: Guide for the Planning, Design, and Operation of Pedestrian Facilities, 2004: Section 2.6.2: Traffic-Calming Methods; Section 3.3.1: Curb Radii; Section 3.3.2: Crossing Distance Considerations
- Ewing, R. and J. Brown: U.S. Traffic Calming Manual. 2009
- NACTO: Urban Street Design Guide, 2013

Midblock curb extensions at David Street Station

ARTERIAL STREET SPEED MANAGEMENT

ROAD DIETS

A road diet is the reallocation of roadway space by converting one or more vehicle travel lane(s) to active transportation use while retaining the existing curb line. The most common road diet converts a four-lane road with two lanes in each direction to a three-lane section with one lane in each direction, one bike lane in each direction, and a center turn lane. This strategy can be applied broadly to a wide variety of cross sections where one or more travel lanes are repurposed to provide more space for people walking and bicycling. Road diets are most typically done on roadways with excess capacity where anticipated traffic volumes have not materialized to support the need for additional travel lanes.

Road diets provide potential for crash reduction. Converting a four-lane street to a three-lane street removes left turns from the main flow of traffic and has been shown to reduce the number of rear-end collisions, for example, since left turning motorists can wait to turn in the center lane. Four to three lane conversions typically have minimal effects on the vehicular capacity of the roadway because left-turning vehicles are moved into a common two-way left turn lane. Roadway configurations with two travel lanes and a center turn lane can discourage speeding and weaving; reduce the potential for rear end and side swipe collisions; improve sight distances for left-turning vehicles; reduce pedestrian crossing distances and exposure to motor vehicle traffic; and reallocate space for sidewalks, bicycle facilities, and curb extensions.

DESIGN CONSIDERATIONS

- If considered during reconstruction, raised center islands may be constructed in between intersections to provide improved pedestrian crossings, incorporate landscape elements, and reduce travel speeds.

A road diet may be considered for the Mills Main Street project.

MORE INFORMATION

- AASHTO: Guide for the Development of Bicycle Facilities, 2012: Section 4.9.2: Retrofitting Bicycle Facilities Without Roadway Widening
- Federal Highway Administration: Road Diet Informational Guide, 2014
- Federal Highway Administration: Traffic Calming ePrimer, 2017

SIGNAL MODIFICATIONS

Modifications to traffic control devices can improve driver compliance by increasing the visibility of a signal and making phasing easier to understand. These modifications can include altering timing and phasing in order to separate movements and optimize flow, such as by adding a protected left turn phase, which restricts pedestrian movement during left turning movements. Phasing modifications benefit people using active transportation by increasing their visibility to drivers, reducing the risk of crashes and injuries. Physical modifications include such enhancements as retroreflective backplates/borders on signs and traffic signal heads, and LEDs or flashing beacons used in conjunction with warning or regulatory signs. Traffic signal displays can also be outfitted with signal visors, limited visibility lenses, or signal louvers to prevent preemptive movements and minimize confusion about the right of way among adjacent movements.

DESIGN CONSIDERATIONS

- Stop signs and warning signs may be accompanied by LED units along the border of the sign for illumination (not including changeable message signs).
- Signal backplates can be vented to account for higher wind loads.
- Strobe lights complementing traffic signal displays are not MUTCD compliant.
- Louvers, the inside surfaces of visors, and the front surface of backplates must retain a matte black finish.
- Retroreflective borders on signal backplates offer enhanced visibility at night and during power outages.

MORE INFORMATION

- Federal Highway Administration. Signalized Intersections: Informational Guide. Second Edition. 2013.

MEDIANS

A median divides lanes of traffic and is generally located in the center of the right-of-way to separate opposing directions of traffic. They may also be used off-center to separate local access or special purpose lanes, including bicycle facilities and bus-only lanes. Medians increase safety and enhance roadway operations by reducing vehicular movement conflicts, limiting turning movements, and providing a refuge for pedestrians crossing the street.

DESIGN CONSIDERATIONS

- Medians take many forms and can be used as both a traffic calming and beautification device.
- Medians may be flush with the pavement and consist of painted markings, or a space protected with a raised curb.
- Striped or painted medians may precede more permanent improvements, providing an opportunity to test travel behaviors before making a significant capital investment.
- Medians that intersect a pedestrian crossing should have a clear walk zone that is at least as wide as the crosswalk that intersects it to avoid a bottleneck mid-crossing.

PREFERRED DIMENSIONS

Medians should be at least 10 feet wide (curb to curb) if they are to provide turn pockets at intersections. Medians intended for use as pedestrian refuge islands should be a minimum of six feet wide (curb to curb) to provide adequate width for pedestrians crossing with strollers, bicycles or wheelchair devices.

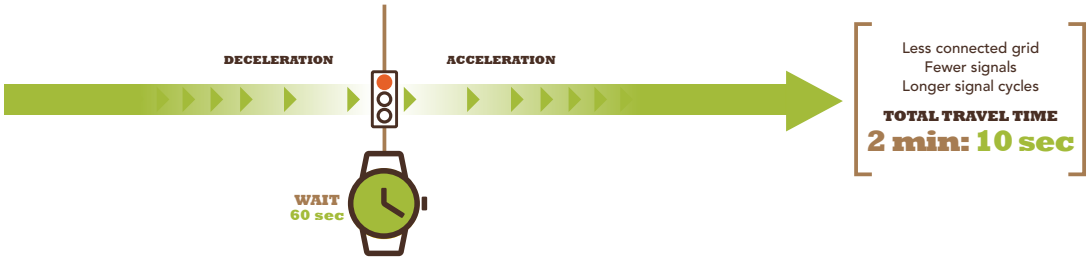
MORE INFORMATION

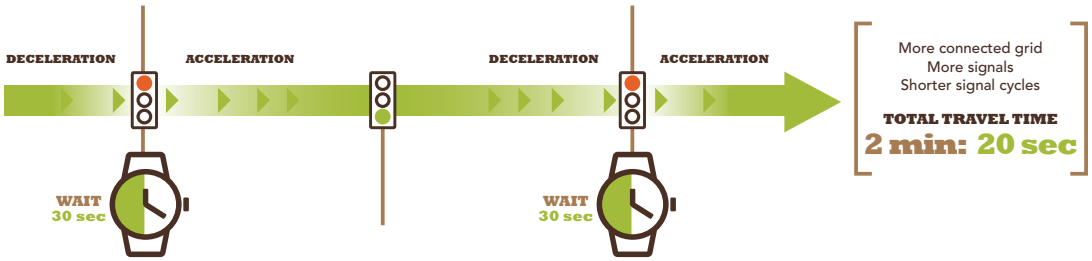
- AASHTO: Guide for the Planning, Design, and Operation of Pedestrian Facilities, 2004
- Federal Highway Administration: Small Town and Rural Multimodal Networks, Chapter 2: Mixed Traffic Facilities
- NACTO: Urban Street Design Guide, 2013

SPEED MANAGEMENT TOOLS

ADDITIONAL SIGNALS

Signals are the tools that help move traffic through intersections. Typical arterial signal spacing is a half-mile or more, which does not correlate well to a pedestrian-scaled network. On a low-speed street, signals are not as necessary to manage speeds, but on arterials and collectors signals can allow for cross-flow, keep vehicle traffic moving at safe speeds, and allow for access to destinations. MUTCD provides recommendations on signal spacing, but also states that locations that do not meet warrants could still include signals with application of engineering judgment.[22]





[22] Federal Highway Administration. "4C: Traffic Control Signal Needs Studies," in Manual of Uniform Traffic Control Devices, 2009 Edition with Revisions No. 1 and 2 Incorporated. 2012.

REDUCED LANE WIDTH

Analysis of a street's layout may reveal space that could be allocated from vehicular uses to other elements. Where a road diet or bike lane might be infeasible, narrowing vehicle lanes may allow for the inclusion of on-street parking, wider sidewalks, landscaping treatments, or bicycle lanes without causing any safety effects to vehicular traffic.

TRANSITIONS

As context and mobility functions change, street type designations may change accordingly. The transitions between street types can include design cues reinforcing the street's desired character relative to its changing context. For example, state highways that function as main streets on entering a commercial district might introduce more urban elements (narrower lanes, curb and gutter edges, pedestrian lighting, gateway treatments, etc.) to cue motorists to the transition from a higher-speed mobility corridor to a lower-speed, walkable commercial district.

MORE INFORMATION

- AASHTO: Guide for the Development of Bicycle Facilities, 2012: Section 4.9.2: Retrofitting Bicycle Facilities Without Roadway Widening
- NACTO: Urban Street Design Guide, 2013

BICYCLE FACILITIES

When the right-of-way is thoughtfully and clearly allocated so that all users have their right-sized piece of the street, the community realizes a range of benefits, from improved roadway safety for everyone to equitable access to jobs and opportunities. A fully connected 8-80 network of bicycle priority streets connects many origins and destinations, without requiring the user to take significant out of direction routes or ride in places that do not suit their ability or skill level. The network is designed to provide infrastructure improvements, traffic calming measures, and strategically placed crossings to ensure the network is not broken up by gaps or barriers, such as high speed and high-volume streets.

CLASS I

Class I facilities – also known as multi-use paths or shared use paths – are paths for exclusive use by people on foot, on bicycles, or other mobility devices. They are separated from vehicle travel lanes, providing a more comfortable facility for a wide range of users. Class I facilities attract a wide range of users traveling at widely varied speeds – from people moving at a leisurely pace to cyclists traveling at higher speeds.

DESIGN CONSIDERATIONS

- Minimize conflict between different user types through additional path width, signage, and design cues such as striping or separation.
- Shared use paths with a higher intensity of use should consider separation of users – separating pedestrians from bicyclists and/or separating oncoming directional travel.

MORE INFORMATION

- FHWA: Small Town and Rural Multimodal Networks, Chapter 4: Physically Separated Facilities
- AASHTO: Guide for the Development of Bicycle Facilities, 2012: Chapter 5: Design of Shared Use Paths

SIDEPATH

Sidepaths are similar to Class I facilities, but are typically located parallel to a street, or within the right-of-way but separated from the roadway. Sidepaths tend to take the form of wide sidewalks, but are designed for both pedestrian and bicycle use, and may be paired with class II bike facilities (bike lanes) within the roadway.

DESIGN CONSIDERATIONS

- Instead of restricting contraflow travel, sidepaths should instead be designed to minimize potential conflicts for these users, and to increase visibility of contraflow travel by all corridor users.
- Where the sidepath crosses a side street or driveway, implement speed reduction measures to reinforce the priority of movement by people walking and bicycling, including raised crossings, truck aprons, and prominent pavement markings. Signage along sidepaths may also be used to alert path users to watch for turning vehicles.
- At signalized intersections, signal timing may be adjusted to add an exclusive sidepath signal phase or leading interval.
- At side street crossings, sidepaths should be offset from the curb line of the parallel roadway by six feet to 24 feet to improve the visibility of bicyclists to turning motorists, and to allow motorists turning onto the primary roadway space to pull forward and yield to traffic in the primary roadway after yielding to sidepath users.

MORE INFORMATION

- Michigan Department of Transportation: Sidepath Intersection & Crossing Treatment Guide, June 2018

CLASS II BIKEWAYS

Class II bikeways are dedicated bicycle lanes delineated by striping, signage and pavement markings. Conventional bike lanes are typically located immediately adjacent to a motor vehicle travel lane and usually located on the right-hand side of the street running in the same direction as motor vehicle traffic, but alternative configurations are possible. Bike lanes alert motorists to the presence of a bike route, allow bicyclists to use the street with less interference from traffic, and increase comfort for cyclists and predictability for all roadway users. Providing bike lanes may reduce the incidence of cyclists riding on sidewalks.

Buffered bicycle lanes have a separation between the Class II bicycle lane and the travelway, increasing the distance between vehicles and cyclists by painting a buffer between the bike lane and parked or moving traffic. The additional buffer may also reduce the risk of cyclists getting hit by the doors of parked cars and allows cyclists to pass one another without entering the general traffic lane.

DESIGN CONSIDERATIONS

- Removing bike lanes in advance of intersections is not an 8-80 treatment, and should be avoided because it introduces a gap in the network.
- Avoid placing conventional bicycle lanes to the right of a right-turn lane or the left of a left-turn lane, unless a separate bicycle signal is provided.
- Use dotted/dashed lines to indicate areas of conventional bicycle lane/vehicle lane conflict, such as bicycle lane markings continuing through intersections or where right turning lanes cross bicycle lanes.
- For buffered bicycle lanes in retail areas, place the buffer adjacent to the parking lane if there is only room for a buffer on one side.

MORE INFORMATION

- NACTO: Urban Bikeway Design Guide, 2nd Edition, 2014
- AASHTO: Guide for the Development of Bicycle Facilities, 2012: Section 4.5: Paved Shoulder; Section 4.6: Bicycle Lanes; Section 4.7: Bicycle Lane Markings and Signs
- FHWA: Separated Bike Lane Design Guide, 2015

CLASS III BIKEWAYS

Shared lane markings (sharrows) are pavement markings that reinforce that a lane is intended to be shared by motor vehicles and bicyclists. Shared lane markings alert motorists to expect bicyclists, remind motorists of the legitimacy of bicyclists to use the roadway, and orient bicyclists to the preferred line of travel outside the door zone. Shared lane markings do not create a dedicated bicycle facility, so some bicyclists will not be comfortable riding in travel lanes and relying on these markings to alert motorists. Shared lane markings are generally considered a minimalist bicycle accommodation and should be limited in use. On higher volume streets, these markings are an interim measure. As this facility would not be comfortable for all ages and abilities, it should not be illustrated on bikeway maps. Instead, bicyclists can be routed to other streets if dedicated bicycle facilities cannot be provided. Use of shared lane markings on streets with traffic volumes below 2,000 cars per day is appropriate for an 8-80 street.

DESIGN CONSIDERATIONS

- Shared lane markings are two chevron symbols positioned above a bicycle symbol. The chevrons should guide bicyclists out of the door zone and be positioned to point bicyclists in the direction of travel.
- When used on low volume streets, sharrows typically are provided as wayfinding, and should be supported with wayfinding signage indicating travel times, destinations, and key route decision points.

MORE INFORMATION

- NACTO: Urban Bikeway Design Guide, 2nd Edition, 2014: Bikeway Signing and Marking: Shared Lane Markings
- AASHTO: Guide for the Development of Bicycle Facilities, 2012: Section 4.4, Marked Shared Lanes
- MUTCD, 2009: Section 9C.07, Shared Lane Marking

CLASS IV BIKEWAYS

Class IV facilities – also known as protected bike lanes, separated bike lanes or cycle tracks – are on-street bicycle facilities with physical separation between the bikeway and the roadway, often by a curb, parked vehicles, planted median or flexible posts. Protected bike lanes reduce the risk of bicycle/ vehicle conflicts and have been shown to correlate positively with increased bicycling activity.

DESIGN CONSIDERATIONS

- Protected bicycle lanes require careful design at intersections to minimize conflicts with turning vehicles and to improve legibility, visibility, and predictability for all travelers. Use colors, yield lines, and "Yield to Bikes" signage to make it clear that the protected bicycle lane has priority over crossing traffic.
- Points of conflict should be clearly marked for both the cyclist and motorist. Bicycle through movements and motor vehicle turning movements should generally be in separate phases at intersections.

MORE INFORMATION

- FHWA: Separated Bike Lane Planning and Design Guide, Chapter 5: Menu of Design Recommendations
- NACTO: Urban Bikeway Design Guide, Second Edition, 2014
- Massachusetts DOT: Separated Bike Lane Planning and Design Guide, 2015

BIKE BOULEVARDS

Bike boulevards are streets with low motorized traffic volumes and speeds, designed to give priority to through-bicycle travel and minimize through-vehicle traffic. These streets feature design elements such as signs and pavement markings, bulb-outs, chicanes, mini roundabouts, and diverters to manage vehicle volumes, "calm" traffic, and limit cut-through vehicle traffic. Bicycle boulevards can form the backbone of the community bicycle network and are often a lower-cost design treatment than many other bikeways described above.

DESIGN CONSIDERATIONS

- Bicycle boulevards may employ a range of speed and traffic calming treatments such as neckdowns, chicanes, speed humps or tables, diverters, and other such devices. These treatments reduce vehicle volumes and slow vehicle speeds to levels comparable with bicycle traffic in order to make the shared roadway environment more comfortable for people bicycling.
- Bicycle boulevard corridors may take circuitous routes to connect suitable low-stress neighborhood street segments, so clear signage and/or directional pavement markings oriented toward the bicyclist is required. Routes should run parallel and near to arterial streets to allow easy access to destinations along major corridors. Bike boulevards work best in a gridded and well-connected street network.
- Apply appropriate crossing and diversion treatments at major intersections. Bike boulevards are typically neighborhood residential streets, and the crossing of arterials and collectors may be unsignalized. Appropriate treatments to ease crossings of larger streets may include rapid flash beacons, pedestrian hybrid beacons, dashed conflict markings, curb extensions, and median refuge islands. Consider removing or flipping stop signs along the corridor to prioritize through bicycle traffic and create stop controls for cross traffic.

MORE INFORMATION

- NACTO: Urban Bikeway Design Guide, Second Edition, 2014.
- FHWA: Small Town and Rural Multimodal Networks, Chapter 2: Mixed Traffic Facilities.

INTERSECTIONS AND CROSSINGS

COMPACT INTERSECTIONS

Compact intersections are preferred for establishing a multimodal environment. A compact intersection has a small roadway footprint, fosters eye contact, reduces crossing distances, and reduces speeds. Where compactness is not achievable due to geometry, number of streets, turning requirements, etc., it might be feasible to break up intersections into "mini-intersections" using small roundabouts.

Techniques to create compact intersections include:

- Designing for the largest vehicle that regularly executes the subject movement – FHWA recommends that practitioners use the smallest practical design vehicle[23]
- Calculating turning radius using effective rather than actual radius
- Setting back stop lines to allow wider turns from approaching legs
- Adding pedestrian refuge islands
- Constructing curb extensions where on-street parking is present or in cases where a turn lane is discontinued across an intersection

Approaches to creating compact intersections can be thought of as moving curbs closer together, adding raised areas within the intersection, or a combination.

CORNER DESIGN

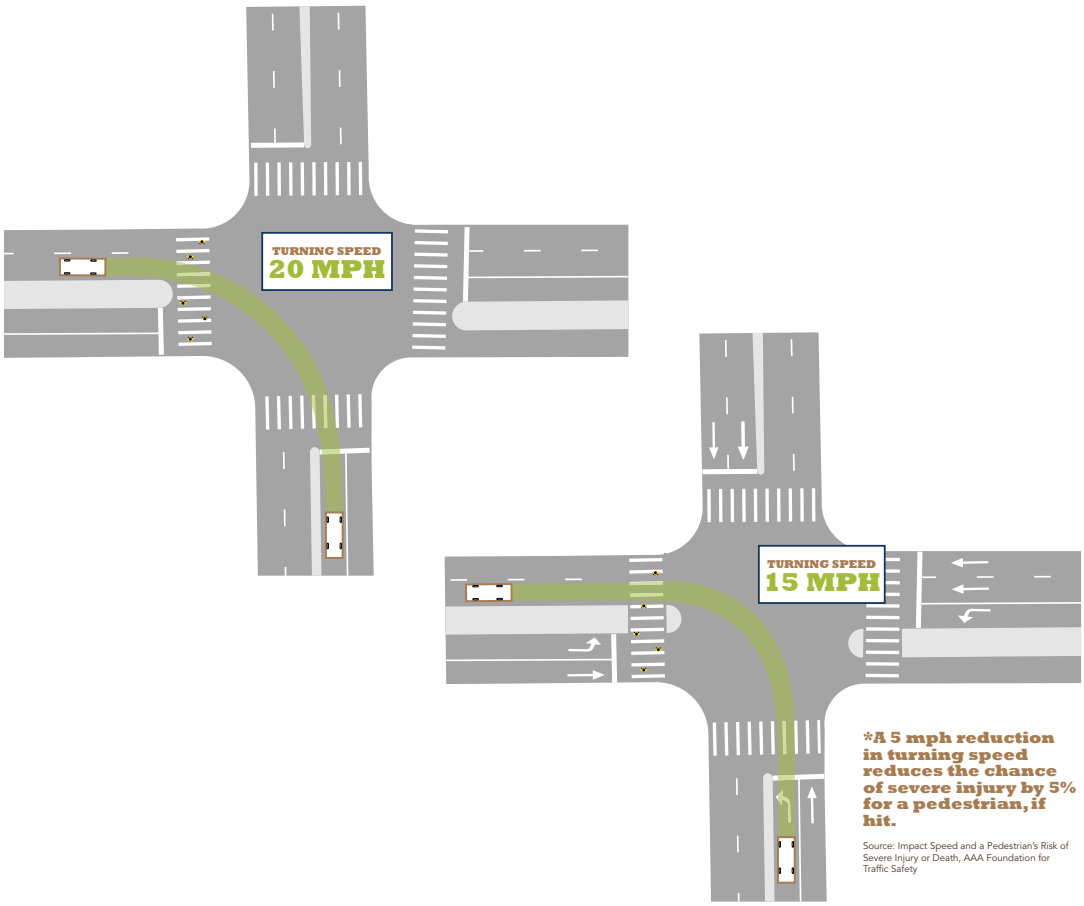
Design of intersection corners is critical to implementation of Complete Streets. It directly impacts turning speeds, sight lines, and the placement and length of crosswalks. Corner design includes the radius of the curb, whether or not curb extensions are used, the distance from the corner at which on-street parking may begin, and any other physical element that impacts the operation of the intersection.

It is recommended that the specified corner geometry elements should be based on both the functional emphasis of the intersecting streets and their surrounding development context. This will ensure that the intersection is built as compact as possible, while still serving the appropriate users and context.

[23] Federal Highway Administration. "Achieving Multimodal Networks: Applying Design Flexibility and Reducing Conflicts." 2016.

CURB RADIUS

The curb radius refers to the arc of the built curb at the corner of an intersection, which determines the effective turning radius of a vehicle. The turning radius refers to the path of a vehicle's wheels as it turns the corner. Reducing the corner radius effectively reduces a vehicle's turning radius, and restricts turning speeds. A smaller curb radius also reduces the width of the intersection, reducing the length of the pedestrian crossings, and ensuring higher pedestrian visibility by placing pedestrians further into the line of sight for motorists. It is important to note that streets with high volumes of truck, transit, or emergency vehicles may require larger curb radii.



LEADING PEDESTRIAN INTERVAL

A leading pedestrian interval (LPI) is a brief period at the beginning of a signal phase that permits pedestrians to enter the crosswalk before any other traffic is permitted to advance, increasing their visibility to motorists and reducing the risk of injuries and crashes during turning movements. LPIs are appropriate for use on any street type; however, they are typically used at intersections with significant pedestrian volumes and high volumes of conflicting turning vehicles, such as commercial areas and areas of high student concentrations. Many cities limit use of LPIs to cross low volume streets, as use on higher volume streets may introduce undesirable delay. LPIs may also be used on streets approaching higher volume streets to improve the visibility of pedestrians crossing parallel to high volume, higher speed streets.

DESIGN CONSIDERATIONS

- LPIs require the concurrent use of pedestrian signals, and may not be used with leading left turns.
- LPIs should be a minimum of three seconds in duration, but more commonly provide five or more seconds to permit pedestrians to cross at least one lane of vehicle traffic.
- LPIs should be accompanied by audible and/or vibrotactile signals for visually impaired pedestrians.
- Combining LPIs with curb extensions further increase pedestrian visibility and safety. Bicycles may also benefit from LPIs and can use the signal to clear an intersection and facilitate vehicle turns.

RECTANGULAR RAPID FLASHING BEACON

Rectangular Rapid Flashing Beacons (RRFBs) are devices using LED flashing beacons in combination with pedestrian and bicycle warning signs to provide a high-visibility strobe-like warning to drivers when pedestrians and bicyclists use a crosswalk. RRFBs can be used when a signal is not warranted at an unsignalized crossing. They are not appropriate at intersections with signals or "STOP" signs.

DESIGN CONSIDERATIONS

- RRFBs should be placed curbside below the pedestrian crossing sign and above the arrow indication pointing at the crossing at both sides of the roadway.
- RRFBs should be used in conjunction with advance yield pavement lines and pedestrian crossing signs.
- If there is a pedestrian refuge or other type of median, an additional beacon should be installed in the median.
- A push button is used to activate the beacon, or another activation method used by the person to signal the intent to cross. The push button and other components of the crosswalk must meet all other accessibility requirements.
- RRFBs should be limited to locations with critical safety concerns and high volume pedestrian crossings, but may also be considered for priority bicycle route crossings and at locations with high volume pedestrian destinations on either side of a street without a nearby controlled crossing.

MORE INFORMATION

- AASHTO: Guide for the Planning, Design, and Operation of Pedestrian Facilities, 2004
- NACTO: Urban Street Design Guide, 2013

CROSSING LOCATIONS

Street crossings are often the most challenging element of pedestrian design. Typical challenges include:

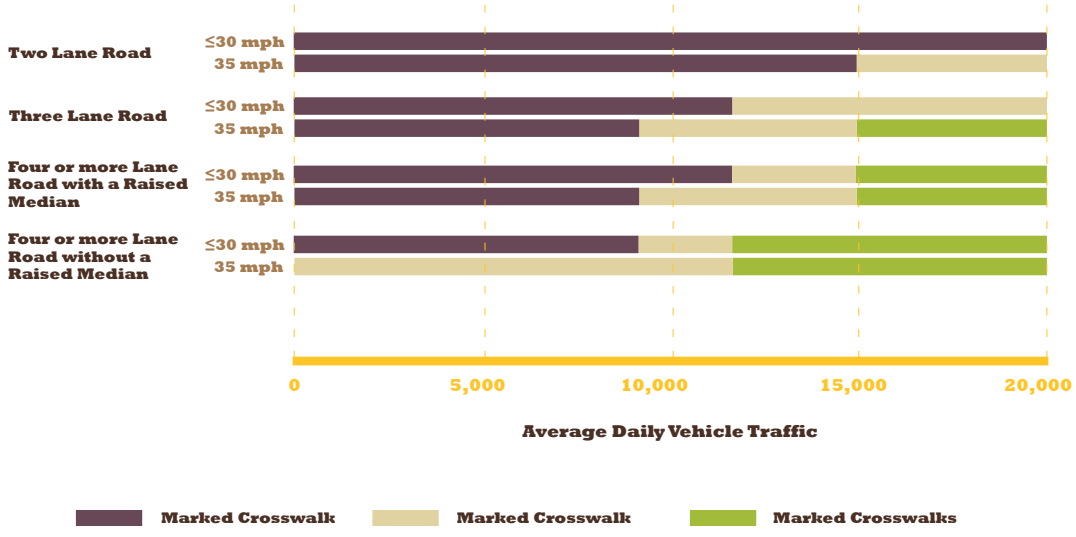
- Existing crosswalks are located ¼ mile apart or further, often times located only at signalized intersections.
- No marked crossings at trip generators like bus stops and shopping centers.
- Resistance to adding marked crosswalks due to concerns of installation cost, liability, and maintenance.
- Resistance to adding traffic-controlled crosswalks due to concerns over meeting MUTCD warrants.

A pedestrian crossing is the path along which a pedestrian wishes to (or does) travel. This concept is related to pedestrian networks and desire lines. A crosswalk is defined as the extension of the sidewalk across an intersection (whether marked or not). Ideally, crosswalks are matched to crossing locations to provide the most convenient, direct, and comfortable walking environment. Crosswalks can take many forms:

- Unmarked crosswalks are legal crosswalks without any traffic control markings
- Marked crosswalks are legal crosswalks with markings
- Uncontrolled crosswalks are legal crosswalks without stop signs, signals, or other traffic controls
- Controlled crosswalks are legal crosswalks with traffic control

Treatments may vary but must be determined by considering vehicle speed, volume, and roadway configurations. Narrower streets with low volume may not need any formal crosswalks; unmarked, uncontrolled crosswalks may feel safe for all users. Wider, high speed, and high-volume roads may require more involved treatments to minimize conflicts between pedestrians and vehicles. These treatments may include medians, overhead signs, improved lighting, and traffic control devices. MUTCD guidance for low-speed streets (35 mph and under) follow FHWA's "Safety Effects of Marked versus Unmarked Crosswalks" for the treatment of marked, uncontrolled crosswalks.

GUIDELINES FOR CROSSWALK INSTALLATION AT UNCONTROLLED LOCATIONS ON STREETS WITH SPEED LIMIT OF 35MPH OR BELOW



MARKED CROSSWALK

A marked crosswalk is any portion of a roadway at an intersection or elsewhere that is distinctly indicated for pedestrian crossing by lines or other markings on the surface. Marked crosswalks are critical components that facilitate a connected and continuous pedestrian network. Marked crosswalks may occur at either intersections or at mid-block locations between intersections. While pedestrians are legally permitted to cross at the intersection of two or more streets, whether the crossings are marked or unmarked, marked crosswalks should be provided at all significant pedestrian crossing locations. Also consider installing marked crosswalks near schools, parks, and community facilities, depending on adjacent street type and expected or observed pedestrian demand.

DESIGN CONSIDERATIONS

- At intersections with marked crosswalks, crosswalks should be provided across all legs.
- Pedestrians should not be forced into out-of-direction travel due to missing crosswalks.
- Marked and unmarked crossings should be adequately lit to provide safety and visibility for both pedestrians and motorists. Crossing distance should be as short as possible to minimize exposure and risk.
- Continuous crossings in excess of 44 feet in length should be avoided. For crossings greater than 44 feet, consider using pedestrian refuge islands.

MORE INFORMATION

- AASHTO: Guide for the Planning, Design, and Operation of Pedestrian Facilities, 2004
- NACTO: Urban Street Design Guide, 2013

MEDIAN REFUGE ISLAND

While pedestrians will always find it more convenient to cross the street in one stage, median refuge islands are a tool to improve pedestrian safety in areas where automobile movement has been prioritized. Refuge islands are raised sections within the roadway that provide a safe landing zone for people walking and bicycling to use while crossing a street with multiple travel lanes. Median pedestrian and bicycle refuge islands make roadway crossings easier and safer by 1) limiting exposure to through moving vehicles; 2) enabling crossings to commence when there are gaps in traffic from one direction at a time; and 3) providing a safe stopping place in the middle of the roadway for pedestrians who are not able to make the complete street crossing during a pedestrian signal phase. They may be used at signalized and unsignalized intersections or mid-block.

DESIGN CONSIDERATIONS

- Pedestrian refuge islands are most often used on multi-lane roadways where a pedestrian must cross 44 feet or more of continuous roadway or where they are necessary to provide a safe crossing.
- Pedestrian refuge islands may be used as a traffic calming or traffic channelization device, often in concert with mini roundabouts or acute angle right turns.

MORE INFORMATION

- AASHTO: Guide for the Planning, Design, and Operation of Pedestrian Facilities, 2004
- Federal Highway Administration: Small Town and Rural Multimodal Networks, Chapter 2: Mixed Traffic Facilities
- NACTO: Urban Street Design Guide, 2013

CURB EXTENSIONS

A curb extension is a section of sidewalk or landscaped area extending into the roadway at an intersection or mid-block crossing that physically narrows the roadway. They are used to create safer, shorter crossings for pedestrians; slow traffic speeds; and/or increase pedestrian zone space for street furniture, benches, landscaping, and street trees. Regardless of street type, curb extensions may only be used where a curb lane is present and used for parking or loading, not travel. Curb extensions are particularly beneficial in commercial frontage contexts where pedestrian volumes are high, where traffic calming is desired, and on very wide streets.

DESIGN CONSIDERATIONS

- Curb extensions should not narrow any bike or general traffic lanes to an unsafe width.
- Extensions should preserve one to two feet of shy distance between the curb face and the first travel lane or bicycle lane.
- When applied to streets with on-street parking, they are typically six to seven feet wide; alternatively, extensions can shadow the length of the parking stall, if parking is on the diagonal.
- Corner or mid-block extensions with crosswalks should be at least as wide as the crosswalk, and ideally extend to the stop bar. The curve of the extension must fit outside of any crosswalks.
- Extensions are intended to narrow pedestrian crossing distance and slow traffic speeds. To accomplish this, maintain tight turning radii no greater than 20 feet. The effective turning radius may be wider.

MORE INFORMATION

- AASHTO: Guide for the Planning, Design, and Operation of Pedestrian Facilities, 2004
- NACTO: Urban Street Design Guide, 2013

MIDBLOCK TRAIL CROSSINGS

If roadway or trail traffic conditions do not warrant a grade-separated crossing of the roadway, a number of considerations apply to the design of trail crossings at mid-block locations. In general, the same principles that apply to design of pedestrian crossing facilities also apply to bikeway crossings. Midblock trail crossings should intersect the roadway as close to a right angle as practical to improve sightlines for all trail and roadway users. Stop or yield signs should be considered for trail users as needed at approaches to roadway crossings.

The most basic shared use path crossing involves a marked high visibility crosswalk with signs and other markings to slow or stop traffic. This may be an appropriate crossing treatment for trail crossings of local streets. Across roadways with higher speeds, higher traffic volumes, or three or more travel lanes, median islands or pedestrian hybrid beacons can be used to simplify the crossing.

Midblock trail crossing improvements were sketched out with the community as part of Spring 2019 workshops, such as this location at Long Creek Path and 12th Street

MORE INFORMATION

- FHWA: Small Town and Rural Multimodal Networks, Chapter 4: Physically Separated Facilities
- AASHTO: Guide for the Development of Bicycle Facilities, 2012: 5.3 Shared Use Path-Roadway Intersection Design

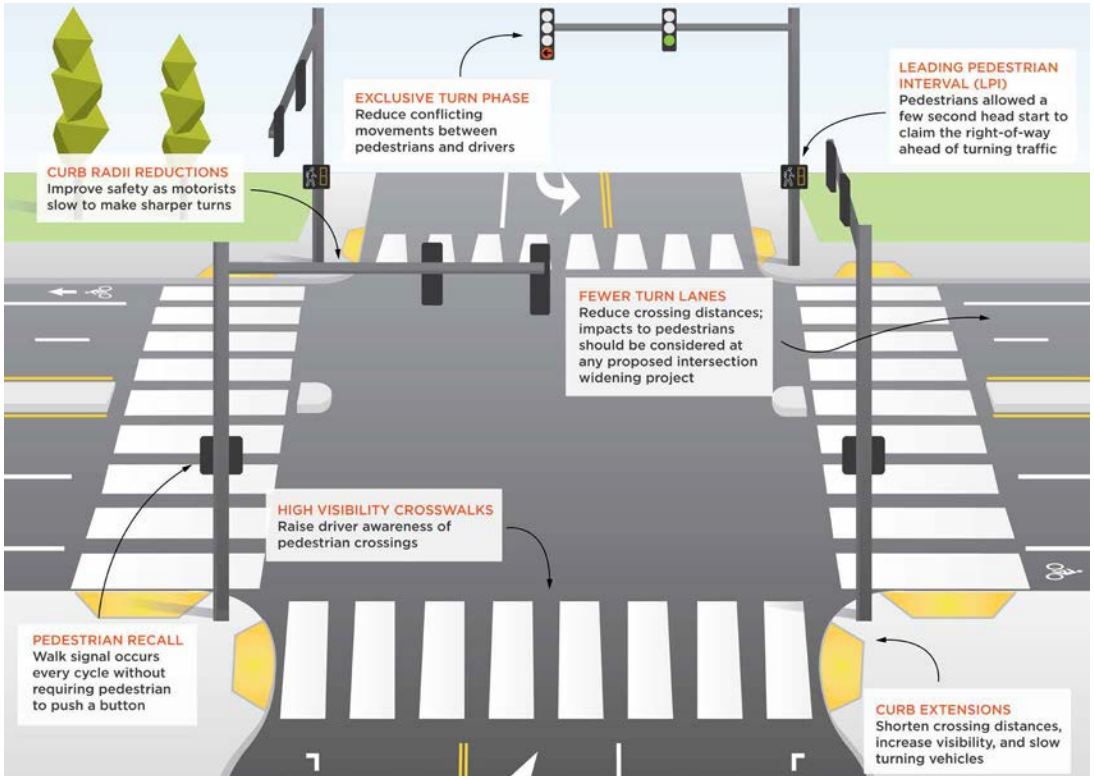
ADA COMPLIANCE

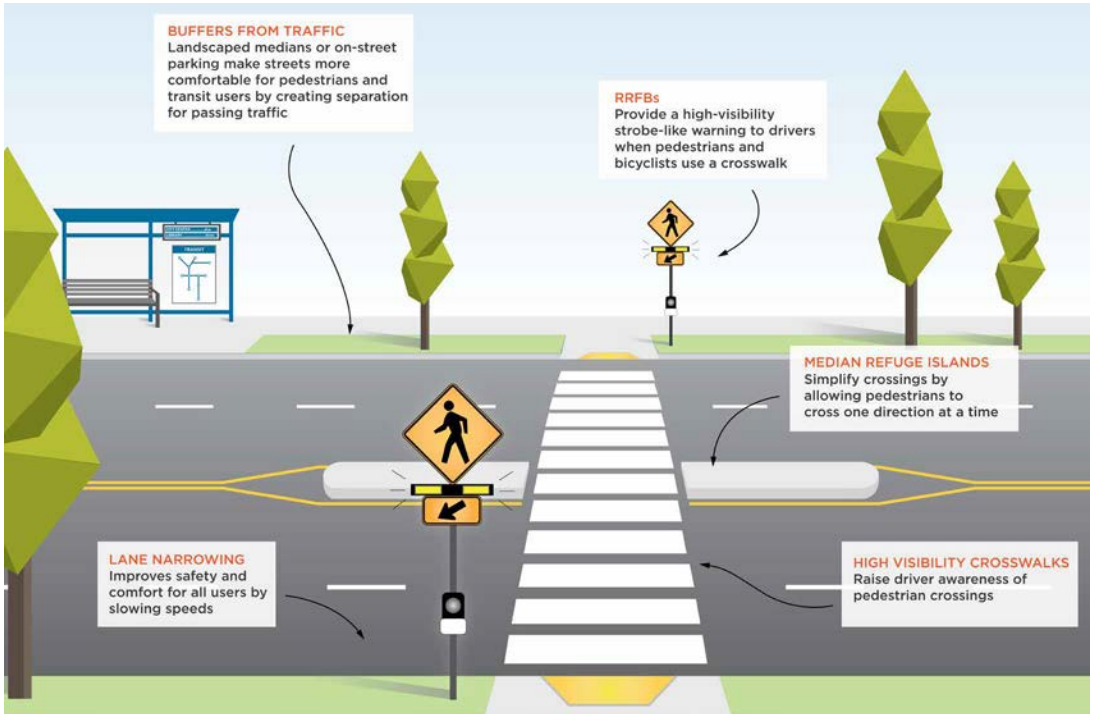
Cities are legally bound to meet certain standards to be ADA compliant. Title II of the ADA requires public entities to ensure that all their programs, activities, and services—including their public rights-of-way—are accessible to and useable by individuals with disabilities. These standards apply to all new construction and retrofits of existing facilities to ensure equal access. Any non-compliant sidewalks or curb ramps must be upgraded to meet current standards whenever any alterations, such as road surfacing, are carried out. Key requirements include:

- Curb ramps located wherever a sidewalk crosses a curb, whether they are at intersections (marked or unmarked) or midblock locations.
- Curb ramps designed with specific dimension and slope as identified in the 2010 ADA Standards for Accessible Design. Ramps must have a slope of less than 1:12 and must be at least 3 feet wide.
- Locations for crossing the street should be legible for those with visual disabilities using detection features such as truncated domes, contrasting color, and crossing edges.
- Curb ramps should be located so that they do not project into vehicular traffic lanes, parking spaces, or parking access aisles. Curb ramps at marked crossings should be wholly contained within the markings, excluding any flared sides.
- Raised median islands in crossings should be cut through level with the street or have curb ramps at both sides.

MORE INFORMATION

- ADA: 2010 Standards for Accessible Design
- Proposed Guidelines for Pedestrian Facilities in the Public Right-of-Way. Published in the Federal Register on July 26, 2011


EXCLUSIVE TURN PHASE
Reduce conflicting movements between pedestrians and drivers
LEADING PEDESTRIAN INTERVAL (LPI)
Pedestrians allowed a few second head start to claim the right-of-way ahead of turning traffic
CURB RADII REDUCTIONS
Improve safety as motorists slow to make sharper turns
FEWER TURN LANES
Reduce crossing distances; impacts to pedestrians should be considered at any proposed intersection widening project
HIGH VISIBILITY CROSSWALKS
Raise driver awareness of pedestrian crossings
PEDESTRIAN RECALL
Walk signal occurs every cycle without requiring pedestrian to push a button
CURB EXTENSIONS
Shorten crossing distances, increase visibility, and slow turning vehicles


BUFFERS FROM TRAFFIC
Landscaped medians or on-street parking make streets more comfortable for pedestrians and transit users by creating separation for passing traffic
RRFBs
Provide a high-visibility strobe-like warning to drivers when pedestrians and bicyclists use a crosswalk
MEDIAN REFUGE ISLANDS
Simplify crossings by allowing pedestrians to cross one direction at a time
LANE NARROWING
Improves safety and comfort for all users by slowing speeds
HIGH VISIBILITY CROSSWALKS
Raise driver awareness of pedestrian crossings

SECTION TEN:

MEASURING SUCCESS

Performance measures are used to indicate how well the transportation system is meeting agency goals and the community's expectations. They are useful in monitoring the achievement of specific regional access and mobility goals, such as accessibility to key regional population, employment, cultural, and recreational centers, the mobility of disadvantaged populations, air quality, and economic health.

Defining and establishing measurable outcomes is key to guiding the decision-making process, and it can significantly affect the types of projects approved by decisionmakers. Additionally, performance results inform agencies whether the types of projects being implemented are in fact helping them achieve their goals. Performance measures can also demonstrate whether the transportation system is faring better or worse over a period of time. The importance of performance-based measures and targets for the MPO's management of a transportation system is highlighted in federal legislation by MAP-21 and the FAST Act.

A performance-based planning and programming (PBPP) approach is intended to improve project and program delivery, inform decision-making, keep staff focused on priorities, and provide greater transparency to the public. Decisions are evidence-based and backed by data so that transportation investments remain realistic and achievable.

PERFORMANCE FRAMEWORK

The following performance framework will allow the Casper MPO to monitor progress towards meeting the goals of Connecting Crossroads and federal requirements. Progress should be monitored on an annual basis and trend in the trajectory of the arrows in the metrics shown below.

GOAL 1 INCREASE TRANSPORTATION OPTIONS FOR ALL MODES

MEASURE	METRIC	TARGET TRAJECTORY
Increase the number of available mobility options	Percent of people who take transit, walk, bike, and share rides for all types of trips	↑
	Mileage of new on- and off-street bicycle facilities and sidewalks	↑
Enhance reliability of the transportation system[24]	Person hours of delay	↓
Provide new connections to existing street network	Link-to-node ratio (number of street segments relative to the number of intersections)	↑
Improve ADA accessibility	Percentage of projects incorporating ADA-complaint features	↑

[24] As Wyoming does not experience severe issues with congestion, WYDOT is not required to report to the national performance metric for congestion mitigation. As the Casper Area MPO is under 1 million people, it is not required to assess and report Peak Hour Excessive Delay (PHED)

GOAL 2

IMPROVE SAFETY AND HEALTH FOR ALL RESIDENTS

MEASURE	METRIC	TARGET TRAJECTORY
Eliminate traffic-related fatalities and reduce serious injuries from traffic collisions	Percentage of crashes resulting in fatal or serious injuries	↓
	Number of projects at high collision locations intended to reduce crashes	↑
Increase physical activity by making walking and biking preferred modes of travel	Key corridor and project bicycle and pedestrian volumes (pre-/post-project)	↑
	Level of traffic stress (pre-/post-project)	↓
Expand the active transportation network density	Total and annual lane miles of bicycle facilities constructed	↑
	Total and annual miles of sidewalks constructed	↑
Improve access to healthy food sources	Number of projects within one mile of a healthy food source	↑

GOAL 3 ENHANCES THE REGION'S DISTINCT CHARACTER

MEASURE	METRIC	TARGET TRAJECTORY
Consistency with community plans	Percentage of projects maintaining consistency with previous community plans	↑
Reduce transportation-related air emissions[25]	Total greenhouse gas emissions from ground transportation	↓
Protect or enhance cultural resources	Number of projects that improve or enhance cultural or environmental resources	↑

GOAL 4 SUPPORT THE REGION'S DIVERSIFYING ECONOMY

MEASURE	METRIC	TARGET TRAJECTORY
Bring existing infrastructure into a state of good repair[26]	Percent of National Highway System (NHS) lane miles of pavement in good condition	↑
	Percent of NHS bridges in good condition	↑
Bring existing transit assets into a state of good repair	Percent of transit assets in a state of good repair	↑
Improve freight movement[27]	Freight corridor travel speeds	↑
	Annual hours of truck delay on Interstates	↓

GOAL 5

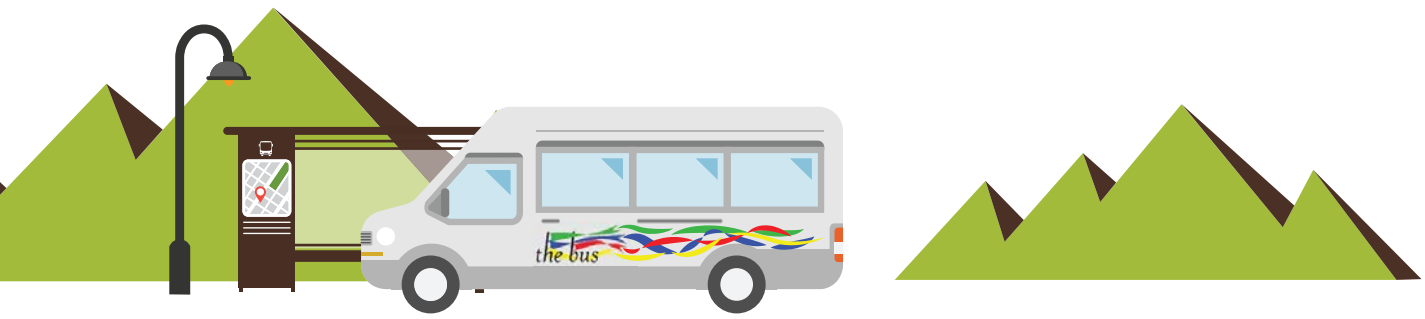
PROMOTE AFFORDABLE AND EASY MOBILITY SOLUTIONS

MEASURE	METRIC	TARGET TRAJECTORY
Improve mobility outcomes for vulnerable populations	Average household housing and transportation costs	↓
Improve transit performance	The Bus/CATC on-time performance	↑
	Passengers per hour on The Bus/CATC	↑
	Overall rate of denied CATC trips	↓

[25] Natrona County is not recognized by the EPA as a non-attainment area, meaning that the Casper Area has air quality at or above national standards. WYDOT's Congestion Mitigation and Air Quality (CMAQ) performance measure target based on Emissions Reductions (kg/day) is set at zero.

[26] For details on WYDOT bridge and pavement performance targets refer to the Transportation Asset Management Plan (TAMP) http://www.dot.state.wy.us/files/live/sites/wydot/files/shared/Planning/Transportation-Plans/TAMP_WYDOT%20SubmissionPublic_Final_2.pdf

[27] The national performance measure for freight movement uses a measure of Truck Time Travel Reliability (TTTR). The TTTR Index is a ratio of the 95th percentile truck travel time to the 50th percentile, which constitutes the time delay. In Wyoming, most truck delay is due to winter weather and construction, not congestion. WYDOT has set its TTTR Index performance target at 1.25.



CONNECTING CROSSROADS

LONG RANGE TRANSPORTATION PLAN