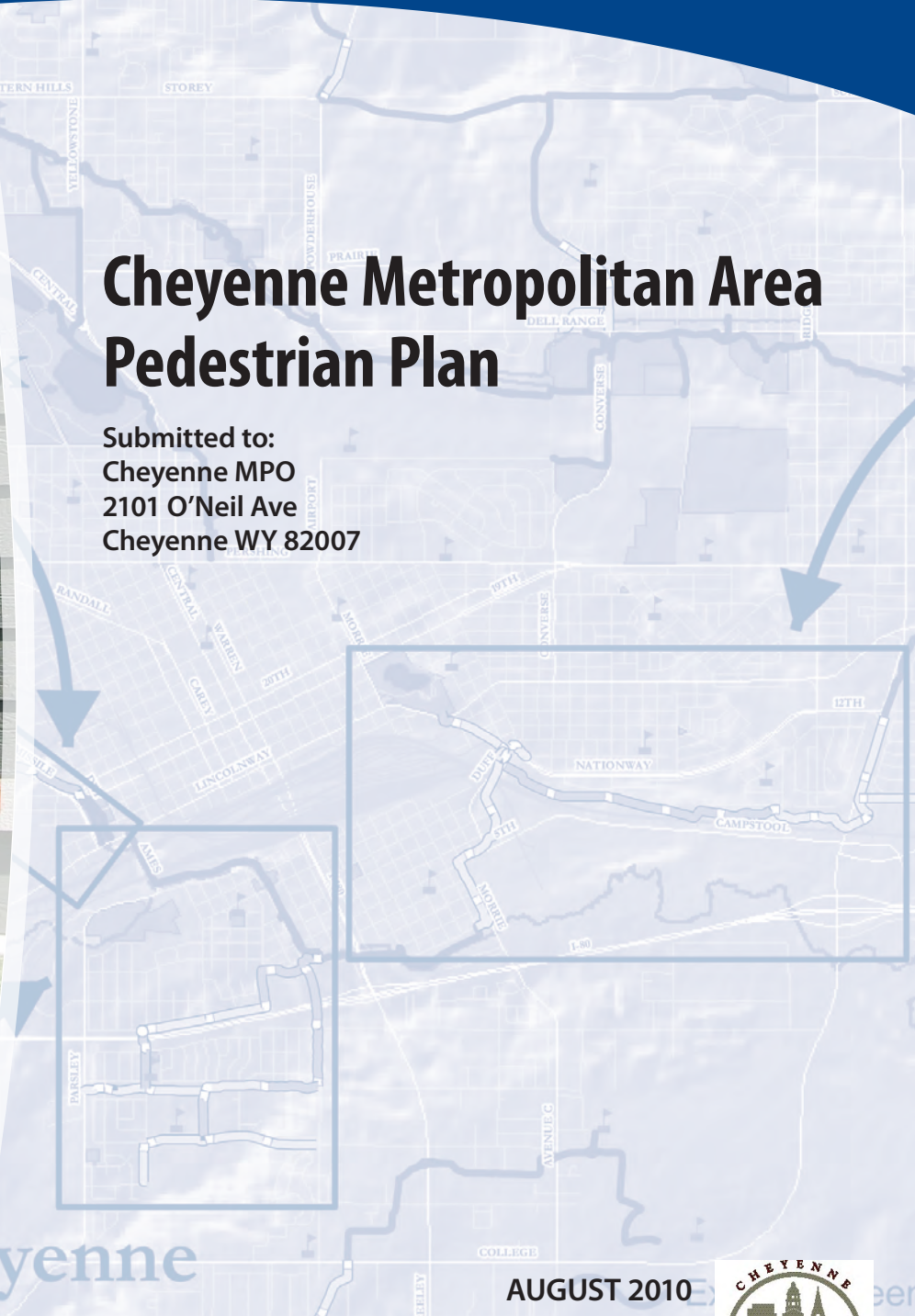




# Cheyenne Metropolitan Area Pedestrian Plan

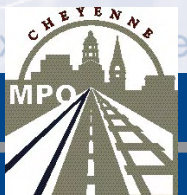
Submitted to:  
Cheyenne MPO  
2101 O'Neil Ave  
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AUGUST 2010

CHEYENNE METROPOLITAN PLANNING ORGANIZATION

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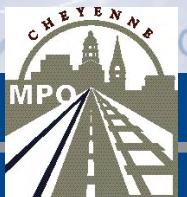


## Cheyenne Metropolitan Area Pedestrian Plan

# Snapshot

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## Acknowledgements

### City of Cheyenne

Engineering Services Office  
Parks & Recreation Department  
Public Works Department  
Cheyenne Transit Program  
One Percent Sales Tax Construction Department  
Urban Planning Office

### Laramie County School District #1

Traffic Safety Committee  
Planning & Construction Department  
Support Operations  
K – 8 School Principals  
Parent Teacher Organizations

### Laramie County

Planning & Development Department  
Public Works Department

### Metropolitan Planning Organization

Policy Committee  
Technical Committee  
Citizen's Advisory Committee

### Wyoming Department of Transportation

Planning Program  
Traffic Program  
Highway Safety Department/Bicycle and Pedestrian Program

### Concerned Citizens of the Cheyenne Metropolitan Area

#### Cheyenne Metropolitan Area Safe Routes to School and Pedestrian Plan Steering Committee

#### Cheyenne-Laramie County Cooperative GIS Program

#### Federal Highway Administration, Wyoming Division

#### Greater Cheyenne Greenway Advisory Committee

## Disclaimer

The preparation of this report has been financed in part through grant[s] from the Federal Highway Administration and Federal Transit Administration, U.S. Department of Transportation, under the State Planning and Research Program, Section 505 [or Metropolitan Planning Program, Section 104(f)] of Title 23, U.S. Code. The contents of this report do not necessarily reflect the official views or policy of the U.S. Department of Transportation.



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## Welcome

Located in the southeast corner of Wyoming, the City of Cheyenne has long stood as an outpost at the northern end of the Front Range, welcoming travelers from all walks of life. As the Laramie County Seat and Wyoming State Capitol, the city is the hub of significant political activity. Political activity is balanced by healthy retail and manufacturing activity.

Since Cheyenne's founding in 1867, visitors and residents have depended on their feet to get around. Evidence of this fact can be seen in the wide sidewalks of the downtown area, older historic neighborhoods (e.g., the Capitol North Historic District), and more recently in the development of the Greenway system. The pedestrian system takes advantage of open space preserved for drainage and policies that support increased pedestrian safety and comfort (e.g., separation from higher speed roadways through the use of tree lawns). Today, the City continues to develop and enhance the existing walkway system by filling sidewalk gaps, constructing greenways, and improving transit connections and roadway crossings. These improvements will result in a truly friendly pedestrian environment, which enables freedom of mobility, encourages more physical activity, allows children to walk and bike to school, reduces traffic congestion, and makes it possible to create economic growth at the same time.

### Part of PlanCheyenne

The *Cheyenne Metropolitan Area Pedestrian Plan* represents an element of *PlanCheyenne*. *PlanCheyenne* documents are written in four parts (*Snapshot*, *Structure*, *Shape* and *Build*) and are designed to take a comprehensive approach to planning Cheyenne's future. The *Cheyenne Metropolitan Area Pedestrian Plan* is a living document that proposes citywide pedestrian improvement projects, supporting education and encouragement programs, and updates to relevant policies.



**Figure 1. Cheyenne's downtown is a place for people to walk in safety and comfort.**

The *Snapshot* element of the *Cheyenne Metropolitan Area Pedestrian Plan* discusses the existing pedestrian environment in Cheyenne. This summary includes an overview and inventory of pedestrian facilities (e.g., sidewalks and greenways), discusses pedestrian accommodation at intersections and transit stops, and reviews relevant plans and policies that impact development and design of the pedestrian environment. Finally, this element closes with a discussion of strengths and weaknesses of the existing pedestrian system.

The projects and policies contained in this document reflect the desire of Cheyenne's residents to make the city even more welcoming and accessible. Whether a pedestrian is walking to their car, watching a summer concert in Depot Square, walking through one of Cheyenne's historic neighborhoods (e.g., Rainsford Historic District), or taking their children for a walk on one of the city's many greenways, everyone should feel safe and comfortable.

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## Section 1. Importance and Benefits of Walking

### Public Involvement Process

The Project Team engaged agencies, stakeholders, and the general public from across the region to develop the Cheyenne Metropolitan Area Pedestrian Plan. The public outreach approach was designed to accommodate multiple methods of public input and solicit feedback regarding existing pedestrian conditions and prioritization of potential improvements.

Two community workshops invited area residents and other stakeholders to provide input on pedestrian conditions and potential solutions (Figure 2). The community workshops were publicized through a press release and flyers in the Cheyenne metropolitan area and publicized on the project website. Approximately 20 participants attended each of the meetings and submitted oral and written comments. With the assistance of group facilitators, participants submitted comments on large-scale maps, flip charts, and questionnaires. The first workshop gathered comments regarding existing pedestrian conditions and potential solutions. The second workshop solicited feedback on potential improvements and project prioritization. The results of the two workshops are summarized in Appendix A.



Figure 2. Cheyenne residents, City and MPO staff attend a presentation on pedestrian planning.

The Project Team also conducted an online survey of residents throughout the Cheyenne metropolitan area. The purpose of the survey was to solicit information about how residents use the pedestrian transportation system barriers to walking, and improvements they would like to see. The online survey received 166 responses. Results from the online survey are summarized in Appendix B.

### How to Use the Snapshot Element

*Snapshot* presents an inventory of existing pedestrian facilities in Cheyenne and a preliminary assessment of pedestrian project opportunity areas across the metropolitan area. The findings informed the development of recommendations contained in the *Structure* and *Build* elements.

As part of the analysis of pedestrian conditions in the Cheyenne metropolitan area, the Project Team conducted a thorough analysis of existing conditions within the Cheyenne metropolitan area that included many of the elementary and junior high schools within the Laramie County School District (LCSD) #1 system. The schools are mentioned throughout this Plan but not discussed in detail. For a detailed analysis of the school related facilities and policies, consult the *Cheyenne Metropolitan Area Safe Routes to School Plan*.

*Snapshot* is organized into the following sections:

- Section 1 provides an introduction discussing the importance and benefits of walking;
- Section 2 summarizes currently adopted pedestrian-related policies;
- Section 3 describes the setting for this study and overall land use patterns in Cheyenne and presents an overview of existing pedestrian facilities;
- Section 4 summarizes system strengths and weaknesses.



## Benefits of Walking

Walking is important to Cheyenne's future due to its potential to address several interrelated challenges, including traffic, air quality, public health, and providing a sense of community. By planning a metropolitan area that is more walkable, practitioners can affect all of these areas, which collectively can have a profound influence on existing and future quality of life in Cheyenne.

### Traffic and Air Quality

Each time a Cheyenne driver chooses to walk, one less motor vehicle trip is made. As Cheyenne becomes more inviting to pedestrians, increasing numbers of shopping, dining, school, and recreational trips will be made on foot. Cumulatively, this pattern may reduce traffic in some neighborhoods, which can also improve air quality.

### Public Health

In recent years, public health professionals and urban planners have become increasingly aware that the impacts of motor vehicles on public health extend far beyond asthma and other respiratory conditions caused by air pollution. There is a much deeper understanding of the connection between the lack of physical activity resulting from auto-oriented community designs and various health-related problems such as obesity and other chronic diseases. Although diet and genetic predisposition contribute to these conditions, physical inactivity is now widely understood to play a significant role in the most common chronic diseases in the U.S., including coronary heart disease, stroke, and diabetes.<sup>1</sup>

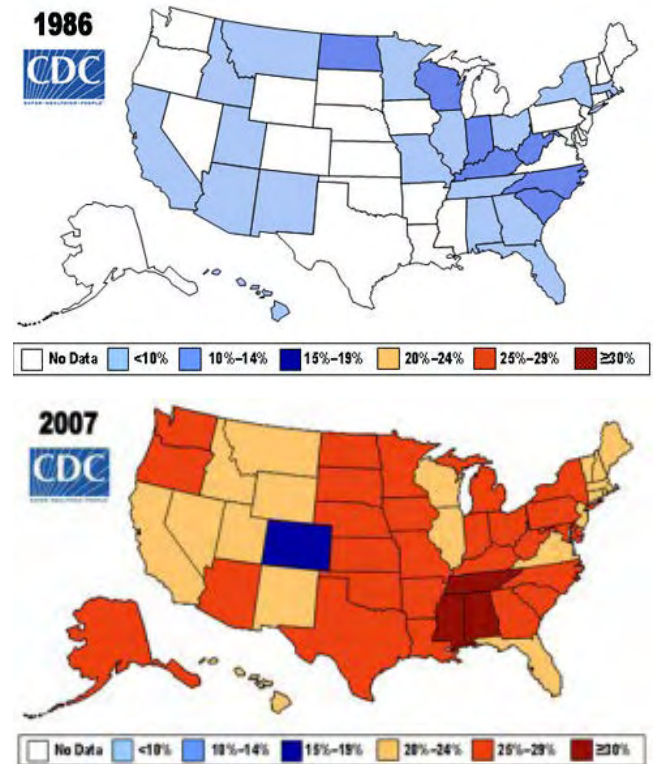
In response to these trends, the public health profession has begun to advocate for the creation of walkable neighborhoods as one of the most effective ways to encourage active lifestyles. Studies show that 43 percent of people with safe places to walk within ten minutes of home meet recommended daily activity levels, compared to only 27 percent of those

1 McKenna, M.T., Taylor, W.R., Marks, J.S., & Koplan, J.P., "Current issues and challenges in chronic disease and control" in *Chronic Disease Epidemiology and Control*, 2<sup>nd</sup> edition, American Public Health Assn., 1988.

without safe places to walk.<sup>2</sup> As Cheyenne becomes a more walkable city, Cheyenne's population will have more opportunities to exercise, ideally resulting in a higher proportion of residents achieving recommended daily activity levels.

### Sense of Community

Cities in which people walk provide more opportunities for chance meetings than do areas where travel is primarily by motor vehicle. Such serendipitous encounters can help neighbors get better-acquainted and provide eyes on the street, which can make an area feel and be safer. Cheyenne residents' sense of living in a cohesive community may be enhanced as the City and Metropolitan Planning Organization (MPO) focus future residential growth in compact, walkable communities, create shopping districts that cater to those on foot, and provide facilities that enhance the pedestrian experience.



2 Powell, K.E., Martin, L., Chowdhury, P.P., "Places to walk: Convenience and regular physical activity" in *American Journal of Public Health*, 2003.

## Section 2. Background Data and Plan Review

This section describes legislation and policies relevant to the *Cheyenne Metropolitan Area Pedestrian Plan*. Legislation and policies guiding pedestrian planning in Cheyenne were developed by the City of Cheyenne, Cheyenne MPO, Laramie County, the State of Wyoming, and the U.S. Department of Transportation (US DOT).

### United States Policies and Legislation

#### SAFETEA-LU

Passed into law in 2005, the Safe, Accountable, Flexible, Efficient Transportation Equity Act – A Legacy for Users (SAFETEA-LU) supports previous walking programs as well as increasing funding and flexibility for several programs. A new funding bill will be prepared to replace SAFETEA-LU when it expires. SAFETEA-LU supports walking programs by:

- Increasing funding for pedestrian-related transportation projects<sup>3</sup>
- Requiring that, prior to approval of a Transportation Improvement Plan (TIP), a listing of “investments in pedestrian walkways” obligated from federal funds during the preceding year must be available to the public. This requirement increases accountability of pedestrian-related projects and regional priorities and can be used to inform future TIP decisions.<sup>4</sup>

#### USDOT Policy Statement: Accommodating Bicycling and Walking into Transportation Infrastructure

A policy statement adopted by the US DOT, *Accommodating Bicycling and Walking into Transportation*

<sup>3</sup> Additional information on funding provisions is provided in *Build*.

<sup>4</sup> Source: Policies and Planning Strategies to Support Bicycling, Pedestrian and Bicycle Information Center. <http://www.bicyclinginfo.org/develop/policies.cfm>

*Infrastructure* was drafted by the US DOT in response to Section 1202 (b) of the preceding Federal Transportation Bill (TEA-21) (1998). The specific policy statements are as follows:

- *Bicycle and pedestrian ways shall be established in new construction and reconstruction projects in all urbanized areas unless one or more of three conditions are met:*
  - *Bicyclists and pedestrians are prohibited by law from using the roadway. In this instance, a greater effort may be necessary to accommodate bicyclists and pedestrians elsewhere within the right of way or within the same transportation corridor.*
  - *The cost of establishing bikeways or walkways would be excessively disproportionate to the need or probable use. Excessively disproportionate is defined as exceeding twenty percent of the cost of the larger transportation project.*
  - *Where sparsity of population or other factors indicate an absence of need. For example, the Portland Pedestrian Design Guide requires “all construction of new public streets” to include sidewalk improvements on both sides, unless the street is a cul-de-sac with four or fewer dwellings or the street has severe topographic or natural resource constraints.*
- *In rural areas, paved shoulders should be included in all new construction and reconstruction projects on roadways used by more than 1,000 vehicles per day, as in States such as Wisconsin. Paved shoulders have safety and operational advantages for all road users in addition to providing a place for bicyclists and pedestrians to operate.*
- *Rumble strips are not recommended where shoulders are used by bicyclists unless there is a minimum clear path of four feet in which a bicycle may safely operate.*
- *Sidewalks, shared use paths, street crossings (including over- and undercrossings), pedestrian signals, signs, street furniture, transit stops and facilities, and all connecting pathways shall be*

designed, constructed, operated and maintained so that all pedestrians, including people with disabilities, can travel safely and independently.

- The design and development of the transportation infrastructure shall improve conditions for bicycling and walking through the following additional steps:
  - Planning projects for the long-term. Transportation facilities are long-term investments that remain in place for many years. The design and construction of new facilities that meet the criteria in item 1) above should anticipate likely future demand for bicycling and walking facilities and not preclude the provision of future improvements. For example, a bridge that is likely to remain in place for 50 years, might be built with sufficient width for safe bicycle and pedestrian use in anticipation that facilities will be available at either end of the bridge even if that is not currently the case
  - Addressing the need for bicyclists and pedestrians to cross corridors as well as travel along them. Even where bicyclists and pedestrians may not commonly use a particular travel corridor that is being improved or constructed, they will likely need to be able to cross that corridor safely and conveniently. Therefore, the design of inter-sections and interchanges shall accommodate bicyclists and pedestrians in a manner that is safe, accessible and convenient.
  - Getting exceptions approved at a senior level. Exceptions for the non-inclusion of bikeways and walkways shall be approved by a senior manager and be documented with supporting data that indicates the basis for the decision.
  - Designing facilities to the best currently available standards and guidelines. The design of facilities for bicyclists and pedestrians should follow design guidelines and standards that are commonly used, such as the AASHTO Guide for the Development of Bicycle Facilities, AASHTO's A Policy on Geometric Design of Highways and Streets, and the ITE Recommended Practice "Design and Safety of Pedestrian Facilities".

## Local Policies and Legislation

### Cheyenne Area Transportation Master Plan

The pedestrian plan is a modal element to be incorporated into the Transportation Master Plan. As the area's long-range transportation plan, it forecasts transportation needs and identifies projects necessary to support those needs through 2030. The document acknowledges that bicycling and walking are becoming "increasingly important" transportation modes. The following selected passages from each of the four sections of the document explain walking-related policies and projects for the Cheyenne area:

#### Snapshot

- Transit service, bicycle facilities, and pedestrian infrastructure are essential to a well-balanced multi-modal transportation system.
- In addition to the travel lanes that accommodate travel by transit and automobile, complete streets include good sidewalks to facilitate pedestrian travel and bike paths or lanes for bicycle travel.

#### Structure

- Complete Streets. Provide facilities for all modes of transportation on or adjacent to streets. Principles:
  - Provide sidewalks either separated by a park strip<sup>5</sup> or sufficiently wide to provide for pedestrian safety on all new roadways.
  - Provide safe pedestrian crossings at intersections. Build corridors that will be conducive to transit, even if transit is not currently available.
  - Integrate Complete Streets with high density or mixed-use activity centers to create multimodal corridors.
- The Cheyenne Road, Street, and Site Planning Design Standards provide guidelines to promoting a pedestrian and bicycle friendly environment. Some important characteristics of pedestrian friendly development include:

<sup>5</sup> Currently the City uses the term "tree lawn" to replace "park strip" or "planter strip."



- Sidewalks separated from the street with a park strip<sup>6</sup> and bicycle facilities on all collector and arterial streets.
- Safe and convenient pedestrian and bicycle access from the development site to existing, planned, and proposed trails or Greenways located on or adjacent to the development site.
- Connections providing direct pedestrian and bicycle access from the development to adjacent neighborhoods, including but not limited to parks, schools, commercial districts, and transit stops. These connections are not necessarily associated with a street.
- On-site or off-site pedestrian overpasses, underpasses, or pedestrian-oriented traffic signalization if appropriate.
- On-site amenities in pedestrian districts such as landscape/hardscape, benches, pedestrian lighting. Street trees to provide a canopy from summer sun and heat.
- In commercial developments, canopies in front of stores to offer weather protection.
- In commercial developments, major entry drive-ways separated from areas where pedestrians must cross.

### Shape

- Policy 1.c: Build Neighborhoods with Mixed Uses. Build new neighborhoods with a mix of compatible uses so that residents have employment and shopping opportunities within walking or bicycling distance of their homes.
- Principle 3: The Cheyenne Area will build a multi-modal transportation system that consists of streets, sidewalks, bicycle facilities, and transit.
- Policy 3.a: Complete Streets. Build arterial and collector streets as complete streets, providing travel lanes for automobiles, bikes, buses, bike lanes, and sidewalks.
- Policy 3.b: Neighborhood Design to Support. Walking and Bicycling Neighborhoods should have adequate, well connected sidewalk and trail facilities to improve pedestrian and bicycle opportunities.
- Policy 3.e: Pedestrian Connections. Develop and maintain a pedestrian circulation system that provides direct, continuous, and safe movement

within and between neighborhoods and activity areas.

- Pedestrian Needs. To preserve and enhance the quality of life in the urbanized areas of Cheyenne, consistent maintenance of the existing pedestrian system and additional facilities are needed.
- Pedestrian Districts. The primary area within Cheyenne that qualifies as a pedestrian district is downtown. Residents consider downtown as a place to go, walk around, shop, eat, study, or conduct business. Pedestrian standards should be high in downtown. In addition to the need for direct, continuous sidewalks where it is safe to cross the street, this area requires higher levels of visual interest and amenities to attract residents and visitors. Future pedestrian districts will include the regional activity centers and mixed-use developments specified in the Community Plan. In addition to the travel lanes that accommodate travel by transit and automobile, complete streets include good sidewalks to facilitate pedestrian travel and bike paths or lanes for bicycle travel.
- Pedestrian Vision Plan:
  - Pedestrian Improvement Installation in Existing Neighborhoods
  - Require Pedestrian Assessment for New Streets and Proposed Turn Lane and Widening Improvements
  - Features of Pedestrian Activity Areas:
    - Reduced Lane Widths within Pedestrian Activity Areas or Other High Pedestrian Demand Areas
    - Traffic Calming to Reduce Travel Speed
    - Crosswalk Treatments
    - Pedestrian Ramp Design
    - Mid-Block Crossing Locations and Design
  - Pedestrian Level of Service. The Cheyenne Area shall devise a method to assess capital and land development projects to determine whether these improvements enhance the pedestrian experience or impact pedestrian mobility. The Pedestrian Level of Service guidelines address the five key elements of directness, continuity, street crossings, security, and visual interest and amenity.

<sup>6</sup> Currently the City uses the term “tree lawn” to replace “park strip” or “planter strip.”

## Build

- *Strategies to Implement the Pedestrian Vision Plan:*
  - *Fund Pedestrian Improvements*
  - *Pedestrian Standards for New Developments*
- *Bicycle and pedestrian facilities should be incorporated into new roadways to increase options for citizens without cars or driver's licenses.*

## Parks and Recreation Master Plan

The Cheyenne Parks & Recreation Master Plan, developed by the Cheyenne Parks & Recreation Department, is a part of Plan Cheyenne, the Cheyenne Area Comprehensive Plan. It updates and replaces the 1992 *Parks System Master Plan*, and sets a strategy for growing and improving park access as the Cheyenne metropolitan area's population grows. The Plan outlines policies and projects to be implemented through the year 2030. Parks are important destinations for health, exercise, and recreation and should be accessed easily by walking. The Parks, Recreation and Open Space Survey in 2004 found that walking was one of the most common adult activities in parks, but also found that walking trails were the type of facility most people cited as lacking in parks. The following selected passages from each of the four sections of the document explain Parks and Recreation policies and projects that relate to walking:

### Snapshot

- *Community Park Accessibility*
  - *Providing easy pedestrian and bicycle access is strongly encouraged, and the City and County are currently working to provide trail links to Community Parks.*

### Structure

- *Neighborhood parks provide nearby recreation and leisure opportunities within walking distance (typically one-half mile) of residential areas. They are also often located adjacent to Greenways. A neighborhood park should be accessible via a walkway or trail system within the city.*
- *Primary Multi-Purpose Trails*
  - *As these trails form key components of an interconnected regional trail system that provides*

*an alternative mode of transportation, funding can often be acquired through regional, state, and federal agencies. Coordination with adjacent municipalities and land management agencies is critical in order to ensure alignment connectivity.*

- *Neighborhood Trails*
  - *Neighborhood Trails function as off-street sidewalks to promote connectivity within residential or commercial developments, or parks and open space. These paved, undivided trails should be provided by the project developer and be an integral part of the circulation and open space system of the development.*

### Shape

- *Policy 1.3: Where additional land is not feasible to develop an adequately sized Neighborhood Park, the City of Cheyenne will provide safe and convenient pedestrian and bicyclist access to the nearest Neighborhood Park. This will be accomplished through construction of sidewalks, improved crossings of roadways, and grade-separated crossings of barriers, where feasible.*
- *Community-Wide Trail System*
  - *Recommendations*
    - *Continue development of the Cheyenne Greenway and primary multi-purpose trail system.*
    - *Provide 3-5 mile trail loops.*
    - *Coordinate trails with development plans and work with other city departments.*
    - *Provide a natural surface trail along the south Cheyenne ridge.*
    - *Secure right-of-way for future trail corridors.*
    - *Investigate possibilities for regional trail connections to the south and east of Cheyenne.*
    - *Work with Laramie County on future City/County trails.*
  - *Coordination with Transportation Projects*
    - *Future trails and connections will be coordinated with other development plans, such as the transportation plan.*

## Greenway Development Plan

Written in 1992, this Plan instructed the build out of the Greenway trail system and identified common standards to use when extending the trail system. These principles and design standards summarize the condition of the Greenway trail system and should be referred to and updated when planning new Greenways or shared use paths in Cheyenne. The original document refers to some older design standards such as older versions of the *Manual on Uniform Traffic Control Devices* (MUTCD) and *American Association of State Highway and Transportation Officials* (AASHTO) guides. The following passages are the most relevant pedestrian design standards to review:

### Design Criteria

- *Path Construction and Alignment:*
  - *Provide a surface usable by pedestrians and non-motorized means of transportation*
  - *Provide a path width which allows safe two-way movements*
  - *Provide for the easy access and use by the handicapped*
  - *Avoid at-grade crossings whenever possible*
  - *Provide convenient access to the path*

## Community Plan

Completed in 2006, the *Community Plan* is a part of *PlanCheyenne*, the Cheyenne Area Comprehensive Plan developed by the Cheyenne Metropolitan Planning Organization. It discusses topics including land use, the economy, housing, and health. The following selected passages from each of the four sections of the document explain Community Plan policies and projects that relate to bicycling and walking:

### Snapshot

- *Multimodal Street Design – In the development of Cheyenne’s streets, there has been an ongoing objective to both design streets to be multimodal and improve their visual attractiveness. Multimodal implies that the streets need to accommodate all modes: auto, transit, bicycle and pedestrian. Therefore bike lanes are proposed on higher volume*

*and higher speed roadways including primary arterial, minor arterial, and collector street cross sections. Detached sidewalks are also proposed on both sides of all roadways to improve the visual attractiveness of Cheyenne’s street system and improve pedestrian safety by separating the pedestrian from the moving travel lanes. On four lane Principal Arterials, a landscaped median is proposed to both improve the visual attractiveness and improve pedestrian safety by providing a pedestrian refuge island.*

- This Plan proposes minimum six-foot wide sidewalks along arterials and four to five foot wide sidewalks on collector and local streets.

### Structure

- *Major Vehicular Corridor*
  - *Design Principles*
    - *Include sidewalks adequate for several people walking, separated from the roadway with landscaping.*
    - *Provide safe and clearly marked pedestrian crossings.*
  - *Why Are These Principles Important?*
    - *An oft -mentioned belief during the PlanCheyenne process is that the community should be less defined by cars – landscaping can help make our streets more walkable.*
    - *Safety for pedestrians is also an important objective if we are to create a more livable community.*
- *Open Space/Greenway Corridor*
  - *Design Principles*
    - *Design paths and trails to provide a comfortable width for several people walking, riding bicycles, or horses.*
    - *Increase pedestrian and bicycle connections between residential areas, businesses, and other key destinations.*
  - *Why Are These Principles Important?*
    - *Open space and Greenway corridors can serve an important role in linking our neighborhoods with other areas of the City.*
- *Downtown and Government Center*
  - *Design Principles*



- Enhance pedestrian areas through the use of sidewalks adequate for several people walking and site furnishings<sup>7</sup>, coordinated site furnishings, pedestrian-scale lighting and landscaping.
- Enhance pedestrian connections between the Downtown and Capitol areas through the use of plantings and safe and clearly marked pedestrian crossings.
- Why Are These Principles Important?
  - Enhancing the pedestrian environment and strengthening connections between the Capitol and Downtown will encourage more activity and increase activity for businesses.
- Single Family Residential
  - Design Principles
    - Provide landscaped pedestrian walks and sidewalks of an adequate width (i.e., comfortable for two people side-by-side), and connect walks to parks, open space, and other neighborhoods.
  - Why Are These Principles Important?
    - Detached walks and tree lawns can result in a safer environment for pedestrians and children playing.
    - Neighborhood streets that are too wide encourage speeding.
- Neighborhood/Downtown Commercial
  - Design Principles
    - Create pedestrian-friendly environments through the use of planting, coordinated site furnishings, pedestrian-scale lighting and building facades, awnings for shade and protection from weather, and sidewalks.
  - Why Are These Principles Important?
    - Designing for pedestrians will encourage opportunities for residents to walk from neighborhoods to retail areas, and enhance safety.
- Convenience Commercial
  - Design Principles
    - Businesses that include drive-thru facilities shall be designed so that pedestrians are able to enter the establishment from the parking lot or sidewalk without crossing the waiting or exit lines.

- Why Are These Principles Important?
  - Designing for pedestrians will encourage opportunities for residents to walk from neighborhoods to retail areas, and enhance safety.
- Large Tenant Commercial
  - Design Principles
    - Orient building fronts to the street, and provide direct public access to building entrances from streets and sidewalks.

## Shape

- Community Benefits of Planning
  - Integrating our parks and trails system with our neighborhoods will make walking and bicycling possible and more relevant as a means of travel within our community and will make our neighborhoods livable and contribute to healthy lifestyles.
- Policy 2.2.c: Connected Streets and Sidewalks. Neighborhoods should have connected streets and sidewalks to make walking and bicycling safe and convenient. They should be designed with connected systems of open space, bikeways, trails, and streets with sidewalks that provide internal links as well as links to other neighborhoods and to neighborhood centers.
- Principal 4.3: The Cheyenne area will have a diverse transportation system that consists of streets, sidewalks, bicycle facilities, and transit.
- Policy 4.3.a: “Multi-modal” Streets. The community will design and construct arterial and collector streets to be “multimodal,” by providing travel lanes for automobiles, bikes, buses, bike lanes, and sidewalks.
- Policy 4.3.b: Neighborhood Design to Support Walking and Bicycling. New neighborhoods should contain a mix of compatible uses so that residents have recreation, employment and shopping opportunities within walking or bicycling distance of their homes.
- Policy 4.3.d: Interconnected Neighborhood Street, Bikeway, and Sidewalk Patterns. New neighborhoods should contain street systems that encourage internal pedestrian, bike, and auto circulation. They should also limit traffic volumes and speeds on neighborhood collector and local streets where houses front. Sidewalks should be installed on both sides of neighborhood collector streets and at least one side

<sup>7</sup> Site furnishings include items such as trash receptacles and benches.

of local residential streets in accordance with street design standards.

- Policy 4.3.e: Loop Trail System Connects Greenway. The Greenway trail system serves as an important transportation and recreation system. Expanding on this system—to fill the gaps, and making connections to it—is our community's priority for trails.
- Within urban residential neighborhoods, streets and sidewalks should provide connections to, from, and within the neighborhoods to make it safe and convenient for people to walk and ride bicycles.
- East Central Cheyenne Plan (2000) – Goals – Goal 3: Improve transportation options throughout the study area for all modes of travel (pedestrians, bicycles, automobiles, mass transit).
- East Cheyenne Infrastructure Improvements Plan (1998) – Goals – Goal 4: Provide efficient and safe network of roads, bike lanes, and bike paths.

## Build

- Foundation 4: Developing a Connected & Diverse Transportation System means...
  - Contributes to a broader transportation system, including cars, bikes, pedestrians & transit, by providing connected sidewalks, bicycle facilities, and access to transit facilities (especially in activity centers).
  - In a new neighborhood, the street systems are designed to encourage internal walking, bicycling, and auto circulation.

## Cheyenne Road, Street & Site Planning Standards

This 2007 document produced by the Cheyenne MPO defines requirements for transportation and development standards and design guidelines. Chapter 3 describes how Transportation Impact Studies (TIS) should be conducted and includes language on how pedestrian and bicycle facilities should be analyzed. Major policies regarding walking reside mainly within Chapter 8 – Sidewalks. The two chapters are summarized below:

### Chapter 3

- Section 3.1.C states that pedestrian connections should be assessed in all Transportation Impact Studies (TIS).
- Section 3.1.D.2 describes the qualities by which

pedestrian improvements should be identified and scored, and identifies the following conditions:

- Examples of pedestrian and bicycle consideration and improvements include: safe, comfortable, and convenient pedestrian services, shorter blocks, tree-lined sidewalks, smaller corner radii, well-defined crosswalks, median refuges, bike lanes, on-street parking and shared use path connections. Also, design elements that lead to low traffic speeds on local streets should be considered.
- Section 3.5.A.12 identifies pedestrians as a required component of a Transportation Impact Study and describes how bicycle and pedestrian conditions can be affected by other elements of the transportation system, such as right-turn lanes adjacent to a bike lane or the presence of walking and biking destinations.

### Chapter 8

- Section 8.2 outlines the following information on parties responsible for sidewalk construction:
  - The builder on the lot is responsible for sidewalk construction. Where sidewalks are not directly related to a lot, the construction of sidewalks is the responsibility of the developer. A certificate of occupancy will not be issued until sidewalks required by the approved site plan are constructed and approved.
- Section 8.3 specifies proper sidewalk design, including minimum width and ADA compliance. A six-foot minimum width is required only when adjacent to angled parking, and a general minimum width is not identified.
- Sections 8.5 and 8.6 identify standards for connectivity, pedestrian comfort, safety, and convenience regarding the street network and all types of developments.
- Section 8.7 discusses pedestrian crossings and identifies which treatments are appropriate for what conditions.

## Laramie County Road, Street & Site Planning Design Standards

County standards are less strict than City standards regarding pedestrian facilities and are limited in detail. The standards state that the development of sidewalks must comply with current ADA regulations and should be checked for compliance. Sidewalks are required in all new developments.

## City of Cheyenne Municipal Code

Codified through Ordinance No. 3842, the following portions of Cheyenne's municipal code impact pedestrians:

- 10.80.060 *Riding on sidewalks.*
  - A. No person shall ride a bicycle upon a sidewalk within a business district.
  - B. Whenever any person is riding a bicycle upon a sidewalk, such person shall yield the right-of-way to any pedestrian and shall give audible signal before overtaking and passing such pedestrian. (2001 In-house code § 28-229)
- 10.48.010 *Drivers to exercise due care.*
  - A. Notwithstanding other provisions of this title, every driver of a vehicle shall exercise due care to avoid colliding with any pedestrian upon any roadway and shall give warning by sounding the horn when necessary and shall exercise proper precaution upon observing any child or any obviously confused or incapacitated person upon a roadway.
  - B. At all pedestrian and school crosswalks within the city indicated by pavement markings and warning and regulatory signs, every driver of a vehicle shall stop and yield the right-of-way to any pedestrian within, entering or attempting to enter the crosswalk at either edge of the roadway. (2001 In-house code § 28-210)
- 10.48.020 *Crossing at right angles.*
  - Except where otherwise indicated by a crosswalk or other official traffic-control device, a pedestrian shall cross a roadway at right angles to the curb or by the shortest route to the opposite curb. (2001 In-house code § 28-211)
- 10.48.030 *Prohibited crossing.*
  - No pedestrian shall cross a roadway other than in a crosswalk in the central business district. (2001 In-house code § 28-212)
- 10.48.040 *Obedience of pedestrians to bridge and railroad signals.*
  - No pedestrian shall pass through, around, over, or under any crossing gate or barrier at a railroad grade crossing or bridge while such gate or barrier is closed or is being opened or closed. (2001 In-house code § 28-213)
- 10.48.050 *Pedestrians prohibited from darting into the street.*
  - No pedestrian shall suddenly leave a curb or other place of safety and dart or run into a street or any other area which is normally utilized for vehicular traffic. (2001 In-house code § 28-214)
- 10.48.060 *Pedestrians prohibited from impeding traffic.*
  - Pedestrians shall not enter or remain upon a street or thoroughfare in a manner which impedes the vehicular traffic. (2001 In-house code § 28-215)
- 12.04.010 *Obstructions on streets.*
  - Except as otherwise provided by this code or other city ordinance, no person shall erect, maintain or in any way cause an obstruction of any character in or upon any street, alley or sidewalk within the city. (2001 In-house code § 40-1)
- 12.04.020 *Wires extending across streets.*
  - With the exception of wires required for the operation and service of a public utility, no person may install, erect or extend wires of any kind across any street, alley or public way. (2001 In-house code § 40-2)
- 12.04.030 *Exceptions to Sections 12.04.010 and 12.04.020.*
  - Nothing in Sections 12.04.010 and 12.04.020 shall prohibit the mayor or city council, in their discretion, from giving permission for the erection of temporary signs, banners or necessary obstructions. (2001 In-house code § 40-3)
- 12.04.040 *Duties of property owners relative to sidewalks generally.*
  - A. *Maintenance.* Every sidewalk must be maintained in a safe condition at all times by the owner of the abutting property.
  - B. *Construction of Sidewalks.* All sidewalks must be constructed according to standards adopted by

- the city engineer.
- C. Reconstruct Sidewalk to Conform to Grade Requirements. If any existing sidewalk does not conform to the grade prescribed by the city engineer, the owner of the abutting property must reconstruct the sidewalk at his or her expense. (2001 In-house code § 40-4)
- 12.04.050 Driving upon or across sidewalks.
  - No person shall drive or ride a team or any animal or vehicle upon or across any sidewalk in the city; however, nothing in this section shall be construed to prohibit persons from crossing sidewalks to and from adjoining premises where they have lawful rights to enter with animals or vehicles. (2001 In-house code § 40-5)
- 12.04.060 Damage to sidewalks and curbs.
  - No person shall damage or tear up any sidewalk, curb or gutter without authority from the city engineer. (2001 In-house code § 40-6)
- 12.04.070 Concrete work to comply with certain specifications.
  - No concrete work of any kind may be done on any street or alley within the city, except in strict compliance with specifications on file in the office of the city engineer. Any type of sidewalk other than concrete shall be constructed in accordance with specifications approved by the city engineer. (2001 In-house code § 40-7)
- 12.04.080 Construction and repair--Permits required--Exception.
  - No person may construct, remove or repair any sidewalk, curb and gutter, driveway, roadway or street, or any other work within the public rights-of-way without first obtaining a construction permit. If work is to be done in conjunction with a building permit, a separate construction permit is required and will be issued based upon the valuation of the work. (2001 In-house code § 40-8)
- 12.04.100 City engineer to approve grade and line.
  - After a construction permit required by Section 12.04.080 is issued, the city engineer shall receive in his or her office the proposed grades and line to which the curb and gutter or sidewalk is to be staked by a licensed engineer or surveyor. Upon approval by the city engineer, the curb and gutter or sidewalk grades shall then be staked and built to approved grades and line.
- A description of the cuts or fills to the finished grade of the top of the curb or sidewalks must be filed in the office of the city engineer after staking and prior to construction. (2001 In-house code § 40-10)
- 12.04.110 Construction of sidewalks adjacent to curbs.
  - In all districts where sidewalks must be laid adjacent to the curb, permits for construction of both curb and gutter and sidewalk must be obtained at the same time. If the curb and gutter is installed, no sidewalk for such property may be constructed or started unless it is done simultaneously with the curb and gutter. (2001 In-house code § 40-11)
- 12.04.120 Repair or replacement of deteriorated curbs, gutters, driveways and sidewalks.
  - A. Whenever any curb, gutter, driveway or sidewalk is in a state of disrepair due to deterioration, dislocation, obsolescence or other reason, so that, in the opinion of the director of public works or city engineer, it should be replaced, the cost of such replacement shall be borne by the abutting property owner; provided, that this subsection shall not apply to intersection valley gutters. The procedure for notice to the abutting owner to replace such curb, gutter, driveway or sidewalk and the method of assessment to pay the cost thereof shall be the same as is provided for sidewalks in Section 12.04.170.
  - B. Whenever any curb, gutter, driveway or attached sidewalk repair or replacement is required in conjunction with a construction project of the city, the board of public utilities or any other agency or entity, whether public or private, working in the public right-of-way in question, the cost of the repair or replacement will be borne by the city, the board of public utilities or the respective agency or entity. Repair or replacement of detached sidewalks will not be borne by the city, the board of public utilities or respective agency or entity, unless the city engineer determines that repair or replacement is necessary to the construction project. (2001 In-house code § 40-12)
- 12.04.130 Compliance with plans approved by the city engineer.
  - All sidewalks or curb and gutter must be laid to



the grade lines approved by the city engineer. At the intersection of the curb and gutter or sidewalk with any alley or driveway and at street corners, curb, gutters, sidewalks and driveways must be installed in accordance with plans approved by the city engineer in compliance with the city engineer's standards. If any sidewalk or curb and gutter is not laid or constructed in accordance with the provisions of this section, the governing body may direct that it has to be reconstructed at the expense of the owner of the abutting property or the contractor constructing the work. (2001 In-house code § 40-13)

- 12.04.140 Barricades and warning lights.
  - If a sidewalk is being repaired or constructed or is in a hazardous or dangerous condition, the contractor or the owner or agent of the abutting property shall erect a barricade to safeguard against accidents with suitable warning lights, which must operate from dusk to daylight. Barricades must be maintained so long as required, but no longer, and may not be interfered with, changed or removed by anyone other than the contractor, owner or agent. (2001 In-house code § 40-14)
- 12.04.160 Construction of sidewalks on city order-- Authority to order.
  - The governing body may order the construction, reconstruction, or repair of any cement or concrete sidewalk necessary for the use of pedestrians or for the development of the immediate vicinity where a sidewalk is required. (2001 In-house code § 40-16)
- 12.04.170 Construction on city order--Notice requirements.
  - A. Notice of sidewalk construction, reconstruction, or repair, under these sections pertaining to construction of sidewalks on city order must be as follows:
    - 1. The director of public works or the city engineer will give written notice, served personally upon the owner or agent of the abutting property.
    - 2. The director of public works or the city engineer shall publish notice once a week for a period of four weeks in a local newspaper of general circulation.
  - B. The notice shall:
    - 1. Describe fully the termini, course, width and character of the work ordered;
    - 2. Allow a period of thirty (30) days during which parties may construct, reconstruct, or repair the walk abutting their property;
    - 3. State that all work which is not performed at the expiration of thirty (30) days from the date of service or of the first publication of notice shall be performed by the contractor authorized by the governing body. (2001 In-house code § 40-17)
- 12.04.180 Governing body may contract for construction.
  - The governing body may let, to the lowest responsible bidder, for any period not exceeding one year, a contract for the construction, reconstruction, or repair, in accordance with specifications prepared by the city engineer and approved by the governing body, of all cement and concrete sidewalks which the governing body may order to be performed during the term of the contract. (2001 In-house code § 40-18)
- 12.04.200 Property owner adjacent to street corners to install sidewalks.
  - The owner of any property adjacent to the street corners shall construct, reconstruct, or repair that portion of the sidewalk extending from the property line to the nearest curb in both directions or such property adjacent to the street corner shall be assessed for the same. (2001 In-house code § 40-20)
- 12.04.210 Special assessments. The total charge to be levied by motion or resolution of the governing body to the owner or agent of property for the construction, reconstruction, or repair of a sidewalk shall include the cost of the sidewalk work, as well as that of any notice, curbing, grading, private crossing and all other necessary expenses. The levy will be a special assessment against the property in front of or beside where the sidewalk work is performed and shall be chargeable against the owner of record at the time of such improvements. (2001 In-house code § 40-21)



## Section 3. Existing Conditions

This Section discusses Cheyenne’s existing pedestrian system, and reviews the overall state of these facilities in Cheyenne. The text identifies major pedestrian destinations and discusses other critical pedestrian elements such as transit connections. The existing conditions are discussed in terms of the following generalized geographic areas (see Map 1):

**North Cheyenne** is bounded by Warren Air Force Base on the west, Cheyenne Airport and Dell Range Boulevard to the south, and the Pedestrian Plan Study Area Boundary to the north and east.

**West Central Cheyenne** is bounded by Warren Air Force Base on the west, Cheyenne Airport and Lions Park to the north, Pershing Boulevard to the south and Converse Avenue to the east.

**East Central Cheyenne** is bounded by Converse Avenue to the west, East Pershing Boulevard to the south, and the Pedestrian Plan Study Area Boundary to the east and north.

**Downtown Cheyenne** is bounded by Pershing Boulevard to the north, Logan Avenue to the east, Union Pacific Railroad (UPRR) to the south and the Pedestrian Plan Study Area Boundary to the west.

**Central Cheyenne** is bounded by East Pershing Boulevard to the north, the Pedestrian Plan Study Area Boundary to the east, UPRR tracks to the south and Logan Avenue to the west.

**East Cheyenne** is bounded by the UPRR tracks to the north, Morrie Avenue to the west, and the Pedestrian Plan Study Area Boundary to the south and east.

**South Central Cheyenne** is bounded by the UPRR tracks to the north, the Pedestrian Plan Study Area Boundary to the west, I-80 to the south and Morrie Avenue to the east.

**South Cheyenne** is bounded by I-80 to the north and the Pedestrian Plan Study Area Boundary to the west, south and east.



Figure 3. Depot Square Plaza is a well used pedestrian plaza in the heart of downtown Cheyenne.

## Setting and Land Use

### Location

The City of Cheyenne is situated in the southeast corner of Wyoming near the Wyoming/Colorado border. The city encompasses approximately twenty one square miles of land and is the northernmost city in the Front Range Urban Corridor that reaches south to Denver and Colorado Springs, Colorado. With a current population of about 56,000 for the city as of 2006, and a total of 87,000 people in Laramie County, it is the most populated city in the state of Wyoming. The geography of Cheyenne is defined by the Union Pacific Railroad, which gave rise to the city when it crossed Crow Creek in 1867. The railroad now separates the larger northern part of the city from the smaller southern part. The topography of Cheyenne is fairly flat, with a windy and semi-arid climate.

As the Wyoming State Capitol and Laramie County Seat, Cheyenne’s economic base includes a number of publicly based jobs and support economies. The city is the junction of several interstate highways, U.S. routes, Wyoming state highways, and rail routes. Colleges and trade schools in the Cheyenne Metropolitan Area include:

- Laramie County Community College
- College America
- Cheeks Beauty Academy
- Institute of Business & Medical Careers
- Park University
- Align Non-Profit Leadership Institute

## Land Use

Map 2 shows existing land use in the Pedestrian Plan Study Area. One of the most vibrant pedestrian areas in Cheyenne is downtown. This area includes many pedestrian-oriented destinations such as Cheyenne Depot Square (Figure 3), the State Capitol Buildings, the downtown Historic District, and numerous commercial establishments. Generally, as distance from the downtown area increases, so do lot sizes, roadway widths, and posted roadway speeds.

Pedestrians in Cheyenne experience a variety of conditions as they travel through the city. For example, pedestrians in the downtown will have a comfortable experience as they walk along wide sidewalks lined with pedestrian amenities including pedestrian scale lighting. They may cross the street at intersections marked by brick paver crosswalks and pedestrian countdown signals. They may choose to connect to other areas within the city via the existing Greenway system (Figure 4).

In contrast, on the east side of the city, in the industrial/commercial area along Campstool Road, pedestrians walk adjacent to higher speed motor vehicle traffic on wide, paved roadway shoulders. They generally have few protected crossing opportunities and will frequently travel through areas that are poorly lit during evening and nighttime hours. Though this area does not have the same amount of pedestrian traffic, these conditions do affect the number of pedestrians that will venture out along these roadways.

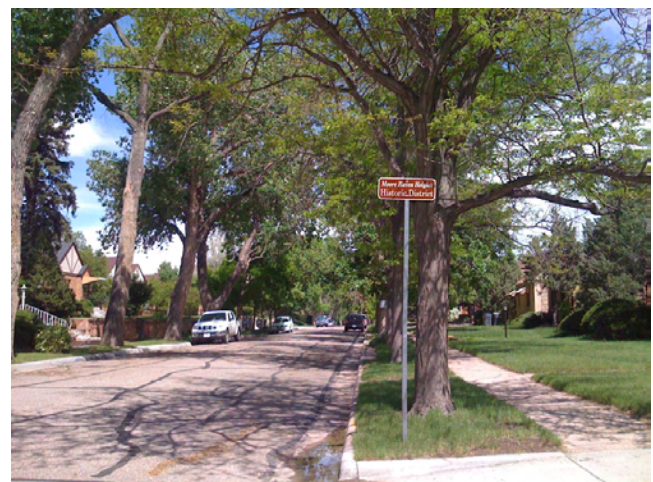
Older neighborhoods to the north, east, and directly south of downtown are well-established neighborhoods that exhibit characteristics of pedestrian-friendly neighborhoods including small lots, short block lengths (which increases network connectivity), narrow streets, and mature street trees (Figure 5). Downtown Cheyenne and the surrounding

neighborhoods also exhibit a diverse mix of land uses. Increased land use diversity and network connectivity both reduce the distance a pedestrian must walk to reach desirable destinations, such as multi-use commercial areas, parks and schools.

Newer construction, larger homes, and a cul-de-sac style roadway network characterize areas further from downtown. Commercial development along major arterials north of downtown is generally strip commercial, though some greater concentrations such as Frontier Mall on Dell Range Boulevard do exist.

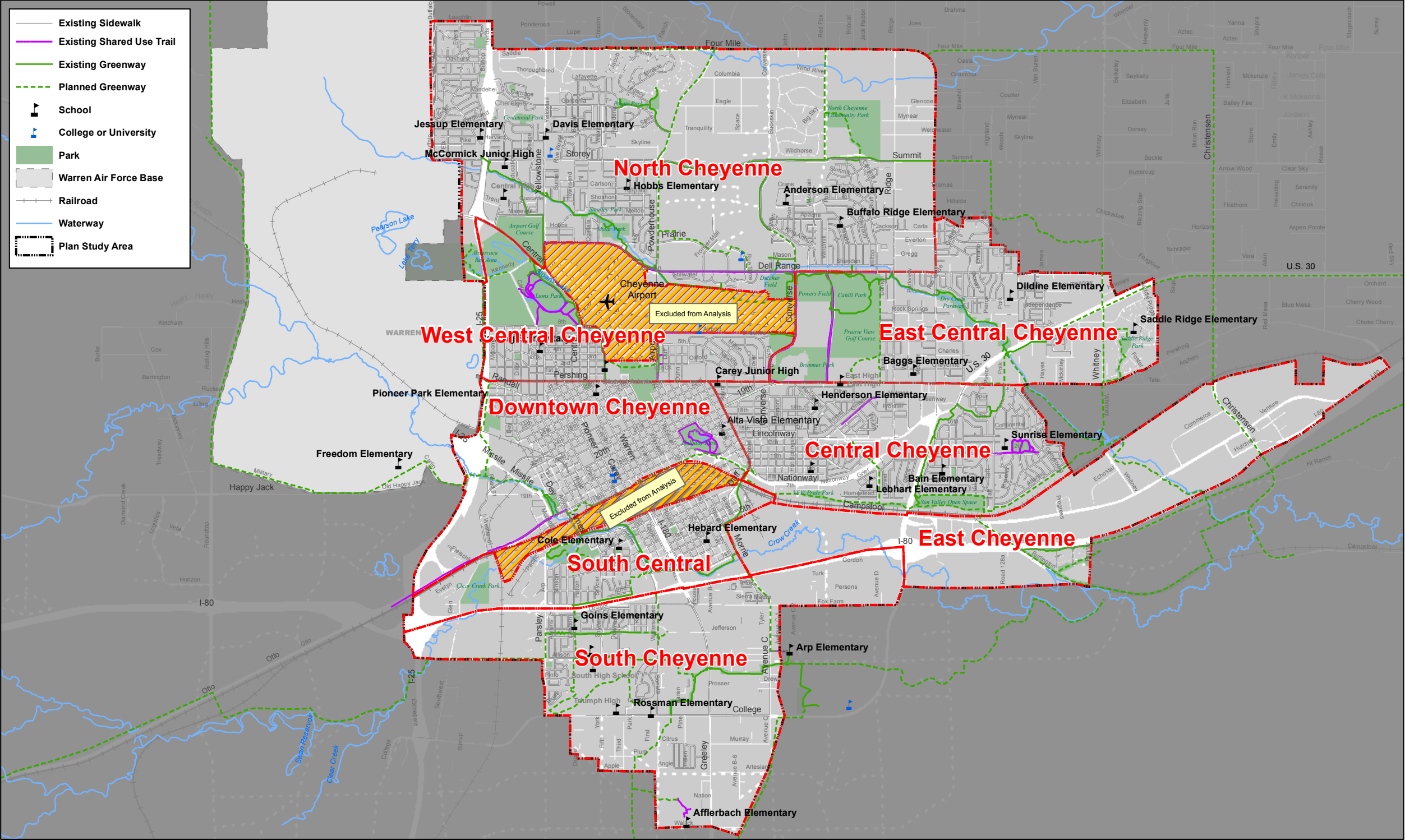


**Figure 4. A Greenway system increases pedestrian connectivity throughout Cheyenne.**



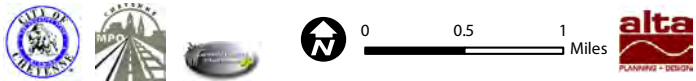
**Figure 5. Older neighborhoods in Cheyenne exhibit pedestrian friendly characteristics such as mature street trees, which increase the visual interest of the streetscape.**



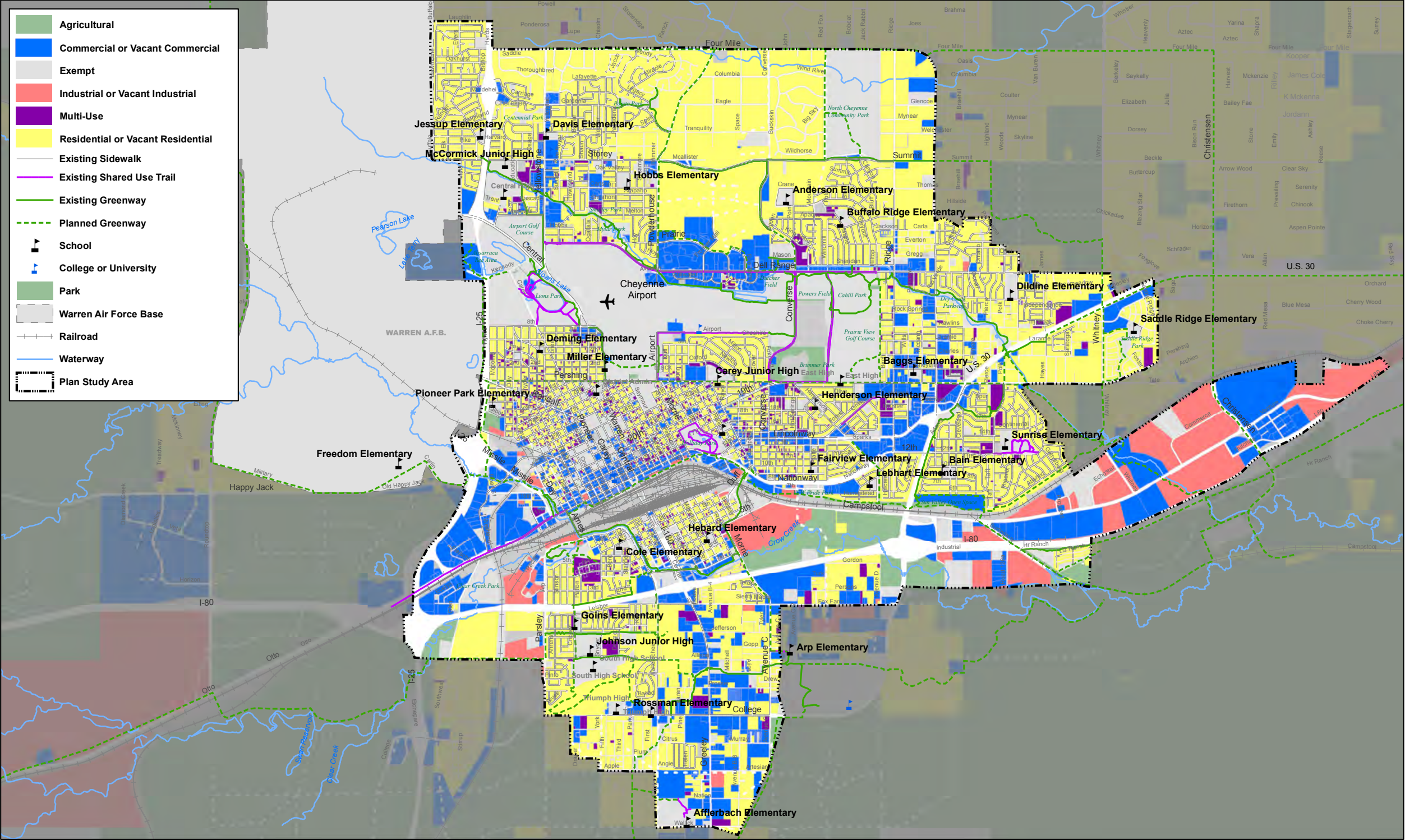


Map 1 - Generalized Geographic Area Boundaries

Cheyenne Metropolitan Area  
Pedestrian Plan  
Source: Cheyenne - Laramie County Cooperative GIS Program  
Date: August 2010

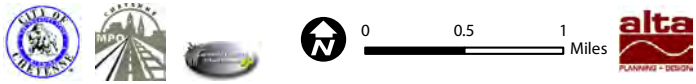






Map 2 - Generalized Land Use

Cheyenne Metropolitan Area  
Pedestrian Plan  
Source: Cheyenne - Laramie County Cooperative GIS Program  
Date: August 2010





Dell Range Boulevard provides access on the east side of the city to several major park complexes including Brimmer Park, Cahill Park, and Prairie View Golf Course. Pedestrians in these areas are accommodated by wider sidewalks; sometimes a tree lawn is present. When cul-de-sac development is present, roadway standards require pedestrian accessways to enhance connectivity.

South of Dell Range Boulevard and Prairie View Golf Course, an area of mixed residential and commercial uses stretch east and west along U.S. 30. South of this mixed commercial/residential area and further separated by the Union Pacific Railroad (UPRR) is a large industrial/commercial area, bounded by I-80 to the south. This area of town contains the largest land parcels, the lowest concentrations of residential development, and the fewest low speed roadways.

South of the UPRR rail yard, directly south of downtown Cheyenne, is another area of mixed residential and commercial use. Commercial uses are generally centered along South Greeley Highway.

## Existing Walkways

Pedestrian travel is accommodated and enhanced primarily by sidewalks, intersection treatments (e.g., crosswalks and curb ramps), shared use paths, Greenways, and accessways. These facility types comprise the majority of Cheyenne's existing walkway network, described below. Map 3 shows the location of existing walkways. There are approximately 125 miles of roadway within the City without sidewalks. Map 4 shows the type of sidewalk and its width.

### Sidewalks

As part of this planning effort, the Project Team developed an inventory of sidewalks in a GIS database that allows the sidewalk network to be mapped and analyzed. According to the sidewalk inventory, there are currently about 460 linear miles of sidewalk within Cheyenne.

#### North Cheyenne

The sidewalk network in Northern Cheyenne is



**Figure 6. Sidewalks with recurring gaps characterize some residential neighborhoods in North Cheyenne.**

mostly complete in the western portion of the zone and in the neighborhood surrounding Buffalo Ridge Elementary. The streets north of Anderson Elementary generally accommodate pedestrian travel on wide roadway shoulders. As shown in Figure 6, some network gaps do exist (e.g., portions of Yellowstone Road, Storey Boulevard, and many local streets). Sidewalks in this area are generally attached and provide separation between pedestrians and motor vehicles. Most sidewalks in this area are in acceptable condition, showing some wear, and provide safe travel conditions for pedestrians. Several sidewalks around McCormick Junior High School (e.g., along Western Hills Boulevard) show signs of cracked and heaving pavement.

#### West Central Cheyenne

The neighborhoods immediately north of downtown have a fairly complete sidewalk network and provide pedestrian connections to a number of destinations including Deming Elementary School, Miller Elementary School and Lions Park. Sidewalks are generally 3.5 to five feet wide. Their physical condition is generally acceptable given their age. Sidewalks along roadways within the area bounded by Bent Avenue to the west and Central Avenue to the east are five feet wide and detached. Ridged sidewalks along Yellowstone Road, south of Central Avenue, do not meet ADA standards for smooth walkway

accessibility (Figure 7).

### East Central Cheyenne

The sidewalk network on the north side of U.S. 30 is mostly complete. The most complete coverage exists in the neighborhood near Dildine Elementary School. This area is characterized by attached 4.5 foot-wide sidewalks. The sidewalk network around Saddle Ridge Elementary School will be completed as new housing stock is constructed.

### Downtown Cheyenne

A complete pedestrian network with wide sidewalks greets pedestrians walking in the downtown area. Most sidewalks are at least five feet wide and provide sufficient room for multiple people to travel side by side or pass each other (Figure 8). Sidewalks are in good condition, showing few cracks, and visual interest is provided by changes in paving materials. Sidewalks in the area directly west of downtown (e.g., along Ames Avenue and Snyder Avenue) are three to four feet wide with few network gaps, creating favorable travel conditions for pedestrians.

### Central Cheyenne

Pedestrians walking through Central Cheyenne can utilize the mostly complete pedestrian walkway network. Most streets in the area have sidewalks along at least one side; facilities range from three to four feet wide. Exceptions include Nationway, North College Drive, and portions of East Lincolnway (Figure 9).

### East Cheyenne

Few sidewalks exist in East Cheyenne. Pedestrians in this area are accommodated by wide roadway shoulders. The increased exposure to high speed and volumes of motor vehicle traffic in this area can make travel for pedestrians difficult and uncomfortable.

### South Central Cheyenne

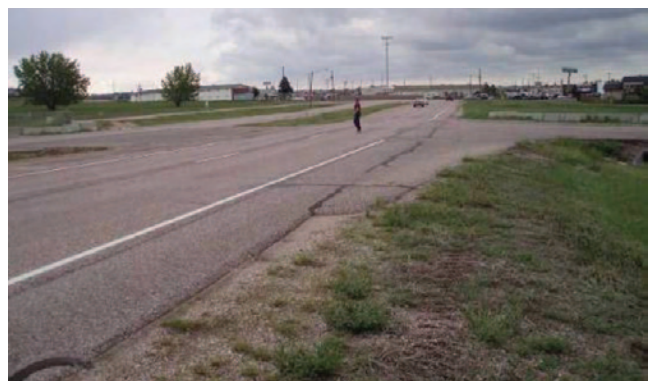
The neighborhoods immediately south of downtown have mostly complete sidewalk networks that serve destinations including Hebard Elementary School and Cole Elementary School. Sidewalk width



**Figure 7. Ridged sidewalks along Yellowstone Road create challenging and uncomfortable travel conditions for pedestrians.**

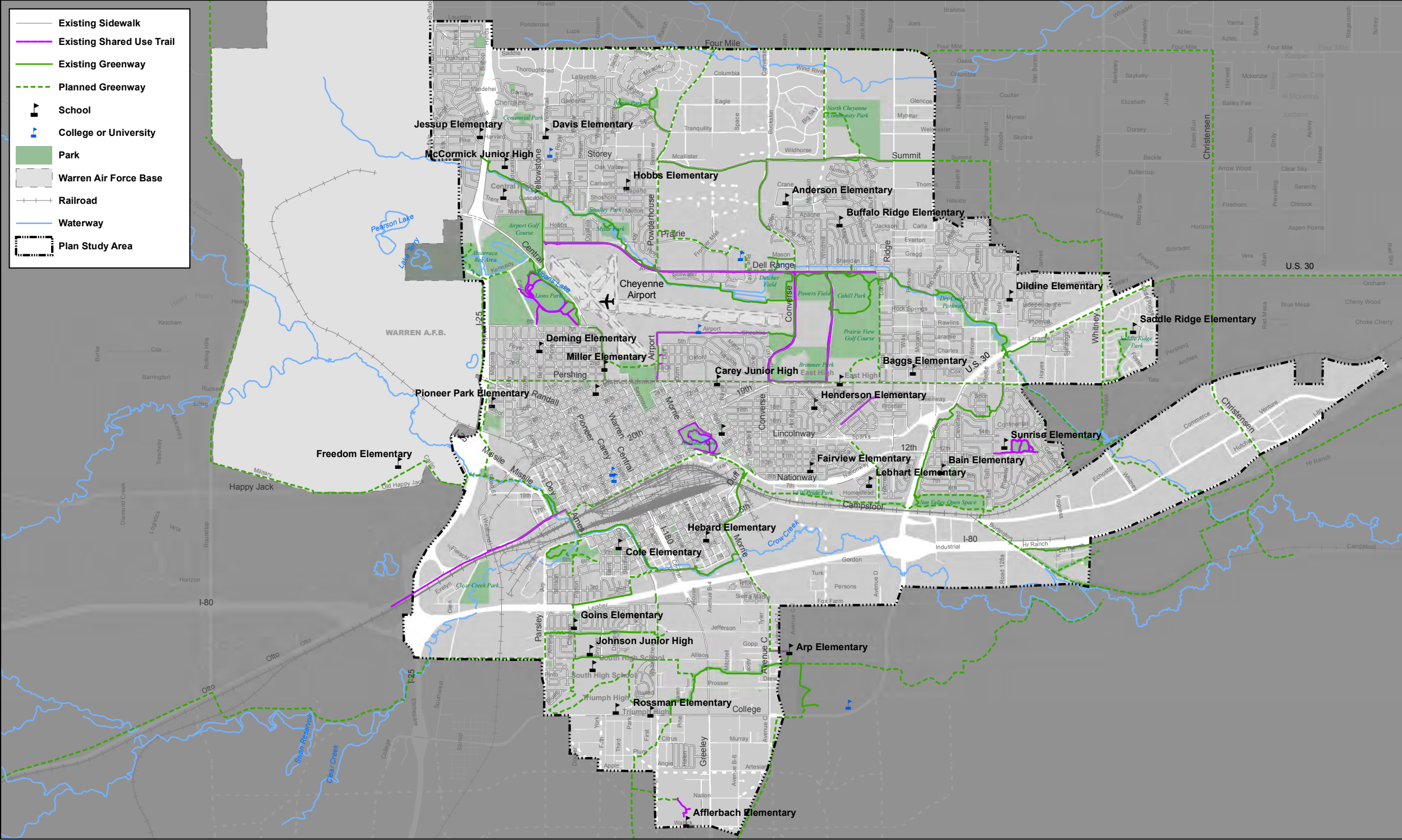


**Figure 8. Sidewalks downtown are in good condition and provide sufficient width for several pedestrians to pass each other.**



**Figure 9. The pedestrian network in Central Cheyenne is fairly complete, with the exception of several higher speed roads such as Nationway.**

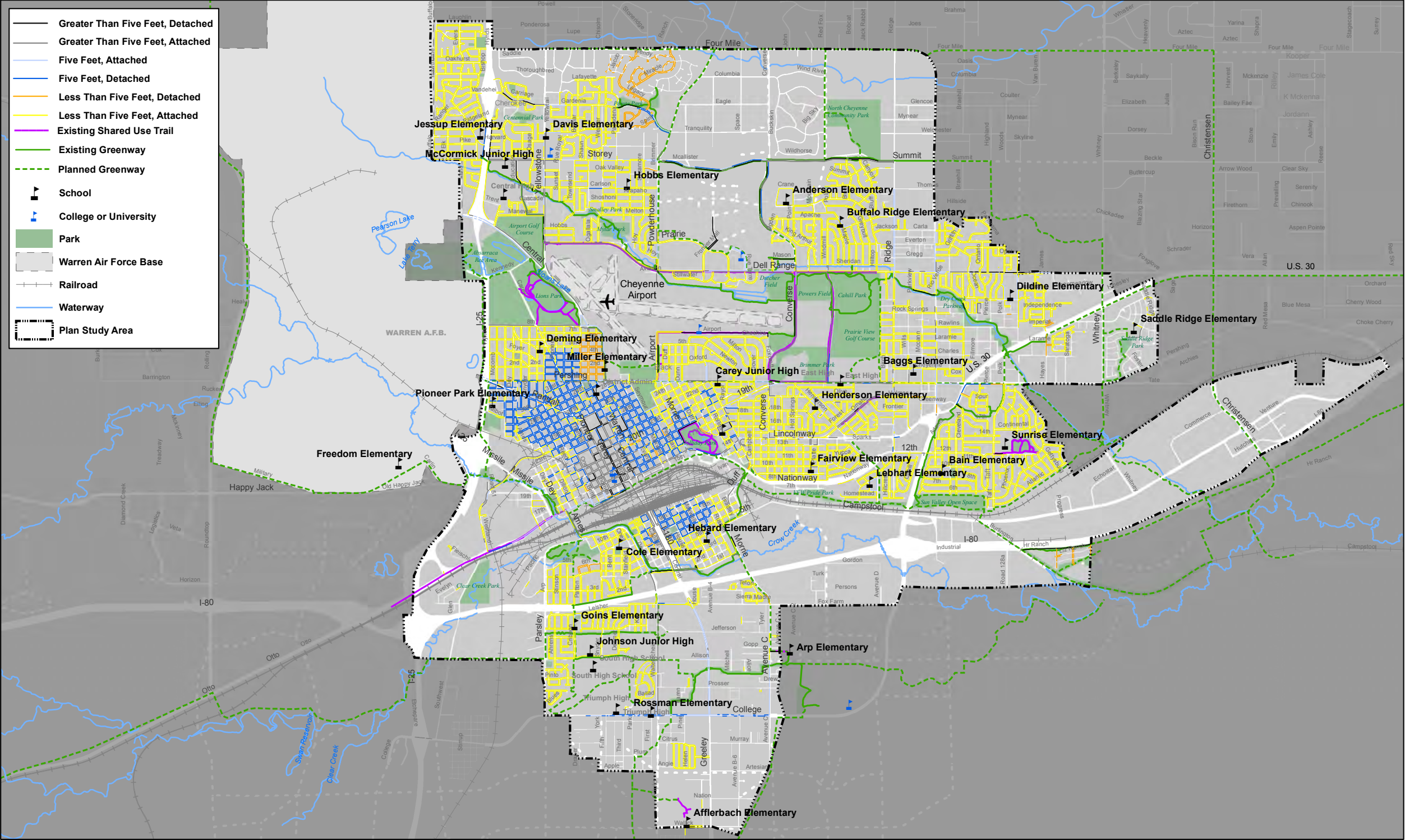




**Map 3 - Existing Pedestrian Facilities**

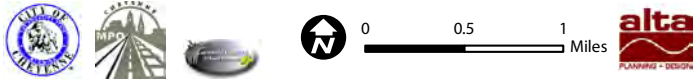
Cheyenne Metropolitan Area  
 Pedestrian Plan  
 Source: Cheyenne - Laramie County Cooperative GIS Program  
 Date: August 2010





Map 4 - Existing Sidewalk Characteristics

Cheyenne Metropolitan Area  
Pedestrian Plan  
Source: Cheyenne - Laramie County Cooperative GIS Program  
Date: August 2010





varies between 3.5 and five feet. Those more recently constructed (e.g., in the area around Van Lennen Avenue and Pebrican Avenue) are five feet wide and include a tree lawn that provides an additional buffer between pedestrians and motor vehicles.

### South Cheyenne

There are many roadways without sidewalks in South Cheyenne. Where sidewalks do exist, such as in the neighborhood around Goins Elementary School, they are less than five feet wide. Five-foot wide sidewalks exist on both sides of South Greeley Highway north of East College Drive. Higher speed roadways without sidewalks, such as South Greeley Highway south of East College Drive, can create particularly challenging and potentially dangerous travel conditions for pedestrians. West College Drive near Triumph High School is also missing sidewalks on the north side of the roadway. With the construction of South High School and the infill scheduled for this area, conditions are expected to improve significantly for pedestrians in the next five to ten years.

## Intersections

The quality of intersections, from a pedestrian perspective, varies widely by location. The following sections first describe pedestrian related intersection infrastructure in Cheyenne and then provide a more detailed discussion of conditions throughout the study area. More design related on the details of these infrastructure elements is included in *Structure*. A detailed discussion of several specific intersections is included in the analysis of system weaknesses in Section 4.

### Intersection Elements

#### Crosswalks

Many major street crossings have marked crosswalks in Cheyenne (Figure 10). The City uses transverse markings, longitudinal markings, and combinations of both marking types. Crosswalks are repainted annually, but can be difficult to see during times of the year near the end of the annual maintenance cycle.

#### Curb Ramps

Curb ramps represent a fundamental element of an accessible pedestrian system. A sidewalk without a curb ramp can be useless to someone in a wheelchair, forcing them back to a driveway and out into the street for access. Cheyenne has constructed curb ramps as a standard feature of their sidewalks and intersections for many years. However, the age of some ramps means that they do not meet the current ADA standards for cross slope and running slope. These ramps may also be deteriorating due to age and weathering (Figure 11). In 2009, the city began installing truncated-dome style curb ramps, which meet current ADA standards.



**Figure 10.** Most crosswalks outside of downtown Cheyenne consist of longitudinal markings.



**Figure 11.** Older curb ramps typically have a greater cross and running slope than the maximum allowed by current ADA standards.

### Intersection Controls

Traffic at many roadway intersections in Cheyenne is controlled by either a stop sign or traffic control signal. Pedestrians benefit from control provided by stop signs and traffic signals on collector and arterial roadways, which generally carry greater volumes of motor vehicle traffic at higher speeds. Most signalized intersections outside of downtown also include pedestrian-activated signals or have pre-timed signal phasing allowing pedestrian crossing movements concurrent with parallel vehicle movements.

### North Cheyenne

North Cheyenne's street network is comprised mainly of local roadways that present minimal crossing challenges for pedestrians. Several larger roadways that may present more challenging conditions include Dell Range Boulevard, Yellowstone Road and Storey Boulevard. However, many of these roadways provide pedestrian crossing aids at major intersections.

Many intersections have curb ramps on at least one approach. Curb ramps at major intersections (e.g., Storey Boulevard and Yellowstone Road) generally lack tactile warning strips. Faded crosswalks at certain times of year also contribute to the challenges of crossing at some intersections.

A grade-separated crossing of I-180 (Figure 12) near the west end of Western Hills Boulevard provides a protected crossing for pedestrian traffic near Central High School and Jessup Elementary School.

### West Central Cheyenne

Pedestrians seeking to cross the roadways in this area will generally encounter low motor vehicle volumes on local streets. Many intersections along Pershing Boulevard provide pedestrian crossing signals and crosswalks. Channelized right turns along Dell Range Boulevard increase the potential for motor vehicle/pedestrian conflicts as motorists frequently turn right without slowing down to look for cross traffic.



**Figure 12.** A grade-separated crossing of I-180 provides a protected crossing opportunity.



**Figure 13.** Intersections along Converse Avenue have pedestrian signal heads and ADA-compliant curb ramps.

Most intersections in West Central Cheyenne make some accommodation for pedestrians with physical disabilities and include curb ramps (e.g., West Pershing Boulevard and Carey Avenue), but may not include tactile warning strips. Converse Avenue provides protected pedestrian crossings and ADA compliant curb ramps (Figure 13).

### East Central Cheyenne

Pedestrians experience a range of conditions at intersections in East Central Cheyenne. Most intersections have curb ramps on at least one approach. Curb ramps at major intersections (e.g., North College Drive and Dell Range Boulevard) sometimes lack tactile warning strips.

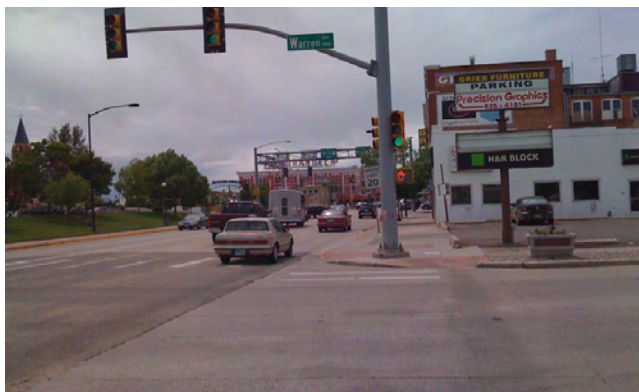
Like many areas of Cheyenne, the majority of intersections in this area are local streets that are generally easy to cross. Notable challenges are created by U.S. 30, which bisects this area. While several signal-controlled intersections provide several protected crossing opportunities, they may require significant out-of-direction travel. A key intersection creating challenges for pedestrians is Hayes Avenue and U.S. 30. Pedestrians at this intersection must contend with high speed traffic with no crossing aids to reach nearby residential developments.

### Central Cheyenne

Most intersections in this area are intersections of lower-volume neighborhood streets, where pedestrians face few crossing difficulties. However, some of these intersections (e.g., several in the neighborhood near Bain Elementary School) lack curb ramps. Intersections that create significant crossing challenges in this area include North College Drive and 12th Street, North College Drive and East Lincolnway, and East Lincolnway and Converse Avenue. Pedestrian signal phases are fairly short and a combination of slip lanes plus right turns permitted on red increase the chance of motor vehicle/pedestrian conflicts.

### Downtown Cheyenne

Intersections in and around downtown Cheyenne generally have good pedestrian crossing conditions;



**Figure 14.** The crosswalk at the intersection of Warren Avenue and Lincolnway is faded, reducing visibility of the crossing.

crosswalks are marked in many locations. Many intersections (e.g., 22<sup>nd</sup> Street and Capitol Avenue) meet ADA standards for cross and running slope. Most signalized intersections provide crosswalks and pedestrian signals, though crosswalks are worn in some places (Figure 14). Curb extensions at several intersections (e.g., Capitol Avenue and 19<sup>th</sup> Street) reduce crossing distances and improve intersection conditions. Separated pedestrian facilities on I-180 over the UPRR tracks increase pedestrian connectivity between downtown and the southern portions of Cheyenne.

The intersection of East Lincolnway and Nationway creates notably difficult pedestrian crossing conditions due to wide travel lanes, missing sidewalks and curb ramps in some locations, and irregular intersection geometry.

### East Cheyenne

Very few intersections in East Cheyenne provide pedestrian accommodations. Curb ramps are not present, nor are crosswalks with the exception of Christiansen Road and Venture Avenue. Crosswalks and pedestrian-actuated signals are located at this intersection.

### South Central Cheyenne

As local roadways comprise a significant portion of the roadway network in this area, most intersections



**Figure 15.** The modern roundabout at Snyder Avenue and Allison Road provides crosswalks and signage on all approaches.



are generally pedestrian friendly. Most intersections in South Central Cheyenne provide some accommodation for pedestrians; curb ramps in the areas with detached sidewalks meet existing ADA standards, but lack tactile warning strips. Several intersections along the Cheyenne Greenway (e.g., 9<sup>th</sup> Street) lack curb ramps. Many intersections (e.g., 9<sup>th</sup> Street and Warren Avenue) include two or three improved corners with curb ramps.

The intersection of 9<sup>th</sup> Street and I-180 creates challenges due to missing curb ramps, and wide crossing distances. An overcrossing between 9<sup>th</sup> Street and 5<sup>th</sup> Street provides a grade-separated crossing opportunity for pedestrians.

### South Cheyenne

Pedestrians will find few challenges crossing local roadways in this area. A higher level roadway, South Greeley Highway presents challenges due to the high vehicle speeds and longer distances between protected crossings. A signalized crossing at East College Drive provides pedestrians with a protected crossing opportunity. The new roundabout near South High School provides good pedestrian accommodation on all approaches (Figure 15).

## Shared Use Paths and Greenways

Cheyenne began construction of the Greater Cheyenne Greenway (Greenway) system in the early 1990s. These off-street pathways provide numerous opportunities for pedestrians to travel along routes separated from motor vehicle traffic. This system takes advantage of drainage corridors that capture and channel stormwater runoff through a series of above ground channels throughout the city. The Greenway system generally consists of narrower pathways found in parks (e.g., Lions Park and Holliday Park) and wider corridors following drainage features (e.g., the Dry Creek Parkway) or roadways (e.g., Converse Avenue). Map 3 shows existing and planned greenways and shared use paths in and around Cheyenne.



**Figure 16.** The undercrossing at Dell Range Boulevard provides pedestrians with a crossing completely separated from motor vehicle traffic.

### North Cheyenne

Existing Greenways run along Storey Boulevard in the eastern portion of this area and along Converse Avenue north of Dell Range Boulevard. Proposed greenway connections will connect portions of Converse Avenue and Powderhouse Road. These pathways are in good condition, showing few signs of weathering, though crossings are more challenging at intersections along Dell Range Boulevard and Converse Avenue due to high traffic volumes. An undercrossing of Dell Range Boulevard near Sheridan Street provides an opportunity for pedestrians to access Cahill Park (Figure 16).

### West Central Cheyenne

Existing greenways and shared use paths through Lions Park are in good condition, showing signs of light wear, and provide off-street pedestrian connectivity along Central Avenue.

### East Central Cheyenne

This area is served by the Dry Creek Greenway. This facility is in good condition and shows few signs of weathering. Curb ramps are missing at some roadway/trail intersections (Figure 17).



## Downtown Cheyenne

The Crow Creek Greenway runs along Ames Avenue and currently terminates in Martin Luther King Jr. Park. The MLK segment is the only asphalt portion of the system, and is in need of repair. The Ames segment was retrofit to make a 10' sidewalk of an existing 5' sidewalk. This segment is in poor condition and needs to have excess curb cuts removed near Lincolnway.

## Central Cheyenne

Central Cheyenne is served by a greenway running along the east side of North College Drive. Future extensions of this facility will run along the north side of the UPRR tracks and provide off-street connections to downtown Cheyenne.

## East Cheyenne

Previous planning efforts have resulted in several proposed greenway connections in East Cheyenne. At this time, no shared use facilities exist.

## South Central Cheyenne

The Crow Creek Greenway provides off-street connectivity between Morrie Avenue, along 9<sup>th</sup> Street, and west to the undercrossing of the UPRR tracks at Ames Avenue.

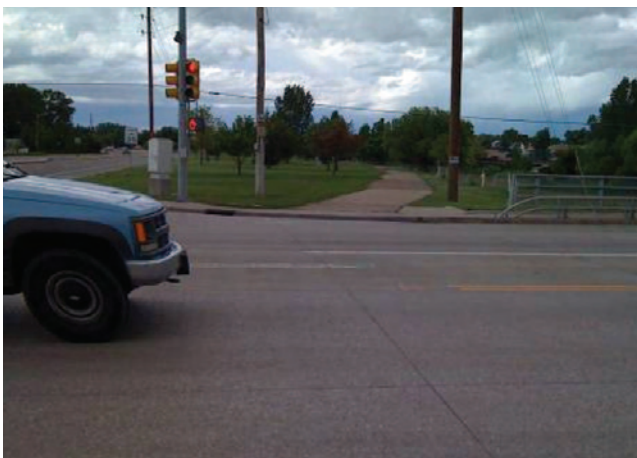


Figure 17. Missing curb ramps at a roadway/trail intersection along the Crow Creek Greenway.

## South Cheyenne

Several greenways enhance pedestrian safety and comfort in South Cheyenne. The Allison Draw Greenway provides connections between Rossman Elementary School, Arp Elementary School and Laramie County Community College. The Greenway along Allison Road and the existing South Cheyenne Greenway provide travel opportunities for students accessing Johnson Junior High School and Goins Elementary School. Informal pathways exist between Johnson Junior High School and West College Drive. Planned greenways will formalize these trails as new construction occurs in the area. Overall, greenways are in good condition and show few signs of disrepair.

## Supporting Infrastructure, Amenities and Transit Access

In addition to walkways, Cheyenne's pedestrian environment includes a number of supportive infrastructure elements found throughout the city including benches, walkway lighting, and public restrooms. The environment is enhanced by amenities including street art, landscaping and trash receptacles (Figure 18). Map 14 in *Shape* shows the locations of roadway lighting and Greenway amenities. Generally,



Figure 18. Pedestrian amenities in downtown Cheyenne include western-themed street art.

the supportive infrastructure and amenities found within the city are in good repair and suitably match the surrounding land use.

### Transit Service and Transit Stop Amenities

Transit service, provided by the Cheyenne Transit Program as shown on Map 9 of *Shape*, is available Monday through Friday from 6 AM to 7 PM and on Saturday from 10 AM to 5 PM. Buses serve most stops hourly. Dial-a-ride and curb-to-curb service is available by reservation. Map 9 in *Shape* also shows system wide transit boardings based on one-day counts conducted in August 2007 by the Cheyenne Transit Program. The system is most heavily utilized near downtown and areas of higher commercial intensity along Dell Range Boulevard, near Frontier Mall. Many bus stops have benches and route identification signs (Figure 19) though conditions vary from stop to stop. The Cheyenne Transit Program received nearly \$900,000 during the 2009 fiscal year to upgrade 50 stops and shelters throughout the area. Funding was provided through the Federal American Recovery and Reinvestment Act of 2009.



**Figure 19. Many transit stops have benches and transit signs.**

## Section 4. System Strengths and Weaknesses

### System Strengths

Summarized below, various system characteristics contribute to pleasant walking conditions in Cheyenne.

#### Topography

The topography of Cheyenne is relatively flat, with few challenging hills to deter pedestrians. In addition, the relatively flat terrain may improve sight distances and allow motorists to react to obstructions on the road, enhancing pedestrian safety throughout the city.

#### Land Use Characteristics

Land use characteristics, particularly in West Central Cheyenne, Downtown Cheyenne, and Central Cheyenne, foster a pedestrian-friendly environment. For example, buildings fronting the sidewalk edge create a sense of tight urban form and an inviting pedestrian atmosphere. The presence of angled on-street parking on downtown streets such as 17th Street and 18th Street (Figure 20) buffers foot traffic from adjacent motor vehicle traffic. Walking as a



Figure 20. Angled parking buffers foot traffic from motor vehicle traffic.

means for running errands is encouraged through the grouping of diverse land uses in these areas.

#### Parks and Open Space

The City has an extensive parks and open space network, such as Lions Park and Holliday Park, that give residents opportunities for active recreation within the metropolitan area. Most residents live within one half mile of a park or Greenway trail.

#### Presence of Pedestrian Friendly Neighborhood Streets

Most residential areas benefit from a pedestrian-friendly environment. Many houses in Cheyenne are located on low-volume streets with sidewalks, and pedestrians of all ages and skills can get around neighborhoods in increased safety and comfort (Figure 21).

#### Existing and Planned Greenway System

Cheyenne residents value their Greenway system and consistently support its expansion through public polls and 'yes' votes on Greenway funding proposals.



Figure 21. Low speed and low volume neighborhood streets are inviting places for people to walk and play.



Since the founding of the Greenway system nearly 20 years ago, nearly 30 miles of paved facilities have been constructed with plans to construct about 100 additional miles. The City has secured funding to complete several additional miles of Greenway in 2010 and continues to make gap closure in this system a priority.

### Recent Walkway Improvements

Cheyenne continues to construct and add to its existing Greenway system. Recent construction includes the greenway connecting 12<sup>th</sup> Street and East Pershing Boulevard on the east side of town. Sidewalks built or reconstructed recently meet the five foot minimum width required by ADA. Many newer subdivisions in North and South Cheyenne contain these wider sidewalks.

### Use of Warning Signage at Trail/Roadway Crossings

Most streets approaching the intersections with Greenways and other shared use paths include warning signage alerting motorists to the presence of bicyclists and pedestrians.

### Presence of Grade-Separated Trail Crossings

Cheyenne has existing grade-separated crossings at several locations around the city that reduce the impact of barriers created by railroad tracks and



**Figure 22.** Grade-separated crossings at high-volume roads (such as Converse Avenue) increase pedestrian connectivity and reduce exposure to motor vehicles.

higher speed roadways (Figure 22). Existing crossings include:

- An underpass of the UPRR tracks on Ames Avenue south of West Lincolnway
- I-80 near Cole Elementary School
- Converse Avenue near Dell Range Boulevard
- I-25 near McCormick Junior High School
- I-180 between 5<sup>th</sup> and 9<sup>th</sup> streets

Other locations are Greenway underpasses at:

- Dell Range north of Cahill Park;
- Dry Creek under Yellowstone Road and Powderhouse Road;
- Central Road west of Yellowstone Road;
- Windmill Road south of Powers Field;
- US 30 west of Van Buren;
- Ridge Road south of Dell Range Boulevard;
- College Drive 1-2 blocks south of Dell Range Boulevard;
- Allison Draw Greenway under S. Greeley Highway, W. Prosser and Avenue C;
- Logan Avenue south of Nationway;
- College Drive and 12th Street;
- I-180 at First Street
- and at First Street and Evans Road.

All of these underpasses have connections to sidewalks (where they exist) in the ROW at street level.



**Figure 23.** The UPRR rail yard creates a significant barrier between downtown and southern Cheyenne.



## Presence of Pedestrian Crossing Treatments

### Pedestrian Countdown Signals

A pedestrian countdown signal shows the amount of time remaining for a pedestrian to cross the street before the light changes. This aids pedestrians in deciding whether to start a crossing movement and is an important accommodation at intersections where pedestrians cannot see traffic signals oriented toward motorists. Several principal arterials (e.g., Pershing Boulevard, Dell Range Boulevard, Warren Avenue, Central Avenue, Pioneer Avenue) and downtown intersections provide pedestrian countdown signals.

## System Weaknesses

Described below, pedestrians in and around Cheyenne face a variety of challenges.

### Barriers

Major roads are considered by many as barriers to increased walking. This is particularly due to higher vehicle speeds and volumes, which create uncomfortable and potentially unsafe crossing conditions.

Roads serving as major barriers include:

- Parsley Avenue;
- College Drive;
- Dell Range Boulevard;
- Pershing Boulevard;
- Storey Boulevard;
- Windmill Road;
- Nationway;
- U.S. 30/Lincolnway;
- Yellowstone Road;
- S. Greeley Highway;
- Powderhouse Road;
- Cheyenne Regional Airport
- I-80;
- I-25;
- I-180; and
- F.E. Warren AFB.

The Union Pacific Railroad (UPRR), which bisects Cheyenne, creates another significant barrier (Figure 22), as do the Burlington Northern Santa Fe Railroad tracks. Running west to east roughly following I-80,

the presence of the tracks and rail yard create a significant barrier between the northern and southern part of the city.

### Barriers Created by Major Roadways

Although streets are generally well connected in northern Cheyenne and near downtown, high speed and high volume streets bisect the region. Roads providing both north/south and east/west connectivity are typically high-volume streets with limited pedestrian facilities. Some of these major streets include Pershing Boulevard, Dell Range Boulevard, Converse Avenue, and South Greeley Highway.

Certain parts of the city are also less connected to the central area. The UPRR and I-80 separate South Cheyenne from North Cheyenne. Similarly, portions of eastern Cheyenne are separated by U.S. 30.

### Lack of Wayfinding Tools

Cheyenne's walkway system could benefit from signage and other wayfinding tools to orient users and direct them to and through major destinations like downtown, the Greenway system, schools, parks, and commercial areas. The city is implementing a wayfinding signage plan that focuses primarily on motorists but does provide some signage in the downtown area for pedestrians.



**Figure 24.** Transit stops that do not have a hard, smooth waiting pad can create challenges for mobility impaired pedestrians.

### Discontinuous Shared Use Path/Greenway System

Although Cheyenne has made significant progress toward completing a comprehensive shared use path/Greenway system, several major gaps remain. These areas include the area south of Johnson Junior High School, Pershing Boulevard, and connections in eastern Cheyenne along Campstool Road and U.S. 30. Through these areas, non-motorized users must currently negotiate major roadways with high vehicle speeds and volumes.

### Conditions at Some Transit Stops

Some unpaved transit stops in Cheyenne create barriers to pedestrians with mobility impairments. Stops without shelters may also reduce the amount of time pedestrians are willing to wait during inclement weather (Figure 24).

### Maintenance Issues

Described below, several maintenance issues complicate pedestrian travel on existing walkways in Cheyenne. These issues include faded crosswalks, snow and ice, flooding, and damaged or deteriorated sidewalks and trails.



**Figure 25. Heavy rainfalls can flood existing Greenways. Water or ice on the trail can further discourage pedestrian use.**



**Figure 26. Aging and deteriorated walkways create uneven travel surfaces.**

### Crosswalk Issues

Though crosswalks are repainted annually, they are difficult to see in some locations during late spring and summer prior to painting. Crosswalk bars on many of the city's longitudinal crosswalks are fairly narrow and difficult to see. Crosswalk bars have faded at several intersections along Pershing Boulevard, Ames Avenue, and South Greeley Highway, as well as near many schools.

Despite the presence of pedestrian activated signals, several major intersections lack marked crosswalks, such as the intersection of Ames Avenue and Missile Drive. These locations were previously marked, but have not been re-marked recently.

### Snow and Ice Accumulation

Snow and ice represent major challenges to walking. When snowplows remove snow and ice from roadways, it is usually deposited on roadway edges and on sidewalks. This creates a difficult walking environment, particularly in areas with attached sidewalks. Ponding water can create ice on walkways, on curb ramps, and on crosswalks, further complicating pedestrian travel.

### Flooding

At certain times of year, generally in the spring,



Cheyenne receives heavy rainfalls. Runoff is handled by the system of above ground drainage corridors throughout the city. Occasionally, storms cause flooding along the Greenway system, creating barriers to pedestrian travel and potential safety hazards for trail users in these areas during flooding events (Figure 25).

### Damaged/Deteriorated Walkways

Existing walkways in some parts of the community suffer from cracking, heaving, and/or vegetation growing between pavement seams (Figure 26). Uneven pavement joints (often caused by tree roots below the sidewalk) create tripping hazards and complicate travel for wheelchair users. Water ponding on walkways surfaces can further challenge walking, especially when ponding water freezes in cold weather.

### Driver Behavior

Driver behavior greatly affects pedestrian safety and comfort. In Cheyenne, motorists often disregard marked crosswalks and other warning devices. The fact that motorists often ignore marked crosswalks and warning signs is particularly evident where the Greenway system crosses major and minor streets, thus requiring users to wait until the road is clear before proceeding across the street.



Figure 27. Demand paths alongside roadways indicate the need for formalized pedestrian facilities.

Motorists' lack of compliance with posted speeds is another safety concern, particularly near elementary schools throughout the city.

### Demonstrated Demand for More Pedestrian Facilities

The presence of informal paths (also known as "demand paths") in some areas indicates a demand for pedestrian facilities where they currently do not exist or where formalized facilities require users to follow circuitous routes to travel relatively short distances. This is particularly evident near schools and across open spaces, where pedestrians take short-cuts to access shopping centers or bus stops.

An example of this can be found along Nationway near East Lincolnway (Figure 27) and in several other areas of the City.

### Uncomfortable Walking Environment along High-Volume Roadways

Large vehicles (e.g., trucks, buses, and recreational vehicles) and high vehicle speeds and volumes create challenging, uncomfortable, and potentially unsafe walking conditions on major streets. These conditions present additional challenges on major roads with

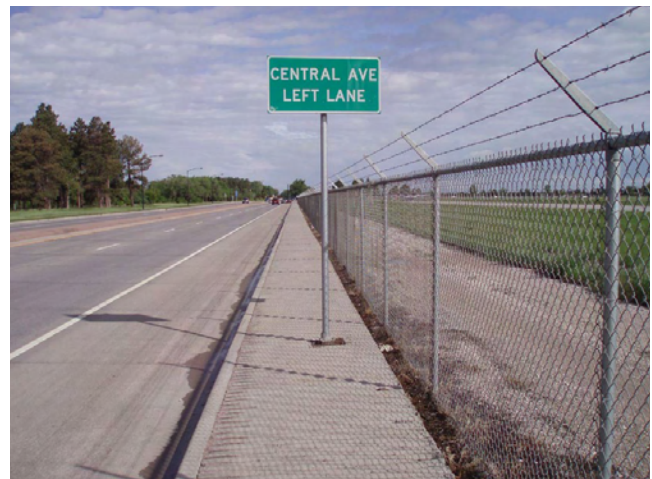


Figure 28. Walking along Yellowstone Road can be uncomfortable due to physical obstructions in the sidewalk and close proximity to higher speed motor vehicles.

minimal or no pedestrian facilities. Example corridors include Yellowstone Road (Figure 28), Nationway, Ridge Road, portions of Storey Boulevard, and portions of College Drive.

### **Fragmented Sidewalk Network in Some Areas**

As discussed earlier, many areas of Cheyenne benefit from a fairly complete sidewalk network, while in other areas the system is fragmented. Generally, a relatively complete sidewalk system exists in central, western, and northern Cheyenne, while many streets in eastern and southern Cheyenne do not have sidewalks. These areas include the neighborhoods surrounding Arp Elementary School and Afflerbach Elementary School, the industrial/commercial area along Campstool Road, and the area around Saddle Ridge Elementary School.

### **Difficult Crossing Conditions for Mobility-Impaired Pedestrians**

Pedestrians with disabilities experience crossing difficulties in several parts of Cheyenne. Curb ramps at some intersections are in poor condition or disrepair (e.g., Pershing Boulevard and Windmill Road). In some cases, marked crosswalks lead to sidewalks with no curb ramps or are not aligned with existing curb ramps. This can make traveling by wheelchair or motorized mobility device challenging, if not impossible. Visually-impaired pedestrians also experience difficulty navigating through intersections with curb ramps oriented diagonally toward the intersection's center rather than toward a crosswalk.

### **Other Difficult Crossings**

Pedestrians face a variety of difficult street crossing conditions, including high-volume streets and interchange areas. Generally, South Greeley Highway creates crossing challenges due to limited crossings and missing sidewalks. Other corridors with generally difficult crossing conditions include Pershing Boulevard, Dell Range Boulevard and North College Drive. Other particularly challenging intersections identified by the City Staff and the Project Team are described below.



**Figure 29. Pershing Boulevard and U.S. 30 is a challenging intersection for pedestrians of all ages and abilities.**

#### **Pershing Boulevard and Windmill Road**

Though pedestrian crossings are allowed on all legs, the missing curb ramps on the northern portion of the “T” at this intersection creates challenging conditions for mobility impaired pedestrians. Crosswalks are faded and may not give sufficient visual cues to motorists approaching the intersection.

#### **Dell Range Boulevard and Converse Avenue**

The Dell Range corridor is the City’s primary commercial strip. Historic traffic counts rate this intersection as the busiest in the state. Further complicating pedestrian travel through this intersection is the presence of the shared use path that ties into the Greenway system. Pedestrian crossings are prohibited on the west leg of this intersection. Despite the prohibited crossing, it is likely that pedestrians will cross at this location and create potential conflicts with unsuspecting motorists.

#### **Dell Range Boulevard and Windmill Road**

This intersection, located at the east end of Cheyenne’s primary commercial strip along Dell Range Boulevard is the principal southern entry point to the Buffalo Ridge neighborhood. Pedestrian attractions near this area include soccer fields, several parks and a golf course. The Greenway running parallel to Dell Range Boulevard also crosses the intersection



at-grade on the southern leg of this intersection. A large open parcel on the southeast corner of the intersection will likely be developed into an auto-oriented retail development and will act as an additional pedestrian attractor and motor vehicle trip generator. An underpass was constructed about one-half mile south of the intersection but may require significant out of direction pedestrian travel. The primary concern at this intersection is heavy traffic from the south making a right turn on red. Observations of existing patterns at this intersection indicate that motorists on all legs routinely ignore pedestrian signals and posted warning signage.

#### **East Pershing Boulevard and U.S. 30**

East Pershing Boulevard, the primary east-west roadway in Cheyenne, bisects the original city plat and provides connections to I-25 on the west and residential ranchettes to the east. At the edge of the urban/rural interface, this intersection is currently constructed primarily for use by motor vehicles and features wide lanes, gently angled slip lanes (that encourage higher vehicle turning speeds), large ditches that separate the roadway from pedestrian walkways, and faded crosswalks. Few pedestrians cross at this intersection despite several nearby pedestrian attractors and generators including a retirement community and commercial establishments (Figure 29).

#### **West Lincolnway and Ames Avenue**

The underpass on Ames Avenue south of West Lincolnway is one of four crossing points of the UPRR tracks. An at-grade Greenway crossing exists on the east leg of this intersection. A bar on the southwest corner of this intersection generates significant pedestrian traffic. Pedestrian crashes have occurred with regularity at this intersection for the past two decades due in part to high vehicle turning speeds.

#### **East Lincolnway, East 13<sup>th</sup> Street, Dunn Avenue and Nationway**

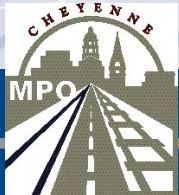
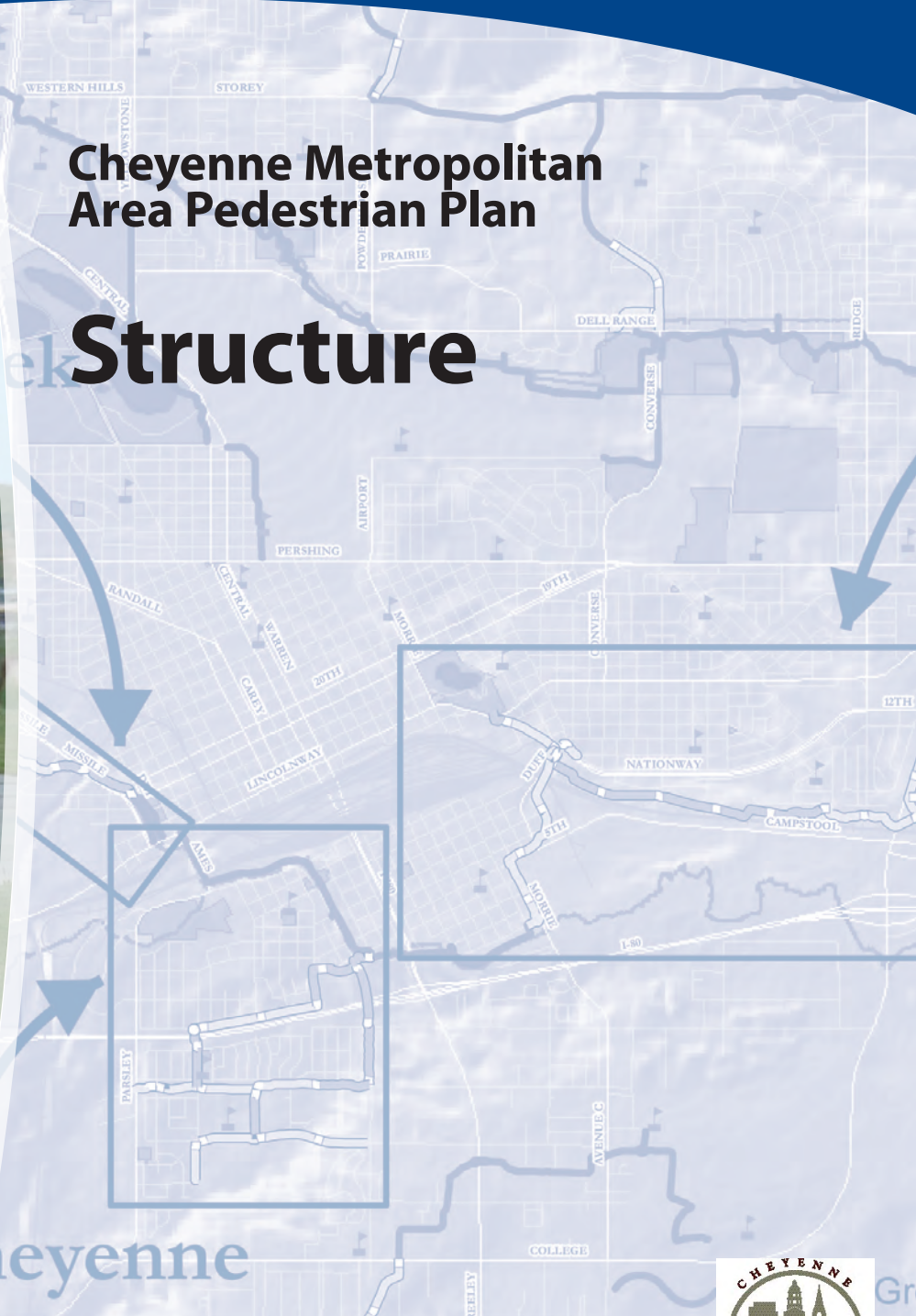
The juncture of two street grid systems in this area has created several large intersections with irregular geometry that create challenging conditions for all users. The Project Team noted the following

conditions during a site visit:

- Nationway bisects the intersections of 13th Street and Dunn Avenue at a forty-five degree angle. The intersection itself is characterized by wide approach lanes on Nationway, and a slip lane from Dunn Avenue onto Nationway eastbound. Vehicles approaching from East 13th Street are controlled by a stop sign but are allowed to make the turn across Nationway onto Dunn Avenue. A building on the corner of Nationway and East 13th Street restricts the sightline of traffic traveling westbound on Nationway.
- A sidewalk gap exists along the east side of Dunn Avenue between 13th Street and East Lincolnway
- Several corners in this area do not have ADA compliant curb ramps
- Curb ramps exist on East Lincolnway on the east and west sides of Nationway. While crossings are prohibited on the west leg of the intersection, the faded crosswalk on the east leg of the intersection may increase pedestrian confusion about legal crossing locations.
- Irregular intersection geometry throughout the area increases the challenge of pedestrian crossings

#### **South Greeley Highway and Fox Farm Road**

The intersection of South Greeley Highway and South Fox Farm Road creates difficulty for pedestrians due to gently angled slip lanes that lack traffic controls and allow higher speed right turns, faded crosswalks, and slightly irregular intersection geometry that shortens the sightline on several intersection legs. Raised pedestrian refuge islands do improve conditions and shorten crossing distance. This intersection provides the only protected crossing opportunity for nearly one-half mile in either direction.



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## Welcome

The *Structure* element of the *Cheyenne Metropolitan Area Pedestrian Plan* discusses pedestrian-friendly transportation facilities that, when implemented, will enhance the safety and comfort of pedestrians of all ages and abilities.

The United States Department of Transportation (USDOT) supports the “development of fully integrated active transportation networks,” and recognizes that “the establishment of well-connected walking and bicycling networks is an important component for livable communities, and their design should be part of Federal-aid project developments.”<sup>1</sup>

### Part of PlanCheyenne

The *Structure* element of the *Cheyenne Metropolitan Area Pedestrian Plan* is one part of PlanCheyenne, a four-part, comprehensive approach to planning Cheyenne’s future. It contains elements and design principles that will help define the pedestrian environment.

### How to Use the Structure Element

Cheyenne recognizes the importance of providing safe walking routes and already provides several existing documents that contain standards for the development of high-quality pedestrian facilities. These standards demonstrate Cheyenne’s intention to create a highly walkable environment. In addition to the documents described below, the *Structure* element builds on these documents and provides additional design guidance for pedestrian facilities, including walkways and crossings.

This plan does not replace existing City and County standards. Rather, it provides an accompanying set of design solutions that the City can use to augment existing information (e.g., standard roadway cross

sections). These design solutions are context sensitive and should be used in conjunction with good engineering judgment and additional study, when necessary, to create a safe and consistent pedestrian environment that provides direct access, visual interest and a sense of security for all users.

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1 United States Department of Transportation “Policy Statement of Bicycle and Pedestrian Accommodation Regulations and Recommendations.” [http://www.fhwa.dot.gov/environment/bikeped/policy\\_accom.htm](http://www.fhwa.dot.gov/environment/bikeped/policy_accom.htm).



## Section 1. Existing Plan Review

The following local plans contain design principles and guidelines that are relevant to pedestrian facility development and design. Additional national design guidance can be found in the 2009 *Manual on Uniform Traffic Control Devices* (MUTCD) and the 2004 *AASHTO Guide for the Planning, Design, and Operation of Pedestrian Facilities*. State level guidance is contained in the 2003 *Pedestrian and School Traffic Control Manual* and the 2002 *Wyoming Bicycle & Pedestrian Transportation Plan*.

### 2006 Cheyenne Area Transportation Master Plan

Divided into four components (*Snapshot*, *Structure*, *Shape*, and *Build*), the transportation element of *PlanCheyenne* includes several principles and design concepts that will improve the pedestrian environment with guidelines ranging from network level to street level. The *Structure* and *Shape* components contain pages highlighting these supported standards.

#### Structure

In the *Structure* element of the *Cheyenne Area Transportation Master Plan*, several design principles for multimodal transportation include pedestrian design guidelines. Complete Streets principles require pedestrian facilities of a safe width to be included on all new roadways<sup>2</sup>. The directness principle recommends providing pedestrian access through barriers such as cul-de-sacs and states that secondary sidewalk uses such as café seating areas shall be designed not to interfere with pedestrian travel and access. The continuity principle identifies elements such as street trees and landscaping that should be provided to create a protected and pleasant pedestrian experience.

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<sup>2</sup> The idea of providing additional separation between pedestrians and motorists is consistent with guidelines in the Wyoming Bicycle & Pedestrian Transportation Plan; however, State guidelines recommend a planting strip or tree lawn rather than a wide sidewalk.

Street crossings should include features such as median refuges and curb extensions, and should be accessible to pedestrians of all ages and abilities.

#### Shape

The *Shape* element of the Transportation Plan includes several pages describing the 2030 Pedestrian Vision stating that pedestrian improvements “should be made to existing neighborhoods as needed, but are not necessary throughout Cheyenne” and “as growth occurs in undeveloped areas, steps should be taken to ensure that development is planned to accommodate pedestrian travel.” This discussion touches on a mix of topics related to building a walkable city, ranging from connectivity at the network level to specifics such as countdown pedestrian signal heads at the street level. Concepts discussed include lane width reduction, traffic calming, directness, visual continuity, and crossing locations and treatments. The Vision also calls attention to the challenges presented by additional conflict points caused by turning movements at intersections and crossings, and lists design concepts that can mitigate associated safety concerns.

### Neighborhood Traffic Management Program

The *Neighborhood Traffic Management Program* encourages citizen involvement by responding to neighborhood actions for traffic safety. The program manual provides a short description of over a dozen common traffic calming techniques and suggests the type of roadway that is appropriate for each technique (e.g., diverters are allowed on local streets but are not acceptable treatments for collectors and arterials). These treatments include:

- Bike lanes
- Chicanes
- Chokers or curb extensions
- Diverters
- Entrance ways

- Lighted crosswalks
- Medians
- Pavement markings
- Road closures and half closures
- Speed humps, speed lumps and speed tables
- Street narrowing
- Textured crosswalks
- Traffic circles

The *Neighborhood Traffic Management Program* document also contains guidance on a number of programmatic responses that may influence traffic patterns to improve safety and comfort in the pedestrian environment. These include speed display boards and neighborhood speed watch programs.

## 2007 Cheyenne Road, Street & Site Planning Design Standards (Road Standards)

Two chapters contain most of the standards relating to pedestrian facility design in this document: Chapter 6 – Streetscape Design and Chapter 8 – Sidewalks. It should also be noted that Attachments 5-A and 5-B, located at the end of Chapter 5 – Street Design, show cross sections that include some sidewalk and tree lawn widths that do not agree with the minimum width standards for sidewalks and sidewalk zones in the design guidelines recommended later in this document. The minimum sidewalk width for several local street types is 4.5 feet rather than the five feet recommended in these design guidelines and the *Wyoming Bicycle & Pedestrian Transportation Plan*. While the 4.5-foot minimum is sufficient based on Americans with Disabilities Act (ADA) accessibility standards, it does not provide sufficient room for passing and two-way travel. ADA standards state that in areas where sidewalks are less than five feet wide, passing spaces of sufficient width for wheelchair users to pass one another or turn around shall be provided at intervals of 200 feet<sup>3</sup>.

<sup>3</sup> Americans with Disabilities Act (ADA) and the Architectural Barriers Act (ABA) Accessibility Guidelines for Buildings and Facilities. Chapter 4: Accessible Routes, Section 403: Walking Surfaces. U.S. Access Board July 23, 2004 Available: [www.access-board.gov/ada-aba/final.htm#Surfaces](http://www.access-board.gov/ada-aba/final.htm#Surfaces). Accessed: February 8, 2010

## Chapter 6 – Streetscape Design

The Streetscape Design chapter focuses mainly on the design and maintenance of tree lawns with both shade trees and ornamental trees. Street trees are an amenity for pedestrians, insulating the sidewalk from the noise and exhaust of passing vehicles while creating a buffer zone that enhances pedestrian comfort.

## Chapter 8 – Sidewalks

Sidewalk design standards are discussed at length in Chapter 8, organized by the five components comprising pedestrian level of service: Directness, Continuity, Street Crossings, Visual Interest and Amenity, and Security. These factors are discussed in similar language in the previously mentioned documents, but each document has offered a different focus on these subjects.

Chapter 8 emphasizes curb extensions as a treatment that should be used to supplement street crossings. Roundabouts are also discussed in the Street Crossings component, although they are not mentioned in other pedestrian design documents. The Visual Interest and Amenity component includes direction not just for the form and features of the sidewalk itself, but also guidelines for the development of adjacent buildings and other uses that contribute to the feel of the pedestrian environment. The Security component is focused mainly on lines of sight, and the importance of proper pedestrian scale lighting to both improve visibility and prevent the creation of shadowed areas.

## 1992 Greenway Development Plan

Chapter 2 of this plan provides design guidance for Greenways. In addition to meeting design standards established by the ADA, MUTCD, AASHTO, State of Wyoming, City of Cheyenne and Laramie County, Greenways should be designed in accordance with several basic ideas stating that Greenways should:

- Provide a surface usable by pedestrians and non-motorized means of transportation.
- Provide a path width which allows safe

- two-way movements.
- Provide for the easy access and use by the physically impaired.

Additional recommendations are included on page 2-2 of the plan. Future Greenways should be constructed in accordance with updated standards adopted by city, county, state, and federal guidelines.

## **Americans with Disabilities Act (ADA)**

All public facilities must be built to meet the requirement of the Americans with Disabilities Act (ADA), where possible. The act was established to prohibit discrimination on the basis of disability by public accommodations and requires places of public accommodation and commercial facilities to be designed, constructed, and altered in compliance with accessibility standards established by ADA. The ADA provides guidance for designing sidewalks and other pedestrian facilities.

ADA design standards establish criteria to support universal access. All paths and ramps are to be designed with the least possible slope. The maximum slope allowed by ADA for a walkway in new construction shall be 1:12 or 8.33% of rise over 30 feet of run. When designing for maximum slope, landings are needed every 30 inches of rise along with handrails. Paths will have a continuous clear width of 5 feet minimum so that two wheelchairs can pass each other. To provide extra traction, decking should be perpendicular to the walking direction. Standard code requirements state that where the walkway/boardwalk will be 30 inches or more from the ground plain, guardrails will be added to the design. In areas 30 inches or lower, curbing stops will be constructed to the edge of the walkway.

Constructing trails outdoors may have limitations that make meeting ADA standards difficult and sometimes prohibitive. Prohibitive impacts include harm to significant cultural or natural resources, a significant change in the intended purpose of the trail, requirements of construction methods that are against federal, state, or local regulations, or presence of terrain characteristics that prevent compliance.

Simple details to be considered in the planning and design process can greatly enhance accessibility to and within the planned system. Breaks in long grades, consideration of the user's eye level, minimizing grades at drainage crossings, providing areas to get off the trail, and appropriately designed seating walls are examples of simple accessible improvements. Consultation with the physically challenged on specific design issues prior to the planning and design of trails or trailhead facilities can be very beneficial and is encouraged for every accessible project.



## Section 2. Recommended Pedestrian Design Guidelines

Cheyenne's existing standards for pedestrian facilities design demonstrate the city's goal to continue improving the pedestrian network. However, because these guidelines are located across multiple documents, some gaps exist where pedestrian design standards should be clarified more thoroughly. The pedestrian design guidelines found in this document will help close these gaps and provide a comprehensive vision for the pedestrian environment in Cheyenne.

### Sidewalks

Sidewalks are the most fundamental element of the walking network, as they provide an area for pedestrian travel that is separated from vehicle traffic. Sidewalks are typically constructed of concrete and are separated from the roadway by a curb or gutter and sometimes a tree lawn. Sidewalks are a common application in urban and suburban environments but are less common in rural areas and environments where objections to the "urban" character of sidewalks can arise. In rural areas, pedestrian travel commonly occurs along the shoulder of the roadway, which is often unpaved.

Section 8.2 of Cheyenne's Road Standards states that, "The builder on the lot is responsible for sidewalk construction. Where sidewalks are not directly related to a lot, the construction of sidewalks is the responsibility of the developer." Installing new sidewalks can be costly, particularly if drainage improvements such as undergrounding of roadside culverts and installation of curbs/gutters are part of the required design. However, fixing short gaps in an existing sidewalk network maximizes system continuity and can be relatively low-cost. Alternatives to sidewalks in rural areas include pedestrian paths separated from a roadway by a bioswale (to serve drainage purposes) or traffic-calming measures on low-volume streets where pedestrians share the road with motorists.

### Sidewalk Design Guidelines

The sidewalk corridor is the portion of the pedestrian realm between the roadway edge and right-of-way boundary, generally along the sides of streets. A variety of considerations are important in sidewalk design. Providing adequate and accessible facilities should lead to increased numbers of people walking, improved safety, and the creation of social space. Attributes of well-designed sidewalks include the following:

- **Accessibility:** A network of sidewalks should be accessible to all users and meet ADA requirements.
- **Adequate width:** Two people should be able to walk side-by-side and pass a third person comfortably, and different walking speeds should be possible. In areas of intense pedestrian use, sidewalks should be wider to accommodate the higher volume of walkers.
- **Safety:** Design features of the sidewalk should allow pedestrians to have a sense of security and predictability. Sidewalk users should not feel they are at risk due to the presence of adjacent traffic.
- **Continuity and directness:** Walking routes should be obvious and should not require pedestrians to travel out of their way unnecessarily.
- **Landscaping:** Plantings and street trees within the roadside area should contribute to the overall psychological and visual interest of sidewalk users.
- **Social space:** Sidewalks should be more than areas to travel; they should provide places for people to interact through the principles of visual interest and provision of amenities. There should be places for standing, visiting, and sitting. The sidewalk area should be a place where adults and children can safely participate in public life.

- **Quality of place:** Sidewalks should contribute to the character of neighborhoods and business districts and strengthen their identity.

Especially in urban areas, sidewalks serve multiple functions including such uses as café seating and transit stops. It is important to integrate these functions with the sidewalk in ways that enhance the pedestrian experience without infringing upon walking traffic. As such, design considerations for these features are included in this section.

Section 8.3 of the Cheyenne Road Standards provides the following basic standards:

Sidewalks shall be provided for any portion of a site which abuts a roadway. All sidewalks shall be in the public right-of-way. Sidewalk width will be as specified in Attachment 5-A of these Standards.

When a sidewalk abuts angled parking such that there will be vehicular overhang, the sidewalk shall be a minimum of six feet in width. Curb ramps shall be provided wherever an accessible route crosses a curb as per the current ADA Accessibility Guidelines. Driveways shall also be constructed in accordance with current ADA Accessibility Guidelines in order for a person in a wheelchair to negotiate the sidewalk.

Where there is adequate right-of-way, the construction of the sidewalk independent of the curb and gutter section is required on arterials and collectors, and recommended elsewhere. The area between the sidewalk and the back of the curb shall be appropriately landscaped.

Sidewalks in the Downtown Development District shall conform to streetscape recommendations set forth in the Cheyenne Downtown Streetscape Design and Improvement Standards, available at the Cheyenne MPO Office.

The following pages describe specific sidewalk elements in greater detail and provide design concepts that can be used to enhance the existing city standards and provide additional quality and consistency throughout the pedestrian network. These concepts compliment the features and accommodations discussed in Section 8.6 of the Roadway Standards.

## Zones in the Sidewalk Corridor

### Design Summary

The Sidewalk Corridor is typically located within the public right-of-way between the curb or roadway edge and the property line. The Sidewalk Corridor contains four distinct zones (Figure 1): the Curb Zone, the Furnishings Zone, the Through Pedestrian Zone, and the Frontage Zone

#### The Curb Zone

Curbs prevent water in street gutters from entering the pedestrian space, discourage vehicles from driving over the pedestrian area, and facilitate street sweeping. In addition, the curb helps to define the pedestrian environment within the streetscape, although other designs can be effective for this purpose. At the corner, the curb is an important tactile element for pedestrians who are finding their way with the use of a cane.

#### The Furnishings/Planting Zone

The Furnishings Zone buffers pedestrians from the adjacent roadway and is also the area where elements such as street trees, signal poles, utility poles, street lights, controller boxes, hydrants, signs, parking meters, driveway aprons, grates, hatch covers, and street furniture are properly located (Figure 2). This is the area where people enter and depart from parked cars and transit vehicles.

#### The Through Pedestrian Zone

The Through Pedestrian Zone is the area intended for pedestrian travel. This zone should be entirely free of permanent and temporary objects.

#### The Frontage Zone

The Frontage Zone is the area between the Through Pedestrian Zone and the property line. This zone provides a comfortable “shy” distance from the building in areas where buildings are at the lot line or from elements such as fences and hedges on private property.

### Design Examples

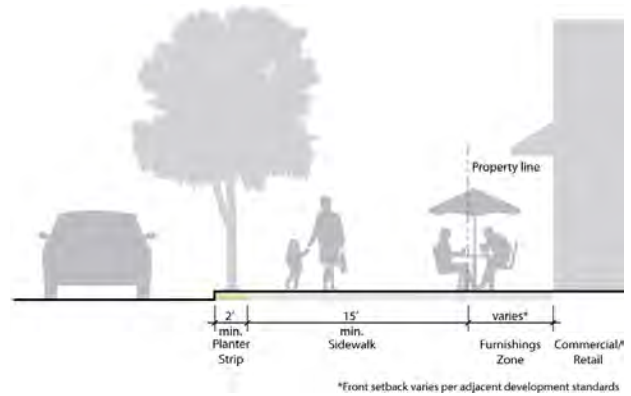



Figure 1. Illustration of Sidewalk Zones.



Figure 2. This sidewalk has plantings in the furnishing zone and lighting in the frontage zone and provides sufficient through passage zone width.



## Sidewalk Widths

Design Summary	Design Examples			
<p>Proposed sidewalk guidelines apply to new development and depend on available street width, motor vehicle volumes, surrounding land uses, and pedestrian activity levels. Standardizing sidewalk guidelines for different areas of the city, dependent on the factors listed above, ensures a minimum level of quality for all sidewalks (Figure 3).</p> <p>Generally, sidewalks should provide at least five feet of clear space dedicated to pedestrian travel. This width:</p> <ul style="list-style-type: none"> <li>Enables two pedestrians (including wheelchair users) to walk side-by-side or to pass each other comfortably.</li> <li>Allows two pedestrians to pass a third pedestrian without leaving the sidewalk.</li> </ul> <p>The table to the right provides guidance for minimum sidewalk widths by street type.</p> <p>In some cases, it is possible to increase the dimensions of the sidewalk corridor, either through acquisition of right-of-way or public walkway easements, or by re-allocation of the overall right-of-way (such as by narrowing roadway travel lanes or reducing the number of lanes). As part of a roadway reconstruction project on a street with a narrow sidewalk corridor, project planners should first analyze the impact of reclaiming a portion of the existing right-of-way. If this proves impractical, the feasibility of acquiring additional right-of-way should be examined. Acquisition should be considered where its cost is reasonable in proportion to the overall project cost.</p> <p>In the case of infill development, the dedication of public right-of-way or the granting of a public walkway easement to widen the sidewalk corridor may be included as a requirement for obtaining a building permit or land use approval.</p>	Recommended Minimum Sidewalk Widths by Street Type:			
		Curb	Tree Lawn (Buffer)	Sidewalk Width
	Arterial and Collector Street	1 ft.	2-4 ft.	8 ft.*
	Urban Local Neighborhood Street	0-1 ft.	0-2 ft.	5 ft.*
*Note: short sidewalk segments can have narrower widths in physically-constrained areas.				
				
Figure 3. Example of a sidewalk with trees and sufficient space for pedestrians to walk together.				

## Sidewalk Surfaces

### Design Summary

Sidewalk surfaces should be smooth and continuous. It is also desirable that the sidewalk surface be stable, firm and slip resistant. The preferred material is Portland Cement Concrete (PCC) (Figure 4). PCC provides a smooth, long-lasting, and durable finish that is easy to grade and repair. Asphalt Concrete (AC) Shown in Figure 5 AC has historically been used for trails in Cheyenne. Due to Cheyenne's cycle of freezing and thawing (frost-heave cycle) AC has to be replaced every 7 – 10 years as opposed to the national average of every 20 years and is not recommended for new installations in Cheyenne.

Crushed aggregate may also be used as an all-weather walkway surface in park areas, but this material generally requires a higher level of maintenance to maintain accessibility.

The *Americans with Disabilities Act* allows a maximum two percent cross-slope on sidewalks and other walkways. Where sidewalks meet driveways, curb cuts, or intersections, a three-foot wide area should be maintained with a two percent cross-slope.

### Design Examples



Figure 4. Concrete is often used as a trail material and can be used for sidewalks.



Figure 5. Asphalt is a common sidewalk surfacing material in many areas, but has a limited lifespan in Cheyenne, due to winter weathering.

## Addressing Sidewalk Obstructions

### Design Summary

Obstructions to pedestrian travel in the sidewalk corridor typically include sign posts, utility and signal poles, mailboxes, fire hydrants, and street furniture. Obstructions should be placed between the sidewalk and the roadway to create a buffer for increased pedestrian comfort. When sidewalks abut perpendicular or angled on-street parking, wheelstops should be placed in the parking area to prevent parked vehicles from overhanging in the sidewalk. When sidewalks abut hedges, fences, or buildings, an additional two feet of lateral clearance should be added to provide appropriate shy distance.

Driveways represent another sidewalk obstruction, especially for wheelchair users. The following techniques can be used to accommodate wheelchair users at driveway crossings:

- Reducing the number of access points reduces the need for special provisions. This strategy should be pursued first.
- Constructing wide sidewalks avoids excessively steep driveway slopes. The overall width must be sufficient to avoid an abrupt driveway slope.
- Where constraints preclude a tree lawn, wrapping the sidewalk around the driveway has a similar effect (Figure 6). However, this method may have disadvantages for visually-impaired pedestrians who follow the curb line for guidance.
- Tree lawns allow sidewalks to remain level, with the driveway grade change occurring within the planter strip (Figure 7).
- When constraints only allow curb-tight sidewalks, dipping the entire sidewalk at the driveway approaches keeps the cross-slope at a constant grade (Figure 8). However, this may be uncomfortable for pedestrians and could create drainage problems behind the sidewalk.

### Design Examples

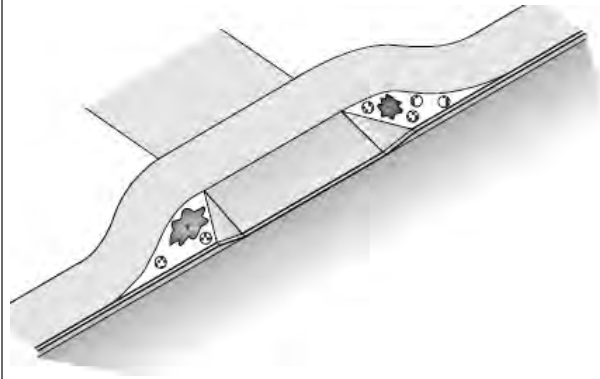


Figure 6. Sidewalk wrapped around driveway.

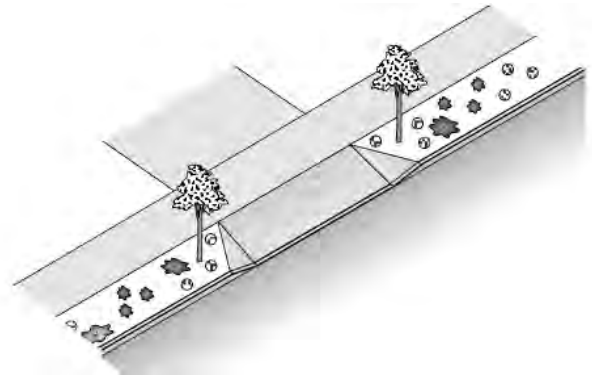


Figure 7. Driveway apron utilizing the tree lawn.

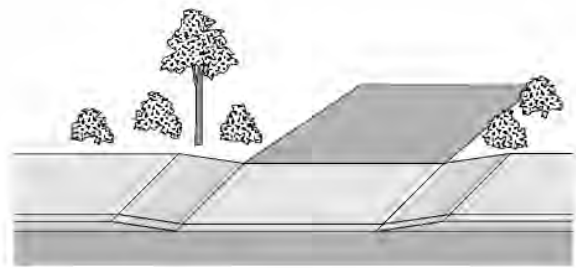


Figure 8. Entire sidewalk dips at driveway.



## ADA-Compliant Curb Ramps<sup>1</sup>

### Design Summary

Curb ramps are the design elements that allow all users to make the transition from the street to the sidewalk. There are a number of factors to be considered in the design and placement of curb ramps at corners. Properly designed curb ramps ensure that the sidewalk is accessible from the roadway. A sidewalk without a curb ramp can be useless to someone in a wheelchair, forcing them back to a driveway and out into the street for access.

The ADA defines two types of curb ramp systems, “perpendicular ramps” and “parallel ramps” (Figure 9). The first provides a ramp into a crosswalk, while the second provides a ramp into a landing that is flush with the street surface, sometimes called a “dropped landing.” A third type, diagonal curb ramps are recommended only in locations with physical constraints.

### Design Examples

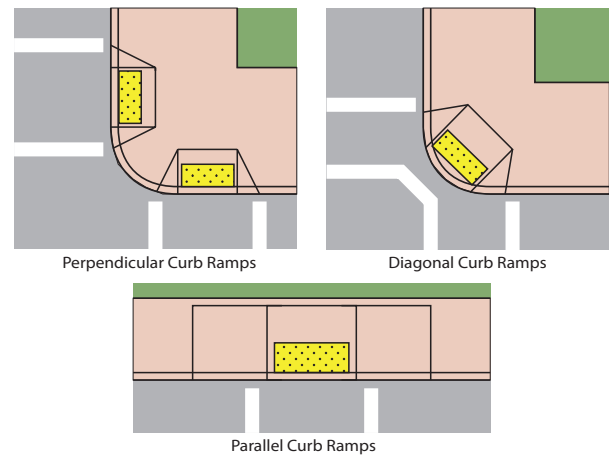


Figure 9. Curb ramp design options.

### Discussion

Every curb ramp must have a landing at the top and at the bottom (Figure 10). The maximum ramp slope in the right-of-way is 1:12 with a cross slope of no more than 1:50. The minimum width of a ramp should be three feet.

The landing at the top of a ramp should be at least four feet long and at least the same width as the ramp itself. It should slope no more than 1:50 in any direction.

If the ramp runs directly into a crosswalk, the landing at the bottom will be in the roadway. The landing, four feet long, should be completely contained within the crosswalk and should not have a running slope of greater than 1:20.

If the ramp lands on a dropped landing within the sidewalk or corner area where someone in a wheelchair may have to change direction, the landing must be a minimum of five feet long and at least as wide as the ramp, although a width of five feet is preferred. The landing should not slope more than 1:50 in any direction.

A single landing may serve as the top landing for one ramp and the bottom landing for another.



Figure 10. Example of a curb ramp with truncated domes.

### Curb Ramp Maintenance

It is critical that the interface between a curb ramp and the street be maintained adequately. Asphalt street sections typically have a shorter life cycle than a concrete ramp. Potholes in the asphalt at the foot of the ramp can catch the front wheels of a wheelchair, causing it to tip over.

In some cases, existing ramps and streets create a tipping hazard because of a sharp change in slope. As an interim solution, this sharp transition can be eased with a tapered infill of asphalt at the foot of the ramp.

<sup>1</sup> Additional information is provided in the ADA Accessibility Guidelines for Buildings and Facilities available at: <http://www.access-board.gov/adaag/html/adaag.htm#4.8>.

## Pedestrian Amenities

### Lighting

Pedestrian-scale lighting (Figure 11) improves visibility and can provide a vertical buffer between the sidewalk and the street, defining pedestrian areas. Pedestrian-scale lighting should be used in areas of high pedestrian activity and where feasible based on available right-of-way, utilities, and cost. Pedestrian-scale lighting is a significant capital improvement and should be provided only where it will have a maximum benefit, such as public safety.

When installing pedestrian-scale lighting, the following details should also be considered:

- Need for strong structures to withstand vandalism
- Materials should fit with City standards and area character
- Glare to adjacent residents
- Color of light: High pressure sodium lamps have the longest life and lowest maintenance cost with a yellow light quality. Metal halide lights produce a white light quality but have shorter lamp life.



Figure 11. Pedestrian-scale lighting in downtown Cheyenne.

### Pedestrian-Scale Furniture

Providing benches in commercial districts or parks (Figure 12) enhances public space by creating places for people to meet and interact, anchoring pedestrian use on the street. Benches are also useful on trails at key rest areas and viewpoints, encouraging people of all ages to use the trail by ensuring that they have a place to rest along the way. Benches can be simple (e.g., wood slats) or more ornate (e.g., stone, wrought iron, concrete), and can be designed to match the character of the neighborhood or area where they are located.



Figure 12. Benches can enhance public spaces by creating places for interaction.

### Landscaping and Bioswales

Landscape features, including street trees or trees along sidewalks and Greenways (Figure 13), can enhance the visual environment and improve the pedestrian experience. Trees can also provide shade from heat and protection from rain.

Bioswales are natural landscape elements that manage water runoff from a paved surface, such as streets, sidewalks, and trails. Plants in the swale trap pollutants and silt and prevent them from entering a river system. Bioswales and landscaping elements can be combined with traffic calming features such as curb extensions and median islands.



Figure 13. Landscaping provides visual interest along Greenways.

## Pedestrian Accommodation at Transit Stops

### Design Summary

All bus stops should have a hard, flat boarding surface. All stops must meet ADA requirements. New sidewalk connections should be provided from the transit stop to the nearest improved sidewalk.

### Discussion

Pedestrian-friendly design encourages transit use (Figure 14). In order to be a successful alternative to the automobile, transit service must be frequent, reliable, convenient, comfortable, and affordable.

When designing or improving a transit stop, there are certain amenities that must be provided in order for the stop to effectively accommodate transit passengers. The amenities include:

- Bus stop markers/signs that are oriented to the pedestrian, rather than to passing vehicles
- Bus schedules and route map display areas
- Seating for transit passengers, placed so that the waiting passengers are visible to the bus driver
- A shelter to shield passengers from the weather
- Pedestrian-scale lighting to increase security and visibility for riders and transit operators
- A trash receptacle



Figure 14. Example of a good transit stop, which provides shelter and a place to sit.

### Additional Guidance

High-visibility crosswalks are often appropriate, particularly at high-usage transit stops. Even if transit riders access the station from one side only, they all will need to cross the street to access or leave the bus stop. For transit stops at signalized crossings, stops on the far side of the intersection are often preferred to reduce conflicts with right-turning vehicles and increase visibility.



## Sidewalk Maintenance

### Design Summary

Sidewalk surfaces that have settled or heaved over time can be a significant barrier for pedestrians. Surfaces that are smooth when newly installed may not stay that way, particularly where masonry units are installed without an adequate subbase. Knowledgeable design, wise material selection, good construction practices, and regular maintenance procedures can help ensure that differences in level between adjacent units do not exceed the limits of usability. Surface provisions for an accessible route limit allowable vertical differences in level between abutting surfaces.

### Root Protection

Most sidewalk damage is caused as subsurface tree roots become thicker, lifting up concrete slabs (Figure 15). To prevent extensive sidewalk damage, the appropriate rootstocks should be chosen for trees planted at each location. Trees and rootstocks that have extensive, shallow root systems should not be planted adjacent to sidewalks. Also, tree selection should be made based on the available soil, water and light conditions, and most importantly, the width of the planting strip.



Figure 15. Subsurface tree roots can lift concrete sidewalk slabs, causing the surface to become uneven.

### Plantings

Street trees are a highly desirable part of the pedestrian environment, especially large-canopied shade trees. Tree limbs should be trimmed to leave at least eight feet of clear space above the sidewalk. Where mature trees are in place, root barriers, root pruning techniques, and interlocking sidewalk pavers could be used to minimize damage.

### Grates

All grates within the sidewalk should be flush with the level of the surrounding sidewalk surface (Figure 16), and should be located outside the Through Pedestrian Zone. Ventilation grates and tree well grates shall have openings no greater than ½ inch width.

Designers should consider using tree well grates or treatments such as unit pavers in high pedestrian use areas.

### Hatch Covers and Chases

Hatch covers and chases should be located within the sidewalk Furnishings Zone. Hatch covers and chases should have a surface texture that is rough, with a slightly raised pattern. The surface should be slip-resistant even when wet. The cover should be flush with the surrounding sidewalk surface.



Figure 16. Tree well grates should be flush with the sidewalk surface.

## Intersections and Crossings

In general, pedestrians are not inclined to travel very far out of direction to access a designated crosswalk, therefore providing sufficient crossings is critical for a safe and convenient pedestrian environment. Crosswalks can also be designed for increased visibility of pedestrians, and curb ramps and vehicle turning radii should also be considered for the pedestrian environment.

In areas of high pedestrian use, it may be appropriate to design for the convenience of pedestrians when considering signal placement and timing, even if it means reducing the efficiency of vehicle progression. For example, longer pedestrian phases may be desirable.

For areas with long blocks and few intersections, the natural frequency of crossing facilities may be insufficient, causing pedestrians to cross streets at various unprotected locations. On roadways that are part of the state highway system, improvements should follow WYDOT's typical practice of funneling pedestrians to signalized intersections. In areas with long blocks that are not part of the state highway system, mid-block crossings can provide better service for pedestrians while simultaneously increasing the predictability of behavior that increases safety for all road users. Section 8.7.2 of the Road Standards provides guidance on crosswalk location and warrants.

### Intersection Design Guidelines

Attributes of pedestrian-friendly intersection design include:

- **Legibility** — Symbols, markings, and signs used at corners should clearly indicate what actions the pedestrian should take.
  - **Accessibility** — All corner features, such as curb ramps, landings, call buttons, signs, symbols, markings, and textures, should meet accessibility standards.
  - **Separation from Traffic** — Corner design and construction must be effective in discouraging turning vehicles from driving over the pedestrian area.
- Although some intersections in Cheyenne create challenging pedestrian crossing conditions, improvement opportunities exist. Most intersections that could benefit from improvements are located on streets with higher vehicle speeds and volumes, higher pedestrian volumes, limited sight distance, and/or other conditions complicating pedestrian crossing movements. The following sections describe specific intersection and crossing elements in greater detail.
- **Clear Space** — Corners should be clear of obstructions. They should also have enough room for curb ramps, transit stops where appropriate, and street conversations where pedestrians might congregate.
  - **Visibility** — It is critical that pedestrians on the corner have a good view of vehicle travel lanes and that motorists in the travel lanes can easily see waiting pedestrians.

### Improving Visibility at Crossings

At signalized intersections, all crosswalks should be marked. At unsignalized intersections, crosswalks should be marked in the following situations:

- To help pedestrians find their way across a complex intersection
- To show pedestrians the shortest route with the least exposure to vehicular traffic
- To help position pedestrians where they can best be seen by oncoming traffic

#### Mid-block Crossings

Crosswalks can be provided at mid-block locations if sufficient pedestrian demand exists or where pedestrians would be required to walk out-of-direction to access a crosswalk at an intersection (Figure 17). Mid-block crossings should be aligned where possible with logical pedestrian travel patterns. Mid-block crossings should always include pavement markings and warning signs.



Figure 17. High visibility mid-block crossing.

#### High-Visibility Crosswalks

Where there is poor motorist awareness of an existing crossing or at high-use locations such as a school crosswalk, high-visibility crosswalks can increase safety for pedestrians and bicyclists.

#### Flashing Warning Signs

Flashing warning signs call attention to the pedestrian crossing location. They can be continuous, timed for rush hours, or activated by a pedestrian push button.

One device, the Rectangular Rapid Flashing Beacon (RRFB), has been granted interim approval for use by the MUTCD. This beacon has been shown to have high rates of compliance with a fairly low cost installation relative to other more restrictive devices that provide comparable results, such as full mid-block signalization (Figure 18). Guidance on use and installation guidelines can be found at the MUTCD website<sup>1</sup>.



Figure 18. Flashing pedestrian warning signs can use solar power to minimize maintenance.

#### Pedestrian Refuge Islands

Pedestrian refuge islands (Figure 19) minimize pedestrian exposure at a crossing by shortening the crossing distance and increasing the number of available gaps for crossing. Refuge islands allow pedestrians to make a crossing in multiple stages by focusing on one direction of traffic at a time.



Figure 19. Pedestrian refuge islands reduce pedestrian exposure at roadway crossings.

<sup>1</sup> [http://mutcd.fhwa.dot.gov/resources/interim\\_approval/ia11/fhwamemo.htm](http://mutcd.fhwa.dot.gov/resources/interim_approval/ia11/fhwamemo.htm)



## Modifying Wide Corners

### Design Summary

In general, a smaller curb radius is better for pedestrians (Figure 20). In comparison to a large curb radius, a tight curb radius:

- Provides additional pedestrian space.
- Allows more flexibility in the placement of curb ramps.
- Results in a shorter crosswalk.
- Requires motorists to reduce speed while turning.
- Is beneficial to street sweeping operations.

Historically, roadway design standards have called for wide curb radii at intersections to increase capacity for motor vehicles. As a result, many of Cheyenne's intersections have corners that force pedestrians to walk longer to cross the street than at intersections with smaller turning radii. This design also allows motorists to make right turns at relatively high speeds.

### Discussion

#### Choosing a Curb Radius

Several factors govern the choice of curb radius in any given location:

- The turning radius of the design vehicle
- The geometry of the intersection
- Street classification
- Whether on-street parking or a bike lane (or both) exists between the travel lane and the curb

The presence of a lane for parking or bicycles creates an "effective curb radius" that allows the designer to choose a radius for the curb that is smaller than the turning radius required by the design vehicle.

The designer must balance all factors, keeping in mind that the chosen radius should be the smallest possible (Figure 21). The radius may be as small as three feet where there are no turning movements, or five feet where there are vehicle turning movements and there is adequate street width and a larger effective curb radius created by parking or bike lanes.

#### Parking Control and Corner Radii

Designers sometimes consider that on-street parking will begin or end at the point of tangency or point of curvature of the corner radius. In practice, this point is not always evident in the field. Parking control should not be a factor in selecting curb radius.

### Design Examples

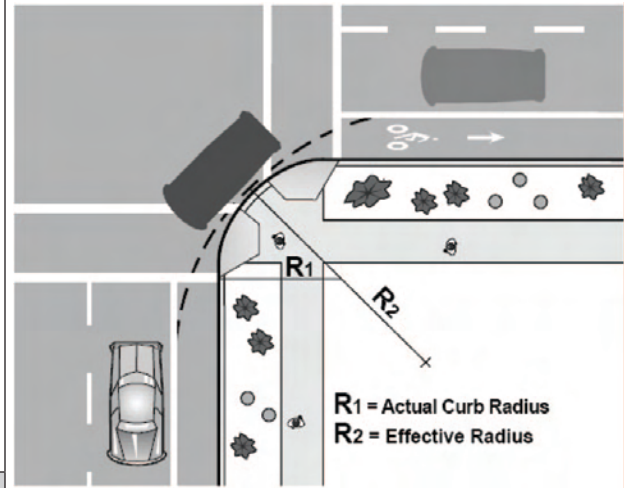


Figure 20. Actual versus effective curb radius



Figure 21. This corner was reconstructed to reduce vehicle turning speeds and to provide additional pedestrian space.

## Accommodating Pedestrians at Signals

### Pedestrian Push Buttons

Pedestrian push buttons are used to permit the signal controller to detect pedestrians wanting to cross the street (Figure 22). They can be used at an actuated or semi-actuated traffic signal, at intersections with low pedestrian volumes, and at mid-block crossings.

When push buttons are used, they should be:

- Located so that someone in a wheelchair can reach the button from a level area of the sidewalk without deviating significantly from the natural line of travel into the crosswalk.
- Marked (for example, with arrows) so that it is clear which signal is affected.

In general, the use of pedestrian push buttons should be avoided in areas of high pedestrian use; these areas should use pre-timed pedestrian signal phasing. However, the pedestrian classification must be balanced with the other functions of the street. In high pedestrian use areas, there should be a demonstrated benefit for actuated signals before push buttons are installed. The following are some criteria for that benefit:

- The main street carries through traffic or transit, such as a major city traffic or transit street or a district collector.
- Traffic volumes on the side street are considerably lower than on the main street.
- The pedestrian signal phase is long (for example, on a wide street) and eliminating it when there is no demand would significantly improve vehicular level of service of the main street.

Where push buttons must be installed in high pedestrian use areas, designers should consider operating the signal with a regular pedestrian phase during off-peak hours. The U.S. Access Board recommends buttons be raised above or flush with their housing and be large enough for people with visual impairments to recognize, a minimum of two inches. The U.S. Access Board also recommends the force to activate the signals should be no more than five pounds of force. Additional guidance on the placement of push buttons is contained in the 2009 MUTCD.

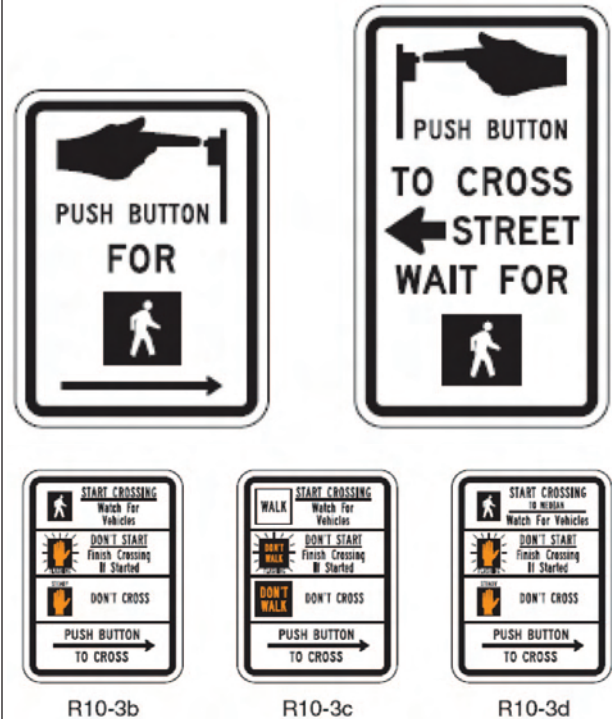


Figure 22. Pedestrian push button examples

## Accommodating Pedestrians at Signals

### Pedestrian Signal Indication ("Ped Head")

Pedestrian signal indicators indicate to pedestrians when to cross at a signalized crosswalk (Figure 23). All traffic signals should be equipped with pedestrian signal indications except where pedestrian crossings are prohibited by signage.

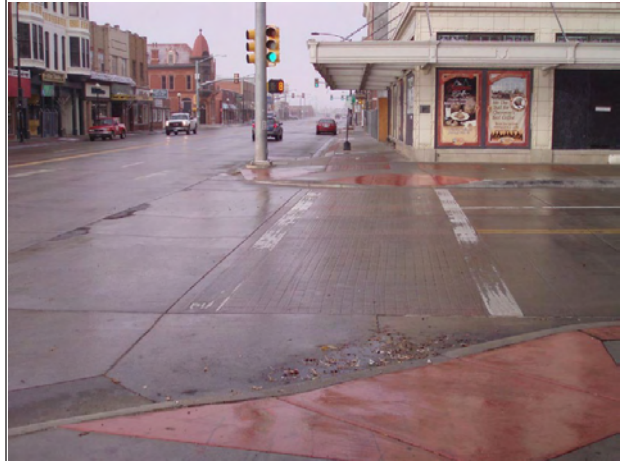


Figure 23. Pedestrian signal indication

### Audible Pedestrian Traffic Signals

Audible pedestrian traffic signals provide crossing assistance at signalized intersections for visually-impaired pedestrians. To be considered for audible signals, the location must first meet the following basic criteria:

- The intersection must already be signalized.
- There must be a demonstrated need for an audible signal device. The need is often demonstrated through a user request.
- The location must have a unique intersection configuration and characteristics.
- The location must be suitable to the installation of audible signals, in terms of safety, noise level, and neighborhood acceptance (Figure 24).

Audible signals should be activated by a pedestrian signal push button with at least a one-second delay to activate the sound. Additional guidance on audible signals is contained in the 2009 MUTCD.



Figure 24. Speaker on pedestrian traffic signal



## Accommodating Pedestrians at Signals

### Pedestrian Signal Phases

Special pedestrian phases can be used to provide more crossing time for pedestrians at intersections. Examples include a pre-timed signal, leading pedestrian interval, and pedestrian scramble phase, all described below. Additional guidance on pedestrian signal phases is contained in the 2009 MUTCD.

#### Pre-Timed Signal

Pre-timed signals accommodate pedestrian crossings through automatic phasing concurrent with parallel vehicle traffic, while at actuated signals pedestrians usually push an activation button to trigger the walk signal. Providing adequate pedestrian crossing time is a critical element of the walking environment at signalized intersections. The 2009 MUTCD recommends traffic signal timing to assume a pedestrian walking speed of 3.5 feet per second, meaning that the length of a signal phase with parallel pedestrian movements should provide sufficient time for a pedestrian to safely cross the adjacent street. At crossings where older pedestrians or pedestrians with disabilities are expected, crossing speeds as low as three feet per second may be assumed.

#### Leading Pedestrian Interval (LPI)

At intersections where there are conflicts between turning vehicles and pedestrians, pedestrians are given a “walk” designation a few seconds in advance of the associated green phase for parallel vehicle traffic.

#### Pedestrian Scramble Phase

In areas with very heavy pedestrian traffic, an all-pedestrian signal phase gives pedestrians free passage in the intersection while no vehicle traffic movement is allowed (Figure 25). Pedestrian scramble phases are only recommended where pedestrian volumes are very high and should be used sparingly, given that the additional phase increases wait times for other modes.



Figure 25. Example of a pedestrian scramble signal.

Source: <http://www.tsc.berkeley.edu/newsletter/winter05-06/scramble.html>

## Half Signalized Crossings

### Pelican (Pedestrian Light Control Activated Crossing) Signals

A Pelican signal uses a standard red-yellow-green light that rests on green for vehicular traffic until a pedestrian activates the push button (Figure 26). The signal then changes to yellow, then red, while WALK is shown to the pedestrian. The signal can be installed as either a one-stage or two-stage signal, depending on the street's characteristics. In a two-stage crossing, the pedestrian crosses first to a median island and is then channelized along the median to a second signalized crossing point with operation identical to the first. The two crossings only delay the pedestrian minimally and allow the signal operation to fit into the arterial synchronization, thus reducing delays.



Figure 26. Example of a Pelican signal.

### Puffin Signals (Pedestrian User Friendly Intelligent)

An updated version of a Pelican crossing, a Puffin signal consists of traffic and pedestrian signals with push buttons and infrared or pressure mat detectors (Figure 27). After a pedestrian pushes the button, a detector verifies the presence of the pedestrian at the curbside. This helps eliminate false signal calls associated with people who push the button and then decide not to cross. When the pedestrian is given the WALK signal, a separate motion detector extends the WALK interval (if needed) to ensure that slower pedestrians have time to cross safely. Conversely, the signal can also detect when the intersection is clear of pedestrians and return the green signal to vehicles, thereby reducing vehicle delays. Puffin signals are designed to be crossed in a single movement by the pedestrian.



Figure 27. Example of a Puffin signal.

### Hawk Signals (High-Intensity Activated Crosswalk)

A HAWK signal (Figure 28) is a combination of a beacon flasher and traffic control signaling technique for marked crossings. The beacon signal consists of a traffic signal head with a red-yellow-red lens. The unit is normally off until activated by a pedestrian. When pedestrians wish to cross the street, they press a button and the signal begins with a flashing yellow indication to warn approaching motorists. A solid yellow light, advising motorists to prepare to stop, then follows the flashing yellow. The signal is then changed to a solid red, at which time the pedestrian is shown a WALK indicator. The beacon signal then converts to an alternating flashing red, allowing motorists to proceed, while the pedestrian is shown the flashing DON'T WALK signal. Additional guidance on HAWK signals (including warrants) is contained in the 2009 MUTCD.



Figure 28. Example of a Hawk signal.

## Other Types of Crossings

### Grade-Separated Crossing

Grade-separated crossings (Figure 29) completely separate pedestrian travel from vehicular travel. They should be used only where it is not feasible to provide an at-grade crossing. Examples include crossing a freeway, major highway, a rail yard, or a waterway.

Guidelines for grade-separated crossings:

- The crossing must be accessible.
- Grade changes should be minimized to the greatest extent possible.
- Shared bicycle/pedestrian facilities should have a clear passage width of at least 12 feet.



Figure 29. Grade-separated crossing

### No Pedestrian Crossing

Pedestrian crossings may be prohibited to avoid conflicts between pedestrians and traffic in situations that are especially dangerous (Figure 30). Prohibiting crossings should be considered only in very limited circumstances, for example:

- Where it would be dangerous for pedestrians to cross, as where visibility (for pedestrians or motorists) is obstructed and the obstruction cannot be reasonably removed.
- Where so many legal crosswalks exist that they begin to conflict with other modes, as on an arterial street with multiple offset intersections.
- Where there are unique considerations at a particular intersection and pedestrian mobility is not disproportionately affected by the closure.

Guidelines:

- Do not close crosswalks at “T” and offset intersections unless there is a safer crosswalk within 100 feet of the closed crosswalk.
- Use “Pedestrians Use Marked Crosswalk” signs for crosswalks closed to reduce an excess of crosswalks on a street with “T” or offset intersections.
- Use “No Pedestrian Crossing” signs for crosswalks closed for pedestrian safety.



R9-3a

Figure 30. No Pedestrian Crossing sign.



### Pork Chop Refuge Island

Pork chop refuge islands (Figure 31) shorten crossing distances and provide a refuge for pedestrians between separated traffic movements. They should be used with right turn slip lanes, modern roundabouts, or other intersection treatments where pedestrians benefit from a refuge. Pork chop refuge islands can also be used at “T” intersections between right-turning and left-turning travel lanes. Note that right-turn slip lanes are not recommended in areas of high pedestrian use.

#### Guidelines:

- The refuge must be accessible.
- Crosswalks should be indicated with pavement markings to show pedestrians and motorists the correct crossing location.
- Generally, the crosswalk should be set back 20 feet from the point where the traffic merges, so that pedestrians cross behind the first vehicle, and should be oriented perpendicular to the line of vehicle travel.

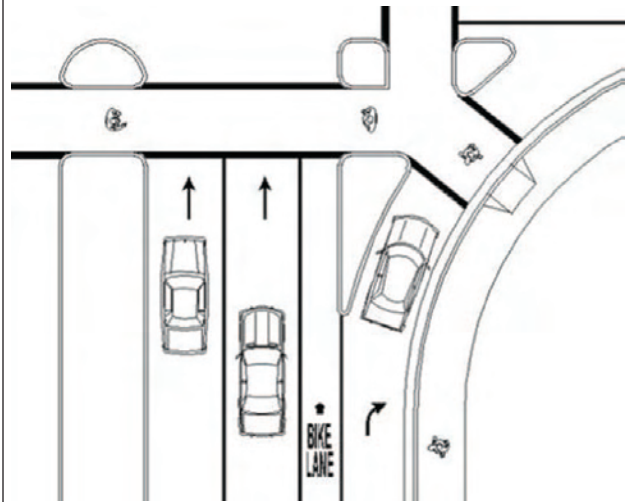


Figure 31. Pork chop refuge island

## Traffic Calming

Traffic calming interventions slow traffic by modifying the physical environment of a street. Research into the efficacy of traffic calming devices to improve pedestrian safety has shown that traffic calming can reduce the number of automobile collisions. For instance, a Vancouver study published in 1997 showed an average collision reduction of 40 percent in four neighborhoods that used a combination of the traffic calming methods, including those described in this section.<sup>4</sup>

### Traffic Calming Design Guidelines

Traffic calming treatments are typically installed in residential areas in response to neighborhood safety concerns, but some treatments may be also appropriate for commercial centers or other areas of high pedestrian use. The following sections discuss a variety of traffic calming treatments, including some types already in use in Cheyenne. It should be noted that some traffic calming devices may restrict bicycle mobility, which conflicts with the multi-modal design principles presented in the Cheyenne Transportation Master Plan. The traffic calming tools presented here are consistent with the information presented in the *Neighborhood Traffic Management Program*. Techniques presented here that are not discussed in the *Neighborhood Traffic Management Program* include street trees and raised crosswalks.

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<sup>4</sup> Zein, S. R.; Geddes, E.; Hemsing, S.; Johnson, M., "Safety Benefits of Traffic Calming," Transportation Research Record Vol: #1578 pp. 3-10.

## Traffic Calming Treatments

### Street Trees

In addition to their aesthetic value, street trees can slow traffic and improve pedestrian safety and comfort (Figure 32). Trees add visual interest to streets and narrow the street's visual corridor, which may encourage slower driving speeds.

#### Guidelines:

- If the sidewalk corridor is not wide enough to accommodate street trees, adding tree plantings in the parking lane is possible. These trees will have shortened life spans.



Figure 32. Mature street trees line the streets of Cheyenne's older neighborhoods.

### Raised Crosswalks

Raised crosswalks are similar to speed humps, but are installed at intersections to elevate crosswalks. Raised crosswalks eliminate grade changes from the pedestrian path and give pedestrians greater prominence as they cross the street (Figure 33). Detectable warnings should be used at the curb edges to alert vision-impaired pedestrians that they are entering the roadway. Raised crosswalks may be designed so they do not have a slowing effect (for example, on emergency response routes).



Figure 33. Raised crosswalks increase pedestrian visibility.  
Source: [www.walkinginfo.org](http://www.walkinginfo.org)

### Speed Humps

Speed humps are elevated, sloped sections of pavement that require motorists to slow down as they pass over (Figure 34).

Speed humps are generally 12-22 inches long and three to four inches high. There are four speed hump shapes – sinusoidal, circular, parabolic, and flat-topped – which differ in the shape of their slope. The sinusoidal humps are much smoother to drive over at the intended speed and are also friendlier to bicyclists. Speed humps of the parabolic shape provide a more pronounced bump when driving over them.

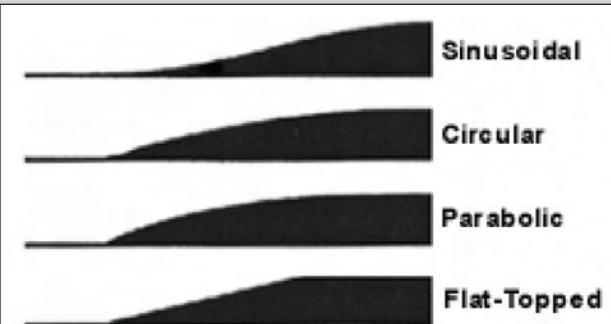


Figure 34. Types of speed humps.



## Traffic Calming Treatments

### Chicanes

Chicanes are a series of bulb-outs or narrowings that create an S-shaped route (Figure 35).

With no major pedestrian issues, chicanes can provide additional landscaping and street buffer area. Care should be taken to ensure that chicanes do not affect bicycle mobility.



Figure 35. Example of chicanes.

### Mini Traffic Circles

Mini traffic calming circles are circular islands in the middle of an intersection (Figure 36). Traffic circles slow traffic by altering the route of vehicles and by reducing the distance a motorist can see down the street, which also causes traffic to slow.

Unlike full roundabouts, traffic circles maintain the crosswalks at the intersection corners. However, in some cases it is necessary to move the crosswalks back to accommodate the turning radius of larger vehicles around the circle. In these cases the crosswalks are no longer aligned directly perpendicular with the corner, which could cause difficulty for persons with visual impairments.

Care should be taken to ensure that any landscaping in the circles uses low-growing shrubs that maintain visibility for pedestrians, particularly those in wheelchairs.




Figure 36. Mini traffic calming circles can help slow traffic.

### Pinch Point (Queuing Street/Neckdown/Choker)

This treatment narrows the travel lane for motorists by installing curb extensions or islands at intersections to create a narrow channel through which only one vehicle can pass at a time (Figure 37). A separated bicycle travel-way segregates the bicycles from motor vehicles as they travel through the device. This design slows auto traffic while retaining priority movement for bicycles.



Figure 37. Example of a pinch point treatment.

Traffic Calming Treatments	
Street Closures/Diverters	
<p>There are three primary types of street closures:</p> <ul style="list-style-type: none"> <li>• Diverters force traffic to turn right or left.</li> <li>• Half roadway closures allows one-way traffic to continue through an intersection and does not allow travel in the other direction.</li> <li>• Full roadway closures that completely close a street segment to motor vehicle traffic (Figure 38).</li> </ul> <p>All three types of street closures benefit pedestrians and residents by diverting traffic away from residential streets. However, diverted traffic flows may cause problems on other streets. On streets with closures, emergency vehicle access may be limited.</p>	 <p>Figure 38. Example of a full roadway closure.</p>

## Greenways

Greenways (also referred to as “trails” and “multi-use paths”) are often viewed as recreational facilities, but they are also important corridors for utilitarian trips. Greenways serve pedestrians and provide additional width over a standard sidewalk. These facilities may be constructed adjacent to roads, through parks or open space areas, along creeks, or along linear corridors such as abandoned railroad lines. The *Greenway Development Plan* states that trails should always include a paved surface but a decomposed granite or other aggregate material is a desirable material for shoulders that accommodate joggers and runners. Greenways constructed next to the road must have some type of vertical (e.g., curb or barrier) or horizontal (e.g., landscaped strip) buffer separating the path area from adjacent vehicle travel lanes.

### Greenway Design Guidelines

Greenways should generally provide directional travel opportunities not provided by existing roadways. Elements that enhance Greenways include<sup>5</sup>:

- Frequent access points from the local road network; if access points are spaced too far apart, users will have to travel out of direction to enter or exit the path, which will discourage use
  - Directional signs to direct users to and from the path
  - High building standards to allow heavy maintenance equipment to use the path without causing it to deteriorate
  - Few at-grade crossings with streets or driveways
  - Path terminus that is easily accessible to and from the street system, preferably at a controlled intersection or at the beginning of a dead-end street. If poorly designed, the point where the path joins the street system can put pedestrians and cyclists in a position where motorists do not expect them
- Identification and addressing of potential safety and security issues at the start of the planning process
  - Consider creating parallel bicycle and pedestrian treadways within the same right of way when room is available and heavy use is observed or anticipated

---

<sup>5</sup> These elements are discussed in greater detail in the *Greenway Development Plan* and in the following pages of this section.



## Greenways

### Design Summary

#### Width:

- 10 feet is the minimum width suggested for a two-way shared-use path and is only recommended for low traffic situations.
- 12 feet is recommended in most situations.
- 12 to 14 feet or greater is recommended for heavy-use situations with high concentrations of multiple users such as joggers, bicyclists, rollerbladers, and pedestrians.

#### Lateral Clearance:

- A two-foot or wider shoulder on both sides (Figure 39).

#### Overhead Clearance:

- Clearance to overhead obstructions should be a minimum of eight feet, but 10 feet is recommended.

#### Separation From Roadway:

- A minimum five-foot buffer should separate the path from the edge of the roadway, or a physical barrier of sufficient height should be installed where a shared-use path must be adjacent to a roadway.

### Discussion

The use of concrete surfacing for paths has proven to be the most suitable for long-term use (Figure 40). Using modern construction practices, concrete provides a smooth ride with low maintenance costs. Concrete paths can be placed with a slip-form paver. The surface must be cross-broomed. Crack-control joints should be saw-cut, not troweled.

Greenways should be designed with sufficient surfacing structural depth for the subgrade soil type to support maintenance and emergency vehicles. Where the path must be constructed over a very poor subgrade (wet and/or poor material), treatment of the subgrade with lime, cement, or geotextile fabric should be considered.

### Design Examples

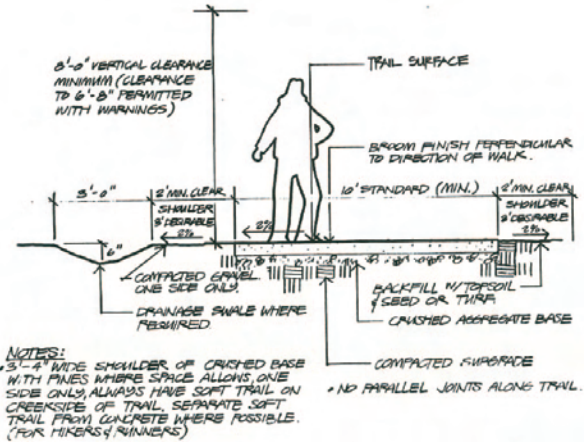


Figure 39. Recommended standard Greenway design. Additional details are contained in the Greenway Development Plan.



Figure 40. Greenway trails have sufficient width to accommodate a variety of users.

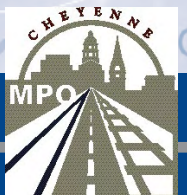


## Cheyenne Metropolitan Area Pedestrian Plan

# Shape

CHEYENNE METROPOLITAN PLANNING ORGANIZATION

ALTA PLANNING + DESIGN | SUMMIT ENGINEERING



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## Welcome

The *Shape* element of the *Cheyenne Metropolitan Area Pedestrian Plan* analyzes Cheyenne's existing pedestrian needs. One goal of this Plan is to evaluate indicators of current or potential pedestrian demand across the Cheyenne metropolitan area, such as the presence of schools, transit, youth, and elderly populations, and to determine the quality of existing facilities. Studying the distribution of certain population segments and land use types in Cheyenne helps identify locations with the greatest potential for walking trips and thereby allows the City to focus its resources in these areas. In addition to understanding the potential demand for walking, it is also important to understand current and potential barriers to walking, such as freeways, railroads, unsafe intersections, and poor facility connectivity.

### Part of PlanCheyenne

The *Shape* element of the Cheyenne Metropolitan Area Pedestrian Plan is one part of PlanCheyenne, a four-part, comprehensive approach to planning Cheyenne's future. This element, *Shape*, analyzes existing pedestrian needs and provides guidance on the current and future planning efforts.

### How to Use the Shape Element

The key outcome of the pedestrian needs analysis presented in this element is a thorough understanding of current and potential pedestrian demands and barriers in the metropolitan area, which will become the basis for the development of system recommendations. In order to achieve a deeper understanding of conditions within the metropolitan area, the generalized geographic areas used to frame the discussion of existing conditions in the *Snapshot* element were divided into smaller zones and used as the basis for the Pedestrian Level of Service (PLOS) analysis discussed later. The PLOS zones were developed based on input from City and MPO staff, community members, and Project Team field visits.

### Needs Analysis Limitations

This needs analysis relies heavily on data provided by the Laramie County Cooperative GIS program and U.S. Census Bureau. The demographic data comes primarily from the 2000 U.S. Census and may not depict the current demographic profile of the Cheyenne Metropolitan Area with 100 percent accuracy. Likewise, the data used in the development of the intersection analysis (e.g., intersection control devices) are only updated periodically and provide a picture of existing conditions within the city at the time of their development. This limitation is particularly significant in residential areas that have been constructed since the last update of these datasets. The City may choose to run this analysis again in the future using the methodology presented here to obtain an updated picture of existing conditions and pedestrian needs in the Cheyenne area. This analysis uses data from the U.S. Census Bureau aggregated into census block groups and density aggregated into Traffic Analysis Zones (TAZs).<sup>1</sup> Raster analysis, discussed later, was used to reaggregate this information to match the PLOS zone boundaries.

---

<sup>1</sup> TAZ are generally used for motor vehicle transportation modeling. They are similar to PLOS zones, but their suitability for analyzing pedestrian need and demand is limited as TAZ zones are constructed to capture motor vehicle trips and there is some variation in the factors known to influence pedestrian and motor vehicle trips.



## Section 1. Pedestrian Trip Generators

This section summarizes the location and intensity of pedestrian trip-generating land uses and sub-populations across Cheyenne. This analysis guides the planning process toward those areas of Cheyenne where investments in pedestrian facilities may be most beneficial in terms of the current propensity for pedestrian activity<sup>2</sup>.

### Total Population and Employment Density

Population density, measured as the number of persons per acre of residential land, is a strong indicator of potential pedestrian activity. Generally, higher population densities are associated with more urban environments, which tend to support pedestrian travel through mixed land uses and interconnected street networks.

Map 1 displays population density for the Cheyenne Metropolitan Area Pedestrian Plan study area. As shown, the neighborhoods near downtown have the highest population densities, ranging from five to ten people per acre. Other areas with high density include the Buffalo Ridge Neighborhood and the Arp Neighborhood. Low population densities occur in the southern area of the city, though this density is likely to increase in the next few years with the development of the area surrounding South High School. There is a noticeable absence of population density in the easternmost portion of the city, where land uses are predominately commercial and industrial.

Employment density, measured as the number of employers per acre of commercial land, is a strong indicator of potential pedestrian activity. Map 2 displays average employment density by Traffic

Analysis Zone (TAZ). There are several locations with high concentrations of employment, including downtown and Frontier Shopping Mall on Dell Range Boulevard. Low employment densities occur in north and east Cheyenne.

### Current Walking Rates in Cheyenne

According to the 2000 Census, approximately 365 people in Cheyenne reported walking to work on a daily basis. This represents about 1.3 percent of the commuting population. The proportion of Cheyenne commuters who walk is comparable to the state average, which is approximately 1.8 percent. Map 3 displays the percentage of all commuters who walk to work by census block groups. Populations residing in older residential neighborhoods surrounding the downtown core reported the highest rates of pedestrian commuting. The high rates of pedestrian commuting in these census blocks is balanced by very low rates of pedestrian commuting further from the downtown core. The pedestrian mode share in census block groups separated from downtown by the UPRR tracks and I-80 generally is higher than block groups north of downtown. The area between the UPRR tracks and I-80 is characterized by populations with lower median incomes, larger average household size, and increased rates of walking to nearby schools. The pedestrian commute mode share in the area immediately south of I-80 and east of South Greeley Highway is very similar to the pedestrian commute share recorded in downtown Cheyenne and the neighborhoods immediately to the north.

---

<sup>2</sup> The analysis of pedestrian generators and attractors is based upon methodologies employed by the City of San Diego's 2006 Draft Pedestrian Master Plan Citywide Implementation Framework Report. This methodology received broad public review and was widely supported by San Diego Association of Governments staff.

## Pedestrian Dependent Sub-Populations

This section summarizes demographic characteristics commonly associated with higher levels of walking, including age (both youth and the elderly), physical ability (people with physical impairments), and median household income (members of lower income households). Youth tend to walk more because they cannot legally drive. The elderly and physically impaired may walk more given physical abilities that may restrict their capacity to drive, such as vision impairments. Finally, members of lower income households tend to walk more given their lack of access to motor vehicles for driving.

Map 4 displays the distribution of persons younger than 16 years across Cheyenne. The distribution and intensity of youth generally follows the overall population density patterns.

Map 5 displays the distribution of persons older than 65 years across Cheyenne. The presence of higher concentrations of elderly persons follows similar patterns to the overall population, with notable concentrations in the census block groups in central east Cheyenne, south of Pershing Boulevard.

Map 6 displays the distribution of physically impaired residents. As shown, these populations are concentrated in the Mountain View, Silvergate, North Yellowstone East, Monterey Heights and Buffalo Ridge Neighborhoods.

Map 7 displays household income patterns across Cheyenne. As shown, the areas north of downtown have the highest annual median income, while households with lower incomes are concentrated south of the UPRR tracks and east of South Greeley Highway.

Table 1. Pedestrian Generator Weights and Multipliers

Pedestrian Generator	Weights	Multipliers	Final Score
Pedestrian Commuters (percent pedestrian commuters by census block group)			
> 12	3	2	6
6 – 12	2		4
3 - 6	1		2
< 3	0		0
Population Density (persons per acre by census block group)			
> 10	3	2	6
5 – 10	2		4
< 5	1		2
Employment Density (employees per nonresidential acre by TAZ)			
> 34.38	4	2	8
12.08 – 34.37	3		6
3.32 – 12.07	2		4
< 3.31	1		2
Elderly (population older than 65 years per residential acre by census block group)			
> 1.9	3	2	6
.77 – 1.9	2		4
.32 – .76	1		2
< .31	0		0
Youth (population younger than 16 years per acre by census block group)			
2.31 – 4.95	3	2	6
1.41 – 2.30	2		4
0.61 – 1.40	1		2
< 0.60	0		0
Impaired (physically impaired population per residential acre by census block group)			
> 0.79	3	1	3
0.37 – 0.78	2		2
0.18 – 0.36	1		1
< 0.17	0		0
Median Household Income (median household income by census block group)			
\$18,120 - \$31,278	3	1	3
\$31,279 - \$41,970	2		2
\$41,971 – \$57,026	1		1
\$57,026 - \$81,157	0		0

Sources: Alta Planning + Design; Cheyenne - Laramie County Cooperative GIS Program; 2000 U.S. Census Bureau

## Composite Pedestrian Trip Generators

Map 8 shows the composite pedestrian trip generator map. This map was developed using a GIS tool called Spatial Analyst, which combines the individual generators, as discussed in the previous sections, into a single composite file. The pedestrian trip generators are weighted individually, with higher values assigned to locations with higher levels of pedestrian trip-generating features. Differing multipliers were also applied to the various pedestrian trip generators to account for the greater importance of some generators. Table 1 displays the pedestrian trip generators, along with the associated weights and multipliers. Categorical breaks were determined using Jenks natural breaks methodology.

Interpreting the weight and multiplier values assigned to one of the generators is useful for understanding this process. In the case of population density, three classes of density were defined (greater than 10 persons per acre, five to 10 persons per acre, and fewer than five persons per acre). Point values were then assigned to the different classes, with higher population densities receiving higher point values. A multiplier value of one or two was applied to the generators. Those generators receiving a multiplier of two should have a greater effect on pedestrian activity than those generators receiving a multiplier of one. The population density generator was assigned a multiplier of two, meaning that it is more highly correlated with walking than some of the other pedestrian trip generators.<sup>3</sup>

As shown on Map 8, the final pedestrian trip generator map identifies several high-generator areas within Cheyenne, especially downtown Cheyenne, the neighborhoods directly north of the airport, and the residential neighborhoods east of downtown and south of East Pershing Boulevard. The areas with the lowest pedestrian trip generator scores are the residential area in the northwestern corner of the study area, the industrial land in east Cheyenne, and the less densely populated area in southwest Cheyenne.

---

<sup>3</sup> The weight and multiplier values were similarly applied by the City of San Diego in their 2006 *Draft Pedestrian Master Plan*.



## Section 2. Pedestrian Trip Attractors

This section summarizes the distribution of various land use types across Cheyenne that are typically associated with higher levels of walking, especially land use types that attract pedestrian trips. Such land uses include schools, transit stops, parks, retail establishments, and civic facilities (e.g., libraries, post offices, and government buildings).

### Schools, Parks, and Other Pedestrian Trip-Generating Land Uses

Pedestrian trip-generating land uses are displayed on several maps throughout this Plan. Schools and parks are displayed on all maps. Transit stops are displayed on Map 9, while places of employment correlate with employment density shown on Map 2. As shown, these land uses are fairly evenly distributed across Cheyenne with transit stops and employment concentrated toward the center of the study area.

### Transit Stops and Ridership

An important focus for pedestrian travel is the public transit system, since transit riders typically access the transit system on foot. Cheyenne is served by the Cheyenne Transit Program (Map 9). There are approximately 200 transit stops in the Cheyenne metropolitan area, with ridership ranging from one to 60 observed daily boardings at a single transit stop during a 2007 study. The greatest concentration of transit boardings was observed in the downtown area, with high concentrations also recorded near Frontier Mall on Dell Range Boulevard.

### Composite Pedestrian Trip Attractors

Map 10 displays the final pedestrian trip attractor map for the City of Cheyenne. This map was developed using a GIS tool called Spatial Analyst, to combine the individual attractors into a single, composite file, with higher values assigned to locations closer to pedestrian trip-attracting land uses, and lower values assigned to locations further away from pedestrian trip-attracting land uses. Whereas the assessment of pedestrian trip generators was based mainly upon concentrations of various population groups, pedestrian trip attractors are assessed in terms of distances to or from the attractor.

Varying weights were assigned to all locations in Cheyenne based upon their proximity to pedestrian trip-attracting land uses. Concentric rings (or buffers) were created for each pedestrian trip-attracting land use. Table 2 displays the distance-based weight values assigned to the respective buffers around the pedestrian trip-attracting land uses, and Table 3 displays the weights applied to the various pedestrian trip-attracting land uses, along with the associated distance-based multipliers. The map shows the relative pedestrian trip-attraction value or proximity to desirable pedestrian destinations within the study area.

**Table 2. Distance-Based Pedestrian Attractor Multipliers**

Buffer Distance	Distance-Based Multiplier
Within 1/8 Mile	1.5
1/8 to 1/4 Mile	1
1/4 to 1/3 Mile	0.75
1/3 to 1/2 Mile	0.5

**Table 3. City of Cheyenne Pedestrian Trip Attractor Weights & Distance-Based Multipliers**

Pedestrian Trip-Attracting Land Uses	Weights	Distanced Based Multiplier			
		Within 1/8 mile	Between 1/8 and 1/4 mile	Between 1/4 and 1/3 mile	Between 1/3 and 1/2 mile
Transit Stops	3	4.5	3	2.25	1.5
Elementary Schools	3	4.5	3	2.25	1.5
Middle Schools	2	3	2	1.5	1
Places of Employment	2	3	2	1.5	1
Parks, Recreation and Open Space	1	1.5	1	0.75	0.5
High Schools	1	1.5	1	0.75	0.5

Source: Alta Planning + Design, *City of San Diego Pedestrian Master Plan*

As shown on Map 10, the composite pedestrian trip attractor map identifies several high-attraction areas within Cheyenne, especially in the downtown area, the area around Cole Elementary School and Hebard Elementary School the commercial corridor along Dell Range Boulevard, and the cluster of elementary schools on the east side of I-25.

## Section 3. Pedestrian Barriers

Existing barriers to walking affect perceptions of safety and decrease the accessibility of destinations that are otherwise within a walkable distance. This section summarizes the distribution of various factors across Cheyenne that may discourage people from walking. Indicators of pedestrian barriers include pedestrian/vehicle collisions, discontinuous pedestrian facilities, absence of streetlights, high posted speed limits (e.g., greater than 35 miles per hour), steep slopes, and un-traversable infrastructure, specifically freeway and rail corridors. High wind speeds were noted as an additional barrier to pedestrian travel but were excluded from this geographically-based analysis.

### Pedestrian Crashes

In the period from 2005 through 2007, 41 crashes involving a pedestrian were reported in Cheyenne (Map 11). Reported pedestrian crashes remained steady at 15 during 2005 and 2007, with a slight decrease to 11 crashes in 2006. Of reported crashes, the majority occurred along street corridors (21 crashes). Thirteen crashes occurred at an intersection location. Streets in Cheyenne that experienced more than two crashes during that time period include:

- Pershing Boulevard (5)
- Central Avenue (4)
- 8th Street (2)
- Lincolnway (6)
- I-25 (2)
- Logan Avenue (2)
- Ames Avenue (2)
- South Greeley Highway (2)
- I-80 (2)

The majority of crashes occurred during dry roadway conditions during daylight hours. Alcohol was a contributing factor in four crashes; in three of four reported incidents, the motorist was cited. About ten percent (5) of the reported crashes were hit-and-run incidents. Most streets where crashes were reported

are either collector or arterial roadways.

### Freeways, Railroads, and Slopes

Map 12 displays areas with steep slopes and infrastructure-related barriers created by limited access roadways and railroad corridors. Slopes over ten percent were considered to be barriers to pedestrian travel. As shown, several areas with slopes greater than ten percent characterize Cheyenne, these areas encircle the city like a large bowl with the steepest slopes occurring in southwest Cheyenne. I-80 and the UPRR tracks effectively serve as barriers dividing the north and south ends of town.

### Posted Roadway Speeds

Map 13 displays existing posted speed limits. As roadway speed increases, so does the associated pedestrian barrier score, which is shown in Table 4. Roadways that have the highest pedestrian barrier score include:

- Pershing Boulevard
- College Drive
- Dell Range Boulevard
- Yellowstone Road
- Bishop Boulevard
- Hynds Boulevard
- Central Avenue
- Powderhouse Road
- Prairie Avenue
- Ridge Road
- Lincolnway
- Nationway
- Campstool Road
- Fox Farm Road
- South Greeley Highway
- U.S. 30
- I-80
- I-25
- I-180
- Parsley Boulevard



- Walterscheid Boulevard
- Missile Drive

## Streetlights and Greenway Amenities

Map 14 displays the location of street lighting along roadway corridors and greenway amenities. Due to the age of the data and the unavailability of data from the unincorporated areas in the County, lighting in some newer neighborhoods, such as the area around South High School, is not shown. However, the majority of roadways in Cheyenne have some roadway lighting. Proximity of greenway amenities is a factor considered in the Pedestrian Quality Index, discussed later in this section. Areas closer to greenway amenities receive a positive bump to their facility score. Greenway amenity data was provided by the Laramie County Cooperative GIS program and included: Adopt-A-Spot locations, archways, art installations, benches, bicycle shops, drinking

fountains, fitness clusters, interpretive signage, mileage markers, playgrounds, restrooms, signalized crossings, stop controlled crossings, trailheads and trash receptacles.

## Composite Pedestrian Trip Barriers

Map 15 displays the composite pedestrian trip barrier map for Cheyenne. The pedestrian trip barriers are weighted individually. Differing multipliers are also applied to the various pedestrian trip barriers to account for the relatively greater importance of some barriers over others. Table 4 displays the pedestrian trip barriers, along with the associated weights and multipliers.

Shown on Map 15, the final pedestrian trip barrier map identifies several high-barrier areas within Cheyenne. The freeway, railroad, and major arterial corridors appear to be significant pedestrian barriers. Downtown is relatively free of pedestrian barriers,

**Table 4. Pedestrian Barrier Weights and Multipliers**

Pedestrian Barrier	Weights	Multipliers	Final Score
Pedestrian Collisions, 2005 to 2007 (1/16 mile buffer applied to each collision)			
Fatality	3	3	9
Injury	2		6
Posted Speed Limits			
> 45 mph	3	2	6
35 – 44 mph	2		4
25 – 34 mph	1		2
< 25 mph	0		0
Absence of Street Lights			
> 300 feet	3	1	3
150 – 300 feet	2		2
75 – 149 feet	1		1
< 75 feet	0		0
Railroad and Freeway Corridors			
Rail or Freeway Corridor	1	3	3
Slopes			
> 25%	2	1	2
10% - 25%	1		1
< 10%	0		0

Sources: Alta Planning + Design; Cheyenne - Laramie County Cooperative GIS Program; *City of San Diego Pedestrian Master Plan*

as are areas with lower speed roadways. Areas in the southern portion of the study area (e.g., around Arp Elementary and Afflerbach Elementary) come up as relatively barrier free in this analysis, which considers primarily existing infrastructure rather than social or economic barriers.

Map 16 shows the composite attractor, generator, and barrier scores in the study area. Areas with high scores currently provide pedestrians with the best level of service; they are areas with low barrier scores and high pedestrian trip-generating potential that serve many users. Areas with lower scores have lower population and employment densities, are less likely to have higher need pedestrians, and can be characterized by topographic and infrastructure barriers that create access constraints. Some characteristics that contribute to lower composite pedestrian scores can change over time, such as an area's average residential or employment density, or be mitigated through installation of new infrastructure designed with pedestrians in mind (e.g., grade separated crossings or pedestrian-scale lighting).

## Section 4. Pedestrian Level of Service (PLOS)

The Pedestrian Level of Service (PLOS) analysis builds on the existing conditions discussed in the *Snapshot* element. Unlike a motor vehicle level of service analysis, the PLOS provides an objective framework to help planners and decision makers understand the relative quality of the pedestrian experience. Understanding the characteristics of great pedestrian neighborhoods as well as areas with lower PLOS scores can help prioritize improvements in areas with the most need and determine policy strategies that will provide the best financial return.

Five composite maps were constructed and used as the basis for developing a PLOS need (latent demand) map highlighting areas of Cheyenne that are particularly deficient in pedestrian facilities and have existing or potentially high pedestrian volumes. Two companion indices, the Pedestrian Quality Index (PQI) and the Intersection Quality Index (IQI), were developed to rate the quality of individual intersections and sidewalk segments and were integrated into the final analysis.

### Pedestrian Quality Index

The Pedestrian Quality Index (PQI) measures the quality of individual existing sidewalk, shared use path and greenway segments. The conditions found from this segment-based analysis can be integrated into the PLOS to obtain relative measures of zonal sidewalk quality. The resulting analysis presents an overall picture of existing environmental quality.

Table 5 shows the weight assigned to each contributing PQI factor. Sidewalk type and width<sup>4</sup>, land use, slope, presence of lighting, roadway speed, and proximity to amenities factor into the walkway quality in specific locations, while network completion is calculated on a zonal basis. Map 17 shows the relative quality of walkways throughout Cheyenne, and Map

<sup>4</sup> In several cases, sidewalk width and type were unknown. In these cases, it was assumed the sidewalk was a five-foot wide, attached facility.

18 aggregates quality by zone. Generally, the highest quality walkway facilities are located in the heart of downtown and within greenway corridors where connected facility networks provide the greatest pedestrian separation from motor vehicles. Zone 13 has the highest Pedestrian Quality Index score; this is due to the presence of several greenway segments that receive high scores for being high quality pedestrian facilities. Given that we know this Zone lacks sidewalks, the high score indicates that there are no other segment types to influence the Zone's score.

### Intersection Quality Index (IQI)

The following factors were used to measure the pedestrian-friendliness of each intersection.

#### Traffic Control

Traffic at a roadway intersection is either controlled or uncontrolled. A control, such as a stop sign provides a measure of pedestrian safety at intersections while a signalized intersection provides the most protection at a crossing location.

#### Maximum Speed Limit

This is the maximum posted speed limit on any intersection approach. Intersections with higher speed limits received lower scores.

#### Connectivity

Defined as the number of intersection approaches (intersection legs), a greater number of approaches are associated with a more connected roadway grid that provides pedestrians with more opportunities to select their routes.

Table 6 shows the weight assigned to each contributing IQI factor. Map 19 shows the condition of all intersection facilities throughout the study area, whereas Map 20 shows the average zonal intersection quality. Intersections with slower approaches and higher connectivity scored higher, while uncontrolled



Table 5. Sidewalk and Greenway Quality Factor Weights and Multipliers

Pedestrian Quality Index Factor		Weights	Multipliers	Final Score
Type of Sidewalk				
Detached Sidewalk	2	1	2	
Attached Sidewalk	1		1	
No Sidewalk	0		0	
Width of Sidewalk				
> 10 feet	3	2	6	
5 – 10 feet	2.5		5	
5 feet	2		4	
< 5 feet	1		2	
Posted Speed Limits				
< 25 mph	3	2	6	
25 – 34 mph	2		4	
35 – 44 mph	1		2	
> 45 mph	0		0	
Distance to Nearest Lighting				
< 50 feet	3	1	3	
50 - 150 feet	2		2	
150 - 300 feet	1		1	
> 300 feet	0		0	
Slopes				
< 10%	3	1	3	
10% - 25%	2		2	
> 25%	1		1	
Adjacent Land Use				
Park or Open Space	3	2	6	
Commercial or Multi-Use	3		6	
Residential	2		4	
Agricultural	1		2	
Industrial or Other	0		0	
Proximity to Greenway Amenities				
< 50 feet	3	1	3	
50 - 150 feet	2		2	
150 - 300 feet	1		1	
> 300 feet	0		0	
Percent Network Completion				
> 81%	5	2	10	
61% - 80%	4		8	
41% - 60%	3		6	
31% - 40%	2		4	
21% - 30%	1		2	
< 20%	0		0	

Sources: Alta Planning + Design; Cheyenne - Laramie County Cooperative GIS Program



**Table 6. Intersection Quality Weights and Multipliers**

Intersection Quality Index Factor	Weights	Multipliers	Final Score
Traffic Control			
Signal	3	2	4
Stop-Controlled	2		2
Uncontrolled	1		0
Posted Approach Speed			
< 25 mph	4	3	9
25 – 34 mph	3		6
35 – 44 mph	2		3
> 45 mph	1		0
Connectivity Evaluation			
Four or More Approaches	2	2	4
Three Approaches	1		2

Sources: Alta Planning + Design; Cheyenne - Laramie County Cooperative GIS Program,

intersections with higher speed approaches and low connectivity scored poorly. Turn radii, crossing distance, number of turning lanes, and other factors also contribute to intersection quality; while these factors were not directly included in the analysis, the included factors act as proxies for many of these characteristics. This analysis is constrained by the quality of existing data. If intersection level data is used for decision-making purposes, the data should be verified through a field visit or consultation with aerial photos.

The most pedestrian friendly intersections are located in downtown Cheyenne. The least pedestrian friendly intersections are scattered throughout the city and several are located in the Pointe Neighborhood. Zones 16, 17 and 20 have the highest average intersection quality scores, while Zones 4 and 13 have the lowest average intersection quality scores. Areas in the southern and south eastern portion of the study area were not free of barriers, rather the barriers are comprised of factors that do not appear on these maps including fewer roadways as well as social and economic barriers.

## Composite PLOS

Map 21 shows the composite PLOS including the PQI, IQI, attractors, generators, and barriers. Table 8 shows the relative ranking of each zone for each of these indices. These colors correspond to the ranking scheme used on the PLOS maps (Maps 18, 20, and 21). Zones with a purple ranking scored the best in a particular category, as shown in Table 7.

Overall, zones with the highest composite score are located in downtown Cheyenne, or directly east of downtown. High pedestrian attractor and generator scores, low barrier scores and good IQI and PQI scores characterize these zones. Low attractor and generator scores contribute to low composite scores in Zones 2 and 4. Zones 22 and 23 also had low composite scores but moderately high attractor and generator scores. A high barrier score and low scores for existing infrastructure suggest that these zones could be targeted for pedestrian infrastructure improvements and become quite pleasant places to walk. Zone 10 has a low barrier score and moderate scores for all other variables. Cost effective strategies in this zone could significantly increase its pedestrian-friendliness. A table summarizing opportunities, constraints and suggested improvement strategies for each zone is located in Appendix C. The *Build* element of this Plan incorporates this analysis to help develop the pedestrian priority project list.



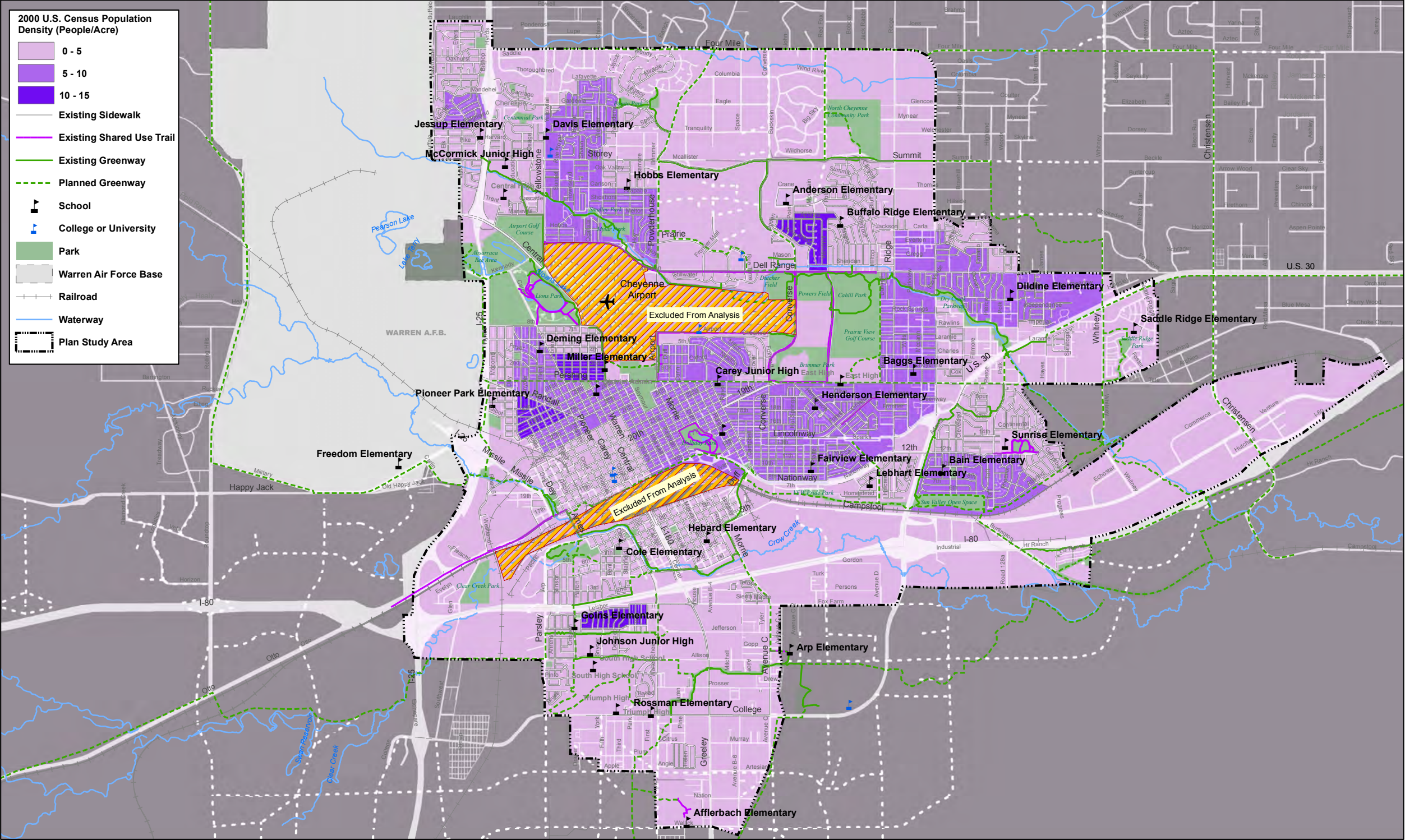
Table 7. Composite PLOS Score

Color	Ranking
	Low
	High

Table 8. PLOS Zonal Summary for the Cheyenne Metropolitan Area

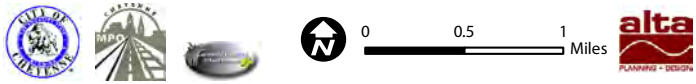
Pedestrian Zone	Attractors	Barriers	Generators	IQI	PQI	Composite
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
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20						
21						
22						
23						



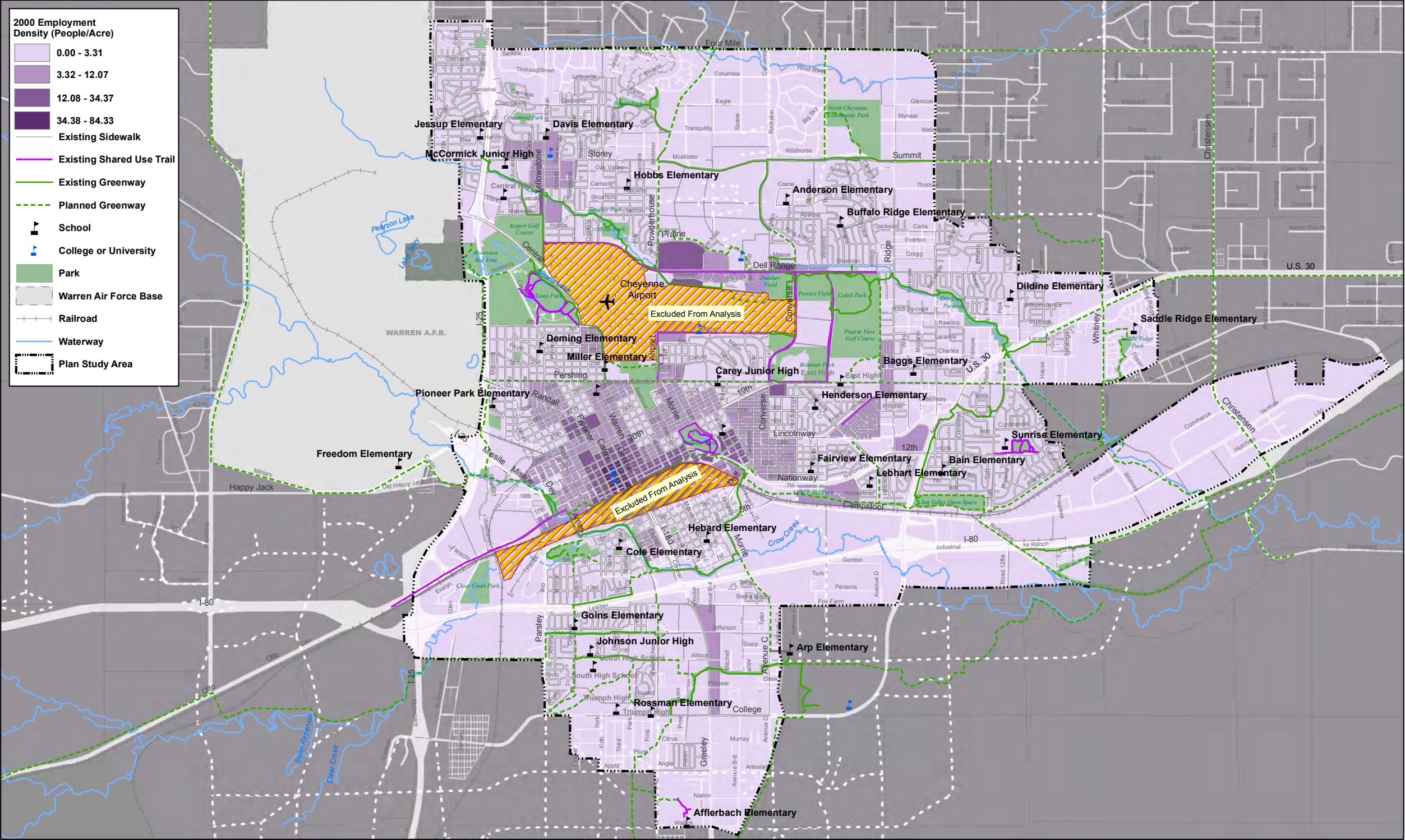


**Map 1 - 2000 Population Density by Census Block Group**

Cheyenne Metropolitan Area  
Pedestrian Plan  
Source: Cheyenne - Laramie County Cooperative GIS Program  
Date: August 2010

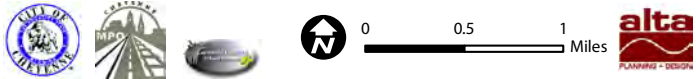




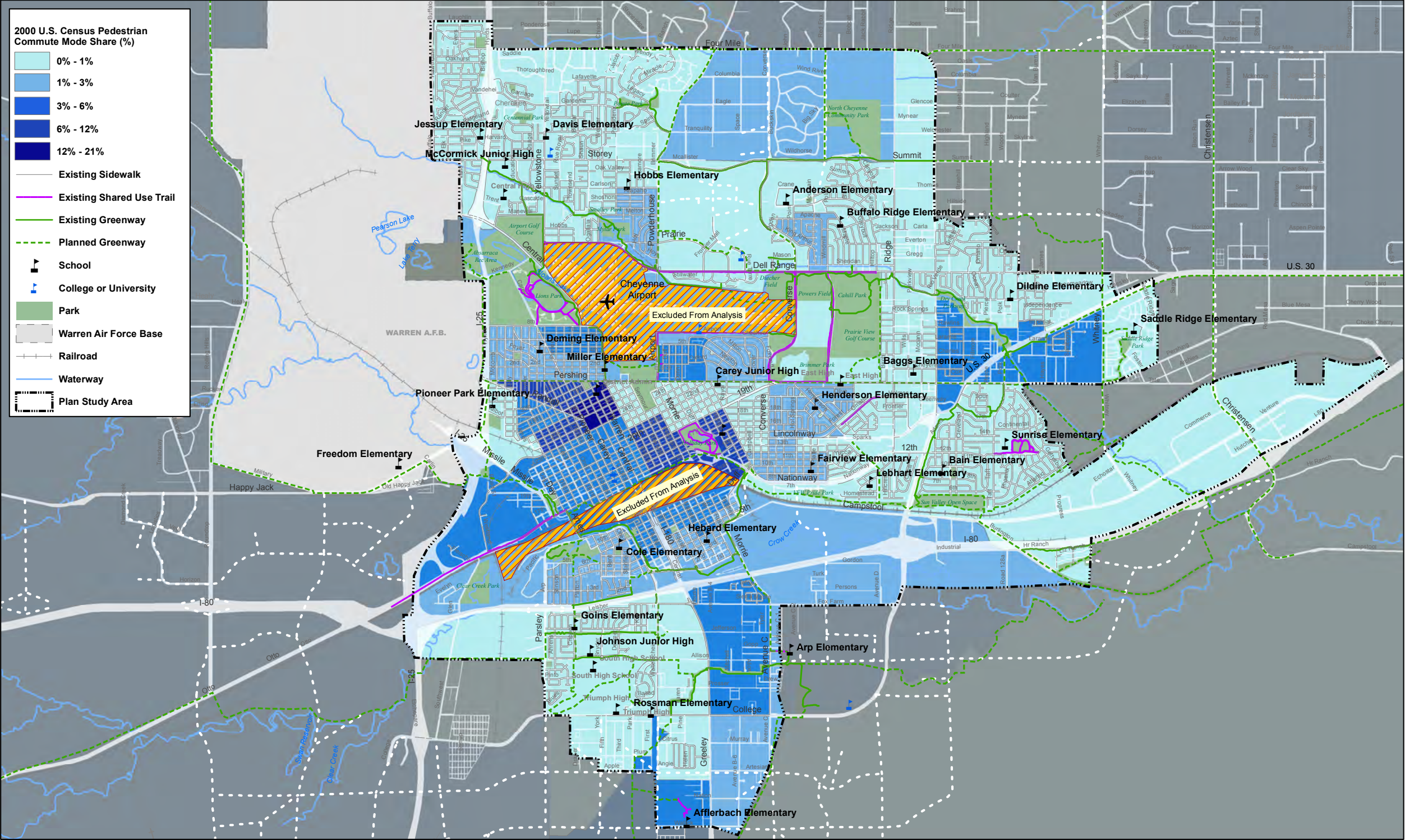


**Map 2 - 2000 Employment Density by Traffic Analysis Zone**

Cheyenne Metropolitan Area  
Pedestrian Plan  
Source: Cheyenne - Laramie County Cooperative GIS Program  
Date: August 2010

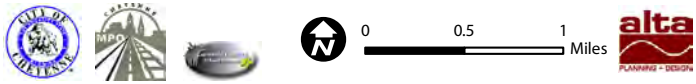




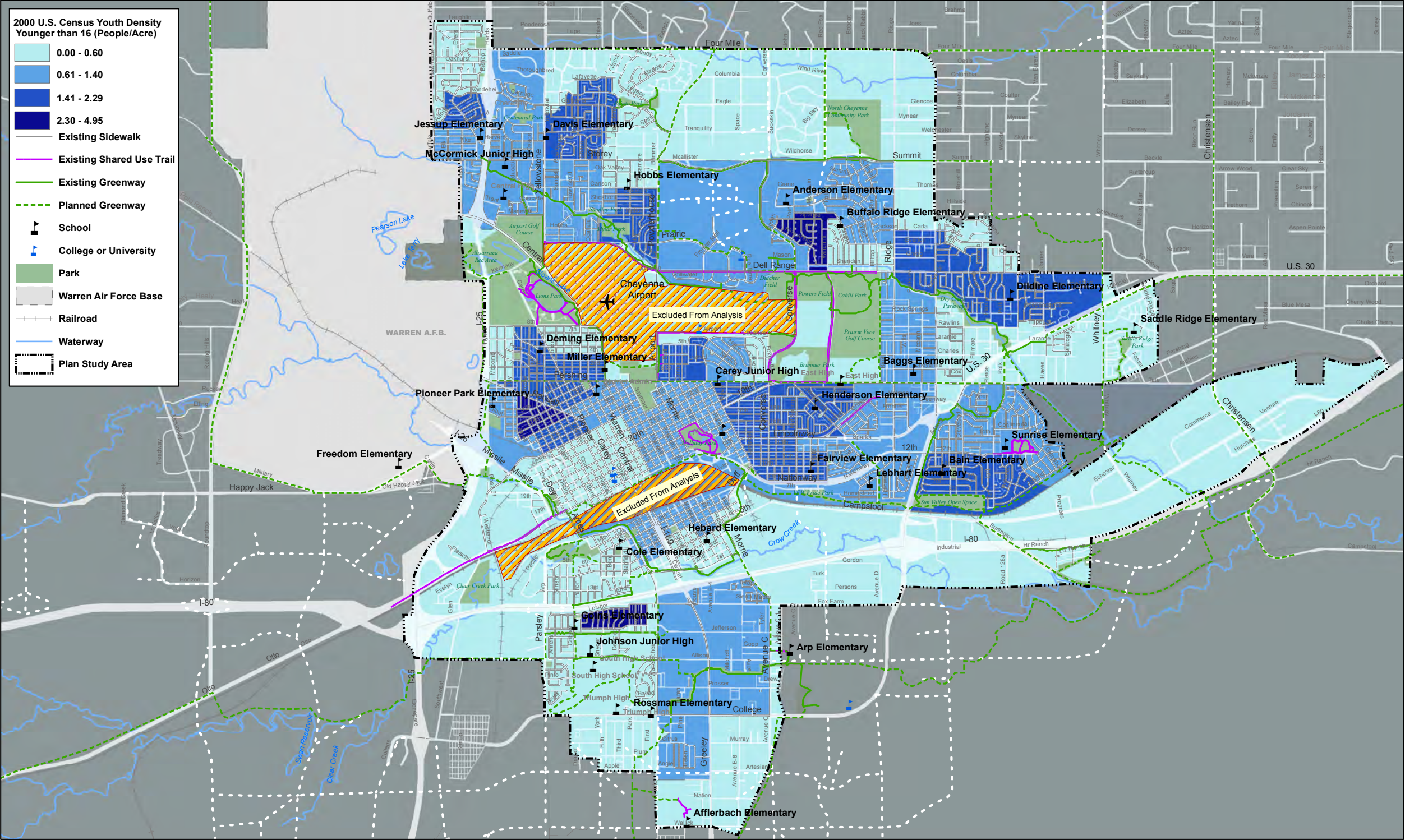


**Map 3 - Pedestrian Commute Mode Share by Census Block Group**

Cheyenne Metropolitan Area  
Pedestrian Plan  
Source: Cheyenne - Laramie County Cooperative GIS Program  
Date: August 2010

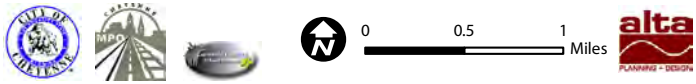




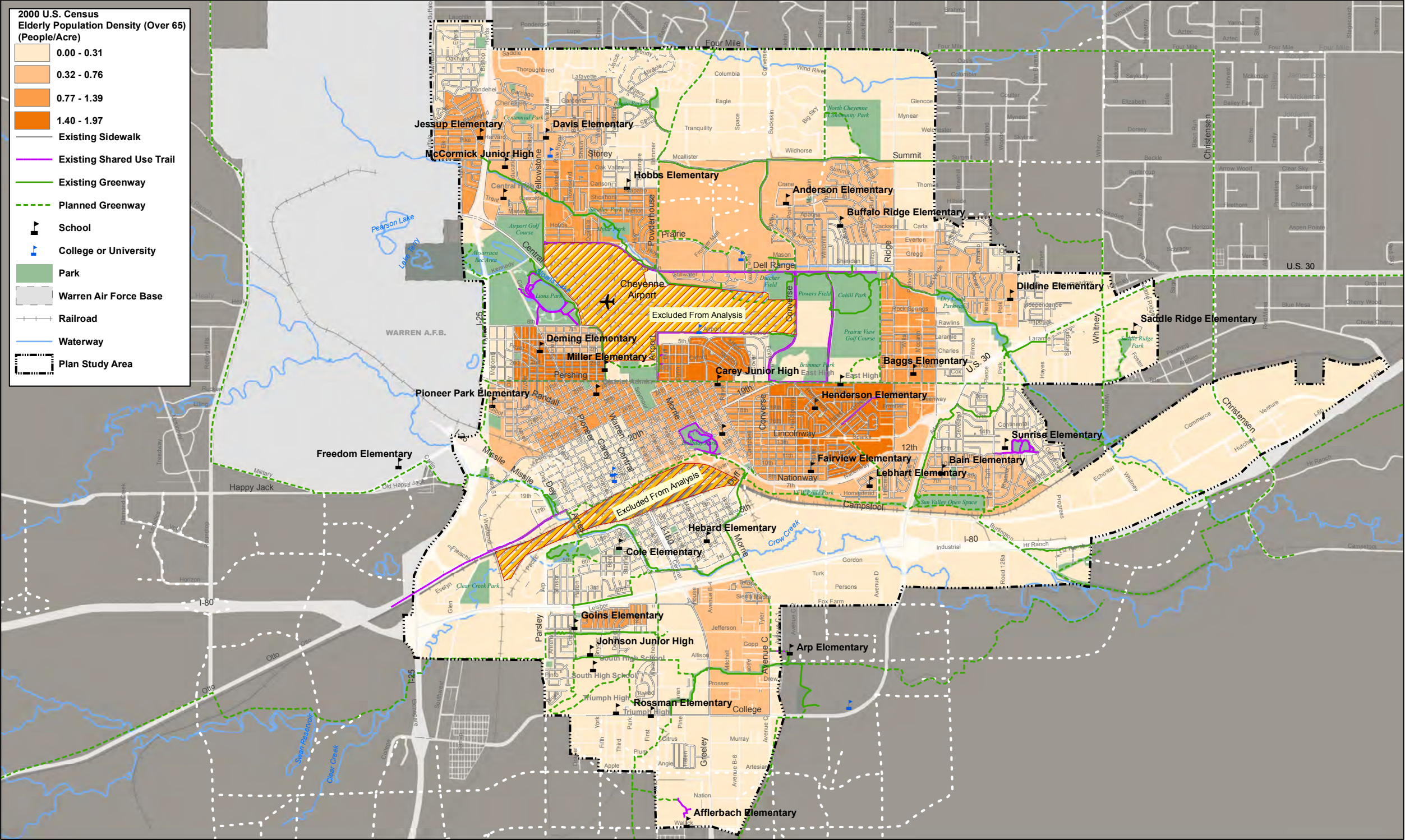


**Map 4 - 2000 Youth Population Density by Census Block Group**

Cheyenne Metropolitan Area  
Pedestrian Plan  
Source: Cheyenne - Laramie County Cooperative GIS Program  
Date: August 2010

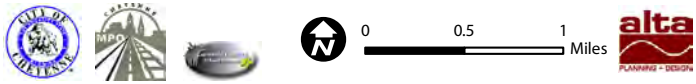




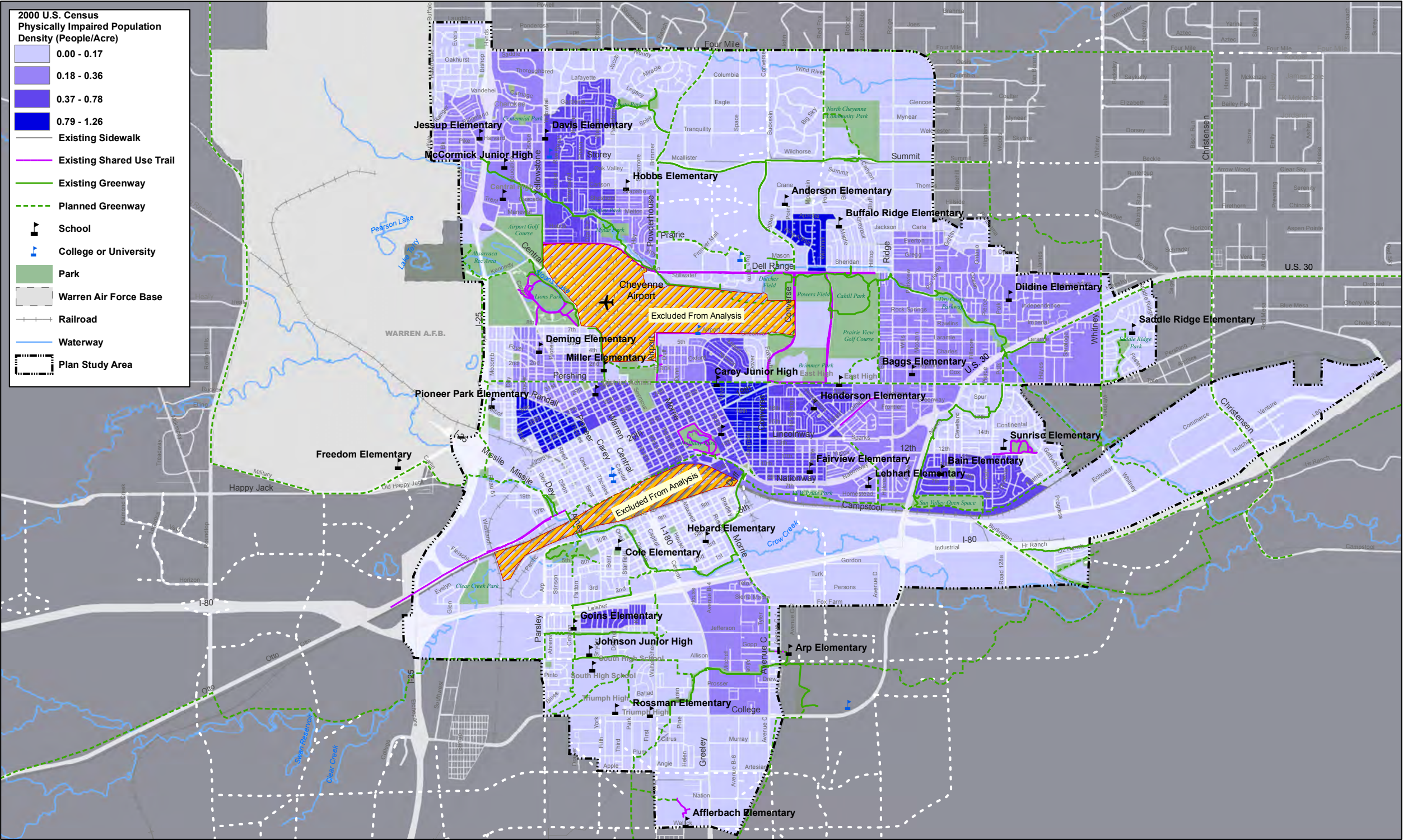


**Map 5 - 2000 Elderly Population Density by Census Block Group**

Cheyenne Metropolitan Area  
Pedestrian Plan  
Source: Cheyenne - Laramie County Cooperative GIS Program  
Date: August 2010

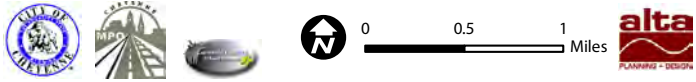




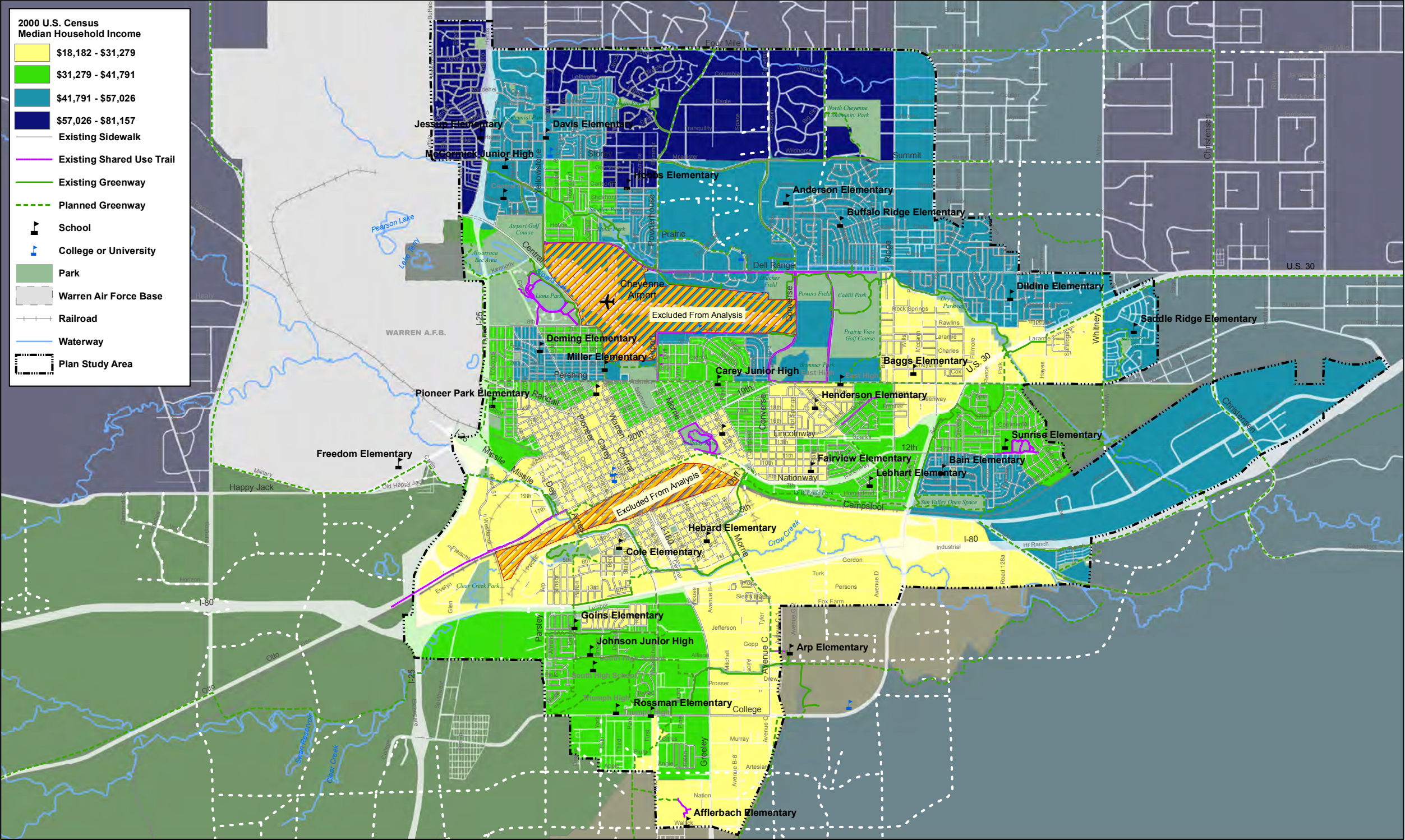


**Map 6 - Physically Impaired Population Density by Census Block Group**

Cheyenne Metropolitan Area  
Pedestrian Plan  
Source: Cheyenne - Laramie County Cooperative GIS Program  
Date: August 2010












**Map 7 - Median Household Income by Census Block Group**

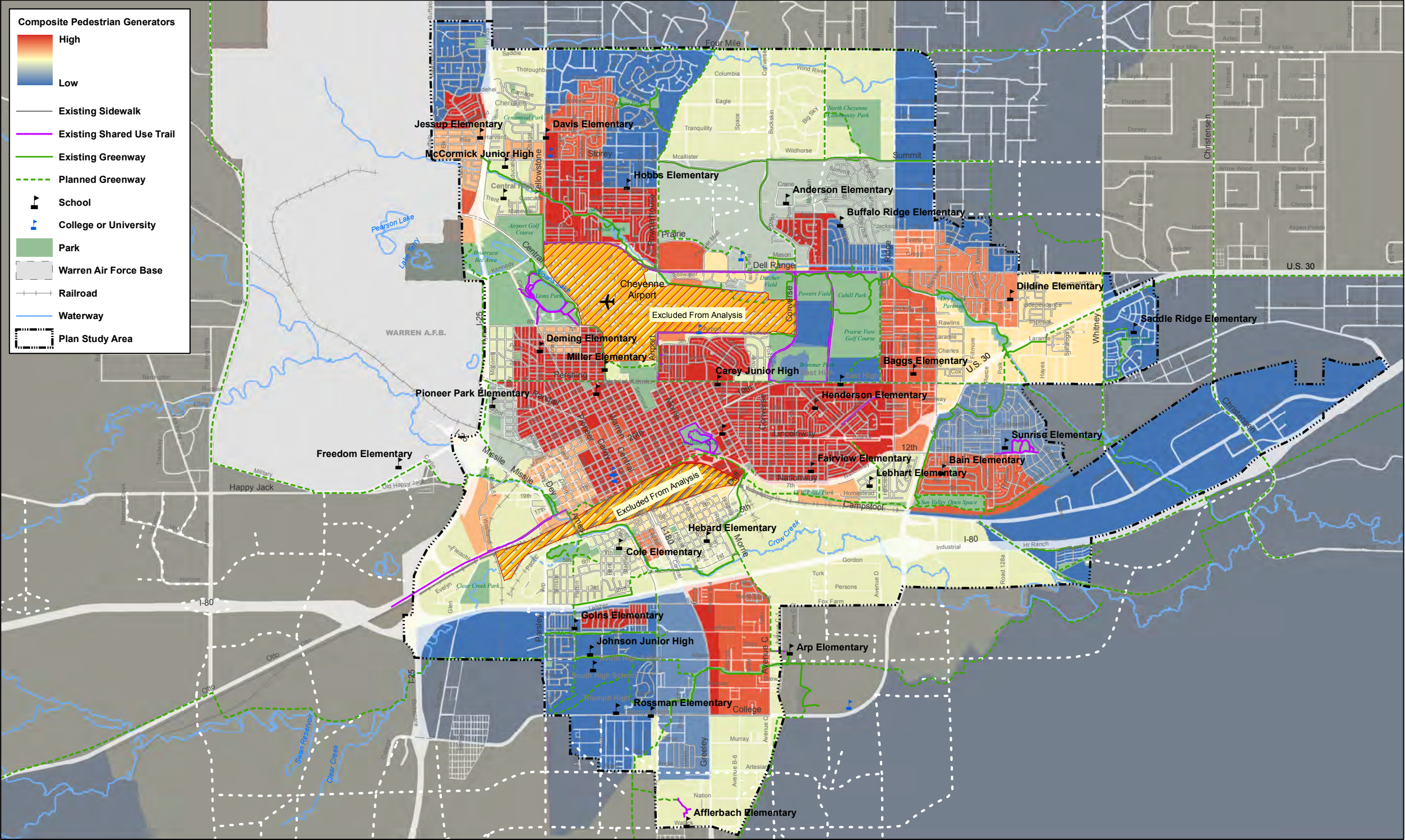
Cheyenne Metropolitan Area  
Pedestrian Plan  
Source: Cheyenne - Laramie County Cooperative GIS Program  
Date: August 2010



00.51 Miles

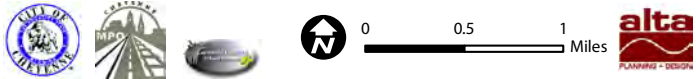




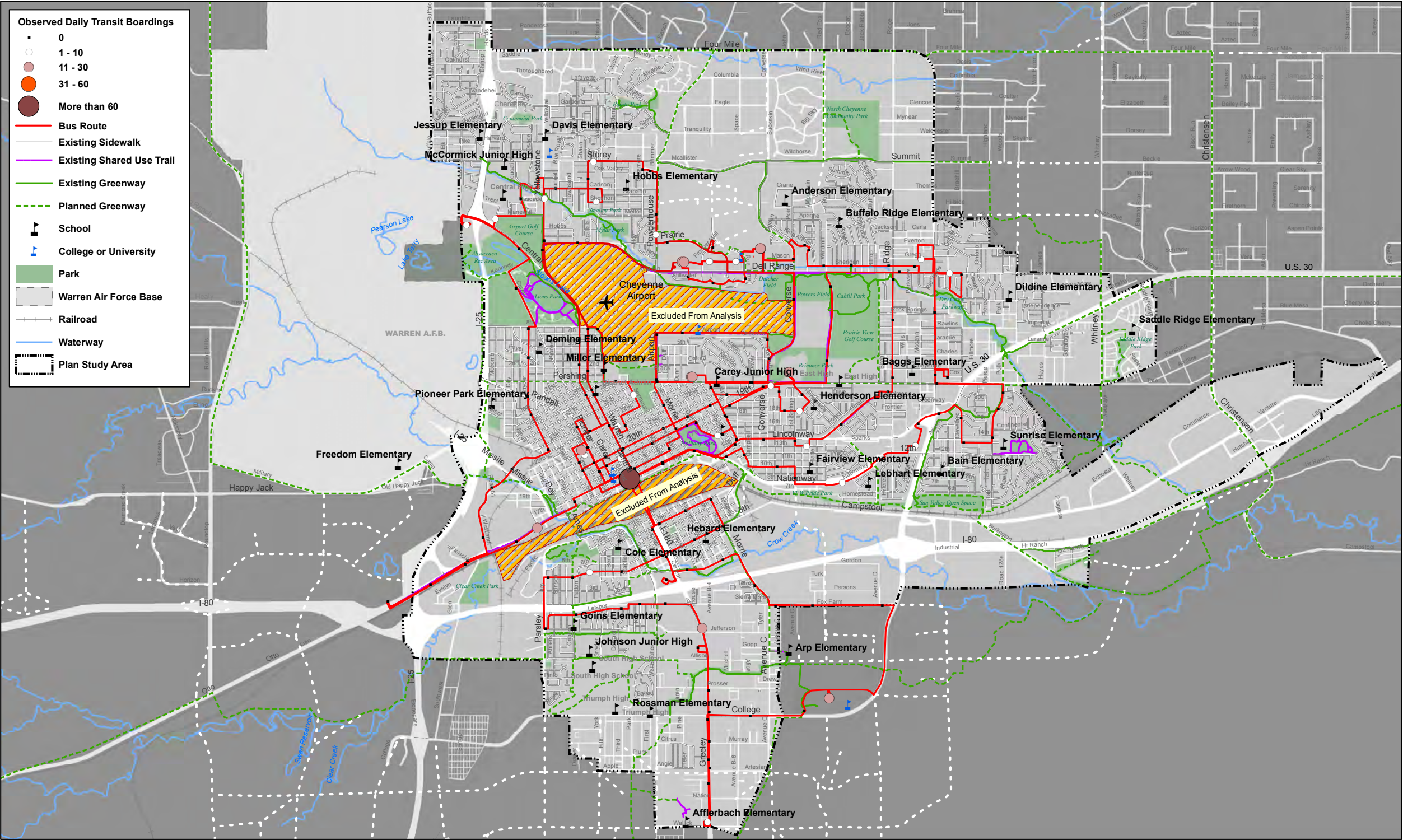


**Map 8 - Composite Pedestrian Generators**

Cheyenne Metropolitan Area  
Pedestrian Plan  
Source: Cheyenne - Laramie County Cooperative GIS Program  
Date: August 2010

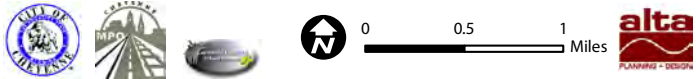




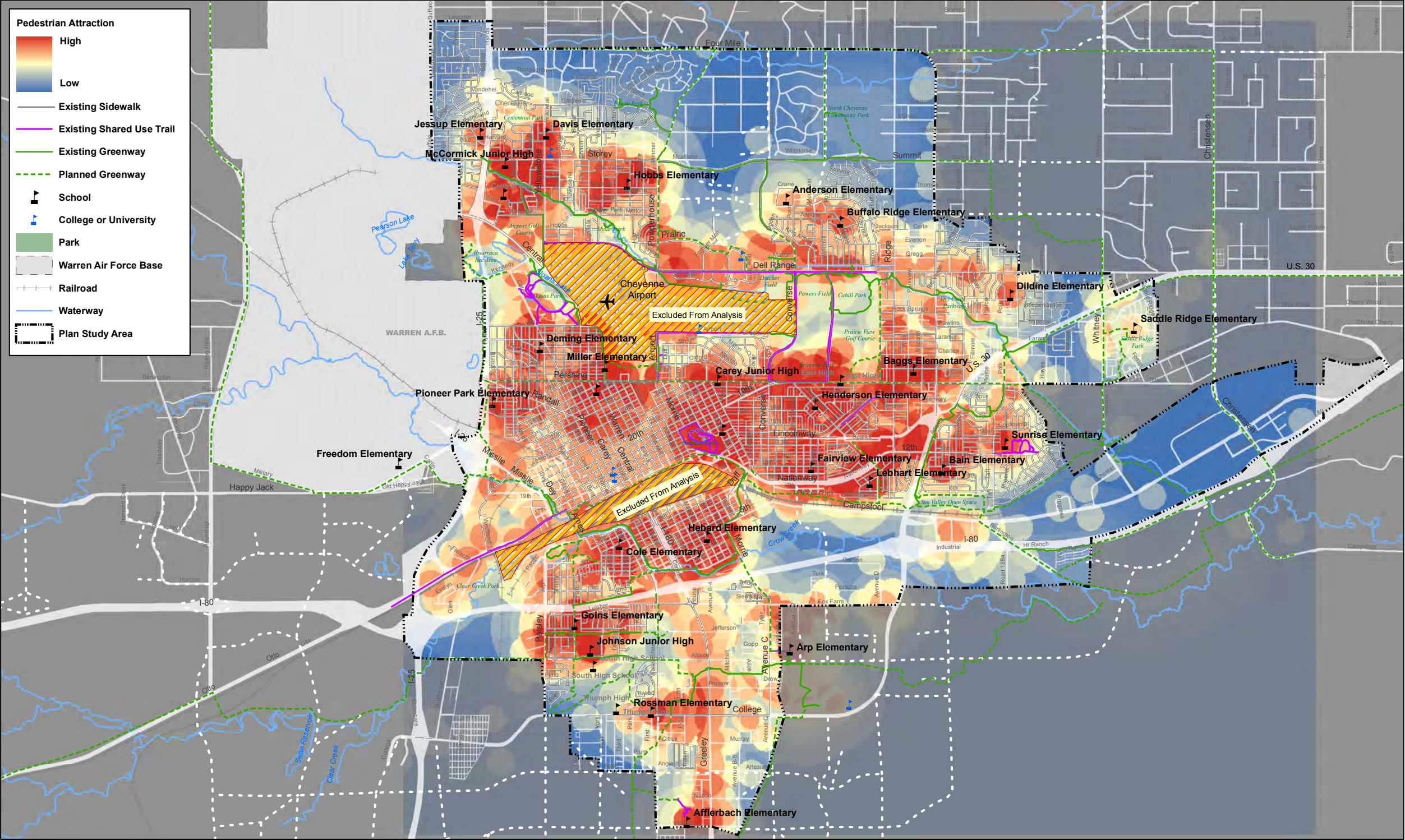


**Map 9 - Transit System and Reported Daily Transit Boardings (August 2007)**

Cheyenne Metropolitan Area  
Pedestrian Plan  
Source: Cheyenne - Laramie County Cooperative GIS Program  
Date: August 2010

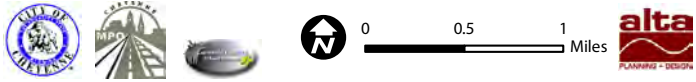




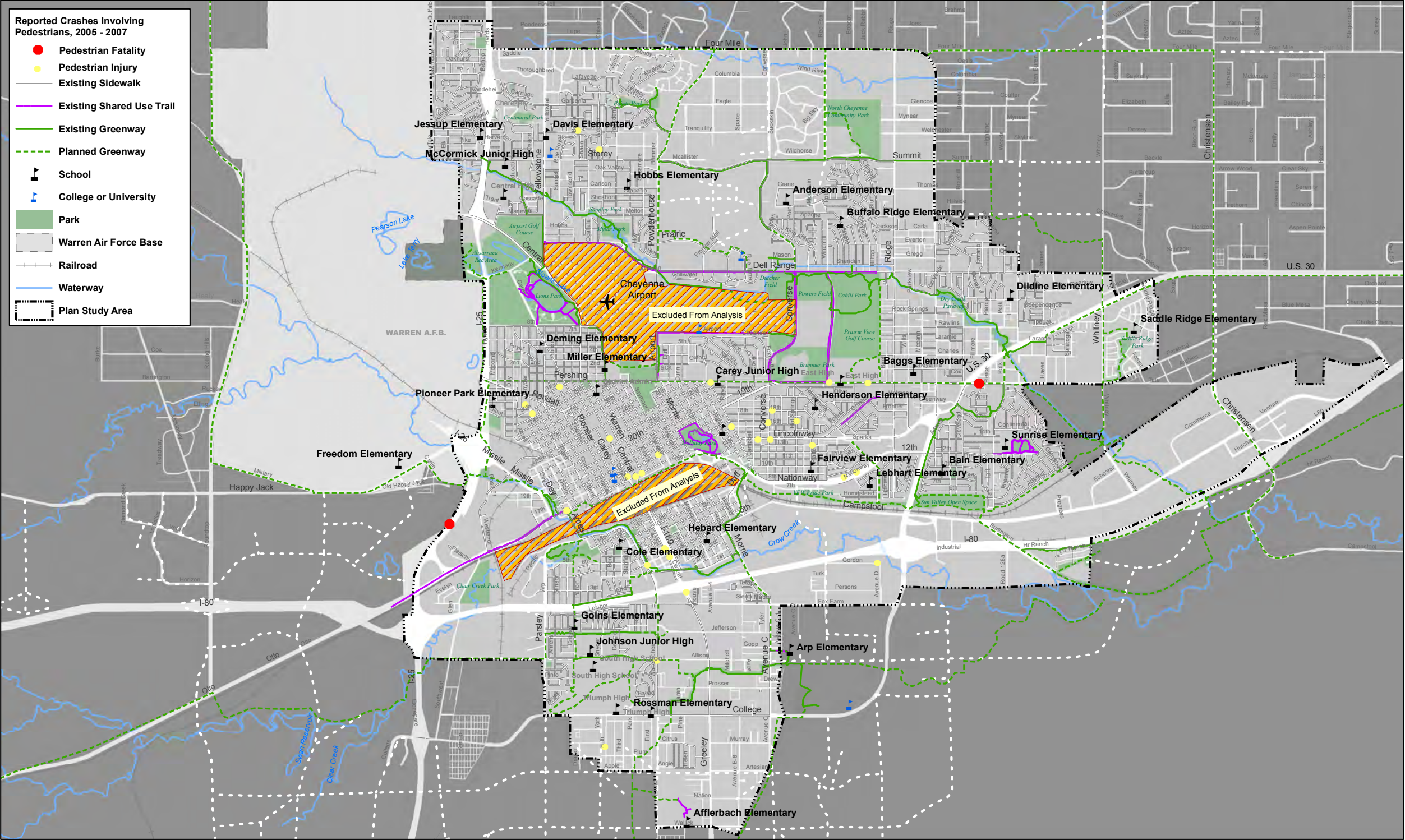


**Map 10 - Composite Pedestrian Attractors**

Cheyenne Metropolitan Area  
Pedestrian Plan  
Source: Cheyenne - Laramie County Cooperative GIS Program  
Date: August 2010

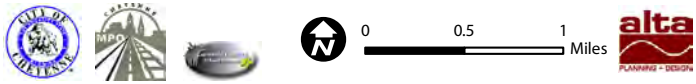




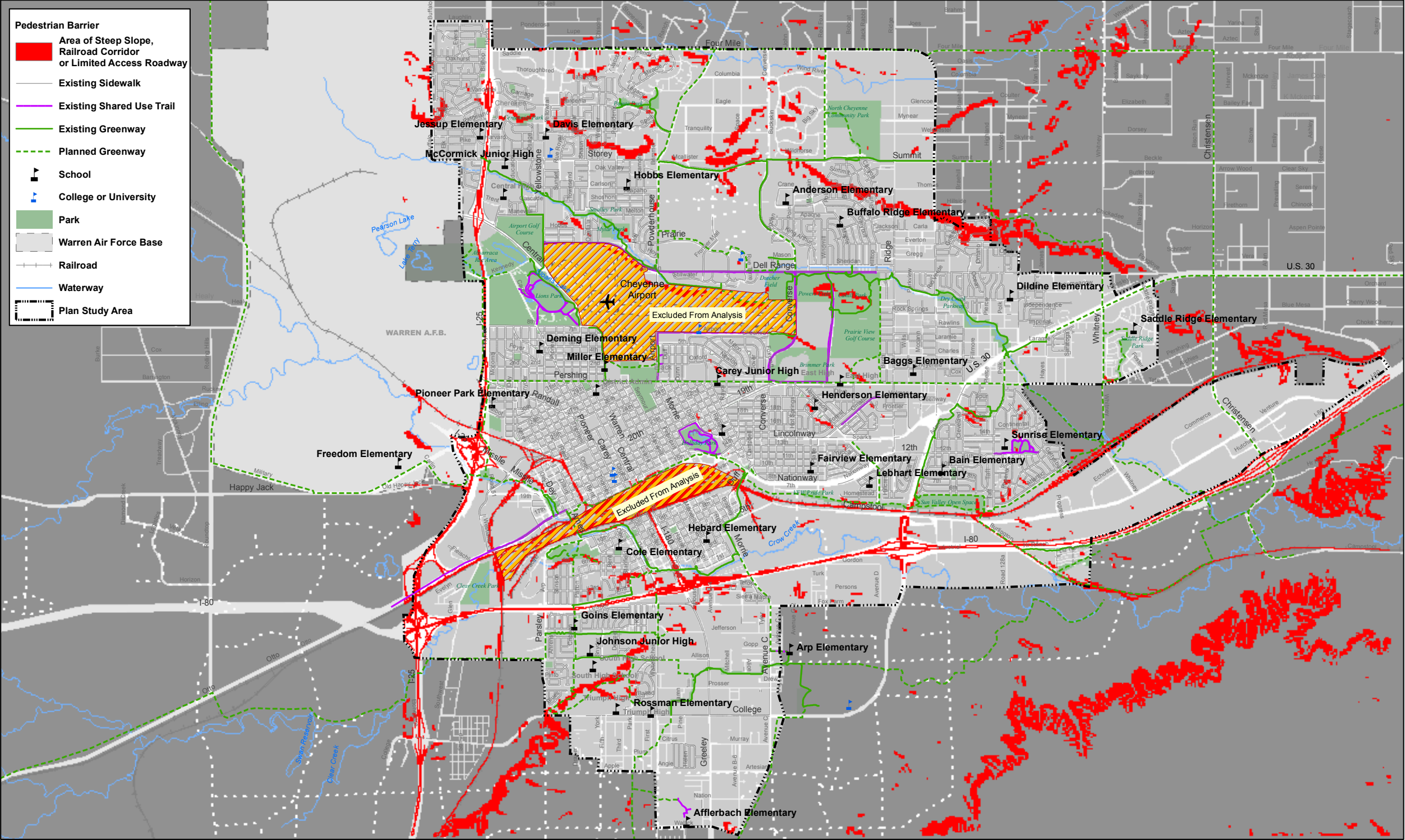


**Map 11 - Pedestrian Related Crashes (2005 - 2007)**

Cheyenne Metropolitan Area  
Pedestrian Plan  
Source: Cheyenne - Laramie County Cooperative GIS Program  
Date: August 2010

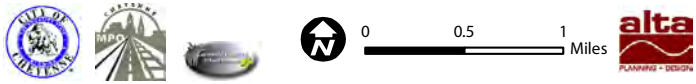




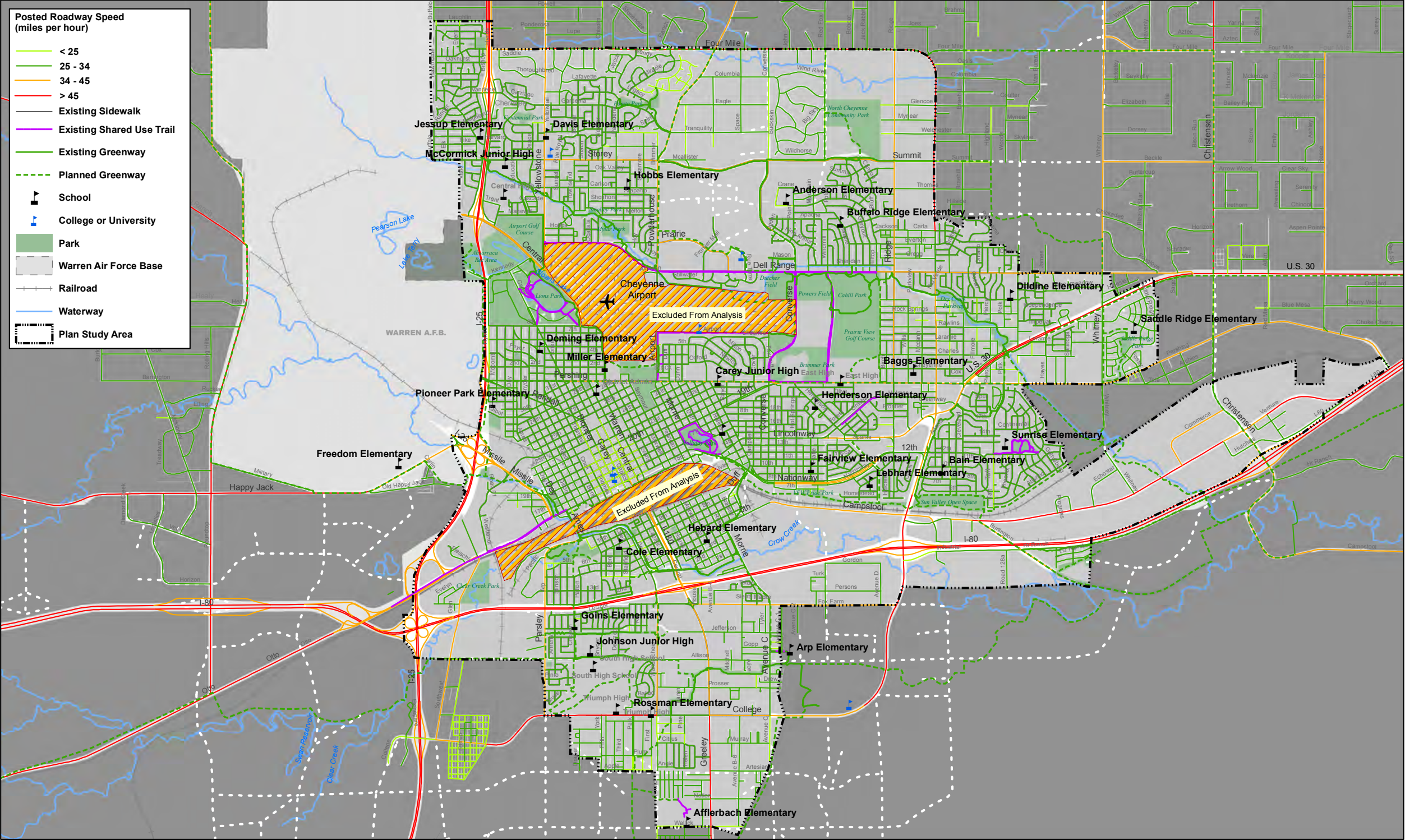


Map 12 - Barriers Created by Railroads, Limited Access Roadways and Steep Slopes

Cheyenne Metropolitan Area  
Pedestrian Plan  
Source: Cheyenne - Laramie County Cooperative GIS Program  
Date: August 2010

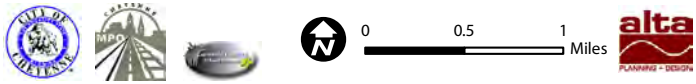




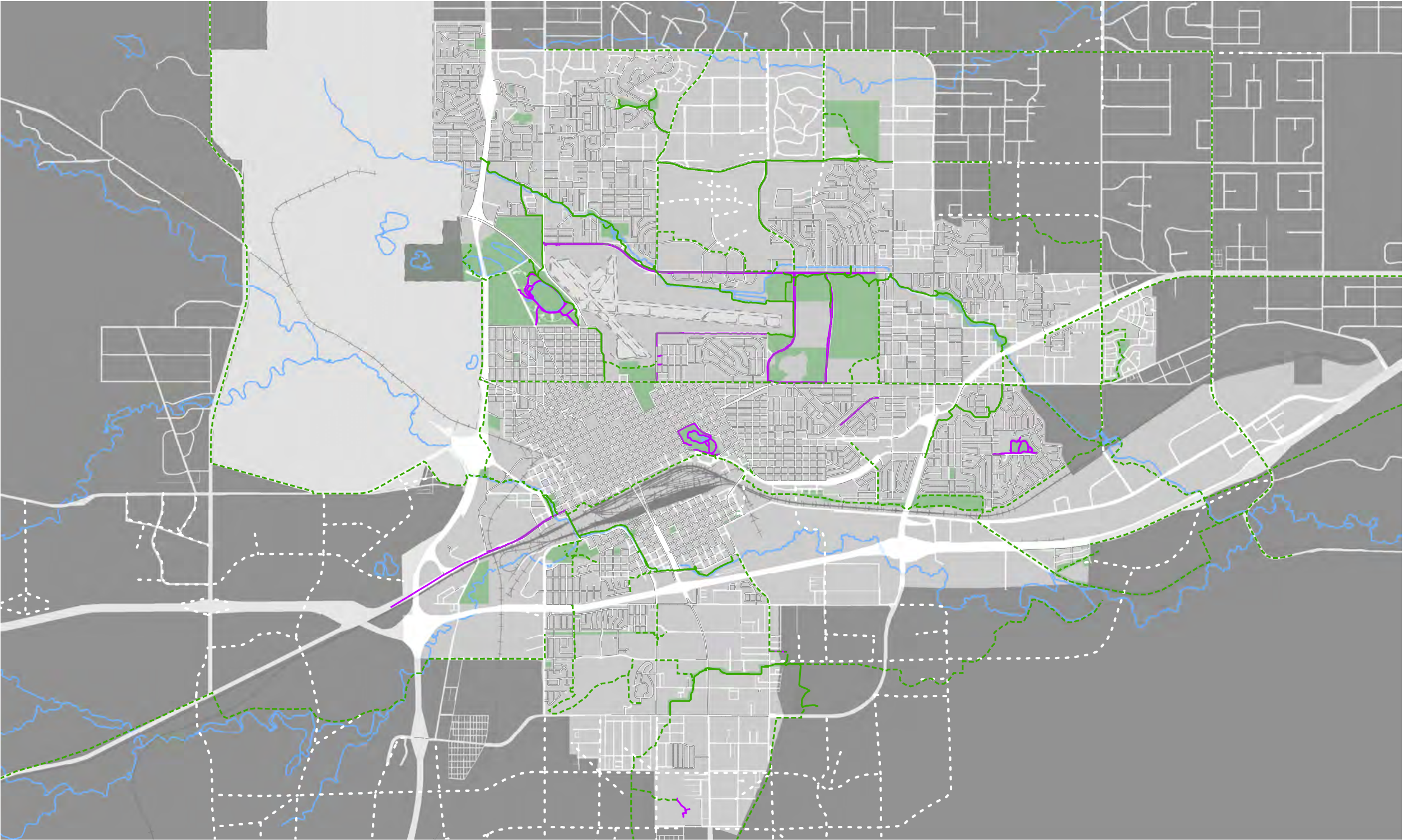


Map 13 - Posted Roadway Speeds

Cheyenne Metropolitan Area  
Pedestrian Plan  
Source: Cheyenne - Laramie County Cooperative GIS Program  
Date: August 2010

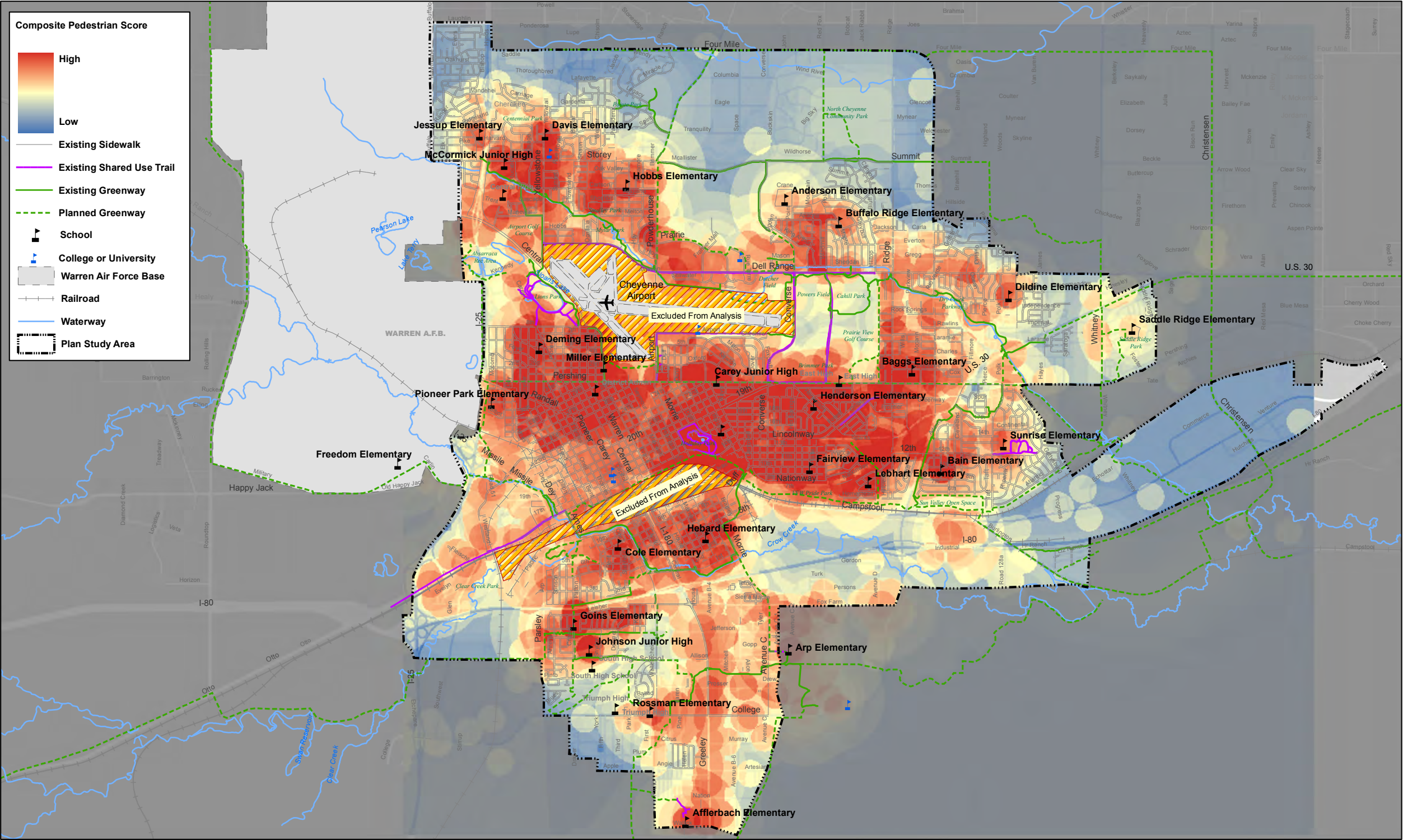






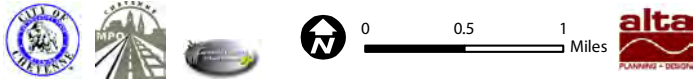




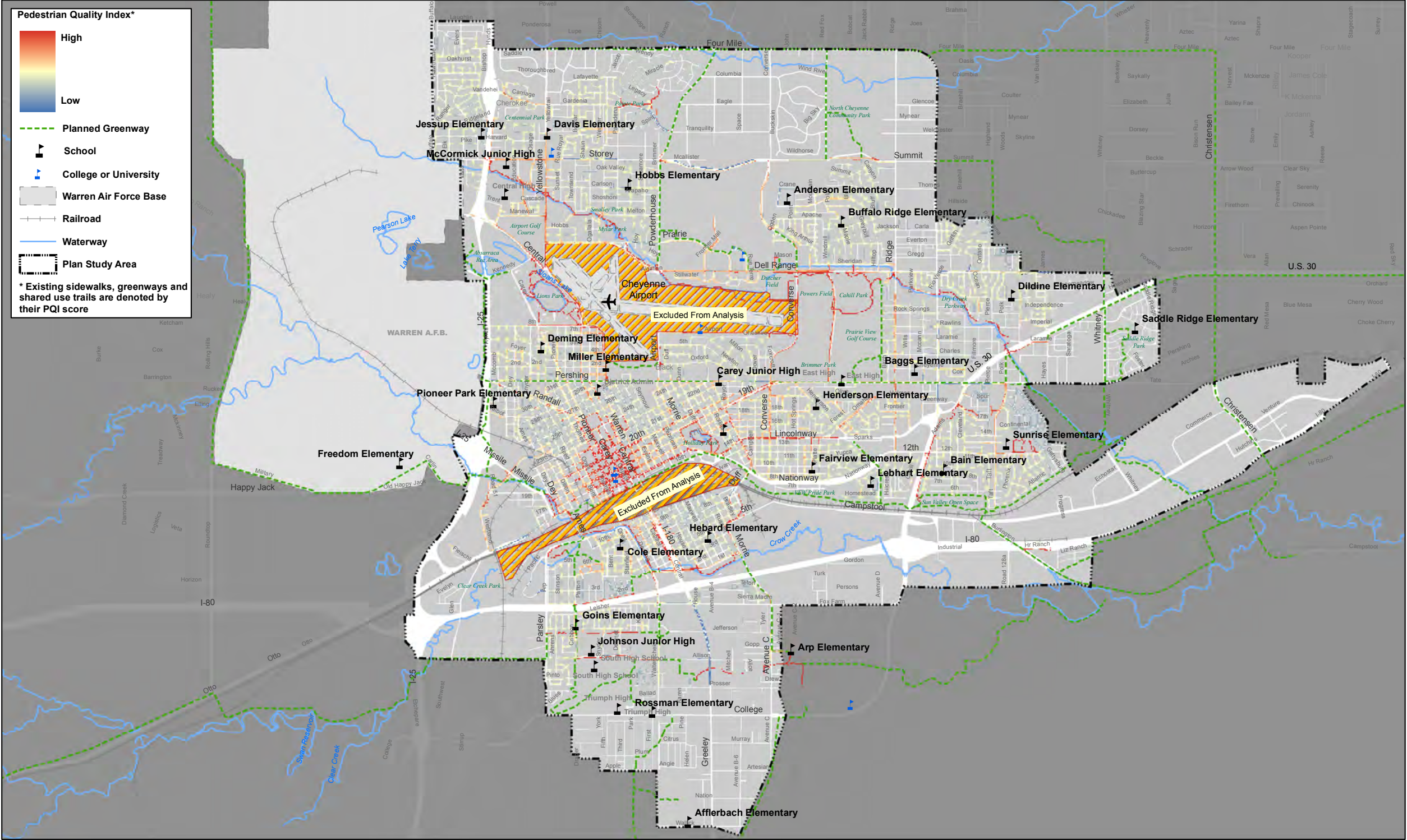


**Map 16 - Composite Pedestrian Attractor, Generator and Barrier Score**

Cheyenne Metropolitan Area  
Pedestrian Plan  
Source: Cheyenne - Laramie County Cooperative GIS Program  
Date: August 2010

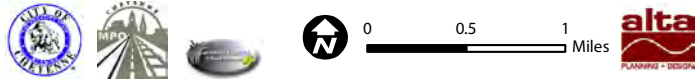




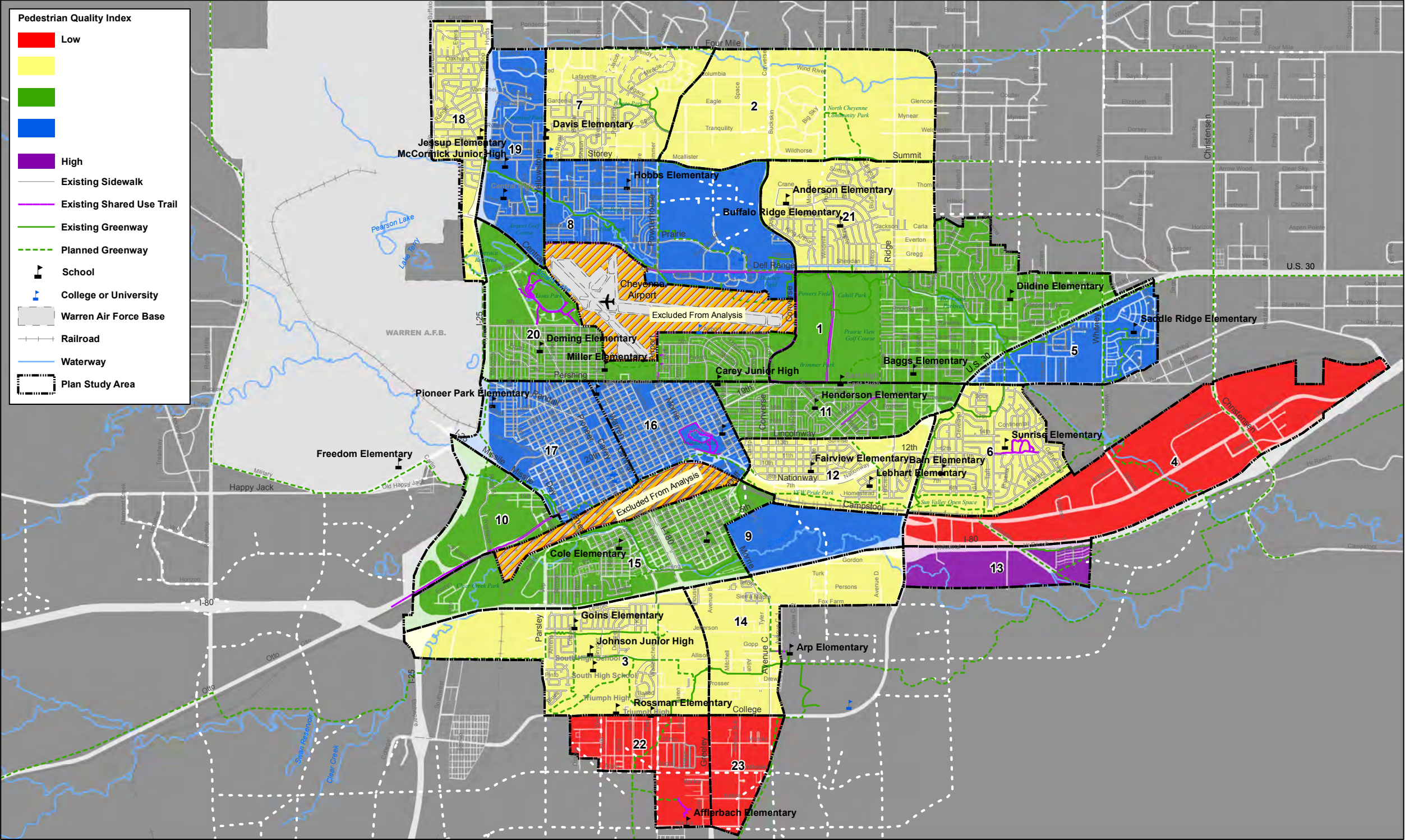


**Map 17 - Pedestrian Quality Index for Sidewalks, Greenways and Shared Use Trails**

Cheyenne Metropolitan Area  
Pedestrian Plan  
Source: Cheyenne - Laramie County Cooperative GIS Program  
Date: August 2010

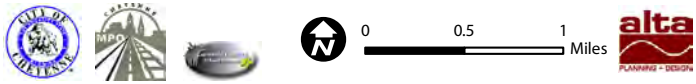




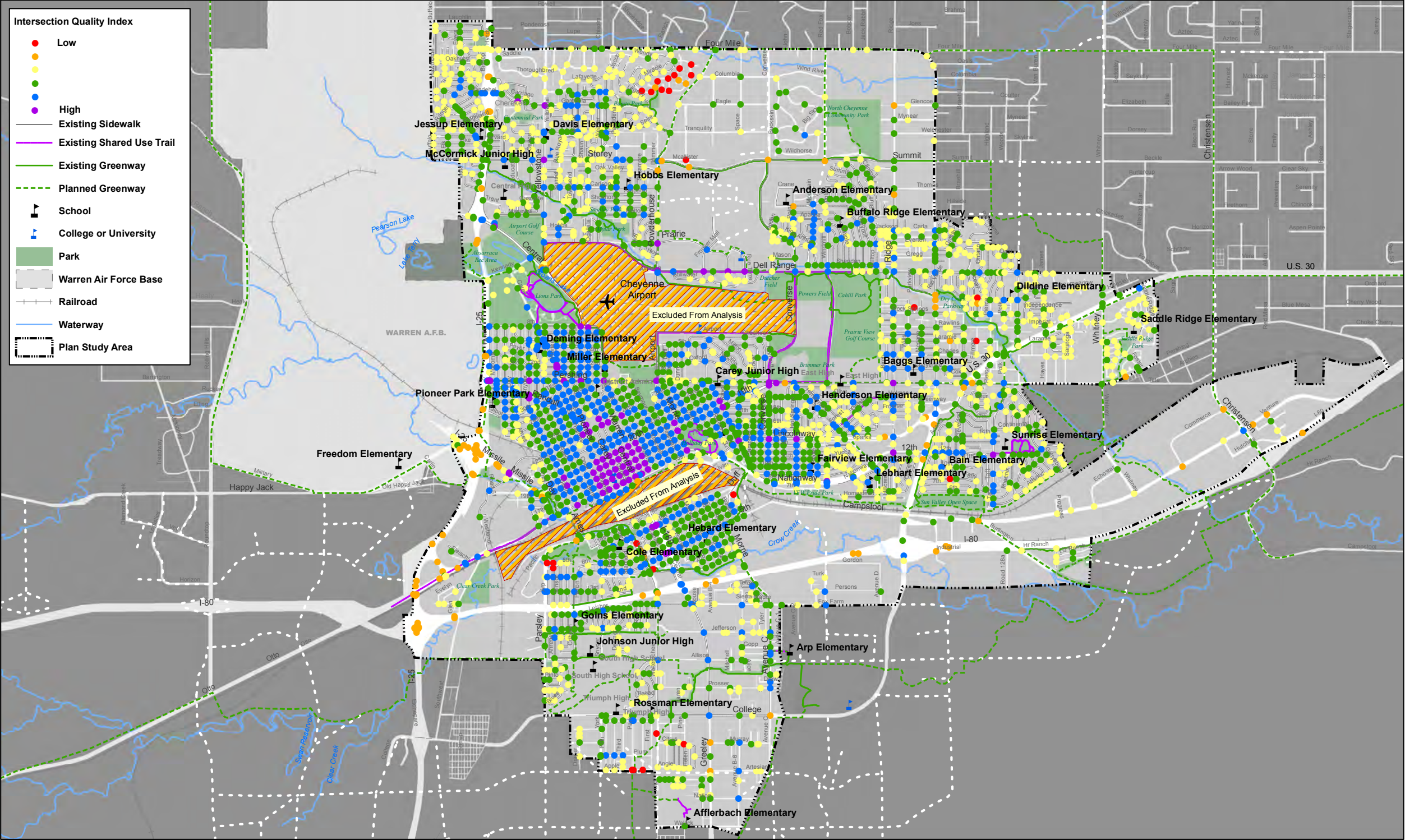


Map 18 - Pedestrian Quality Index by PLOS Zone

Cheyenne Metropolitan Area  
Pedestrian Plan  
Source: Cheyenne - Laramie County Cooperative GIS Program  
Date: August 2010

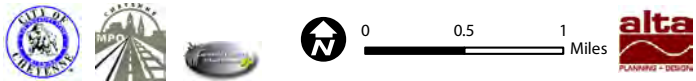




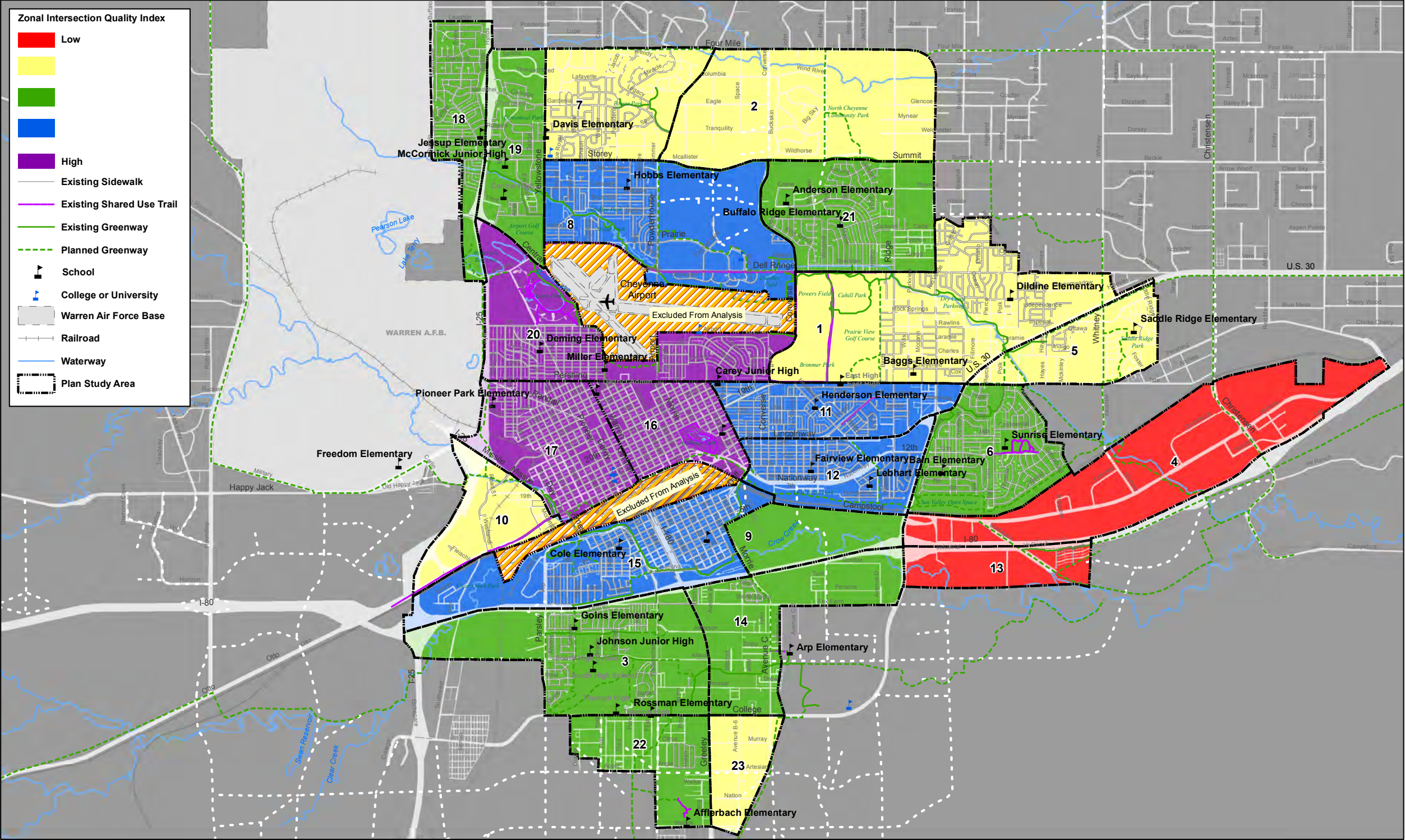


Map 19 - Intersection Quality Index

Cheyenne Metropolitan Area  
Pedestrian Plan  
Source: Cheyenne - Laramie County Cooperative GIS Program  
Date: August 2010

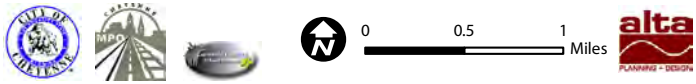




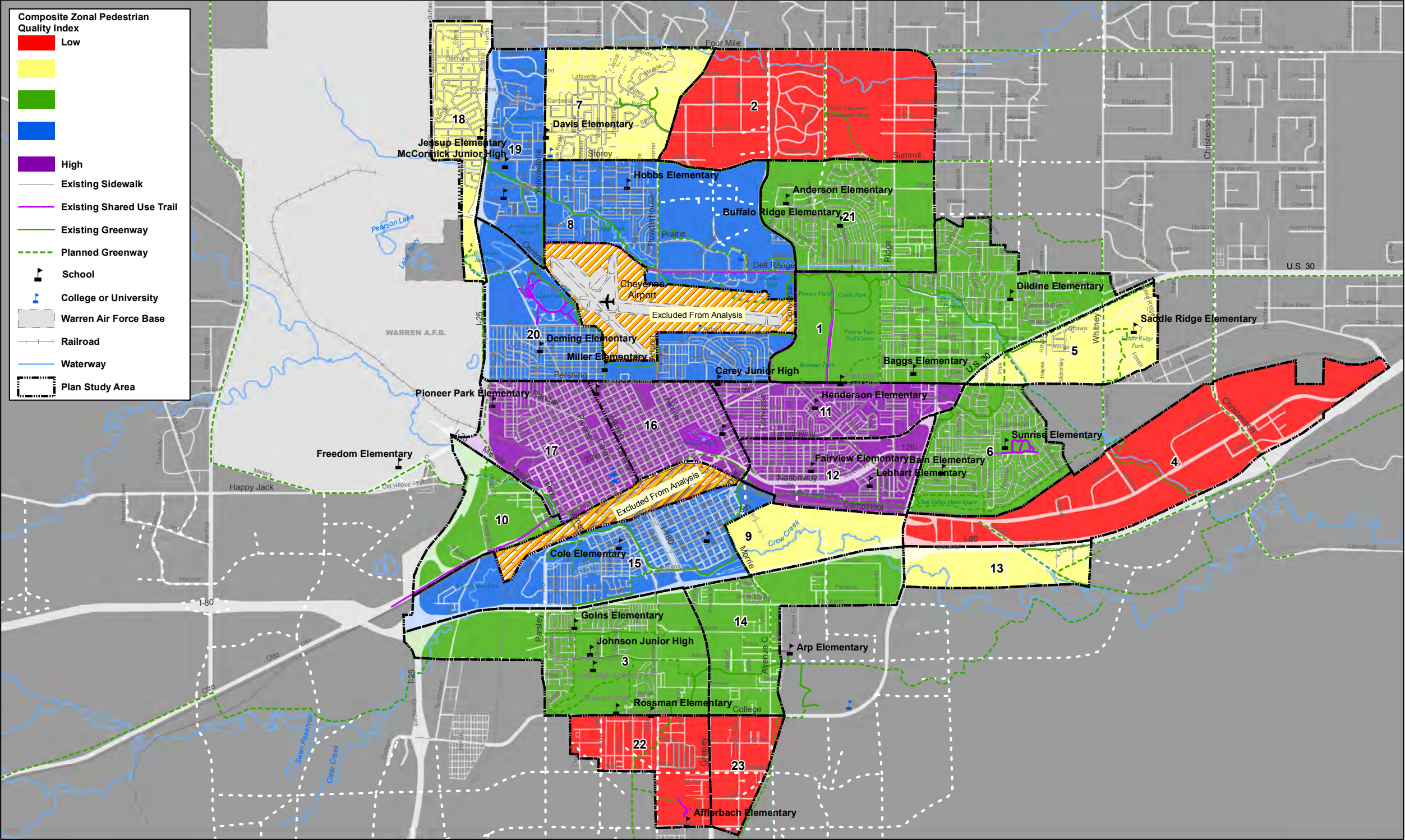


**Map 20 - Intersection Quality Index by PLOS Zone**

Cheyenne Metropolitan Area  
Pedestrian Plan  
Source: Cheyenne - Laramie County Cooperative GIS Program  
Date: August 2010


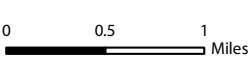








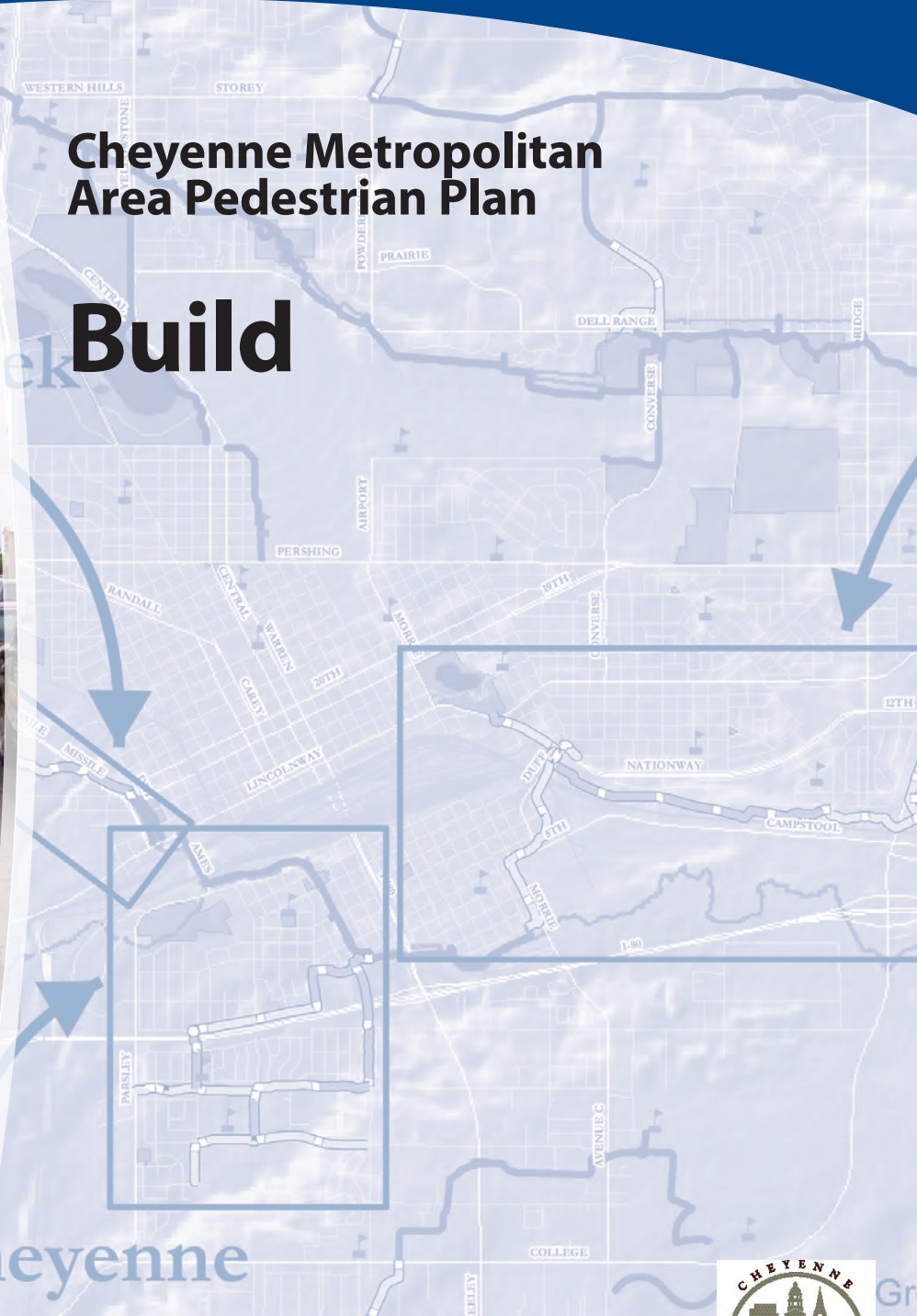


Map 21 - Composite PLOS by Zone

Cheyenne Metropolitan Area  
Pedestrian Plan  
Source: Cheyenne - Laramie County Cooperative GIS Program  
Date: August 2010





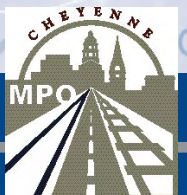


## Cheyenne Metropolitan Area Pedestrian Plan

# Build

CHEYENNE METROPOLITAN PLANNING ORGANIZATION

ALTA PLANNING + DESIGN | SUMMIT ENGINEERING





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## Welcome

The *Build* element of the *Cheyenne Metropolitan Area Pedestrian Plan* contains a list of suggested improvements and recommended programs designed to increase Cheyenne's walkability. The recommended walkway network includes a comprehensive and diverse set of pedestrian facilities connecting key destinations in and around Cheyenne. System improvements include upgrading intersections for safer pedestrian crossings, establishing priority corridors to target sidewalk infill, and other non-infrastructure projects to encourage and improve walking. Suggested improvements include low-cost measures yielding immediate results, such as spot-infill of sidewalks and implementation of the City's wayfinding signage program. Other suggested improvements, such as expanding the Greater Cheyenne Greenway (Greenway) system, represent longer-term strategies for continuing Cheyenne's transformation into a pedestrian-friendly community.

### Part of PlanCheyenne

The *Cheyenne Metropolitan Area Pedestrian Plan* was developed as part of *PlanCheyenne*. *PlanCheyenne* documents are written in four parts (*Snapshot*, *Structure*, *Shape* and *Build*) and are designed to take a comprehensive approach to planning Cheyenne's future. The *Cheyenne Metropolitan Area Pedestrian Plan* is a living document that proposes citywide pedestrian improvement projects, supporting education and encouragement programs, and updates to relevant policies.

The *Build* element provides guidance and strategies that guide implementation of plans and policies recommended in the *Pedestrian Plan*. The *Build* element builds on design guidelines presented in the *Structure* element and the analysis of pedestrian needs developed in the *Snapshot* and *Shape* elements.

### How to Use the Build Element

This element presents an overview of the proposed *Cheyenne Metropolitan Area Pedestrian Plan* pedestrian network, high priority pedestrian projects, and supporting education, enforcement, encouragement, and evaluation programs and activities organized into the following sections.

- **Section 1.** provides an overview of the proposed pedestrian network including the location of high priority pedestrian projects.
- **Section 2.** discusses existing and on-going recommended education, encouragement, enforcement, evaluation, and engineering activities.
- **Section 3.** describes project prioritization including infrastructure project evaluation, priority project and program recommendation sheets, and supporting programs evaluation.
- **Section 4.** presents implementation recommendations including project cost opinions and potential funding sources.



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## Section 1. Proposed Pedestrian Network

The recommended pedestrian network builds upon Cheyenne's existing system of sidewalks, shared use paths, greenways, and other pedestrian infrastructure elements currently in place. Map 1 depicts recommended pedestrian system improvements, which include intersection improvements and pedestrian priority corridors to target sidewalk infill, greenway construction and other spot improvements.

Best practice design guidelines are based on guidance from the 2009 *Manual on Uniform Traffic Control Devices* (MUTCD), *Americans with Disabilities Act* (ADA) standards and guidelines, and guidance from other relevant design manuals. Community-wide engineering and support programs are discussed in Section 2. Project sheets detailing each high-priority project, proposed intersection improvement, or proposed corridor improvement are included in Section 3 along with a comprehensive list of all projects considered in the Plan and a discussion of project prioritization methodology.

### Sidewalks

Sidewalks are the most fundamental element of the walking network, as they provide an area for pedestrian travel that is separated from vehicle traffic. Sidewalks are typically constructed out of concrete and are separated from the roadway by a curb or gutter and sometimes a landscaped tree lawn area. Sidewalks are a common application in urban and suburban environments but are less common in rural areas and environments where objections to the "urban" character of sidewalks can arise.

In Cheyenne, property owners are responsible for the installation and maintenance of sidewalk abutting their property. Installing new sidewalks can be costly, particularly if drainage improvements such as undergrounding of roadside culverts and installation of curbs/gutters are part of the design. However, fixing short gaps in an existing sidewalk network is important to maximizing system continuity and can

be relatively low-cost. Alternatives to sidewalks in rural areas include pedestrian paths separated from a roadway by a bioswale (to serve drainage purposes) or traffic-calming measures on low-volume streets where pedestrians share the road with motorists.

### Sidewalk Design Guidelines

A variety of considerations are important in sidewalk design. Providing adequate and accessible facilities should lead to increased numbers of people walking, improved safety, and the creation of social space. Attributes of well-designed sidewalks include the following<sup>1</sup>:

#### Accessibility

A network of sidewalks should be accessible to all users and meet ADA requirements.

#### Adequate Width

Two people should be able to walk side-by-side and pass a third person comfortably, and different walking speeds should be possible. In areas of intense pedestrian use, sidewalks should be wider to accommodate the higher volume of walkers.

#### Safety

Design features of the sidewalk should allow pedestrians to have a sense of security and predictability. Sidewalk users should not feel they are at risk due to the presence of adjacent traffic.

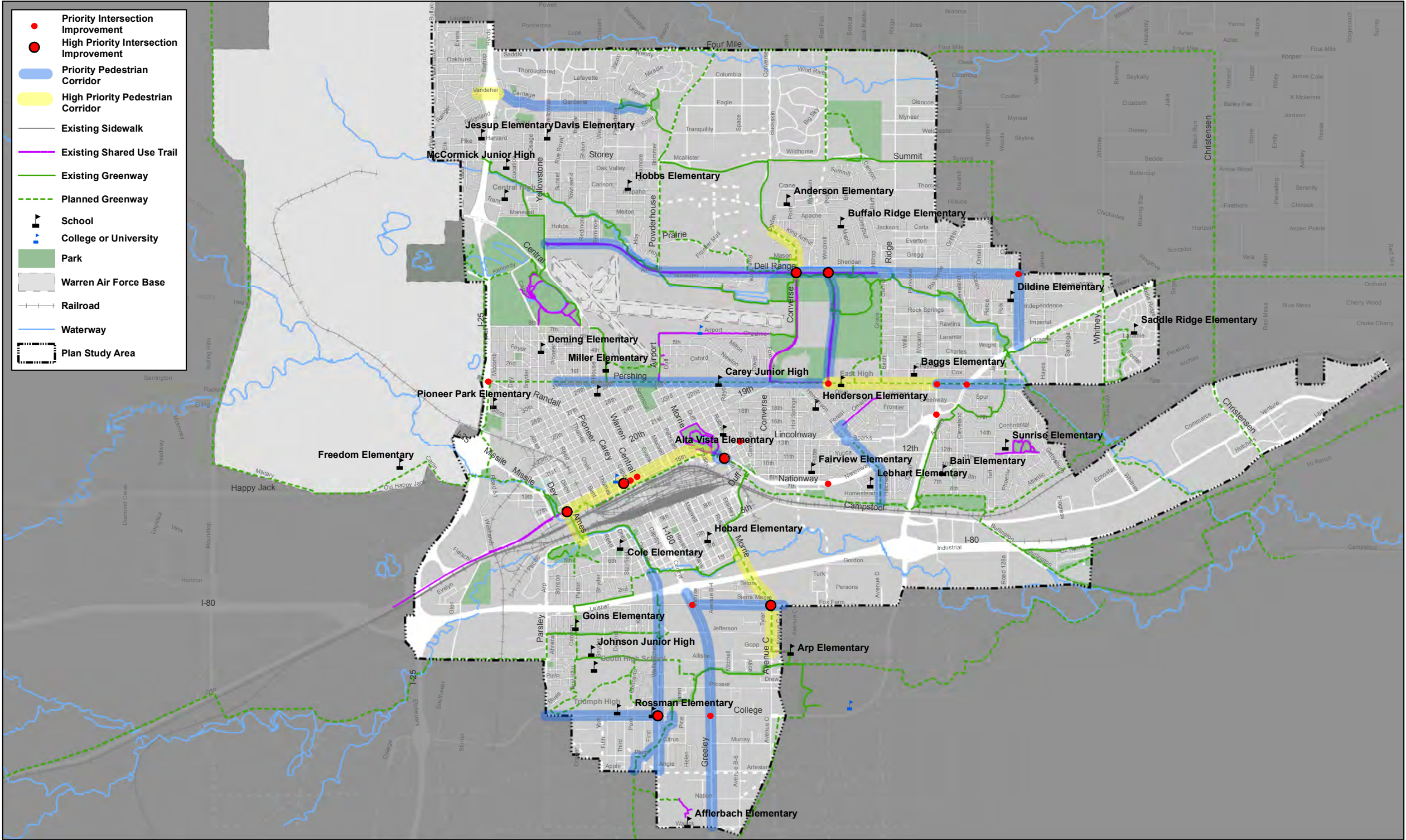
#### Continuity

Walking routes should be obvious and should not require pedestrians to travel out of their way unnecessarily.

#### Landscaping

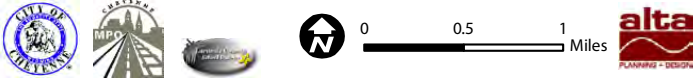
Plantings and street trees within the roadside area

<sup>1</sup> More guidance on sidewalk design is contained in the *Structure* element.



**Map 1 - Proposed Pedestrian Improvements**

Cheyenne Metropolitan Area  
Pedestrian Plan





should contribute to the overall psychological and visual comfort of sidewalk users, without concealing potential dangers.

### **Social Space**

Sidewalks should be more than areas to travel; they should provide places for people to interact. There should be places for standing, visiting, and sitting. The sidewalk area should be a place where adults and children can safely participate in public life.

### **Quality of Place**

Sidewalks should contribute to the character of neighborhoods and business districts and strengthen their identity.

### **Priority Sidewalk Corridor Recommendations**

Cheyenne benefits from a relatively complete sidewalk system in many areas (particularly around the downtown core and surrounding neighborhoods), while streets in some outlying areas have fragmented sidewalks or no sidewalks at all. As a result, a major challenge lies in retrofitting existing streets where sidewalks are fragmented, widening narrow sidewalks, constructing sidewalks where they are lacking altogether, and in areas where significant redevelopment is not expected to occur. An improvement or upgrade is typically triggered by property reconstruction, a change in land use, or significant improvements requiring a site plan, replat, or rezoning. In corridors where improvements are not likely to occur in the near future, it may be beneficial to inventory locations where sidewalks are in poor repair and notify landowners about required sidewalk maintenance/reconstruction. It may also be important to pursue other avenues of funding to complete the priority sidewalk infill projects.

### **Recommendation**

Several corridors have been identified as having potential to benefit from targeted pedestrian improvements (e.g., Converse Avenue). In some cases, extensive corridors identified as pedestrian priority corridors were subdivided into shorter segments (e.g., Pershing Boulevard). Map 1 shows the corridors

where the City of Cheyenne should initially focus its sidewalk and intersection improvements.

As a second priority, Cheyenne should continue to work with residents who request sidewalks within neighborhoods where sidewalks may not already exist or are currently in poor condition. These sidewalks may be funded through Community Development Block Grant (CDBG) funds, property owner upgrades, or other funding sources as they become available.

### **Sidewalk Obstruction Relocation**

Relocating obstructions such as light poles, mail boxes and fire hydrants that constrain sidewalk space provides more room for pedestrians to walk side-by-side or pass one-another comfortably. This strategy can also provide increased effective sidewalk width without having to increase the actual width of existing facilities.

### **Recommendation**

In several locations throughout Cheyenne, such as Lincolnway between Ames Avenue and Nationway, the existing sidewalk is at least five feet wide, but sidewalk obstructions reduce the effective width. Rather than widen the sidewalk in these locations, obstacles should be relocated when possible to the edge of the walkway, or as far out of the pedestrian travelway as possible. The City should consider taking advantage of existing planned projects that require sidewalk reconstruction to remove sidewalk obstructions.

### **Driveway Consolidation**

Consolidating driveways reduces the number of conflict points between pedestrians and vehicles entering or leaving driveways. This strategy may also improve vehicle traffic flow on the roadway by reducing the number of potential roadway entry points. When necessary, these plans should be coordinated with the Laramie County and WDOT.

### **Recommendation**

In some locations throughout Cheyenne such as

South Greeley Highway, pedestrians encounter sidewalks with many driveways. The City should consider driveway consolidation to improve the pedestrian environment as well as roadway traffic flow as opportunities arise.

### Greenways

Greenways and shared use paths (also referred to as trails and multi-use paths) are often viewed as recreational facilities, but they are also important corridors for utilitarian trips. Greenways serve pedestrians and various other non-motorized users (e.g., cyclists, and in-line skaters) and provide additional width over a standard sidewalk. These facilities may be constructed adjacent to roads, through parks or open space areas, along creeks, or along linear corridors such as abandoned railroad lines. In rural areas, greenways can serve as an alternative to formal curbs, gutters, and sidewalks. If a concrete surface is not desired, paths can be constructed with decomposed granite or another aggregate material to better match an area's rural character. Regardless of type, greenways constructed next to the road must have some type of vertical (e.g., curb or grade change) or horizontal (e.g., landscaped strip) buffer separating the travelway from adjacent vehicle travel lanes.

#### Greenway/Shared Use Path Design Guidelines

Greenways and shared-use paths should provide directional travel opportunities not provided by existing roadways. Greenway elements should include:

- Frequent access points from the local road network; if access points are spaced too far apart, users will have to travel out of direction to enter or exit the path, discouraging use
- Directional signage to direct users to and from the path
- High construction standards to allow heavy maintenance equipment to use the path without causing surface deterioration
- Few at-grade crossings with streets or driveways
- Path termini that are easily accessible to and from the street system, preferably at a

controlled intersection or at the end of a dead-end street. If poorly designed, the point where the path joins the street system can put pedestrians and cyclists in a position where motor vehicle drivers do not expect them.

- Identification and consideration of potential safety and security issues
- Consider creating parallel bicycle and pedestrian treadways within the same right of way when room is available and heavy use is observed or anticipated

#### Priority Greenway Recommendations

Cheyenne has made tremendous progress toward developing and constructing the Greenway system. Additional paths will complete the network of trails for recreation and commuting purposes.

Most of the greenway recommendations in this Plan (e.g., Converse Avenue from Ogden Avenue to Dell Range Boulevard) represent components of longer corridors proposed in previous planning efforts. While many of the longer proposed greenways are likely to be used primarily for recreational purposes, many of the shorter and connecting greenways should also be considered as commuter or utilitarian routes. Proposed priority greenways are shown on Map 1.

### Intersections

In general, pedestrians are not inclined to travel very far out of direction to access a designated crosswalk, therefore providing sufficient crossings in appropriate locations is critical for a safe pedestrian environment. Crosswalks can also be designed for increased visibility of pedestrians, while curb ramps and vehicle turning radii should also be considered for improving the pedestrian environment.

In areas of high pedestrian use, where priority is given to walking trips by City policies, it may be appropriate to design for the convenience of pedestrians when considering signal placement and timing, even if it means reducing the efficiency of vehicle progression. For example, longer pedestrian crossing phases may be desirable to accommodate pedestrian

traffic (e.g., at 16<sup>th</sup> Street and Capitol Avenue).

Although many local roadway intersections in Cheyenne are easy to traverse, some intersections in Cheyenne represent a greater challenge for pedestrians. This Plan proposes an overall strategy to improve intersections and other pedestrian crossings throughout the metropolitan area (e.g., the intersection of Dell Range Boulevard and Windmill Road and the intersection of Ames Avenue and West Lincolnway). Many intersections that could benefit from improvements are located on streets with higher vehicle speeds and volumes, higher pedestrian volumes, limited sight distance, and/or other conditions that can make pedestrian crossing movements difficult.

### Intersection Design Guidelines

Attributes of pedestrian-friendly intersection design include:

#### Clear Space

Corners should be clear of obstructions. They should also have enough room for curb ramps, transit stops where appropriate, and street conversations where pedestrians might congregate.

#### Visibility

It is critical that pedestrians on the corner have a good view of vehicle travel lanes and that motorists in the travel lanes can easily see waiting pedestrians.

#### Legibility

Symbols, markings, and signs used at corners should clearly indicate what actions a pedestrian should take.

#### Accessibility

All corner features, such as curb ramps, landings, call buttons, signs, symbols, markings, and textures must meet accessibility standards.

#### Separation from Traffic

Corner design and construction must be effective in discouraging turning vehicles from driving over the pedestrian area.

### Signalized Intersection Enhancements

#### Signage and Striping

A controlled intersection provides the greatest level of traffic control for both motor vehicles and pedestrians. However, even with traffic controls, there may be conflicts between vehicles and pedestrians due to motorists stopping in the crosswalk, failing to yield to pedestrians when turning, or making a right turn on red while pedestrians are crossing. Signage and striping improvements can help increase motorist awareness of their vehicle placement at intersections.

#### Recommendation

At intersections with a history of vehicle-pedestrian conflicts (based on pedestrian crash analysis) or other locations where this problem was noted during a field visit (e.g., Dell Range Boulevard and Converse Avenue), the City should consider the following treatments:

- 1) Installation of stop lines five feet in advance of crosswalks to help position motorists upstream from the crosswalk when stopped
- 2) Installation of “Turning Traffic Must Yield to Pedestrians” (MUTCD R10-15) signage
- 3) If conflicts appear to be related to motorists turning right on red, consideration of prohibiting right turns on red at that location

#### Signal Timing Adjustment

Signal timing controls the amount of time each phase of a signal is allotted for vehicles and bicycles to pass through or pedestrians to cross the street. Per the 2009 MUTCD, standard traffic engineering design assumes that pedestrians travel at 3.5 feet per second, which together with the width of the street is used to determine the amount of time to assign to the pedestrian clearance interval. This walking speed is slower than the 4.0 feet per second used as the standard in previous versions of the MUTCD and will increase the safety and comfort of pedestrians who need more time to cross the roadway (e.g., elderly people or people with mobility impairments). This should be



taken into account as signal timing along corridors is updated over the next several years.

### **Recommendation**

In addition to modifying traffic signal timing to take into account the slower crossing times recommended by the MUTCD, the City should consider prioritizing signal-timing modification along corridors prioritized in this Plan. This recommendation takes into account Cheyenne's current practice of synchronizing signal timing corridor-by-corridor rather than intersection-by-intersection. Engineering judgment, pedestrian volume, and MUTCD guidelines should be used to define appropriate signal timing when signals are retimed.

### **Leading Pedestrian Interval**

Another type of signal timing adjustment that favors pedestrians is a Leading Pedestrian Interval (LPI), which may be beneficial in areas of high pedestrian activity or areas with heavy right-turning vehicle traffic. An LPI must be at least three seconds in duration and give a pedestrian enough time to cross one travel lane before vehicle traffic is released.

### **Recommendation**

In some locations throughout the city, pedestrians may benefit from additional time to cross the street. These locations include signals near schools and retirement homes. As signal timing updates occur along roadway corridors, City staff should consider locations that may benefit from a LPI or slower pedestrian walk speed.

### **Countdown Signals**

Pedestrian countdown signals provide pedestrians with information on the amount of time remaining in the pedestrian crossing interval, which can assist pedestrians in making safe crossing judgments. Updated 2009 MUTCD guidelines require installation of countdown displays for all pedestrian signals when the change interval (indicated by a yellow light) is longer than seven seconds. Countdown displays are optional when the change interval is less than seven seconds.

### **Recommendation**

The practice of installing countdown signals when new traffic signals are installed and when existing pedestrian signal heads are replaced throughout Cheyenne should be continued.

### **Audible Signals**

Audible pedestrian traffic signals provide crossing assistance to pedestrians with vision impairments. The 2009 MUTCD provides guidance on acceptable installation locations but advises against these signals at intersections with split signal phasing or channelized turns as they can cause confusion.

### **Recommendation**

City staff should develop a list of intersections where audible signal installation could be beneficial, study these intersections to determine their suitability, and create a prioritized list. As funding becomes available, this type of signal is requested, or the identified signals are upgraded, audible signals treatments should be installed. Audible signal treatments should be considered as part of general engineering studies prior to the installation of all new signals.

### **ADA Recommendation: Truncated Domes**

Truncated domes provide a cue to visually-impaired pedestrians that they are entering a street or intersection. Since 2002, Americans with Disabilities Act (ADA) guidelines have called for truncated domes on curb ramps. Many of Cheyenne's curb ramps lack truncated domes, primarily because they were constructed prior to 2002. The City is retrofitting high-priority intersections as funding becomes available and should continue this process. The priority pedestrian corridors noted in this Plan can be used to help prioritize these intersection retrofits, supplemented by input from municipal staff, existing project lists, and feedback from Cheyenne area residents. Additionally, all future installations or reconstruction of curb ramps should include truncated domes regardless of their location.

Truncated domes are a particularly visible improvement, and they are relatively inexpensive to install.

The preferred option for retrofitting truncated domes requires saw-cutting out a 3x4 foot space in the ramp in order to embed the truncated dome panel flush with the surface. While more expensive than simply adhering the retrofit panel to an existing ramp, the saw-cutting ensures that the domes will not become detached and pose a tripping hazard.

### Priority Intersection Improvement Recommendations

Although many intersections throughout Cheyenne could be targeted for enhancements, the intersections identified on the Proposed Pedestrian Improvements Map (Map 1) were recognized by City staff and residents as having relatively high importance. Most highlighted intersections are located on streets with wide cross-sections (e.g., multiple travel lanes in each direction), higher vehicle speeds and volumes, and/or other conditions complicating pedestrian crossing movements. Among the intersections highlighted for improvements are those located along Pershing Boulevard and Dell Range Boulevard. It should be noted that many proposed intersection improvement projects are located on the pedestrian priority corridors described above, providing opportunities to combine projects and streamline corridor improvements. Priority intersection improvements are shown on Map 1.

### Traffic Calming

Cheyenne's existing Neighborhood Traffic Management Program (NTMP) provides interested residents with tools to make proposals and recommendations for traffic calming in their neighborhood. This program provides guidance on existing approved traffic calming devices including pedestrian refuge islands, textured crosswalks and curb extensions. These and other improvements are discussed in the Plan's *Structure* element and the *Neighborhood Traffic Management Program Manual*<sup>2</sup>.

### Recommendation

Cheyenne should continue to support NTMP projects and expand the program when possible, especially in areas of high pedestrian use and around schools.

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<sup>2</sup> <http://www.plancheyenne.org/NeighborhoodTMP.html>

## Section 2. Recommended Programs: Education, Enforcement, Encouragement, Engineering, and Evaluation

Cheyenne's recommended pedestrian network should be complemented by programs and activities designed to promote walking and bicycling. There are many existing efforts to promote walking in the Cheyenne metropolitan area, including efforts by local agencies, active community groups and individual residents. The *Cheyenne Metropolitan Area Pedestrian Plan* recognizes these efforts and encourages Cheyenne to support, promote, and build upon these efforts.

Pedestrian planning commonly refers to the five "E's": engineering, education, encouragement, enforcement, and evaluation. While Section 1 describes infrastructure upgrade strategies for improving the pedestrian network, this section addresses education, encouragement, enforcement, evaluation, and non-location specific engineering program measures.

### Existing Programs, Outreach Efforts, and Implementing Organizations

#### Existing Materials

- Greater Cheyenne Greenway Map (<http://www.cheyennecity.org>)
- Safety Guide (<http://www.cheyennecity.org/>)
- Cheyenne Transit Service Map (<http://www.cheyennecity.org>)

#### Clubs and Organizations

Several clubs have activities aimed at encouraging people to walk, ride bicycles, and participate in organized walks, runs, bicycle rides, and triathlons.

- Cheyenne High Plains Wanderers: <http://www.chpw.info/>
- Adopt-A-Spot Volunteers: <http://www.cheyennecity.org>
- Cheyenne Cycling Club: <http://CheyenneCyclingclub.org>

#### Cheyenne Transit Program (CTP)

Cheyenne's Transit Program includes a fleet of wheelchair accessible buses that run on a Monday through Saturday schedule. For more information on the transit organization, visit: <http://www.cheyennecity.org>

#### Organized Walks and Runs

Cheyenne is the location for many organized walks and runs that help encourage citizens to get out and be physically active in their community. Examples of such organized events include:

- Frontier Refining Inc. Superday's Tour de Prairie and 5K/10K Run/Walk: <http://www.cheyennecity.org>
- Wyoming Fitness Council's Health and Fitness Day: <http://www.wyomingfitnesscouncil.org/>
- Comea House Turkey Trot: <http://eventful.com/cheyenne/events>
- Susan G. Komen Race for the Cure: <http://komenwyoming.org/>
- Sprint Triathlon: <http://cheyennesprinttriathlon.com/>
- Cheyenne Animal Shelter Dog Jog: <http://www.cheyenneanimalshelter.org/>
- Sunrise Lions Ride for Sight: <http://www.active.com/cycling/cheyenne-wy>
- Cheyenne Schools Foundation Walk/Run: <http://blogs.wyomingnews.com/blogs>
- Cheyenne Greenway Foundation "Spring into Green"



## Program Recommendations

This section provides information on programmatic recommendations, approximate cost information is provided for each project. Please see Table 3.3 for an explanation of each program's associated cost opinion.

Technical/Professional Training on ADA and Pedestrian Facilities Design	
Target audience	Local consultants who contract with the City and MPO
Primary agency	City of Cheyenne
Partners	Wyoming Department of Transportation, Laramie County
Key elements	Technical training on ADA issues and pedestrian facilities, design, and implementation
Time frame	One-time with regular updates; can happen at any time
Cost	\$\$
Potential funding sources	MPO PL, City General Fund, Federal Safety Grants
Sample programs	IBPI: <a href="http://www.ibpi.usp.pdx.edu">http://www.ibpi.usp.pdx.edu</a> FHWA: <a href="http://www.fhwa.dot.gov">http://www.fhwa.dot.gov</a> PBIC: <a href="http://www.walkinginfo.org">http://www.walkinginfo.org</a>

Designing streets for all road users is an important characteristic of a healthy pedestrian environment. Forty-seven percent of respondents to the Cheyenne Metropolitan Area Pedestrian Plan Survey stated that Americans with Disabilities Act (ADA) improvements were either a high or the highest priority project. The Federal Highway Administration (FHWA) and Association of Pedestrian and Bicycle Professionals (APBP) have created a technical training for planners, engineers, and project managers to enhance pedestrian mobility through accessible design.

These training courses typically include the following topics:

- Overview of the ADA
- Legal requirements
- Funding opportunities
- How to design accessible driveways, curb ramps, street crossings, intersections, and construction sites
- Information on accessible pedestrian signals (APS)

Consideration for the pedestrian experience and safety when planning building orientation, parking lots, and exterior building design can enhance the pedestrian experience and thus encourage more people to get out and walk.

The Pedestrian and Bicycle Information Center (PBIC) has developed a two-day training course called "Designing for Pedestrian Safety" for planners and engineers. The course includes, but is not limited to, the following:

- Sidewalk and walkway design
- Signs, signals, and crosswalks
- Facilities at signalized intersections
- Road diets and traffic calming

Create Walking Maps	
Target audience	Current and potential pedestrians
Primary agency	City of Cheyenne
Partners	Local walking and bicycling advocacy groups, senior organizations, communities, Greenway Advisory Committee
Key elements	Clear symbology, destinations, and services attractive for pedestrians; good selection of routes
Time frame	One-time, with regular updates; can happen at any time
Cost	\$ - \$\$
Potential funding sources	MPO PL, local transit agencies, traffic safety foundations, and grant programs; hospitals and insurance companies
Sample programs	Portland, Oregon: <a href="http://www.portlandonline.com">http://www.portlandonline.com</a> Kirkland, Washington: <a href="http://www.ci.kirkland.wa.us">http://www.ci.kirkland.wa.us</a>

One of the most effective ways of encouraging people to walk is through the use of maps and guides showing that the infrastructure exists, to demonstrate how easy it is to access different parts of the city on foot, and to highlight unique areas, shopping districts, or recreational areas. Walking maps can be used to promote tourism, encourage residents to walk, or promote local business districts. Maps can be citywide, district-specific, or neighborhood/family-friendly maps.

The City of Cheyenne currently produces the “Greater Cheyenne Greenway” map, depicting existing and future greenways in the region. As the Cheyenne Greenway system is further developed, the City of Cheyenne should regularly update the regional walking map and insets for major neighborhoods.

If a regional Pedestrian Advisory Committee is formed, and/or if a Pedestrian Coordinator position is created, the group or individual may be able to help identify and verify routes identified by members of the public.



Diversion Class	
Target	Motorists, cyclists, and pedestrians
Primary agency	City of Cheyenne
Partners	Cheyenne Police Department
Key elements	A Share the Road class is tailored to first-time offenders of certain bicycle and pedestrian-related traffic violations, including running a stop sign/light on a bike. In lieu of the citation, cyclists, motorists, and pedestrians can take a class.
Time frame	Anytime; on-going
Cost	\$\$
Potential funding sources	Federal and state traffic safety funding
Sample programs	<a href="http://www.marinbike.org">http://www.marinbike.org</a> <a href="http://www.legacyhealth.org">http://www.legacyhealth.org</a>

Bicyclists, pedestrians, and motorists receive citations when they engage in unsafe behavior that endangers themselves or other road users, resulting in an opportunity for education. It is recommended that the City of Cheyenne allow motorists, bicyclists, and pedestrians to partake in a diversion class for a reduced fine or in lieu of a citation. The City of Cheyenne can partner with the Cheyenne Police Department to hold such classes.



Share the Path Campaign	
Target	All path users (especially bicyclists)
Primary agency	City of Cheyenne Parks and Recreation Department
Partners	Greenway Advisory Committee, Greenway Foundation , local bicycling clubs and groups
Key elements	Bell giveaway; maps and information; media outreach
Time frame	May/June or annually
Cost	\$
Potential funding sources	Local bike shops (in-kind donations); volunteer time contributions by local bicycling groups
Sample programs	Portland Office of Transportation Share the Path brochure: <a href="http://www.portlandonline.com">http://www.portlandonline.com</a>

Many cities around the country are implementing “Share the Path” programs in response to concerns about conflicts between pedestrians and bicyclists on shared use paths. Cheyenne is home to the popular Greenway system. A Share the Path program will encourage responsible path use and create community goodwill around walking and bicycling.

It is recommended that the City of Cheyenne’s Parks and Recreation Department implement a Share the Path campaign. The campaign should include the following steps:

- Develop a simple, clear Share the Path brochure; distribute through local bike shops and wherever bike and pedestrian maps are distributed.
- Host at least one bicycle bell giveaway event (Figure 3) on a popular shared use path. A table should be set up with maps and brochures, and knowledgeable staff should be present to answer questions.
- Volunteers and City staff can partner to hand out bells to bicyclists and talk with bicyclists and pedestrians about sharing the path. Signs, pavement chalk, and banners should be used to explain the event and give bicyclists warning so they can stop and receive a bell and/or information. Volunteers should mount the bells on handlebars (BBB EasyFit bells are recommended because installation requires no tools:

<http://www.bbbparts.com/products/accessories/others/bbb12.htm>).

- If desired, volunteers can walk along the path and give a thank you and a small gift to bicyclists who use their bell when passing and pedestrians who exhibit safe behavior.
- The City of Cheyenne should conduct media outreach before the event; the bell giveaway will be a positive story about bicycling and will provide good marketing opportunities.



**Figure 3. Volunteers mount free bells on bikes in this Share the Path Campaign event**

Photo courtesy Jonathan Maus



Perform Annual Pedestrian Counts	
Target audience	N/A
Primary agency	City of Cheyenne
Partners	Laramie County
Key elements	Create a count database to track walking trends and measure success of Pedestrian Plan
Time frame	Annually
Cost	\$\$ (for data collection and analysis)
Potential funding sources	CMAQ (Congestion Mitigation/Air Quality) funds; federal flexible transportation; public transportation funds; hospitals and insurance companies
Sample programs	National Bicycle & Pedestrian Documentation Project: <a href="http://www.fhwa.dot.gov">http://www.fhwa.dot.gov</a>

In Cheyenne, pedestrians are counted in conjunction with all turning movement counts. These counts provide some information about pedestrian movements but they are not conducted annually. As a result, there is no mechanism for tracking walking trends over time or for evaluating the impact of projects, policies, and programs.

It is recommended that the City of Cheyenne perform and/or coordinate annual counts of pedestrians according to national practices. The National Bicycle and Pedestrian Documentation Project has developed a recommended methodology, survey and count forms, and reporting forms, and this approach may be modified to serve the needs and interests of individual jurisdictions.

The City of Cheyenne or MPO should take the lead role in standardizing a regional approach to counts and surveys. City staff may perform the counts themselves or assist partner agencies or volunteer groups in performing the counts. The City of Cheyenne should also handle tracking, analysis, and reporting.

If desired, further pedestrian data collection opportunities may be pursued as well, including the following:

- Include before-and-after pedestrian/vehicle data collection on priority roadway projects
- Insert pedestrian survey questions into any existing travel mode or city audit survey instrument
- Require counting of pedestrians in all Transportation Impact Studies
- Purchase National Household Travel Survey add-on

Pedestrian Safety Hotline	
Target audience	Pedestrians and motorists
Primary agency	City of Cheyenne
Partners	Cheyenne Police Department
Key elements	The city should designate an agency to handle pedestrian safety concerns. Residents can use this number to report pedestrian safety concerns and request improvements. This hotline should cover both facilities and enforcement needs.
Time frame	On-going
Cost	\$ - \$\$
Potential funding sources	City General Fund, Federal Highway Administration safety funding National Highway Traffic Safety Administration
Sample programs	Portland, Oregon: <a href="http://www.portlandonline.com">http://www.portlandonline.com</a>

It is recommended that the City of Cheyenne establish a Pedestrian Safety Hotline. This can serve as a central venue for receiving complaints and information about locations that need physical improvements or enhanced enforcement efforts. Designating a single, existing agency to fulfill this need will reduce the burden of staffing demand and increase the efficiency of the service. Involvement of other agencies (e.g., Animal Control, Public Works or the Cheyenne Police Department) can be coordinated centrally through this service as necessary.

Residents will need to provide a description of the problem, as well as time of day and location as applicable. In order for the Pedestrian Safety Hotline to be effective, it will need to be properly promoted to citizens followed by quick response by the appropriate agency once a complaint has been issued.

“Report a Concern” is a service supported by an outside vendor to the City. A link to this service is located on the City’s webpage. “Streets, Alleys & Sidewalks” is one of the 14 topics available to citizens who would like to report a concern. A short-term implementation solution would involve modifying the existing “Report a Concern” service to include general pedestrian issues.



Fund and Fill a Pedestrian Coordinator Position	
Target audience	N/A
Primary agency	City of Cheyenne
Partners	Wyoming Department of Transportation
Key elements	Staff position charged with managing pedestrian-related policies, programs, and projects
Time frame	On-going
Cost	\$\$ - \$\$\$
Potential funding sources	MPO/Parks and Recreation Staff, City General Fund, Federal Safety Grants
Sample programs	State DOTs with existing Pedestrian Coordinator positions. A complete listing can be found at: <a href="http://www.walkinginfo.org">http://www.walkinginfo.org</a> Boulder, Colorado: <a href="http://www.bouldercolorado.gov">http://www.bouldercolorado.gov</a>

The City of Cheyenne does not currently have a Pedestrian Coordinator position. To take full advantage of pedestrian planning efforts in the Cheyenne Metropolitan Area and to assist with the implementation of the many projects and programs recommended in this Plan, the City or MPO should consider filling this position on a part- or full-time basis. The job duties for this staff person may include:

- Working with the Wyoming Bicycle/Pedestrian coordinator and other community partners
- Monitoring the design and construction of sidewalks, shared use paths, and greenways, including those constructed in conjunction with private development projects
- Ensuring pedestrian facilities identified in specific plans and as mitigation measures are designed appropriately and constructed expediently
- Coordinating implementation of the recommended projects and programs listed in this Plan
- Identifying new projects that would improve the region's access for pedestrians

Crosswalk Enforcement Actions	
Target audience	Motorists
Primary agency	City of Cheyenne
Partners	Cheyenne Police Department
Key elements	Plainclothes police officers or selected volunteer decoys attempt to cross streets at corners and marked mid-block crossings. If motorists fail to yield to the pedestrian in a crosswalk, a second police officer issues a ticket.
Time frame	Annual, spring or fall (coupled with back-to-school dates)
Cost	\$ - \$\$ (depending on design and scope)
Potential funding sources	Federal Highway Administration Safety Funding National Highway Traffic Safety Administration
Sample programs	Pedestrian and Bicycle Information Center website: <a href="http://www.walkinginfo.org">http://www.walkinginfo.org</a>

Crosswalk enforcement actions (sometimes known as “pedestrian stings”) raise public awareness about the legal obligation of motorists to stop for pedestrians at crosswalks. While crosswalk enforcement actions do result in tickets being distributed, the greater impact comes through media publicity of the event to reinforce the importance of obeying pedestrian crossing laws.

Most crosswalk enforcement sites are selected because they have been identified as locations where pedestrians have trouble crossing and/or a large volume of pedestrians (especially vulnerable pedestrians such as children and seniors) is expected. High-crash locations may also be candidates for enforcement actions. If locations near schools are selected, the best timing for an enforcement action is the back-to-school window just after school has begun for the year.

Plainclothes police officers or selected volunteer decoys attempt to cross at corners and marked mid-block crossings. If motorists fail to yield to the pedestrian in a crosswalk, a second police officer issues a ticket. Decoys may also be notable community members (such as the mayor or a well-known business leader) to increase media interest in the event.

The City of Cheyenne should conduct at least three crosswalk enforcement actions each year. Key locations include downtown, schools, hospitals, and community centers.

Establish a Pedestrian Advisory Committee	
Target audience	Citizen advocates
Primary agency	City of Cheyenne or MPO
Partners	Local walking and bicycling advocacy groups, senior organizations
Key elements	Regular meetings of a Pedestrian Advisory Committee to advise the City of Cheyenne on pedestrian issues
Time frame	On-going
Cost	\$
Potential funding sources	Local transit agencies; traffic safety foundations and grant programs; hospitals and insurance companies
Sample programs	Seattle, Washington: <a href="http://www.cityofseattle.net">http://www.cityofseattle.net</a> Arlington Virginia: <a href="http://www.walkarlington.com">http://www.walkarlington.com</a> Wyoming: <a href="http://wyotrails.state.wy.us">http://wyotrails.state.wy.us</a>

Many states, Metropolitan Planning Organizations, and cities have an official Pedestrian Advisory Committee (PAC) to advise the governing bodies on technical issues related to walking. The committee usually is composed of citizen volunteers appointed by the mayor or council. In some jurisdictions, one committee is formed that considers pedestrian, bicycle, and/or traffic safety issues.

Common charges of PACs include some or all of the following:

- Review and provide citizen input on capital project planning and design as it affects walking (e.g., corridor plans, street improvement projects, signing or signal projects, and parking facilities)
- Review and comment on changes to zoning, development code, comprehensive plans, and other long-term planning and policy documents
- Participate in the development, implementation, and evaluation of pedestrian master plans and sidewalk standards
- Provide a formal liaison between city government, staff, and the public
- Develop and monitor goals and indices related to walking
- Promote walking, including pedestrian safety and education

Because PAC members are volunteers, it is essential to have strong staff support for the committee in order for it to be successful. An agency staff person, ideally a Pedestrian Coordinator, should be formally assigned to the PAC and should take charge of managing the application process, managing agendas and minutes, scheduling meetings, bringing agency issues to the PAC, and reporting back to the agency and governing body about the PAC's findings and recommendations.

Creating a committee devoted to pedestrian issues may create a group that has the tendency to advocate solely for their interest and lose sight of how these issues fit into the larger picture. To reduce this risk, the committee should include members from other advisory groups. Potential members may come from the following:

- Greenway Advisory Committee
- MPO Citizens' Advisory Committee
- Mayor's Council for People with Disabilities
- Public Transit Advisory Board

If a Pedestrian Coordinator position is created for the City of Cheyenne, that person should take charge of setting up a regional PAC. Strong citizen groups interested in pedestrian issues should specifically be invited to apply for PAC membership.



Pedestrian Safety Campaign	
Target audience	General public
Primary agency	City of Cheyenne
Partners	Wyoming Department of Transportation
Key elements	Pedestrian Safety Campaign with billboard, radio and/or TV spots
Time frame	Late spring or early summer, in conjunction with back-to-school days
Cost	\$ - \$\$\$ (depending on whether ad space is purchased or donated)
Potential funding sources	Local transit agencies (for donated airtime), traffic safety foundations and grant programs; hospitals and insurance companies
Sample programs	New York City Department of Transportation “Look” Safety Campaign: <a href="http://www.looknyc.org">www.looknyc.org</a>

Marketing campaigns highlighting pedestrian safety are an important part of creating awareness of pedestrians. They are an effective way to reach the general public and reinforce other education and outreach messages.

A well-produced safety campaign will be memorable and effective. One stellar example is the “LOOK” campaign (Figure 4) produced by the New York City Department of Transportation for bicycling safety; it combines compelling ads with an easy-to-use website focused at motorists and cyclists.

It is recommended that the City of Cheyenne create a safety campaign similar to the “LOOK” campaign that places pedestrian safety messages near high-traffic corridors (e.g., on billboards, in bus shelters, and in print publications). It is also suggested that this campaign be kicked off in conjunction with school children returning to school in the fall.

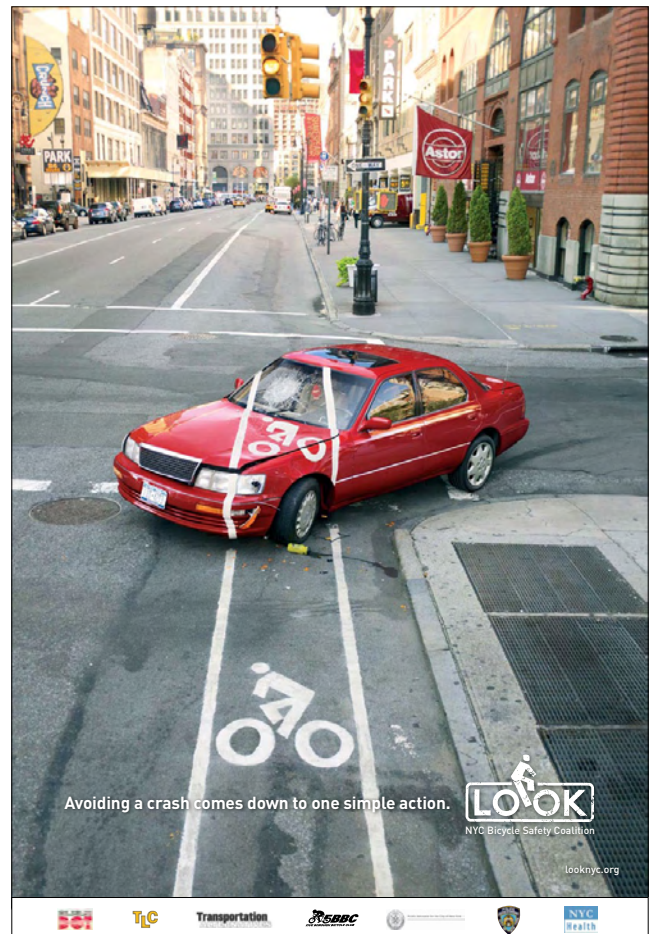


Figure 4. Poster from the “LOOK” campaign

Implement and Expand the Wayfinding Signage Plan	
Target audience	Pedestrians and Greenway users
Primary agency	City of Cheyenne
Key elements	Wayfinding signage plan and signage design
Time frame	Anytime
Cost	\$\$\$ - \$\$\$\$
Potential funding sources	Federal Highway Administration safety funding National Highway Traffic Safety Administration, 6th Penny Tax, City General Fund
Sample programs	Portland Oregon Pedestrian Wayfinding Signage System: <a href="http://www.portlandonline.com">http://www.portlandonline.com</a>

The ability to navigate through a town or city is informed by landmarks, natural features, and other visual cues. Placing signs throughout the community indicating to pedestrians their direction of travel, locations of destinations, and the travel time and distance to those destinations will increase users' comfort and accessibility of destinations around town. Wayfinding signs will assist tourists, as well as locals, to navigate their way to various important destinations in Cheyenne. Wayfinding signs have a unifying design theme that is unique to the local culture. The MPO recently completed the *Cheyenne Wayfinding Plan*.<sup>3</sup> While the Plan is predominately geared toward motorists, some pedestrian-oriented wayfinding signage is planned for the downtown area. The *Cheyenne Wayfinding Plan* could be expanded to include pedestrian-oriented designs and placement guidelines for the entire city. Sign placement could be focused in areas of high pedestrian activity (e.g., downtown, near schools, and the area around Lions Park).

<sup>3</sup> <http://www.plancheysenne.org/Wayfinding/wayfinding%20phase%20I.pdf>

Greenway Pavement Upgrades	
Target audience	Greenway users
Primary agency	City of Cheyenne
Partners	Local walking and bicycling advocacy groups, Cheyenne Metropolitan Planning Organization, Laramie County
Key elements	A plan to dedicate a set amount of funds annually to repair existing Greenway pavement
Time frame	On-going
Cost	\$ - \$\$\$\$ (depends on annual allocation)
Potential funding sources	5th Penny Tax

The Greenway system is a critical element of Cheyenne's walkway network. However, as previously noted, the trail surface in some areas is degrading due to weather, age, and usage. Cheyenne should maintain the Greenway system by repairing or replacing areas where the path surface is damaged or deteriorated (e.g., where there is cracked/heaving pavement).

Crosswalk Marking Upgrades	
Target audience	Pedestrians and motorists
Primary agency	City of Cheyenne
Partners	WYDOT, Laramie County
Key elements	Program to upgrade crosswalk markings on an as-needed basis
Time frame	On-going
Cost	\$\$ - \$\$\$\$ (depends on annual funding allocation)
Potential funding sources	City General Fund, 5 <sup>th</sup> Penny Tax, 6 <sup>th</sup> Penny Tax

As previously discussed, at some intersections in Cheyenne, crosswalks have faded or are otherwise difficult to see, particularly in early to late spring prior to the annual scheduled maintenance. These locations could be targeted through a crosswalk marking upgrade program, which would re-stripe existing faded crosswalks on an as-needed basis. Locations could be noted by maintenance staff, through a pedestrian maintenance hotline, or through development of a list of locations where sidewalks typically wear quickly (e.g., streets with particularly high volumes of motor vehicle traffic).



Continue Sidewalk Infill and Widening	
Target audience	Pedestrians
Primary agency	City of Cheyenne
Partners	WYDOT, Laramie County
Key elements	A plan to periodically inventory, update, and prioritize locations where sidewalk infill or widening is needed
Time frame	On-going
Cost	\$\$\$ - \$\$\$\$ (depends on annual funding allocation)
Potential funding sources	City General Fund, 5 <sup>th</sup> Penny Tax, 6 <sup>th</sup> Penny Tax

A sidewalk infill program places emphasis on completing sidewalk gaps along major pedestrian routes and near major pedestrian destinations.

Completing some sidewalk links can be challenging, especially in older residential areas where residents have developed fencing and landscaping within the public right-of-way and may consider those areas to be part of their personal space. In addition, some residents may not want traditional sidewalks due to the rural look of their neighborhoods and potential impacts to mature landscaping and trees. Regardless, the public right-of way that is generally located on either side of the paved driving and parking area is intended for walking, whether or not a sidewalk currently exists.

A sidewalk inventory was conducted as part of this Plan. The Plan specifically calls out key corridors where sidewalk gaps and narrow corridors currently impede pedestrian travel. Outside these key pedestrian corridors there are still many narrow sidewalks and sidewalk gaps throughout the city. The City should implement a Pedestrian Zone Sidewalk Infill and Widening Program that seeks annually to fill gaps and widen sidewalks in specific areas. The target zone could be selected based on overall sidewalk quality, demonstrated pedestrian need, ranking of attractors and generators, or number of existing sidewalk gaps.

One potential challenge associated with sidewalk infill programs is the fact that maintenance and upkeep is generally the responsibility of the adjacent property owner. The city should work with property owners when possible and investigate additional funding sources to achieve a realistic plan for funding sidewalk infill programs.

Continue Damaged Sidewalk Repair/Replacement	
Target audience	Home and business owners in Cheyenne
Primary agency	City of Cheyenne
Partners	WYDOT, Cheyenne MPO, Laramie County
Key elements	A plan to periodically inventory, update, and prioritize locations where sidewalk repairs are needed
Time frame	On-going
Cost	\$\$\$ - \$\$\$\$ (depends on annual allocations)
Potential funding sources	City General Fund, 5 <sup>th</sup> Penny Tax, 6 <sup>th</sup> Penny Tax

Sidewalk surfaces become degraded over time, with tree roots, weather, and other factors serving as contributing causes. Cheyenne should continue its program of repairing and/or replacing damaged or deteriorated sidewalks where surfaces have cracked or pavement has heaved.

The Pedestrian Priority Corridors identified in this Plan should take priority for sidewalk infill and upgrades. Following these improvements, areas that have high pedestrian use or where sidewalk

conditions are particularly problematic should be targeted for improvements. One method of implementing this program may be to allocate a set amount of staff time to inventory high priority pedestrian corridors and notify property owners if sidewalk repair is necessary. In instances where the property owner cannot afford to pay for sidewalk upgrades, the City could continue its use of CDBG funds to offset the cost of necessary improvements and maintenance.

Continue ADA-Compliant Curb Ramp Upgrades	
Target audience	Pedestrians (both mobility and non-mobility impaired)
Primary agency	City of Cheyenne
Partners	WYDOT, Cheyenne MPO, Laramie County
Key elements	A plan to periodically survey, update, and prioritize locations where ADA curb ramp upgrades are needed
Time frame	On-going
Cost	\$\$\$ - \$\$\$\$ (depends on annual funding allocation)
Potential funding sources	City General Fund, 5 <sup>th</sup> Penny Tax, 6 <sup>th</sup> Penny Tax

With the advent of the Americans with Disabilities Act (ADA) in 1990, the nation recognized the need to provide equal access to all residents. Since its inception, ADA has significantly changed design requirements for the construction of public space. Much of the pedestrian environment built prior to the ADA's inception does not adequately accommodate people with disabilities. Cheyenne's approach is to gradually change this situation through land development project requirements, unrelated capital street improvement projects, and capital projects that specifically retrofit antiquated public pedestrian facilities.

It is important to note that a pedestrian environment that is strategically built to be accessible for people with disabilities is also more accessible for all. Curb ramps, for instance, can accommodate strollers, shopping carts, and dollies for the movement of goods. Accessible intersection crossings can increase safety for people regardless of ability. In recognition of this, the City's philosophical approach is to create pedestrian environments that are attractive, functional, and accessible to all people.

## Section 3. Project Prioritization

### Project Identification and Prioritization

The Cheyenne Metropolitan Area Pedestrian Plan is a tool that allows Cheyenne to focus and prioritize implementation efforts where they will provide the greatest community benefit. While all projects represent important steps for improving Cheyenne's pedestrian environment, a climate of limited financial resources creates the need to establish a prioritization mechanism. Projects were first identified and then evaluated to develop a recommended list of priority projects.

#### Project Identification

The Project Team utilized three main approaches for identifying areas and specific locations throughout Cheyenne where improvement opportunities exist. These included reviewing relevant available data (e.g., crash data, locations of population centers and pedestrian destinations, etc.), field observations throughout the planning process, and input from Cheyenne residents.

#### Data Review

The Project Team reviewed a wealth of data regarding factors that, to varying degrees, impact the pedestrian environment and described *Snapshot* and *Shape* elements of this plan. The data reviewed include:

- Locations of existing walkways (e.g., sidewalks, greenways), including facility characteristics (e.g., width)
- Intersection traffic controls (e.g., signalized, stop-controlled, uncontrolled)
- Reported crashes involving pedestrians
- Locations of transit routes and stops (including daily boardings)
- Locations of "barriers" that may complicate pedestrian travel (e.g., railroads with limited crossing opportunities, freeways, streets with

high vehicle speeds, steep slopes, etc.)

- Land use
- Pedestrian commute mode share by area
- Population densities (including youth, elderly, mobility-impaired)
- Locations of employment centers
- Median household income
- Other data cited in the *Snapshot* and *Shape* elements.

Focusing the analysis on available data alone presents challenges and limitations, as some desired data may not be available; available data may be dated or incomplete; or data may not tell the full story of the issue at hand. For instance, data showing locations of reported pedestrian crashes provides a good starting point for identifying locations with documented safety needs; however crash data often does not capture instances of "close calls" or other factors that may influence pedestrian safety and comfort. With this in mind, the Project Team employed the two additional approaches (described below), to aid in the identification of locations where improvement opportunities exist.

#### Field Observations

To gain an on-the-ground perspective of Cheyenne's current walking environment, the Project Team has conducted several site visits throughout the planning process, including field work conducted in April, June, and October 2009. The Project Team covered the Cheyenne Metropolitan Area on each visit, but also focused particular attention in areas with documented pedestrian safety and comfort. The team also paid special attention to areas exhibiting characteristics of a positive walking environment, as these characteristics can provide guidance where system upgrades are needed. In some cases, City staff and/or stakeholders joined the Project Team on site visits, such as the October 2009 Pedestrian Design Charrette.

#### Input from Cheyenne Residents

Local input represents a critical approach for



assessing a community’s walking environment, as residents are the everyday system users with detailed knowledge of a system’s strengths and weaknesses. The Project Team gathered resident input through two community workshops and through an online survey.

The first Community Workshop, held in June 2009, encouraged residents to “sound off” on Cheyenne’s current pedestrian system, including areas exhibiting a good walking environment as well as locations where improvement opportunities exist. Meeting participants provided feedback through map mark-ups, verbal discussions with workshop staff, notes on large-scale flip charts, and through the workshop questionnaire. The second Community Workshop (held in October 2009) followed a similar format and encouraged participants to review and react to draft project and program recommendations.

The Project Team also administered an online Pedestrian User Survey intended for Cheyenne residents to provide their thoughts on the current walking environment and improvement opportunities. Administered between June and October 2009, the survey yielded over 160 responses. The survey included general and specific questions, including open-ended questions encouraging respondents to list and describe citywide and location-specific issues.

Based on the three general approaches described above, the Project Team developed an initial list of approximately 50 locations where the City (and/or other agencies) should consider concentrating pedestrian infrastructure improvements first. It should be noted that several infrastructure improvement types (e.g., sidewalk infill, curb ramp upgrades, etc.) also represent efforts that are desired citywide, however they are specifically called out at certain locations to ensure that they are included within the overall package of site-specific improvements.

## Infrastructure Project Evaluation

This section describes the methodology used for prioritizing Cheyenne’s recommended walkway projects and programs. The Project Team evaluated over 60 project ideas originating from previous local and

regional planning efforts, resident input at community workshops, and other sources. The Project Team also considered the Pedestrian Level of Service (PLOS) evaluation described in the *Shape* element.

The nine criteria selected for this Plan have been used in similar pedestrian planning efforts in communities throughout the United States and include a broad range of criteria in order to touch on the various elements that should be considered as individual projects are examined and ranked against one another.

Table 3.1 lists the evaluation criteria used to prioritize potential projects and provides an example of how each project was evaluated. These ratings were considered together to prioritize projects. It should be noted that project evaluation is not entirely a scientific and clear-cut process, and various factors require some degree of subjective analysis. For instance, consistent conditions may not exist throughout a project area (particularly along corridors), thereby complicating the ability to assign a ‘neutral,’ ‘moderate,’ or ‘high’ benefit score for a particular criterion. For example, population densities may vary along a corridor, or transit service may only exist along a portion of the corridor under focus. Furthermore, some criteria reflect factors that may not have concrete supportive background data. For instance, the “Safety Need” criterion incorporates reported pedestrian crashes, but also addresses less-quantifiable elements, including perceptions of safety and comfort (e.g., “close calls”). Finally, the Project Team considered geographic equity when developing the “priority” project list to ensure that residents throughout the Cheyenne Metropolitan Area benefit from Plan implementation in the near future.

The relative benefit of each criterion on infrastructure projects shown in table 3.2 is defined below.

- Neutral Benefit ○
- Moderate Benefit ◐
- High Benefit ●

Projects fulfilling the greatest number of evaluation criteria received higher scores. Based on the analysis presented in Table 3.2 and discussions with Cheyenne

City and MPO staff, the Project Team identified several specific projects for more-detailed consideration. These high priority projects are consistent with the goals developed for this Plan. This high priority list also includes some projects already in

the planning stages that could receive funding in the near future. Table 3.3 contains the evaluation matrix of programs and community wide engineering improvements. Table 3.4 presents the list of high priority programs and infrastructure projects.

**Table 3.1. Infrastructure Project Evaluation Criteria**

Criterion	Measurement	Ranking	
Addresses Low PLOS	Improvement is located in an area with a low PLOS. <sup>2</sup>	●	Project is entirely or mostly within a high need area (red, yellow or green zone).
		◐	Project is entirely or mostly within an area of moderate need (blue zone).
		○	Project is entirely or mostly within an area of low need (purple zone).
Closure of Critical Gap	To what degree does the project fill a missing gap in the pedestrian system? Gaps in the system are defined as missing walkways or bridge connections, and unpaved pathways or any other missing connection that restricts pedestrian travel along a corridor.	●	Without this project, travel is impossible or extremely difficult for people of all ages and abilities.
		◐	Travel along the corridor is currently possible, but less confident users or people that require a higher level of accommodation (e.g., the elderly and children) may choose alternate routes.
		○	Project would increase safety and comfort for system users, but would not close a critical gap. Travel is currently possible for all system users.
Public Support	To what degree do Cheyenne residents desire the proposed project? This criterion takes into account oral and written feedback received at the community workshops and through the project's on-line survey.	●	Project was mentioned more than once.
		◐	Project was mentioned once.
		○	Project was not mentioned.
Improvement Serves Immediate Safety Need	Can the project immediately improve walking at locations with perceived or documented safety issues? This criterion takes into account available crash data as well as feedback from agencies and area residents.	●	Project is at a location or includes a location where at least one pedestrian-related crash was reported between 2005 and 2007, or where near-misses were reported by the public.
		◐	The intersection or portion of a corridor was reported by the public as a location of concern or a near-miss was reported. No pedestrian-related crash was reported between 2005 and 2007.
		○	Safety was not mentioned as a concern at this intersection or within this corridor. No pedestrian-related crashes were reported.

<sup>2</sup> As discussed in this Plan's *Snapshot* element, the Pedestrian Level of Service (PLOS) is designed to measure the pedestrian friendliness of various districts, or zones, across Cheyenne. As part of the existing conditions analysis and development of the potential projects list, the Project Team analyzed opportunities and constraints in each zone. The Team then developed infrastructure and programmatic improvements designed to improve conditions in each part of the city. The complete PLOS Opportunities and Constraints Analysis is contained in Appendix C. Map 21 in the *Shape* element shows the results of the PLOS analysis.

Criterion	Measurement	Ranking	
Project Has Been Proposed in a Previous Planning Effort	Has this project been proposed at least once in a past planning effort? To what degree has this project been recognized as critical to pedestrian transportation in Cheyenne?	●	Project is funded and will be constructed within the next 5 years. The project is mentioned in the TIP, STIP, Greenways Plan, or locally funded project list.
		◐	Project was proposed in the TIP, STIP, or Greenways Plan but is not currently scheduled for construction.
		○	This project is new and has not been previously proposed.
Interface with other Transportation Modes	To what degree does this project allow pedestrians to easily transfer between walking and other transportation modes such as bicycling and transit?	●	The project connects to at least one Greenway or transit route. If this is a corridor project, the Greenway or transit route is accessible from multiple points throughout the corridor.
		◐	If this is a corridor project, the project connects to a greenway or transit route at least once within the corridor.
		○	There are no connections to other modes.
Proximity to Destinations	To how many user generators (e.g., parks, elementary schools and downtown Cheyenne) does the project connect within reasonable walking distance?	●	There are a significant number of destinations within one quarter mile of this intersection or corridor.
		◐	There are a moderate number of destinations within one quarter mile of this intersection or corridor.
		○	There are very few or no destinations within one quarter mile of this intersection or corridor.
Current Availability/ Suitability of Right-of-Way <sup>3</sup>	Will Cheyenne have to acquire right-of-way to construct this project? If the right-of-way is available, how much effort is required to prepare the land for infrastructure improvements?	●	There is likely no need to acquire additional right-of-way.
		◐	Potential acquisition of right-of-way may be necessary.
		○	There is likely a need for right-of-way acquisition.
Proximity to Surrounding Populations	How many people will this improvement potentially affect?	●	Likely to improve conditions for many people including populations of higher need (e.g., children and the elderly).
		◐	Likely to improve conditions for a moderate number of people or populations of higher need.
		○	Likely to improve conditions for some people or populations of higher need.

<sup>3</sup> Right-of-way review based on available data. Further survey and engineering analysis is necessary to confirm this evaluation.



Table 3.2. Infrastructure Pedestrian Projects Evaluation

Corridor Improvements	Description	Addresses Low PLOS	Closure of Critical Gap	Public Support	Immediate Safety Need	Previously Proposed	Other Transportation Modes	Proximity to Population	Current ROW Availability/ Suitability	Proximity to Surrounding Destinations
Lincolnway/U.S. 30 Corridor	Ames Avenue to Nationway	●	○	●	●	●	●	●	●	●
Ames Avenue	Lincolnway to Deming Drive	●	●	●	●	●	●	●	●	●
Walterscheid Boulevard	Deming Drive to Pedestrian Plan Study Area Boundary	●	●	●	●	●	●	●	●	●
W College Drive	Walterscheid Boulevard to Pedestrian Plan Study Area Boundary	●	●	●	●	●	●	●	●	●
South Greeley Highway	I-80 to Pedestrian Plan Study Area Boundary	●	●	●	●	●	●	●	●	●
Arp Elementary Connector	Crow Creek Greenway to Arp Elementary	●	●	●	●	●	●	●	●	●
E Fox Farm Road	South Greeley Highway to Avenue C-1	●	●	●	●	●	●	●	●	●
Henderson Ditch Greenway & Omaha Road Connector	Omaha Road to UPRR	●	●	●	●	●	●	●	●	●
Windmill Road	Dell Range Boulevard to E Pershing Boulevard	●	○	●	●	●	●	●	●	●
Converse Avenue	Ogden Road to Dell Range Boulevard	●	●	●	●	●	●	●	●	●
Dell Range Boulevard	Yellowstone Road to Converse Avenue	●	●	●	●	●	●	●	●	●
Van Buren Avenue	Dell Range Boulevard to U.S. 30/E Lincolnway	●	●	●	●	●	●	●	●	●
Vandehei Avenue	Moreland Avenue to Hynds Boulevard	●	●	●	●	●	●	●	●	●
E Lincolnway Crossing (Holliday Park Connector)	Holliday Park to Dunn Avenue	●	●	●	●	●	●	●	●	●
E Pershing Boulevard	U.S. 30 to Van Buren Avenue	●	●	●	●	●	●	●	●	●
E Pershing Boulevard	N College Drive to U.S. 30	●	●	●	●	●	●	●	●	●
E Pershing Boulevard	Windmill Road to N College Drive	●	●	●	●	●	●	●	●	●
E Pershing Boulevard	Evans Avenue to Windmill Road	●	●	●	●	●	●	●	●	●
W Pershing Boulevard	Pioneer Avenue to Evans Avenue	●	●	●	●	●	●	●	●	●
Dell Range Boulevard	Converse Avenue to Windmill Road	●	●	●	●	●	●	●	●	●
Dell Range Boulevard	Windmill Road to Pedestrian Plan Study Area Boundary	●	●	●	●	●	●	●	●	●
Gardenia Drive	Hynds Boulevard to Whispering Hills Road	●	●	●	●	●	●	●	●	●

Intersection Improvements	Addreses Low PLOS	Closure of Critical Gap	Public Support	Immediate Safety Need	Previously Proposed	Other Transportation Modes	Proximity to Population	Current ROW Availability/ Suitability	Proximity to Surrounding Destinations
W Lincolnway and Central Avenue	●	○	●	●	●	●	●	●	●
E Lincolnway and Warren Avenue	●	○	●	●	●	●	●	●	●
W College Drive and Walterscheid Boulevard	●	●	●	●	●	●	●	●	●
South Greeley Highway and E College Drive	●	●	●	●	●	●	●	●	●
E Fox Farm Road and Morrie Avenue/Avenue C	●	●	●	●	●	●	●	●	●
W Lincolnway and Capitol Avenue	●	○	●	●	●	●	●	●	●
W Lincolnway and Ames Avenue	●	●	●	●	●	●	●	●	●
S Greeley Highway and E Fox Farm Road	●	●	●	●	●	●	●	●	●
E Pershing Boulevard and Windmill Road	●	●	●	●	●	●	●	●	●
W Pershing Boulevard and Hynds Boulevard	●	●	●	●	●	●	●	●	●
E Pershing Boulevard and U.S. 30	●	●	●	●	●	●	●	●	●
N College Drive and E Lincolnway	●	●	●	●	●	●	●	●	●
Lincolnway, 13th Street, Dunn Avenue and Nationway	●	●	●	●	●	●	●	●	●
Dell Range Boulevard and Van Buren Avenue	●	●	●	●	●	●	●	●	●
Dell Range Boulevard and Windmill Road	●	●	●	●	●	●	●	●	●
Dell Range Boulevard and Converse Avenue	●	●	●	●	●	●	●	●	●
N College Drive and E Pershing Boulevard	●	●	●	●	●	●	●	●	●
Nationway and Windmill Road	●	●	●	●	●	●	●	●	●
Lincolnway and Logan Avenue	○	●	●	●	●	●	●	●	●

Table 3.3. Programmatic Recommendations Evaluation

Recommended Program	Cost Opinion	Range of Influence	Organizational Needs	Likely Impact
Technical/Professional Training on ADA and Pedestrian Facilities Design	\$\$	High	High	High
Create Walking Maps	\$ - \$\$	Medium	Medium	Medium
Diversion Class	\$\$	Low	Medium	High
Share the Path Campaign	\$	Low	Medium	Medium
Perform Annual Pedestrian Counts	\$\$	Low	Low to Medium	Low
Pedestrian Safety Hotline	\$ - \$\$	High	High	High
Fund and Fill a Pedestrian Coordinator Position	\$\$ - \$\$\$	High	High	High
Crosswalk Enforcement Actions	\$ - \$\$	Low	Medium	High
Establish a Pedestrian Advisory Committee	\$	High	High	High
Pedestrian Safety Campaign	\$ - \$\$\$	Medium	Medium	Medium
Implement and enhance the Wayfinding Signage Plan	\$\$\$ - \$\$\$\$	Low	Medium	Low
Greenway Pavement Upgrades	\$-\$\$\$	Medium	Low	Medium
Crosswalk Marking Upgrades	\$\$ - \$\$\$\$	Medium	Low	Medium
Continue Sidewalk Infill and Widening	\$\$\$ - \$\$\$\$	High	Medium	High
Continue Damaged Sidewalk Repair/Replacement	\$\$\$ - \$\$\$\$	Medium	Medium	Medium
Continue Curb Ramp Upgrades	\$\$\$ - \$\$\$\$	Low	Medium	High
Notes:				
\$ - \$0 to \$5,000: Many of these low cost initiatives can be accomplished using existing community resources such as advocacy organizations, parent groups, and volunteers.				
\$\$ - \$5,000 to \$15,000: Medium cost programs often require some professional expertise on the subject. These programs often include staff time for marketing, coordination, engineering, or web design.				
\$\$\$ - \$15,000 to \$50,000: Higher cost programs require a higher volume of professional hours and/or materials.				
\$\$\$\$ - \$50,000 - \$500,000: These high cost programs primarily target maintenance and infrastructure upgrades. The costs for these programs are dependant on the amount of money available to fund these ongoing programs. Funding allocation may be variable from one year to the next.				
Range of Influence: Potential number of people impacted by an initiative.				
Organization Needs: Potential level of coordination needed with different municipal departments and community organizations.				
Likely Impact: How effective the program is likely to be on possible behavior change.				



Table 3.4 lists the high priority projects as depicted on Map 1. It is important to remember that the pedestrian system and the recommended high priority projects serve as guidelines to those responsible for implementation. High priority projects are discussed in greater detail in the remainder of this section, while Section 4 provides planning-level cost opinions for high priority infrastructure projects.

**Table 3.4. Recommended Top Priority Projects**

Project Type	Project Name	Extent
Program	Create Walking Maps	Regionwide
Program	Perform Annual Pedestrian Counts	Regionwide
Program	Technical/Professional Training on ADA and Pedestrian Facilities Design	Regionwide
Program	Crosswalk Enforcement Actions	Regionwide
Program	Pedestrian Safety Campaign	Regionwide
Program	Implement Wayfinding Signage Plan	Regionwide
Project Type	Project Name	Extent
Corridor	Lincolnway/U.S. 30 Corridor	Ames Avenue to Nationway
Corridor	Ames Avenue	Lincolnway to Deming Drive
Corridor	Arp Elementary Connector	Crow Creek Greenway to Arp Elementary School
Corridor	Converse Avenue	Ogden Road to Dell Range Boulevard
Corridor	Van Buren Avenue	Dell Range Boulevard to U.S. 30
Corridor	Vandehei Avenue	Moreland Avenue to Hynds Boulevard
Corridor	Pershing Boulevard	Windmill Road to College Drive
Project Type	Project Name	Extent
Intersection	College Drive and Walterscheid Boulevard	Intersection
Intersection	Lincolnway and Capitol Avenue	Intersection
Intersection	Lincolnway and Ames Avenue	Intersection
Intersection	Lincolnway, 13th Street, Dunn Avenue, and Nationway	Intersection
Intersection	Dell Range Boulevard and Van Buren Avenue	Intersection
Intersection	Dell Range Boulevard and Windmill Road	Intersection
Intersection	Dell Range Boulevard and Converse Avenue	Intersection

## Walking Maps

Description
<p>One of the most effective ways of encouraging people to walk is through the use of maps and guides showing that the infrastructure exists and highlighting unique areas, shopping districts or recreational areas. Walking maps can be used to promote tourism, encourage residents to walk, or promote local business districts. Maps can be citywide, district-specific, or neighborhood/family-friendly maps.</p> <p>The City of Cheyenne currently produces the “Greater Cheyenne Greenway” map, depicting existing and future greenways in the region. Additionally, these maps could include pedestrian attractions and routes located on sidewalk routes. These maps should be updated as necessary.</p>
Proposed Improvements
<ul style="list-style-type: none"> <li>• Create walking maps with clear symbology, including destinations and services attractive to pedestrians and appropriate walking routes.</li> <li>• Partner with local advocacy groups, senior organizations, and communities to plan and promote.</li> <li>• Seek out potential funding from local transit agencies, traffic safety foundations and grant programs, hospitals, and insurance companies.</li> </ul>
Potential Issues
Maps should be updated regularly.
Lead Agency(ies)
City of Cheyenne
Planning-level Cost Opinion
\$-\$\$



Kirkland, WA provides walking maps for seven neighborhoods. The maps are available in paper form and electronically on the city website.

## Perform Annual Pedestrian Counts

### Description

The City of Cheyenne performs pedestrian counts in conjunction with all turning movement counts taken at intersections but does not perform annual or biannual pedestrian counts. As a result, the City does not have a mechanism for tracking walking trends over time or for evaluating the impact of projects, policies, and programs.

The National Bicycle and Pedestrian Documentation Project has developed a recommended methodology, survey and count forms, and reporting forms. This approach may be modified to serve the needs and interests of individual jurisdictions.

### Proposed Improvements

- Perform and/or coordinate annual pedestrian counts according to national practices.
- Take the lead role in standardizing a regional approach to pedestrian counts and surveys.
- Seek funding through CMAQ (Congestion Mitigation/Air Quality) funds, federal flexible transportation, public transportation funds, hospitals, and insurance companies.
- Further data collection opportunities may be pursued, including before-and-after pedestrian/vehicle data collection on priority roadway projects, inserting pedestrian questions into any existing travel or city audit survey instrument, mandating pedestrian counts in all traffic studies, and purchasing National Household Travel Survey add-on.

### Potential Issues

Funding, establishing consistent systems, sustainability.

### Lead Agency(ies)

City of Cheyenne, Laramie County

### Planning-level Cost Opinion

\$\$ (for data collection and analysis)



The National Bicycle and Pedestrian Documentation Project offers a recommended methodology for implementing and sustaining pedestrian data collection systems. (<http://www.fhwa.dot.gov>)



## Technical/Professional Training on ADA and Pedestrian Facilities Design

### Description

The Federal Highway Administration (FHWA) and Association of Pedestrian and Bicycle Professionals (APBP) have created a technical training for planners, engineers, and project managers to enhance pedestrian mobility through accessible design. The two-day course, "Designing Pedestrian Facilities for Accessibility" includes the following topics:

- Legal requirements and funding opportunities
- How to design accessible driveways, curb ramps, street crossings, intersections, and construction sites
- Information on accessible pedestrian signals

The Pedestrian and Bicycle Information Center (PBIC) has also developed a two-day training course called "Designing for Pedestrian Safety" for planners and engineers. The course includes but is not limited to the following:

- Sidewalk and walkway design
- Signs, signals, and crosswalks
- Facilities at signalized intersections
- Road diets and traffic calming

### Proposed Improvements

- Partner with the Wyoming Department of Transportation and conduct a training for consultants and engineers that work on city projects
- Seek funding from the 6th Penny Tax, General City Funds, Federal Safety Grants

### Potential Issues

Training is a one time project but can be repeated if necessary.

### Lead Agency(ies)

City of Cheyenne, Wyoming Department of Transportation

### Planning-Level Cost Opinion

\$\$



A number of technical trainings exist on ADA issues and pedestrian facilities, design, and implementation for city planners, engineers, and project managers.



Additional technical training programs can augment pedestrian design training offered by Michael Ronkin at the beginning of the Cheyenne Metropolitan Area Pedestrian Planning Process.

### Crosswalk Enforcement Actions

#### Description

Crosswalk enforcement actions (sometimes known as “pedestrian stings”) raise public awareness about the legal obligation of motorists to stop for pedestrians at crosswalks. While crosswalk enforcement actions do result in tickets being distributed, the greater impact comes through media publicity of the event to reinforce the importance of obeying pedestrian crossing laws. Plainclothes police officers or selected volunteer decoys attempt to cross at corners and at marked mid-block crossings. If motorists fail to yield to the pedestrian in a crosswalk, a second police officer issues a ticket. Decoys may also be notable community members (such as the mayor or a well-known business leader) to increase media interest in the event.

#### Proposed Improvements

- Engage media to increase awareness surrounding crosswalk enforcement.
- Conduct at least three crosswalk enforcement actions per year.

#### Potential Issues

Cheyenne Police Department may not have the capacity to properly promote the enforcement actions in order to get increased exposure for pedestrian safety initiatives.

#### Lead Agency(ies)

City of Cheyenne and Cheyenne Police Department


#### Planning-Level Cost Opinion

\$ - \$\$ (depending on design and scope)



A Police Officer getting ready to conduct a “pedestrian sting.”

## Pedestrian Safety Campaign

<p><b>Description</b></p> <p>A marketing campaign highlighting pedestrian safety is an important part of creating awareness of pedestrians. A well-produced safety campaign will be memorable and effective. One stellar example is the “LOOK” campaign produced by the New York City Department of Transportation for bicycling safety; it combines compelling ads with an easy-to-use website focused at motorists and cyclists. It is recommended that the City of Cheyenne create a safety campaign similar to the “LOOK” campaign that places pedestrian safety messages near high-traffic corridors (e.g., on billboards, in bus shelters and in print publications). It is also suggested that this campaign be kicked off in conjunction with school children returning to school in the fall.</p>	 <p>Avoiding a crash comes down to one simple action. <b>LOOK</b> NYC Bicycle Safety Coalition</p>
<p><b>Proposed Improvements</b></p> <p>Develop and print campaign ads that highlight pedestrian safety.</p> <ul style="list-style-type: none"> <li>• Print ads should be located near high crash corridors and locations with high pedestrian volumes.</li> <li>• Campaign can be kicked off near back-to-school or daylight savings time.</li> <li>• Campaign should be held in conjunction with other pedestrian safety initiatives, such as crosswalk enforcement actions.</li> </ul>	
<p><b>Potential Issues</b></p> <p>A pedestrian safety campaign lacks impact if the campaign does not properly communicate the importance of pedestrian safety. It will be valuable to test different campaign messages to evaluate effectiveness prior to launching the campaign.</p>	
<p><b>Lead Agency(ies)</b></p> <p>City of Cheyenne</p>	
<p><b>Planning-Level Cost Opinion</b></p> <p>\$ - \$\$\$ (depending on whether ad space is purchased or donated)</p>	

Example of NYC’s LOOK Bicycle Safety Campaign.



## Implement and Expand the Cheyenne Wayfinding Signage Plan

### Description

The ability to navigate through a town or city is informed by landmarks, natural features, and other visual cues. Placing signs throughout the community – indicating to pedestrians their direction of travel, locations of destinations, and the travel time/distance to those destinations – will increase users' comfort and accessibility to the pedestrian system.

Consider developing a comprehensive and detailed Pedestrian Wayfinding Signage Implementation Plan as is necessary to complete the more general existing Phase I Plan.

### Proposed Improvements

- Implement recommendations for pedestrian-oriented signage from the Cheyenne Wayfinding Signage Plan.
- Enhance the existing plan by adding additional pedestrian wayfinding signage.
- Create a list of primary and secondary locations.
- Recommend sign placement, orientation and frequency.
- Create and install pedestrian wayfinding signage, initially focused in districts with high pedestrian use.
- Include travel times and distances (e.g., by foot) to reduce misconceptions about pedestrian travel time and distance to various locations.
- Detail sign location instructions (e.g., photo and placement instructions for a public works crew) and destinations to be included on each sign.
- Develop a phasing plan that coincides with installation or upgrade of new walkways and Greenways.

### Potential Issues

Pedestrian signage needs to be coordinated with auto-oriented signage to create a uniform system of signs, or users may get confused. Also, it is important to remove current pedestrian signage that does not follow the Wayfinding Signage Plan guidelines.

### Lead Agency(ies)

Cheyenne Metropolitan Planning Organization and Cheyenne Area Convention and Visitors Bureau

### Planning-Level Cost Opinion

\$\$\$ - \$\$\$\$ (dependent on amount of pedestrian signage included in plan)



Example of Walking Map and Sign from Philadelphia.

## Lincolnway/U.S. 30 Corridor (Ames Avenue to Nationway)

### Description

Lincolnway/U.S. 30 is a key travel corridor through downtown Cheyenne. Walkways in this corridor are generally wide and in adequate condition, with little cracking or deterioration. However, several sidewalk segments in the corridor are missing, creating a fragmented pedestrian network. This project would fill sidewalk gaps and widen sidewalks in several locations to better accommodate pedestrian travel.

This project would improve connections along the corridor to businesses, transit, pedestrian attractions in the downtown area such as Cheyenne Depot Plaza, and nearby parks such as Holliday Park.

This project would also include improvements to several intersections; including West Lincolnway and Capitol Avenue. In this location the diameter of the curb encourages pedestrians to cross at any location where the roadway has been narrowed rather than walking to the marked crosswalk, increasing the potential for motor vehicle/pedestrian conflicts.. Recommended improvements include pedestrian channelization to encourage crosswalk use and other pedestrian infrastructure as shown (at the right).

### Demonstrated Need

Several reported pedestrian crashes along this corridor.

Second most mentioned location; only one other location was mentioned more frequently during public surveys.

The presence of frequent driveways in the western end of the corridor increases the potential number of motor vehicle/pedestrian conflict points.

Sidewalk gaps may increase the difficulty of transit access for physically impaired pedestrians.

### Proposed Corridor Improvements<sup>4</sup>

Sidewalk widening where walkways are less than five feet wide.

Sidewalk infill where segments are incomplete. Sidewalks should be attached or detached based on the surrounding sidewalk design.

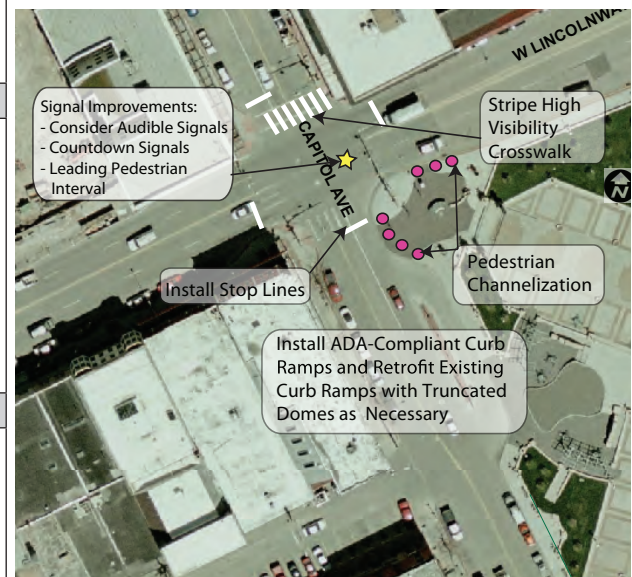
Sidewalk construction where sidewalks do not exist.

Removal/relocation of sidewalk obstructions where necessary.

Consider driveway consolidation when possible.



Pedestrians would benefit from driveway consolidation in the western end of the corridor.



Proposed intersection improvements at West Lincolnway and Capitol Avenue.

**Lincolnway/U.S. 30 Corridor (Ames Avenue to Nationway)****Intersection Improvements****High Priority:**

West Lincolnway and Capitol Avenue (as shown).

West Lincolnway and Central Avenue<sup>5</sup>

East Lincolnway and Warren Avenue<sup>6</sup>

**Other Potential Intersection Improvements:**

Install pedestrian countdown signals at existing signalized intersections where they currently do not exist.

Consider installation of audible signals as necessary.

Retrofit existing curb ramps with truncated domes where necessary.

Install ADA-compliant curb ramps where they currently do not exist.

**Issues for Consideration**

All improvements on Lincolnway/U.S. 30 are subject to final approval by WYDOT.

Any modifications to signal timing may impact the motor vehicle Level of service (LOS).

The City may need to seek alternative funding sources, as sidewalk construction responsibilities are generally the responsibility of the adjacent property owners.

**Lead Agency(ies)**

City of Cheyenne, WYDOT

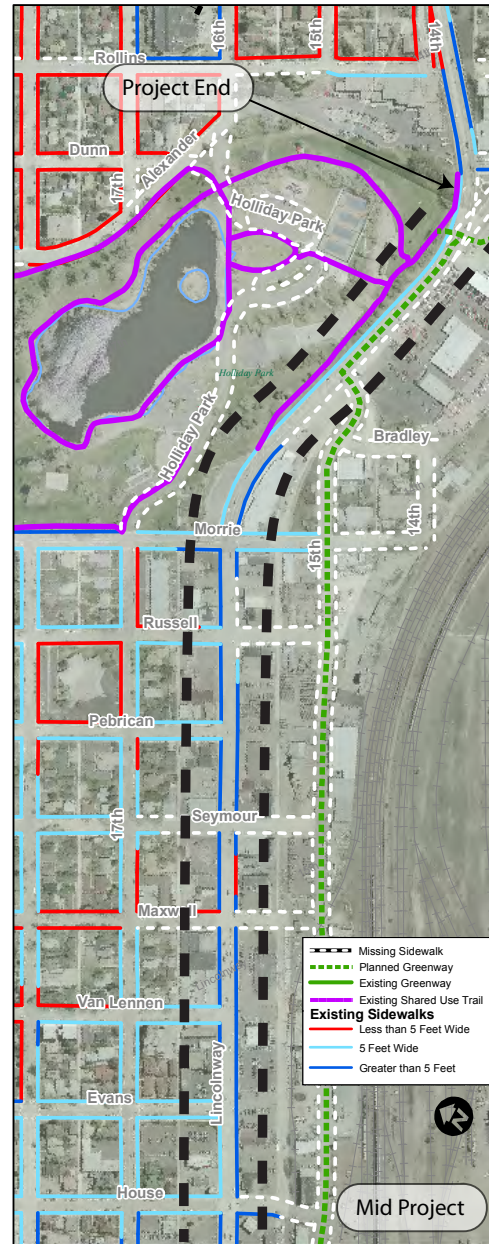
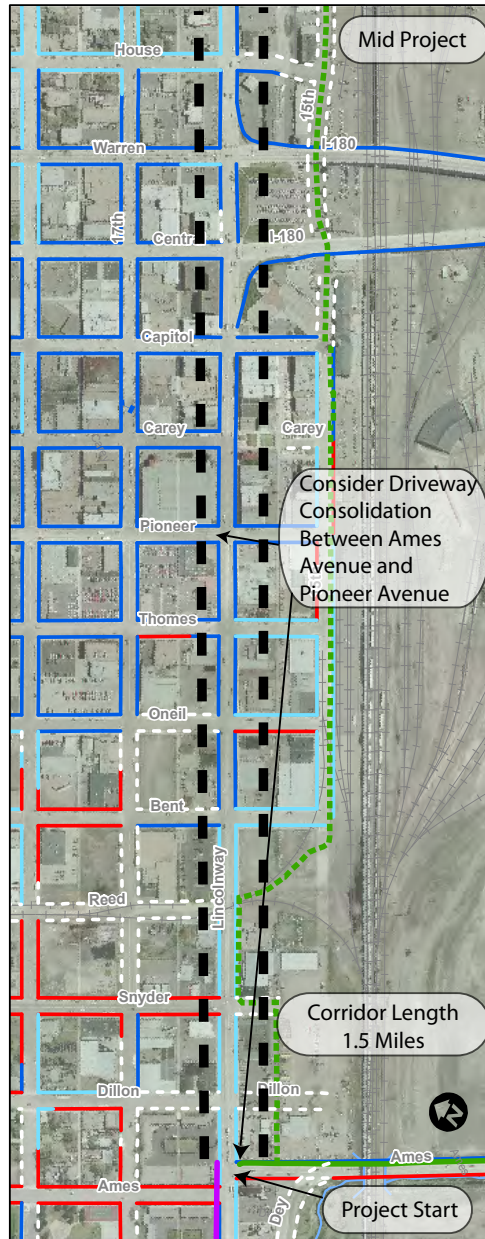
**Planning-Level Cost Opinion<sup>7</sup>:**

Retrofitting truncated domes to the curb ramps at Warren Avenue and West Lincolnway will increase the crossing comfort for pedestrians with visual impairments.

\$\$\$



## Lincolnway/U.S. 30 Corridor (Ames Avenue to Nationway)



4 These proposed improvements are recommendations that should be refined through engineering design and review prior to implementation. A complete listing of proposed improvement details is included in Appendix D.

5 This intersection was considered for but did not make the high priority project list. However, integrating these improvements into corridor-wide improvements can provide a greater increase in pedestrian safety and comfort.

6 This intersection was considered for but did not make the high priority project list. However, integrating these improvements into corridor-wide improvements can provide a greater increase in pedestrian safety and comfort.

7 The costs presented here are planning-level estimates of the relative cost of pedestrian improvements. Further engineering review and design will be necessary to develop a detailed cost opinion.

**Ames Avenue (West Lincolnway to Deming Drive)****Description**

The Ames Avenue underpass is one of four grade-separated crossings of the Union Pacific Railroad tracks in Cheyenne. The greenway located on the east side of the roadway is wide enough to accommodate several pedestrians side by side, but is uncomfortable for some pedestrians due to a lack of lighting. The underpass is also difficult to access due to difficult crossings where West Lincolnway meets Ames Avenue and where it meets Deming Drive.

This project would add lighting to the 0.3 mile greenway corridor and improve pedestrian connections at the northern and southern ends of the corridor.

**Demonstrated Need**

- Several pedestrian collisions have occurred at this the intersection of Ames Avenue and West Lincolnway in the last eight years.
- This undercrossing provides the only accessible and protected railroad undercrossing for over ½ mile in either direction.

**Intersection Improvements<sup>8</sup>****High Priority:**

- West Lincolnway and Ames Avenue<sup>9</sup> (as shown)
- Crossing Improvements at Deming Drive and Ames Avenue<sup>10</sup> (as shown)

**Proposed Corridor Improvements<sup>11</sup>**

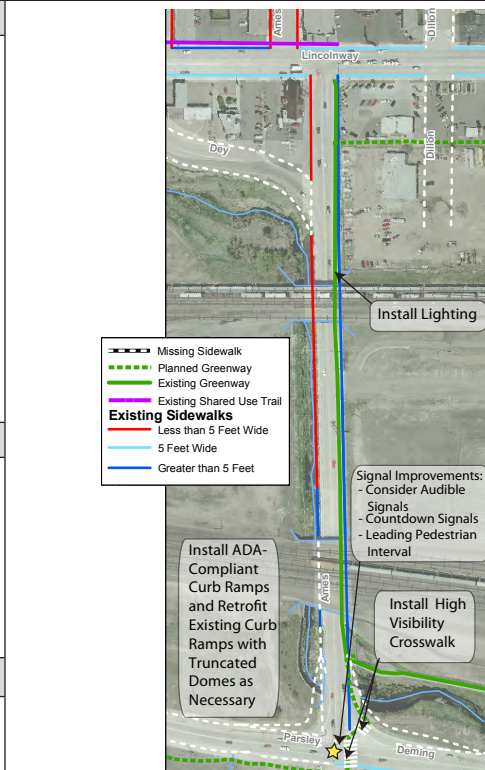
- Add pedestrian-scale lighting to the underpass.

**Issues for Consideration**

- The existing width of the southern underpass does not allow the addition of a sidewalk on the west side of the underpass.
- Coordination with UPRR may be necessary to modify underpass infrastructure.
- Modifications to signal timing may affect motor vehicle level of service (LOS).

**Lead Agency(ies)**

City of Cheyenne, UPRR

**Planning-Level Cost Opinion<sup>11</sup>**

Proposed corridor and Deming Drive/Ames Avenue intersection improvements.



Proposed intersection improvements at Ames Avenue and West Lincolnway. Suggested improvements include moving the signal controller box in the middle of the sidewalk on the SE corner of the intersection.

\$\$

<sup>8</sup> These proposed improvements are recommendations that should be refined through engineering design and review prior to implementation. A complete listing of proposed improvement details is included in Appendix D.

<sup>9</sup> This intersection was ranked as a high priority pedestrian project.

<sup>10</sup> This intersection was considered but did not make the high priority project list. However, integrating these improvements into corridor-wide improvements will provide a greater increase in pedestrian safety and comfort.

<sup>11</sup> The costs presented here are planning-level estimates of the relative cost of pedestrian improvements. Further engineering review and design will be necessary to develop a detailed cost opinion.



## Arp Elementary Connector (Crow Creek Greenway to Arp Elementary School)

### Description

The Arp Elementary Greenway Connector will close a critical gap for students traveling to and from Arp Elementary School and enhance generalized connectivity for all Cheyenne residents. In early 2010, funding was secured through WYDOT's Safe Routes to School Infrastructure Funds grant program. This project, currently underway, will construct a greenway along the east side of Avenue C from Arp Elementary (Reiner Court) to Fox Farm Road and along the west side of Morrie Avenue from Fox Farm Road to the Crow Creek greenway, just north of I-80.

### Demonstrated Need

- There are no other pedestrian crossings of I-80 for over ½ mile in any direction.
- The project would connect to existing transit routes and provide improved travel conditions for the 'last mile' of the journey.
- There are very few other walkways in this area.

### Proposed Corridor Improvements<sup>21</sup>

- Construction of a 0.8 mile long Greenway. This project corresponds to the following Greenway segments proposed by the City:
- Avenue C – Reiner Court to Fox Farm Road
- Morrie Avenue – Fox Farm Road to Teton Street
- Morrie Avenue – Teton Street to 1st Avenue

### Proposed Intersection Improvements

#### High Priority Intersection:

- Avenue C and Fox Farm Road (improvements as shown)

#### Potential Improvements at Other Intersections:

- Install ADA-compliant curb ramps where they currently do not exist.
- Retrofit existing curb ramps with truncated domes where they currently do not exist.

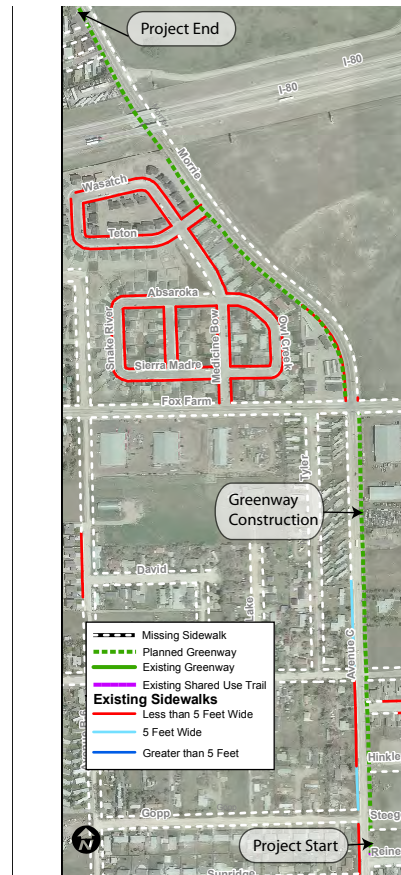
### Issues for Consideration

- Width in the existing I-80 underpass may constrain Greenway width. I-80 is under WYDOT jurisdiction while Avenue C is under Laramie County jurisdiction. Final approval is subject to approval by WYDOT and Laramie County.

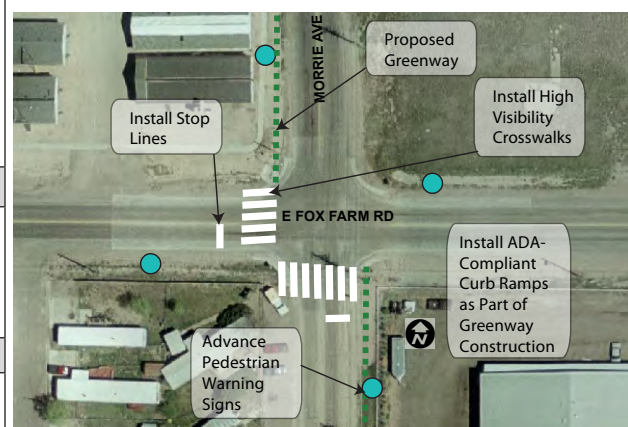
### Lead Agency(ies)

City of Cheyenne, Laramie County, WYDOT

### Planning-Level Cost Opinion



Proposed corridor improvements.



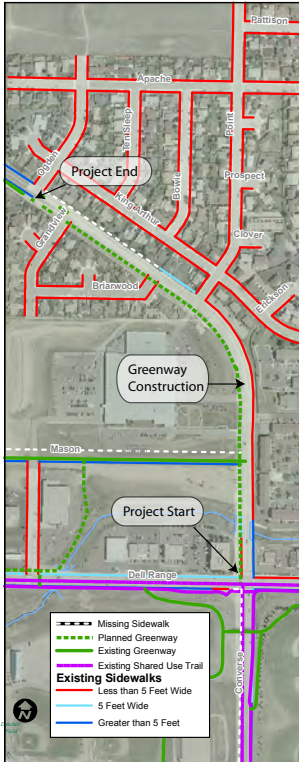

Proposed intersection improvements at Fox Farm Road and Morrie Avenue.

This project is currently underway; no cost opinion was provided as part of this planning effort.

<sup>21</sup> These proposed improvements are recommendations that should be refined through engineering design and review prior to implementation.



**Converse Avenue (Ogden Avenue to Dell Range Boulevard)**

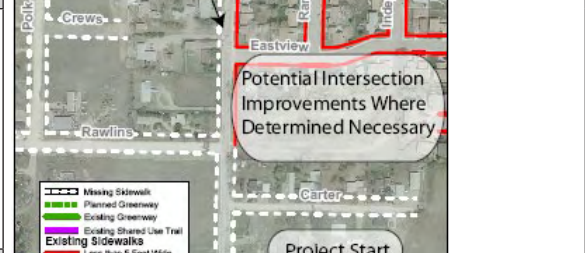
Description	
<p>This project would construct a greenway along the west side of Converse Avenue between Dell Range Boulevard and the existing greenway terminus at Ogden Avenue, as well as intersection improvements at Dell Range Boulevard and Converse Avenue.</p> <p>This greenway would close the gap along the busy Converse Avenue corridor and provide increased pedestrian connectivity between pedestrian trip attractors and generators, including Buffalo Ridge Elementary School, Cahill Park, Anderson Elementary School, and Powers Field.</p>	
Demonstrated Need	
<ul style="list-style-type: none"> <li>The greenway would serve several transit routes.</li> <li>Dell Range Boulevard and Converse Avenue intersection was the intersection mentioned most frequently by the public. The key problem mentioned were motorists making a right turn without yielding to pedestrians.</li> <li>The greenway would provide connections to several other greenways and shared use trails.</li> <li>This corridor provides access to commercial destinations on both sides of Dell Range Boulevard.</li> </ul>	
Proposed Corridor Improvements <sup>12</sup>	
Construct a greenway along the west side of Converse Avenue.	
Proposed Intersection Improvements <sup>13</sup>	Proposed corridor improvements.
<p>High priority:</p> <ul style="list-style-type: none"> <li>Dell Range Boulevard and Converse Avenue</li> </ul> <p>Other Potential Intersection Improvements:</p> <ul style="list-style-type: none"> <li>Retrofit existing curb ramps with truncated domes where necessary.</li> <li>Install ADA-compliant curb ramps where they currently do not exist.</li> </ul>	
Issues for Consideration	
<ul style="list-style-type: none"> <li>This project could be coordinated with the proposed expansion of Converse Avenue from two to four lanes.</li> <li>Adjusting signal timing could impact level of service (LOS) for motorized traffic.</li> <li>This project is on the high priority Greenway list</li> </ul>	
Lead Agency(ies)	
City of Cheyenne	Proposed intersection improvements at Converse Avenue and Dell Range Boulevard.
Planning-Level Cost Opinion <sup>14</sup>	\$\$\$

<sup>12</sup> These proposed improvements are recommendations that should be refined through engineering design and review prior to implementation. A complete listing of proposed improvement details is included in Appendix D.

<sup>13</sup> These proposed improvements are recommendations that should be refined through engineering design and review prior to implementation. A complete listing of proposed improvement details is included in Appendix D.

<sup>14</sup> The costs presented here are planning-level estimates of the relative cost of pedestrian improvements. Further engineering review and design will be necessary to develop a detailed cost opinion.

## Van Buren Avenue (Dell Range Boulevard to U.S. 30)

Description	
<p>Van Buren Avenue is classified as a collector with a posted speed limit of 30 miles per hour. As one of the key north/south routes between Dell Range Boulevard and US 30, the road is frequently used by both pedestrians and motorists.</p> <p>This project would widen sidewalks along the northern portion of Van Buren Avenue and install sidewalks and any missing ADA compliant curb ramps throughout the corridor. Additional pedestrian improvements would include retrofit of ADA-compliant curb ramps with truncated domes where they currently do not exist.</p>	
Demonstrated Need	
<ul style="list-style-type: none"> <li>This project would provide safe connections to destinations such as Dildine Elementary School.</li> <li>There are few other dedicated pedestrian facilities in this area.</li> </ul>	
Proposed Corridor Improvements <sup>17</sup>	
<ul style="list-style-type: none"> <li>Sidewalk widening where walkways are less than five feet wide.</li> <li>Sidewalk construction where sidewalks do not exist.</li> </ul>	
Proposed Intersection Improvements <sup>18</sup>	
<p>High Priority:</p> <ul style="list-style-type: none"> <li>Dell Range Boulevard and Van Buren Avenue<sup>19</sup></li> </ul> <p>Other Potential Intersection Improvements:</p> <ul style="list-style-type: none"> <li>Retrofit existing curb ramps with truncated domes where necessary.</li> <li>Install ADA-compliant curb ramps where they currently do not exist.</li> </ul>	
Issues for Consideration	
<ul style="list-style-type: none"> <li>The City may need to seek alternative funding sources, as the responsibility for sidewalk construction generally falls to adjacent property owners.</li> <li>Any modifications to signal timing may impact the motor vehicle level of service (LOS).</li> <li>Rural residential roadway with borrow ditches and inadequate right of way leave no room for sidewalks; there are many county pocket areas along Van Buren, making right of way acquisition difficult.</li> </ul>	
Lead Agency(ies)	
City of Cheyenne	
Planning-Level Cost Opinion <sup>20</sup>	\$\$\$

Proposed corridor improvements.



<sup>17</sup> These proposed improvements are recommendations that should be refined through engineering design and review prior to implementation. A complete listing of proposed improvement details is included in Appendix D.

<sup>18</sup> These proposed improvements are recommendations that should be refined through engineering design and review prior to implementation. A complete listing of proposed improvement details is included in Appendix D.

<sup>19</sup> This intersection was considered but did not make the high priority project list. However, integrating these improvements into corridor-wide improvements will provide a greater increase in pedestrian safety and comfort.

<sup>20</sup> The costs presented here are planning-level estimates of the relative cost of pedestrian improvements. Further engineering review and design will be necessary to develop a detailed cost opinion.

**Vandehei Avenue (Moreland Avenue to Hynds Boulevard)**

Description	
<p>The project, currently underway, will create two modern roundabouts on either side of a reconstructed I-25 overpass (Vandehei Avenue), which is also part of the project. Roundabouts have been selected as an intersection control by WYDOT based on their cost effectiveness, delay reduction for motorists, and safety benefits.</p> <p>Construction is scheduled to begin in the spring of 2011 and completed by the end of the calendar year<sup>22</sup>.</p>	
Demonstrated Need	
<ul style="list-style-type: none"> <li>• This crossing provides the only pedestrian accessible crossing of I-25 for at least ¾ mile in either direction.</li> <li>• At this time, pedestrians with physical impairments cannot access this facility and must walk in the roadway.</li> </ul>	<p>Planned corridor improvements will include upgrades to pedestrian infrastructure including sidewalks on both sides of the new overcrossing. (Photo: Wyoming Department of Transportation)</p>
Proposed Corridor Improvements <sup>23</sup>	
Reconstruction of the existing I-25 overpass.	
Proposed Intersection Improvements	
<ul style="list-style-type: none"> <li>• Install modern roundabouts at Hynds Boulevard and Bishop Boulevard.</li> </ul>	
Issues for Consideration	
<ul style="list-style-type: none"> <li>• The City and WYDOT need to coordinate traffic management during construction of the facility.</li> </ul>	
Lead Agency(ies)	
City of Cheyenne, WYDOT	 <p>A narrow sidewalk and missing curb ramps on the south side of the I-25 overcrossing create a challenging pedestrian travel environment.</p>
Planning-Level Cost Opinion	<p>This project is currently underway; no cost opinion was provided as part of this planning effort.</p>

<sup>22</sup> [http://www.dot.state.wy.us/wydot/news\\_info/district\\_news\\_info/district\\_1/vandehei\\_interchange](http://www.dot.state.wy.us/wydot/news_info/district_news_info/district_1/vandehei_interchange)

<sup>23</sup> The recommendations have been made and vetted by WYDOT. Final plan approval and construction details will be completed prior to construction.



## East Pershing Boulevard (Windmill Road to North College Drive)

### Description

This project would improve the pedestrian environment of East Pershing Boulevard between Windmill Road and North College Drive. This portion of roadway carries significant volumes of pedestrian and motor vehicle traffic. The corridor contains a number of pedestrian trip attractors including East High School, Baggs Elementary School, businesses, and several parks. This project was frequently identified by the community as a problem area for pedestrians.

### Demonstrated Need

- The project was proposed but not funded in the Transportation Master Plan.
- Cheyenne residents mentioned the project several times as a high priority corridor for improvement.
- Several reported collisions involving pedestrians have occurred in this corridor within the last ten years.

### Proposed Corridor Improvements<sup>15</sup>

- Sidewalk widening where walkways are less than five feet wide.
- Sidewalk infill where segments are incomplete.
- Removal/relocation of sidewalk obstructions where necessary.

### Proposed Intersection Improvements

#### Potential Intersection Improvements:

- Install pedestrian countdown signals at existing signalized intersections where they currently do not exist.
- Consider audible signals as appropriate.
- Retrofit existing curb ramps with truncated domes where necessary.
- Install ADA-compliant curb ramps where they currently do not exist.

### Issues for Consideration

- The City may need to seek alternative funding sources, as the responsibility for sidewalk construction generally falls to adjacent property owners.
- The project should be coordinated with funded reconstruction noted in the Transportation Master Plan.
- Any modifications to signal timing may impact the motor vehicle level of service (LOS).

### Lead Agency(ies)

City of Cheyenne

### Planning-Level Cost Opinion<sup>16</sup>





Proposed corridor improvements.

\$\$\$

<sup>15</sup> These proposed improvements are recommendations that should be refined through engineering design and review prior to implementation. A complete listing of proposed improvement details is included in Appendix D.

<sup>16</sup> The costs presented here are planning-level estimates of the relative cost of pedestrian improvements. Further engineering review and design will be necessary to develop a detailed cost opinion.

### West College Drive and Walterscheid Boulevard

Description	
<p>The intersection of West College Drive and Walterscheid Boulevard is located in southwestern Cheyenne, near Rossman Elementary School and Triumph High School. This intersection currently has high visibility crosswalks on the east, north, and west legs.</p> <p>As development continues to occur in this area over the next five to 10 years, motor vehicle traffic in this area is expected to increase.</p>	
Demonstrated Need	
<ul style="list-style-type: none"> <li>• This is the only protected crossing of West College Drive for at least ½ mile in any direction.</li> <li>• Motorized traffic is expected to increase along this roadway as residential development occurs.</li> <li>• This intersection is located near several schools and utilized as part of several designated walking routes.</li> <li>• A future Greenway connection is proposed for this intersection, which will increase pedestrian traffic at this location.</li> </ul>	<p>Proposed intersection improvements.</p>
Proposed Intersection Improvements <sup>24</sup>	
<ul style="list-style-type: none"> <li>• Retrofit existing curb ramps with truncated domes.</li> <li>• Stripe a high-visibility crosswalk on the southern intersection leg.</li> <li>• Consider audible pedestrian signals.</li> <li>• Install pedestrian countdown signals.</li> </ul>	
Associated Corridor Project	
<p>This intersection is associated with the pedestrian improvement corridor extending along West College Drive from the Pedestrian Plan Study Area Boundary to Walterscheid Boulevard. During evaluation, this corridor project was not designated as a high-priority pedestrian project. However, the intersection and corridor improvements could be combined to create a complete corridor enhancement package.</p>	<p>Intersection of College Drive and Walterscheid Boulevard facing east.</p>
Issues for Consideration	
<ul style="list-style-type: none"> <li>• The <i>Transportation Master Plan</i> recommends widening College Drive through this corridor. The project is not currently funded.</li> </ul>	
Lead Agency(ies)	
WYDOT, City of Cheyenne	
Planning-Level Cost Opinion <sup>25</sup>	\$

<sup>24</sup> These proposed improvements are recommendations that should be refined through engineering design and review prior to implementation.

<sup>25</sup> The costs presented here are planning-level estimates of the relative cost of pedestrian improvements. Further engineering review and design are necessary to develop a detailed cost opinion.

## East Lincolnway, East 13th Street, Dunn Avenue, and Nationway

### Description

This intersection is characterized by skewed angles and an east-bound “slip lane” from Lincolnway to Nationway facilitating high vehicle speeds. Another challenge at this location is limited sight lines on local streets approaching the intersection.

### Demonstrated need

- This intersection was mentioned by the public during several community forums.
- A greenway overcrossing is scheduled for installation just west of this intersection. The Lincolnway / Dunn Avenue intersection improvements would provide a complementary at-grade crossing for pedestrians who are not willing to go out of their way to use the overcrossing.

### Proposed Intersection Improvements<sup>26</sup>

- Stripe high-visibility crosswalks as noted.
- Consider audible pedestrian signals.
- Install leading pedestrian interval (east leg of the Lincolnway and Dunn Avenue intersection) when signal timing in the corridor is upgraded.
- Infill sidewalks, conforming to current standards.
- Install stop lines as noted.
- Install ADA-compliant curb ramps with truncated domes where they are currently not present.
- Install pedestrian countdown signals as necessary.

### Corridor Association

- This intersection is associated with the E Lincolnway Crossing (Holliday Park Connector) corridor project. This intersection improvement project can be combined with the corridor project, if desired.

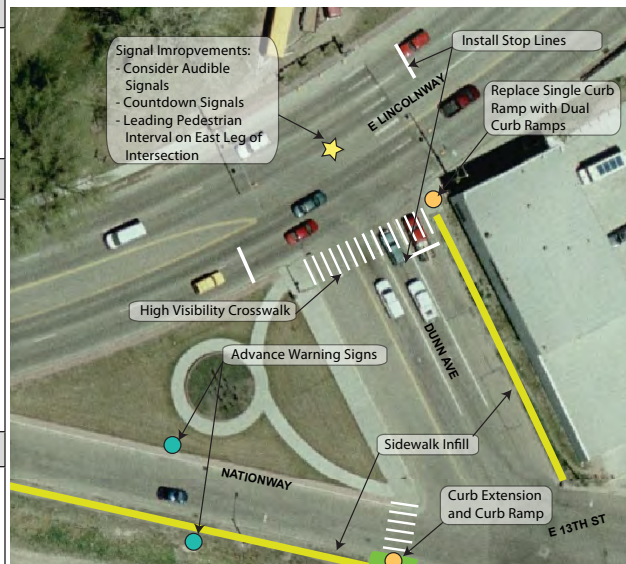
### Issues for Consideration

- Lincolnway is also U.S. 30. WYDOT approval of all designs is required prior to construction.
- Any modifications to signal timing may impact the motor vehicle level of service (LOS).

### Lead Agency(ies)

City of Cheyenne, WYDOT

### Planning-Level Cost Opinion<sup>27</sup>



Proposed intersection improvements.



The eastbound “slip lane” on East Lincolnway facilitates high vehicle speeds and difficult pedestrian crossing conditions.

<sup>26</sup> These proposed improvements are recommendations that should be refined through engineering design and review prior to implementation. A complete listing of proposed improvement details is included in Appendix D.

<sup>27</sup> The costs presented here are planning-level estimates of the relative cost of pedestrian improvements. Further engineering review and design will be necessary to develop a detailed cost opinion.



**Dell Range Boulevard and Windmill Road****Description**

This intersection, located at the east end of Cheyenne's primary commercial strip along Dell Range Boulevard, carries heavy volumes of motor vehicle and pedestrian traffic. Pedestrian trip attractors near this area include soccer fields, several parks, and a golf course.

A greenway paralleling Dell Range Boulevard crosses at-grade on the southern leg of this intersection. The primary concern at this intersection is heavy traffic making right turns on red. Observations of existing driver behavior at this intersection indicate that motorists on all legs routinely ignore pedestrian signals and warning signage.

**Demonstrated need**

- There are many pedestrian trip attractors and generators in this area.
- Stopped vehicles block street crossings for greenway users.
- Motorists have been observed making right turns on red without stopping.
- Cheyenne residents mentioned several times that this intersection should be a high priority due to the frequency of motorists making right turns without stopping.

**Proposed Intersection Improvements<sup>28</sup>**

- Install stop lines.
- Modify signal timing to provide a "leading pedestrian interval."
- Consider prohibiting right turns on red across the southern intersection leg.
- Replace curb ramps on the NW and NE intersection approaches with dual curb ramps.
- Install countdown pedestrian signals.
- Install "Stop Here on Red" Signs.
- Consider audible pedestrian signals.

**Associated with Corridor**

- This intersection is associated with the pedestrian improvement corridor extending along Dell Range Boulevard from Converse Avenue to Windmill Road. During evaluation, this corridor project was not designated as a high priority pedestrian project. However, the intersection and corridor improvements could be combined to create a complete corridor enhancement package.

**Issues for Consideration**

- Adjusting signal timing could impact the level of service (LOS) for motorized vehicles.

**Lead Agency(ies)**

City of Cheyenne

**Planning-Level Cost Opinion<sup>29</sup>**

Proposed intersection improvements at Dell Range Boulevard and Windmill Road.



Prohibiting right turns on red will reduce the potential conflicts between pedestrians and motor vehicles.



Installation of stop lines can provide visual guidance for motor vehicles on where to stop and help keep crosswalks clear for bicyclists and pedestrians.

\$

<sup>28</sup> These proposed improvements are recommendations that should be refined through engineering design and review prior to implementation. A complete listing of proposed improvement details is included in Appendix D.

<sup>29</sup> The costs presented here are planning-level estimates of the relative cost of pedestrian improvements. Further engineering review and design will be necessary to develop a detailed cost opinion.

## Section 4. Implementation Strategies

As described in Section 1, Cheyenne’s recommended walkway system consists of a comprehensive network of sidewalks, greenways, shared use paths, and various programmatic measures. This section presents planning-level cost opinions for these proposed pedestrian improvements and maintenance activities. The section closes with a discussion of supportive policies that can bolster and institutionalize the development of a high-quality walkway network and potential funding sources.

### Cost Opinions

Planning-level cost opinions associated with the recommended pedestrian infrastructure were developed by the Project Team. Cost opinions were based on input from City staff, experience with similar projects in Cheyenne, and similar pedestrian master planning efforts. The following infrastructure elements were included in project cost estimates:

- High-visibility Crosswalks (preformed thermal plastic)
- Pedestrian Countdown Signal
- Stop Bar Installation (preformed thermal plastic)
- 10-foot Greenway Construction
- Railroad Underpass Lighting
- Warning Signs
- Remove and Replace Curb Cut with ADA Ramp
- Remove and Replace with ADA Fillet (20-foot radius)
- Curb Extensions
- Sidewalk Infill – Five Feet Wide, Including Curb and Gutter
- Sidewalk Widening – Assumes Three Feet of Additional Width
- Sidewalk Construction – Five Feet Wide
- Sidewalk Construction – Eight Feet Wide
- Sidewalk Construction – 10 Feet Wide
- Sidewalk Construction – 12 Feet Wide

### Individual Project Cost Opinions

Table 4.1 lists the recommended projects by category and includes generalized planning-level cost opinions for the high priority infrastructure projects while Appendix D includes a detailed list of infrastructure items associated with each project. The cost opinions include contingency and construction management costs, which represent a proportion of the original project costs. These costs represent planning-level opinions for elements of the pedestrian system that currently do not exist (e.g., existing crosswalks that may need restriping are not included in cost opinions). Costs include only pedestrian infrastructure and exclude potential associated costs (e.g., the installation of storm water infrastructure). Cost opinions also excluded the following line items:

- Removal of sidewalk obstructions, fire hydrants, power poles, etc.
- Cost for replacing existing driveway cuts that do not meet current ADA standards
- Potential associated costs such as alterations to storm water infrastructure

Cost opinions are presented in the following general categories:

- \$ - Project cost opinion is less than \$50,000
- \$\$ - Project cost opinion is \$50,000 - \$100,000
- \$\$\$ - Project cost opinion is greater than \$100,000

### Maintenance Costs

As discussed in previous section, on- and off-street walkways require regular maintenance and repair. Among other activities, walkway maintenance includes fixing potholes, repairing sidewalks, and re-striping crosswalks. Sidewalk repair in Cheyenne is usually the responsibility of adjacent property owners. Typical maintenance activities and cost opinions are shown in Table 4.2.

**Table 4.1. Preliminary Cost Opinions for High Priority Infrastructure Projects**

<b>Project Type</b>	<b>Project Name</b>	<b>Extent</b>	<b>Cost</b>
Corridor	Lincolnway/U.S. 30 Corridor	Ames Avenue to Nationway	\$\$\$
Corridor	Ames Avenue	West Lincolnway to Deming Drive	\$\$
Corridor	Arp Elementary Connector	Crow Creek Greenway to Arp Elementary School	Project is in progress; no cost provided.
Corridor	Converse Avenue	Ogden Road to Dell Range Boulevard	\$\$\$
Corridor	Van Buren Avenue	Dell Range Boulevard to U.S. 30	\$\$\$
Corridor	Vandehei Avenue	Moreland Avenue to Hynds Boulevard	Project is in progress; no cost provided.
Corridor	East Pershing Boulevard	Windmill Road to North College Drive	\$\$
<b>Project Type</b>	<b>Project Name</b>	<b>Extent</b>	<b>Cost</b>
Intersection	West College Drive and Walterscheid Boulevard	Intersection Specific	\$
Intersection	West Lincolnway and Capitol Avenue	Included in the Lincolnway/U.S. 30 corridor project	\$*
Intersection	West Lincolnway and Ames Avenue	Included in the Ames Avenue corridor project	\$*
Intersection	East Lincolnway, East 13th Street, Dunn Avenue, and Nationway	Intersection specific	\$
Intersection	Dell Range Boulevard and Van Buren Avenue	Included in the Van Buren Avenue corridor project	\$*
Intersection	Dell Range Boulevard and Windmill Road	Intersection specific	\$
Intersection	Dell Range Boulevard and Converse Avenue	Intersection specific	\$
* Intersection improvement costs are included in corridor cost estimate			

**Table 4.2. Pedestrian Infrastructure and Greenway Maintenance Frequency and Cost Opinions**

<b>Activity</b>	<b>Type</b>	<b>Frequency</b>	<b>Cost Opinion<sup>30</sup></b>	<b>Source</b>
Pavement sweeping	N/A	Weekly/monthly as needed	\$298	Cheyenne MPO
Snow removal	N/A	Weekly/as needed	\$75/hour	Cheyenne Parks Department
Tree/shrub trimming	N/A	Every 5 months – 1 year		
Crosswalk restriping	Preformed Thermal Plastic (PTP)	As Necessary	\$850 per crosswalk	S&J Signs, Cheyenne Wyoming
Stop bar restriping	Preformed Thermal Plastic (PTP)	As Necessary	\$200 per stop bar	S&J Signs, Cheyenne Wyoming
Sign repair/replacement	Worn	Every 10 years	\$300/sign	Summit Engineering
	Stolen	As needed	\$300/sign	Summit Engineering

30 Costs are in 2010 dollars



## Implementation Policies

The *Cheyenne Metropolitan Area Pedestrian Plan* provides the long-term vision for the development of a community-wide pedestrian network usable by all residents for all trip types. Implementation of the Plan will take place in small steps over many years. The following strategies and action items are provided to guide Cheyenne toward the vision identified in the Plan.

### Strategy 1: Strategically Pursue Infrastructure Projects

Cheyenne staff should strategically pursue infrastructure projects. Ideally, staff should initially pursue capital improvements funding or grant funding for short-term pedestrian improvements. However, if grant requirements or construction in conjunction with another roadway project make construction of a lower priority project possible, then staff should pursue funding sources for that project regardless of priority.

#### Action Items

At the end of each fiscal year, Cheyenne should publish a report documenting the status of and on-going actions for pedestrian projects. This report may be combined with the prioritization review discussed below.

- Policy 1.1 Pursue capital improvements funding or grant funding for higher-priority pedestrian improvements first.
- Policy 1.2 In the case where grant requirements or construction in conjunction with another roadway project make construction of a lower priority project possible or required by law, pursue funding sources for that project regardless of priority.
- Policy 1.3 Install approved pedestrian projects simultaneously with road improvement projects scheduled in the same area, regardless of the priority placed upon the pedestrian project.

- Policy 1.4 Publish a report documenting the status and on-going actions for all pedestrian projects at the end of each fiscal year.

### Strategy 2: Regularly Revisit Project Prioritization

Projects have been prioritized based on system connectivity, overcoming barriers, community support, and other criteria described earlier in this report. This list should be reviewed each fiscal year, with new projects added, completed projects removed, and priorities revised as conditions change. This strategy also represents an opportunity to correspond with nearby jurisdictions to collaborate on regionally-important walkways.

#### Action Items

Annually review and update the walkway project list with input from appointed persons within the City of Cheyenne, the Cheyenne Metropolitan Planning Organization, and other relevant agencies. The updated list should be shared with the public.

- Policy 2.1 Annually review and update the Cheyenne Metropolitan Area Pedestrian Plan project and program list.
- Policy 2.2 Share updated Cheyenne Metropolitan Area Pedestrian Plan project list with the public and other jurisdictions.
- Policy 2.3 Review and update the Plan as needed, at a minimum interval of every five years.

### Strategy 3: Integrate Pedestrian Planning into Cheyenne's Planning Processes

This Plan presents a vision for Cheyenne's future pedestrian environment. To ensure that the vision is implemented, the Plan must become a living document that is incorporated into the day-to-day activities of planning, design, funding, construction, and maintenance in Cheyenne. This plan recommends several ways for pedestrian planning to be further integrated into the planning process.

#### Action Items

- Policy 3.1 Incorporate a pedestrian facilities checklist into the Plan review process.
- Policy 3.2 Ensure that a pedestrian assessment is completed for all roadway improvement projects.
- Policy 3.3 Consider adopting a “Complete Streets” policy to ensure that pedestrian facilities are included in all major construction and reconstruction projects. Pedestrian facilities should be addressed at the project scoping stage.
- Policy 3.4 Require sufficient right-of-way to be set aside for pedestrian facilities as redevelopment projects occur.
- Policy 3.5 Ensure that appropriate pedestrian facilities are built as a part of new developments in accordance with this Plan and other relevant plans.

#### Strategy 4: Encourage Private Donors to Support the Walkway/Greenway System

Many trails have a “Friends of” group that can provide volunteer construction and maintenance services and fund small projects, such as signage and wayfinding programs. Through such a program, or an “Adopt a Greenway” program (similar to the existing “Adopt-A-Spot” program), corporations, institutions, and individual private donors can support the existing and proposed walkway system. This program can be leveraged to enhance maintenance through volunteer work and can connect philanthropy with fundraising to sustain the system.

#### Action Items

- Policy 4.1 Create a “Friends of the Greenway System” program and encourage corporations, institutions, and individual private donors to support the existing and proposed walkway/Greenway system.
- Policy 4.2 Leverage this program to enhance maintenance through volunteer work, and

connect philanthropy with fundraising to sustain the system.

- Policy 4.3 Evaluate opportunities for establishing a philanthropic giving program that can be used to support the construction and maintenance of Cheyenne’s walkways and greenways.

#### Strategy 5: Implement Education, Encouragement, and Enforcement Activities

Augment the expanded pedestrian network with education, encouragement, and enforcement activities to encourage more walking among Cheyenne residents. These supporting programs are critical to the success of the Plan and have been prioritized based on ease of implementation, community support, and other criteria.

#### Action Items

- Policy 5.1 Pursue grant funding for higher-priority programs first.
- Policy 5.2 Seek funding for other supporting programs as appropriate.
- Policy 5.3 Work with schools, youth groups, and other parties to provide education and encouragement programs to Cheyenne residents.
- Policy 5.4 Work with the Police Department, media, and advocacy and safety groups to create an educational program to educate pedestrians, bicyclists, and drivers of rights, responsibilities, and safe practices to share the road comfortably and safely.

#### Recommended Complete Streets Policy

There is a growing movement in the U.S. to integrate non-motorized transportation in the planning, design, and operation of roads, bridges, and transit projects, called ‘Complete Streets.’ At the national level, the U.S. Department of Transportation (USDOT) developed a model bicycle and policy framework in 2001. The policy is based on the principle that bicyclists and pedestrians have the right to move along or across all

roadways unless specifically prohibited from doing so. The national policy has served as guidance for State DOTs and public works agencies throughout the U.S. It has recently evolved into the idea that streets are only complete when they address the needs of all modes of transportation, including walking and bicycling. This approach includes providing for transit, ADA compliance, and facilities for people of all ages and abilities.

Complete Streets principles are “*federal, state, local, or regional level transportation laws, policies, or principles which ensure that the safety and convenience of all users of a transportation system, including pedestrians, bicyclists, public transit users, children, older individuals, motorists, and individuals with disabilities, are accommodated in all phases of project planning and development.*”<sup>4</sup> This section provides guidance for Complete Streets policy elements.

## Elements of Complete Streets Policies<sup>5</sup>

### 1. The Principle

- Complete streets are designed and operated to enable safe access for all users. Pedestrians, bicyclists, motorists, and transit riders of all ages and abilities must be able to safely move along and across a complete street.
- Creating complete streets means changing the policies and practices of transportation agencies.
- A complete streets policy ensures that the entire right of way is routinely designed and operated to enable safe access for all users.
- Transportation agencies must ensure that all road projects result in a complete street appropriate to local context and needs.

### 2. Elements of a Good Complete Streets Policy

A good complete streets policy:

- Specifies that ‘all users’ includes pedestrians, bicyclists, transit vehicles and users, and

motorists of all ages and abilities.

- Aims to create a comprehensive, integrated, connected network.
- Recognizes the need for flexibility; all streets are different, and user needs will be balanced.
- Is adoptable by all agencies to cover all roads.
- Applies to both new and retrofit projects, including design, planning, maintenance, and operations, for the entire right of way.
- Makes any exceptions specific and sets a clear procedure that requires high-level approval of exceptions.
- Directs the use of the latest and best design standards.
- Directs that complete streets solutions fit in with context of the community.
- Establishes performance standards with measurable outcomes.

### 3. Implementation

An effective complete streets policy should prompt transportation agencies to:

- Restructure their procedures to accommodate all users on every project.
- Rewrite their design manuals to include the safety of all users.
- Retrain planners and engineers in balancing the needs of diverse users.
- Create new data collection procedures to track how well the streets are serving all users.

## What are the Benefits of Complete Streets?

Complete streets improve safety. They reduce crashes through safety improvements. One study found that designing for pedestrian travel by installing raised medians and redesigning intersections and sidewalks reduced pedestrian risk by 28 percent.<sup>6</sup> Complete streets also improve safety indirectly by increasing the number of people bicycling and walking. A recently published international study found that as the number and portion of people bicycling and walking increases, deaths and injuries decline.<sup>7</sup>

<sup>4</sup> H.R. 1445: Complete Streets Act of 2009, <http://www.govtrack.us/congress/bill.xpd?bill=h111-1443>

<sup>5</sup> Source: <http://www.completestreets.org/changing-policy/policy-elements/>

<sup>6</sup> M.R. King, J.A. Carnegie, and R. Ewing, “Pedestrian Safety Through a Raised Median and Redesigned Intersections” Transportation Research Board 1828 (2003): 56-66.

<sup>7</sup> Jacobsen, PL, “Safety in Numbers: More Walkers and Bicyclists,



Complete streets encourage more walking and bicycling. Public health experts are encouraging walking and bicycling as a response to the obesity epidemic, and complete streets can help. One study found that 43 percent of people with safe places to walk within 10 minutes of home met recommended activity levels, while just 27 percent of those without safe places to walk were active enough.<sup>8</sup> Residents are 65 percent more likely to walk in a neighborhood with sidewalks.<sup>9</sup> A study in Toronto documented a 23 percent increase in bicycle traffic after the installation of a bike lane.<sup>10</sup>

Complete streets can help ease transportation woes. Streets that provide travel choices can give people the option to avoid traffic jams and increase the overall capacity of the transportation network. Several smaller cities have adopted complete streets policies as one strategy to increase the overall capacity of their transportation network and reduce congestion. An analysis by the Victoria Transportation Policy Institute found that non-motorized transportation options can replace some vehicle trips, and in urban areas where more people commute by foot or bicycle, people drive fewer miles overall.<sup>11</sup> In Portland, Oregon, a complete streets approach resulted in a 74 percent increase in bicycle commuting in the 1990s.<sup>12</sup>

Complete streets help children. Streets that provide room for bicycling and walking help children get physical activity and gain independence. More children walk to school where there are sidewalks. Also, children who have and use safe walking and bicycling routes have a more positive view of their neighborhood.<sup>13</sup> Gaining in popularity across the

country, Safe Routes to School programs will benefit from complete streets policies that help turn all routes into safe routes.

Complete streets make fiscal sense. Integrating sidewalks, bike lanes, transit infrastructure, and safe crossings into the initial design of a project spares the expense of retrofits later. Jeff Morales, the Director of Caltrans when the state of California adopted its complete streets policy in 2001, said, “By fully considering the needs of all non-motorized travelers (pedestrians, bicyclists, and persons with disabilities) early in the life of a project, the costs associated with including facilities for these travelers are minimized.”<sup>14</sup>

### **Policy Recommendations**

America Bikes requests that Congress establish a series of performance measures for state and local agencies to ensure that bicycling and walking become safe and convenient options throughout the transportation system.

- Policy 1. As an element of good roadway design, all projects involving new construction or reconstruction of roadways shall consider accommodation of bicyclists and pedestrians. This principle shall apply to all federal, state, and local recipients of funds authorized under Titles 23 and 49, including federal land management agencies.

*Exceptions to this requirement would be possible where:*

- Bicyclists and/or pedestrians are not permitted to operate (e.g., on limited access highways).
- There is a demonstrable lack of need (e.g., in cul-de-sacs).
- Provisions would exceed a reasonable percentage of the overall costs of the project (e.g., 20 percent).

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Safer Walking and Biking,” Injury Prevention 9 (2003): 205-209.

8 Powell, K.E., Martin, L., & Chowdhury, P.P. (2003). Places to walk: convenience and regular physical activity. American Journal of Public Health, 93, 1519-1521.

9 Giles-Corti, B., & Donovan, R.J. (2002). The relative influence of individual, social, and physical environment determinants of physical activity. Social Science & Medicine, 54 1793-1812.

10 St. George Street Revitalization. [www.tc.gc.ca/programs/environment/UTSP/st.georgestretevitization.htm](http://www.tc.gc.ca/programs/environment/UTSP/st.georgestretevitization.htm)

11 Littman, Todd TDM Encyclopedia (ADONIS, 1999; Mackett, 2000; Socialdata Australia, 2000; Cairns et al, 2004).

12 City of Portland, Office of Sustainable Development. Local Action Plan on Global Warming, 2005 Progress Report.

13 Ewing, R. Will Schroeder, William Greene. School location and student travel: Analysis of factors affecting mode choice. Transportation Research Record: Journal of the Transportation

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Research Board, No. 1895, TRB, National Research Council, Washington, D.C., 2004, pp. 55-63.

14 <http://www.americantrails.org/resources/trans/completestreets08.html>

## Recommended Example Complete Streets Policy

A sample recommended complete streets policy from the Ada County Highway District (which encompasses the greater Boise, Idaho region) could be used as the basis for a complete streets policy in Cheyenne.

### 3110 ACHD COMPLETE STREETS POLICY

#### 3110.1 Introduction

A “complete” street addresses the needs of all users. Motorists, pedestrians, bicyclists, and transit riders of all ages and abilities can be safely accommodated within the overall street network. Planning for this diverse user group requires consideration of the following elements:

1. Appropriately-sized travel lanes for cars, trucks, and delivery/emergency service vehicles;
2. Sidewalk space for pedestrians;
3. Bike lanes or bike routes;
4. Transit vehicles, facilities and routes;
5. On-street parking where applicable;
6. Median use for traffic flow, safety, and pedestrian refuge;
7. Adequate buffer areas for pedestrian safety, utility placement, and possible landscaping;
8. Landscaping or hardscaping adding pedestrian protection; and
9. The general land use context of a roadway or corridor.

Future streets within Ada County will be designed to balance user needs and incorporate those elements that match the land use context. Some corridors will be oriented to vehicle mobility but should always safely accommodate other modes. Through context sensitive design, a “complete” street can accomplish greater public benefits, improve safety, increase

transportation options, strengthen the overall benefit of transportation investments and enhance air quality. ACHD supports the creation of “complete” streets by establishing the following policies.

#### 3110.2 Guiding Principle

Streets, bridges and transit stops within Ada County should be designed, constructed, operated and maintained so that pedestrians, bicyclists, transit riders, motorists, and people of all ages and abilities can travel safely and independently.

#### 3110.3 Policies

##### 3110.3.1 Bicycle and Pedestrian Ways

Bicycle and pedestrian ways should be established in new construction and reconstruction projects in all urbanized areas and areas identified for urban levels of development in adopted land use plans unless one or more of the following conditions are met:

- a. Significant safety or other challenges exist that make bicycle and pedestrian facilities dangerous to potential users.
- b. The cost of establishing bikeways or walkways would be excessively disproportionate to the need or probable future use.
- c. Where current and projected future population is sparsely forecasted or other factors indicate an absence of need.

Where bicycle and pedestrian facilities are omitted from a roadway project, it may be necessary to accommodate bicyclists and pedestrians elsewhere within a nearby transportation corridor.

##### 3110.3.2 Paved Shoulders

In rural areas, paved shoulders should be included in all new construction and reconstruction projects on roadways used by more than 1,000 vehicles per day. Paved shoulders of adequate size have safety and operational advantages for all road users in addition

to providing a place for bicyclists and pedestrians.

#### *3110.3.3 Pedestrian Facilities*

All pedestrian facilities, including sidewalks, shared-use paths, street crossings (including over- and undercrossing), pedestrian signals, signs, transit facilities, and all connections within the public right-of-way, should be designed, constructed, operated and maintained so that all people, including children, the elderly and people with disabilities, have safe usage.

#### *3110.3.4 Transportation Infrastructure*

The design and development of the transportation infrastructure should improve conditions for all likely users through the following steps:

a. Plan projects for the long-term. Transportation facilities are long-term investments that should be designed and constructed to anticipate future demand and connectivity needs for bicycle, pedestrian, and transit facilities. Transportation projects should not preclude accommodations for bicycle, pedestrian, and transit facilities, except as outlined in Section 3110.3.1.

b. Coordinate with transit agencies to ensure that planned transit services and facilities are accommodated within the street network. Identifying transit corridors that are accessible and connected to surrounding neighborhoods requires close coordination between transit agencies, municipalities and ACHD in all phases of design and development. Installation and maintenance of transit facilities would be funded through cooperative cost sharing agreements between ACHD and the applicable municipality or transit provider.

c. Address the need for bicyclists and pedestrians to cross corridors as well as travel along them. Even where bicyclists and pedestrians may not commonly use a particular travel corridor that is being improved or constructed, they will likely need to be able to cross that corridor safely and conveniently. Therefore, the design of intersections, interchanges,

and overpasses should accommodate bicyclists and pedestrians in a manner that is safe, accessible and convenient.

d. Consider enhancements such as landscaping, specialized pavement treatments, decorative lighting, public art and other aesthetic features in new construction and reconstruction projects in appropriate land use contexts. Funding for installation and maintenance of enhancements will be specified in cooperative cost sharing agreements between ACHD and its partners as outlined in ACHD Policy Manual, Section 3109, "Interagency Cost Share Policies And Procedures." In new development, these enhancements may be required by the land use agencies through development approval.

e. Get material exceptions approved by the commission. Removal of bikeways or walkways from an existing facility or design should be approved by the Commission or their designee in consultation with the relevant land use agency and be documented with supporting data that indicates the basis for the decision. The decision process and supporting documentation should be open to the public for review and comment.

## **Potential Funding Sources**

### **Federal Funding Sources**

Federal funding is primarily distributed through a number of different programs established by the Federal Transportation Act. The latest act, The Safe, Accountable, Flexible, Efficient Transportation Equity Act – a Legacy for Users (SAFETEA-LU) was enacted in August 2005 as Public Law 109-59. SAFETEA-LU authorizes the Federal surface transportation programs for highways, highway safety, and transit for the five-year period 2005-2009, expiring September 30, 2009. As of the writing of this document, the United States Congress has not authorized a transportation bill to succeed SAFETEA-LU. Two competing bills are being reviewed. In the House of Representatives, the Surface Transportation Authorization Act of 2009 would allocate \$500 billion for Federal transportation projects over six years. If



passed, the bill would change the pattern of funding distribution between different modes. Most significantly, it would authorize \$50 billion for high-speed rail projects. In the Senate, an alternative bill would extend SAFETEA-LU for 18 months, through March 2011, at the same funding levels as in 2009. The bill would act as an interim measure, giving Congress more time to decide on the design of the next multi-year transportation bill.

In Wyoming, federal funding is administered through state (WYDOT) and regional planning agencies. Most, but not all, of these funding programs are oriented toward transportation versus recreation. Programs that provide funding for pedestrian-oriented improvements emphasize the reduction of auto trips and providing inter-modal connections. Federal funding is intended for capital improvements and safety and education programs, and projects must relate to the surface transportation system.

#### **SAFETEA-LU**

There are a number of programs identified within SAFETEA-LU that provide for the funding of bicycle and pedestrian projects.

#### **Surface Transportation Program**

The Surface Transportation Program (STP) provides states with flexible funds which may be used for a wide variety of projects on any Federal-aid Highway including the National Highway System, bridges on any public road, and transit facilities.

Bicycle and pedestrian improvements are eligible activities under the STP. This covers a wide variety of projects such as on-street facilities, off-road trails, sidewalks, crosswalks, bicycle and pedestrian signals, parking, and other ancillary facilities. SAFETEA-LU also specifically clarifies that the modification of sidewalks to comply with the requirements of the Americans with Disabilities Act is an eligible activity.

As an exception to the general rule described above, STP-funded bicycle and pedestrian facilities may be located on local and collector roads which are not part of the Federal-aid Highway System. In addition,

bicycle-related non-construction projects, such as maps, coordinator positions, and encouragement programs, are eligible for STP funds.

#### **Highway Safety Improvement Program**

This program funds projects designed to achieve significant reductions in traffic fatalities and serious injuries on all public roads, bikeways, and walkways. Wyoming was allotted \$5.4 million for Highway Safety Improvement program projects in 2009. This program replaces the Hazard Elimination Program from TEA-21 and includes the Railway-Highway Crossings Program and the High Risk Rural Roads Program.

#### **Transportation Enhancements**

Administered by WYDOT, this program is funded by STP funds that have been set aside for this purpose. Ten percent of STP funds are designated for Transportation Enhancement Activities (TEAs), which include “provision of facilities for pedestrians and bicycles”, “provision of safety and educational activities for pedestrians and bicyclists,” and the “preservation of abandoned railway corridors (including the conversion and use thereof for pedestrian and bicycle trails).” 23 USC Section 190 (a)(35). The Wyoming Transportation Enhancement Activities – Local (TEAL) program provides funding for community-based projects that “compliment surface transportation facilities by stressing mobility, protection of human and natural environment, community preservation, sustainability and livability.”

TEAL applications are competitive and are reviewed on an annual basis with applications due on June 1 each year. TEAL provides 80 percent reimbursement for project costs to project sponsors and an average of \$2 million is distributed annually. Applications are reviewed by the Advisory Selection Committee, which is made up of five members with four members representing different state agencies and one member representing the Federal Highway Administration. Recently, Cheyenne has been awarded TEAL funding for the Norris Viaduct project (2008) and Walterscheid Boulevard Underpass (2010).

### **Metropolitan Planning Funds**

The Metropolitan Planning program provides funding for Metropolitan Planning Organizations to carry out transportation planning activities required by 23 USC 134. This legislation provides funding to develop a Transportation Improvement Program (TIP) for the metropolitan planning area. Examples of typical planning activities include mapping and spatial analysis of potential roadway and trail projects as well as staff time dedicated to public involvement during the TIP update and adoption process.

### **Congestion Mitigation/Air Quality Improvement Program**

The Congestion Mitigation/Air Quality Improvement Program (CMAQ) provides federal funding for projects and programs in air quality non-attainment and maintenance areas for ozone, carbon monoxide, and particulate matter, which reduce transportation related emissions. These federal funds can be used to build bicycle and pedestrian facilities that reduce travel by automobile. Recreational facilities generally are not funded. Every year, each state receives a minimum of 0.5 percent of the total CMAQ funds, with additional funds assigned to states according to the size of population located in areas experiencing excess levels of air pollution. Language in SAFETEA-LU changed CMAQ funding restrictions, allowing each state's 0.5 percent minimum apportionment to be distributed to any jurisdiction, not just air quality non-attainment areas.

The Wyoming CMAQ program can provide up to 80 percent of eligible project funding, but the full project cost is not commonly awarded and local funding match over the 20 percent minimum is highly encouraged. Applications are typically made through the county government. Approximately \$2 million in funding is available annually, with applications made available on September 15 each year. Application due dates may change from year to year, but the deadline is never set earlier than 45 days after the application was made available.

### **Recreational Trails Program**

The Recreational Trails Program of the Federal Transportation Bill provides funds to states to

develop and maintain recreational trails and trail-related facilities for both non-motorized and motorized recreational trail uses. Examples of trail uses include hiking, bicycling, in-line skating, equestrian use, and other non-motorized and motorized uses. These funds are available for both paved and unpaved trails, but may not be used to improve roads for general passenger vehicle use or to provide shoulders or sidewalks along roads.

Recreational Trails Program funds may be used for:

- Maintenance and restoration of existing trails
- Purchase and lease of trail construction and maintenance equipment
- Construction of new trails, including unpaved trails
- Acquisition or easements of property for trails
- Operation of educational programs to promote safety and environmental protection related to trails (limited to five percent of a State's funds)

Recreational Trails Program grant funding is administered locally by the Wyoming Trails Program. Approximately \$900,000 is available each year, with 30 percent reserved for non-motorized projects and 40 percent reserved for diversified projects. Diversified projects combine both motorized and non-motorized uses in the same trail corridor. Local, state, and federal agencies, as well as qualifying private organizations such as non-profit trail stewardship organizations, are eligible to apply. Project sponsors are required to provide a minimum 20 percent local funding match. Awards are capped at \$50,000 for non-motorized projects and \$100,000 for diversified projects.

### **Safe Routes to School (SR2S)**

Under the Safe Routes to School (SR2S) Program, federal funds are administered by WYDOT. The grants can be used to identify and reduce barriers and hazards to children walking or bicycling to school (70 to 90 percent of fund), or for non-infrastructure encouragement and education programs (10 to 30 percent). Between 2005 and 2009, approximately \$1 million has been made available in Wyoming annually. Eligible projects can be fully funded with

no local match requirement, but due to high competition, projects that leverage SR2S dollars with funding from other sources are preferred. Infrastructure project applications are limited to \$200,000 in funding annually. Entities such as state agencies, counties, or non-profit organizations are encouraged to apply, but projects must be coordinated with the local school district, and every project must include a school or schools as co-applicants.

### **Community Development Block Grants**

The Community Development Block Grant program is a part of the Department of Housing and Urban Development. The program has flexible guidelines that allow its funding to be distributed to many different types of projects that aid low-income populations, prevent or alleviate urban blight, or address a community's urgent need. For example, a Community Development Block Grant may fund a streetscape revitalization project, which may be largely comprised of pedestrian improvements. Grantees may "use Community Development Block Grants funds for activities that include (but are not limited to): acquiring real property; reconstructing or rehabilitating housing and other property; building public facilities and improvements, such as streets, sidewalks."

Community Development Block Grant funding is allocated by formula to states and to cities of over 50,000. In 2009, Wyoming received \$3.2 million and Cheyenne received \$546,000 to distribute to grant applicants. Government agencies, non-profit organizations, and individuals are all eligible to apply for a grant. In Cheyenne, the program is administered by Cheyenne Housing and Community Development. Grants are awarded on an annual cycle, with the process beginning in October and applications due in December.

### **Rivers, Trails and Conservation Assistance Program**

The Rivers, Trails and Conservation Assistance Program (RTCA) is a National Parks Service program which provides technical assistance via direct staff involvement to establish and restore greenways, rivers, trails, watersheds, and open space. The RTCA

program provides only planning assistance—there are no implementation monies available. Projects are prioritized for assistance based on criteria that include conserving significant community resources, fostering cooperation between agencies, serving a large number of users, encouraging public involvement in planning and implementation, and focusing on lasting accomplishments. Technical assistance is available for a period of one fiscal year, lasting October 1st through September 30th. Applications for the following year are due annually on August 1. Alan Ragins, Intermountain Region Program Manager, is the Wyoming contact for information and project applications.

### **Land and Water Conservation Fund**

The Land and Water Conservation Fund (LWCF) is a federally-funded program, providing grants for planning and acquiring outdoor recreation areas and facilities, including trails. It is a matching grant, reimbursing up to 50 percent of the total cost of the project. Funds can be used for right-of-way acquisition and construction. The Wyoming State Parks, Historic Sites and Trails Department administers the project. Wyoming's total apportionment for fiscal year 2009 was \$238,000. Applications are reviewed annually and are due on January 30 each year.

### **Transportation, Community and System Preservation Program**

The Transportation, Community and System Preservation Program (TCSP) provides federal funding for transit-oriented development, traffic calming, and other projects that improve the efficiency of the transportation system, reduce the impact on the environment, and provide efficient access to jobs, services, and trade centers. The program is intended to provide communities with the resources to explore the integration of their transportation system with community preservation and environmental activities.

The Transportation, Community and System Preservation Program funds require a 20 percent match, with a maximum federal share of 80 percent. States, MPOs, and local governments can apply. Grants are evaluated by a team of representatives



from several federal transportation departments and agencies, as well as the Environmental Protection Agency. For 2006 to 2009, the TCSP Program was authorized to award up to \$61.5 million in grants. Grants are awarded on an annual cycle, but application deadlines vary from year to year, usually between January and July.

## State Funding Sources

### WYDOT Construction Funds (State Transportation Improvement Program)

WYDOT receives funding every year from the State Legislature for the maintenance and improvement of state roads. Funding can also come from federal sources. The amount available any given year varies, but the Cheyenne Area Transportation Master Plan estimates that an average of \$12 million will be available annually through 2017. Of the total funding from this source, 20 percent is reserved for capital improvement projects. Bicycle and pedestrian improvements along state roads may be possible to fund through this source.

### Motor Vehicle Taxes

Vehicle registration fees and taxes are collected by the state to fund transportation projects. The state distributes these funds to cities, with the Cheyenne area currently receiving about \$1.2 million from this source.

## Local Funding Sources

### Fifth Penny Tax

The Fifth Penny Tax is a one percent sales tax that generates funding specifically for transportation projects. The tax must be approved periodically at the county level. The tax is collected by the state and then returned to each participating county. The Fifth Penny Tax generates about \$7 million annually in Laramie County. The majority of this funding source (80 percent) is reserved for street maintenance and rehabilitation. However, up to 20 percent is available for multimodal projects, which could include bicycle and pedestrian facility projects. Approximately 25 intersections per year in Cheyenne are updated to comply with ADA regulations, with \$250,000 in

funding reserved annually from this source.

### Neighborhood Traffic Management Program (NTMP)

Cheyenne's Neighborhood Traffic Management Program (NTMP) outlines policies and procedures for addressing issues relating to the installation of traffic calming features on local, collector, and arterial streets. Potential treatments range from installation of bike lanes to traffic diversion. NTMP projects are included as a line item of the 5th Penny tax renewal. Additionally, NTMP projects are eligible for funds from several additional sources .

### Neighborhood Matching Grant Funds

This program allows neighborhoods to apply for up to \$5,000 of matching grant funding, assuming they provide at least 50 percent of the overall project cost in cash or labor. This competitive process generally occurs in spring and fall, as funds are available. Proposals are reviewed and prioritized by citizen and city staff committees with the City Council providing final approval. This program is funded through the Fifth Penny Tax as a line item.

### Community Development Block Grant Funding

NTMP projects that meet the federal qualifications for Community Development Block Grant funds are eligible to apply for complete grant funding. Additional information on this program is provided in the listing of federal funding sources.

### Special Improvement District

If the majority of landowners within the area of an NTMP project agree to the creation of a Special Improvement District, improvements can be paid for with the proceeds of a bond issue sold by the city. Each potential NTMP district will include all the properties that will benefit from improvements.

### Local Bond Measures

Local bond measures, or levies, are usually initiated by voter-approved general obligation bonds for specific projects. Bond measures are typically limited by time based on the debt load of the local government or the project under focus. Funding from bond

measures can be used for right-of-way acquisition, engineering, design, and construction of pedestrian and bicycle facilities.

### **Tax Increment Financing/Urban Renewal Funds**

Tax Increment Financing (TIF) is a tool for using future gains in taxes to finance the current improvements that will create those gains. When a public project (e.g., sidewalk improvements) is constructed, surrounding property values generally increase and encourage surrounding development or redevelopment. The increased tax revenues are then dedicated to finance the debt created by the original public improvement project. Tax Increment Financing typically occurs within designated Urban Renewal Areas (URA) that meet certain economic criteria and are approved by a local governing body. To be eligible for this financing, a project (or a portion of it) must be located within the URA. Enabling legislation for TIF funding has not yet been enacted in the state of Wyoming.

### **System Development Charges/Developer Impact Fees**

System Development Charges (SDCs), also known as Developer Impact Fees, represent another potential local funding source. SDCs are typically tied to trip generation rates and traffic impacts produced by a proposed project. A developer may reduce the number of trips (and hence impacts and costs) by paying for on- or off-site pedestrian improvements that will encourage residents to walk or use transit rather than drive. In-lieu parking fees may be used to help construct new or improved pedestrian facilities. Establishing a clear nexus or connection between the impact fee and the project's impacts is critical in avoiding a potential lawsuit.

### **Street User Fees**

The revenue generated by a street user fee is used for operations and maintenance of the street system, and priorities are established by the Public Works Department. Revenue from this fund should be used to maintain on-street bicycle and pedestrian facilities, including routine sweeping of bicycle lanes and other designated bicycle routes.

### **Local Improvement Districts (LIDs)**

Local Improvement Districts (LIDs) are most often used by cities to construct localized projects such as streets, sidewalks or bikeways. Through the LID process, the costs of local improvements are generally spread out among a group of property owners within a specified area. The cost can be allocated based on property frontage or other methods such as traffic trip generation.

### **Business Improvement Districts**

Pedestrian improvements can often be included as part of larger efforts aimed at business improvement and retail district beautification. Business Improvement Districts collect levies on businesses in order to fund area-wide improvements that benefit businesses and improve access for customers. These districts may include provisions for pedestrian and bicycle improvements, such as wider sidewalks, landscaping, and ADA compliance.

### **Sixth Penny Tax**

The Sixth Penny Tax is a one percent Laramie County sales tax that generates funding for special community projects such as the Greater Cheyenne Greenway. Proposed projects are reviewed by a committee of representatives from each city in Laramie County, and then approved for the ballot. Projects must be approved by voters in a public election. Off-street bicycle and pedestrian paths are regularly funded by the Sixth Penny Tax. Projects totaling \$105 million, including \$10 million for Health Safety and Transportation Projects, and another \$10 million for Community Enhancements & Parks Projects, were on the ballot in 2009.

### **Other Local Sources**

Residents and other community members are excellent resources for garnering support and enthusiasm for a bicycle and pedestrian facility, and the City should work with volunteers to substantially reduce implementation and maintenance costs. Local schools, community groups, or a group of dedicated neighbors may get involved, possibly working with a local designer or engineer. Work parties can be

formed to help clear the right-of-way for a new path or maintain existing facilities where needed. A local construction company could donate or discount services. Other opportunities for implementation will appear over time, such as grants and private funds. The City should look to its residents for additional funding ideas to expedite completion of the pedestrian system.

## **Other Funding Sources**

### **American Greenways Program**

Administered by The Conservation Fund, the American Greenways Program provides funding for the planning and design of Greenways. Applications for funds can be made by local, regional or statewide non-profit organizations and public agencies. The grant is administered on an annual cycle, with applications due in the summer. The maximum award is \$2,500, but most awards range from \$500 to \$1,500. American Greenways Program monies may be used to fund unpaved trail development.

## **Future Potential Funding Sources**

### **2010 Campaign for Active Transportation**

Organized by the Rails-to-Trails Conservancy, the Campaign for Active Transportation aims to double the federal funding for trails, walking facilities, and bicycling facilities in the upcoming federal transportation bill reauthorization. They are encouraging communities to gather a campaign team and develop an active transportation case statement, considering what the community could achieve with a \$50 million federal investment in walking and bicycling.





# Cheyenne Metropolitan Area Pedestrian Plan

## Appendix

TO CROSS

PUSH BUTTON



START CROSSING  
WATCH FOR  
TURNING CARS



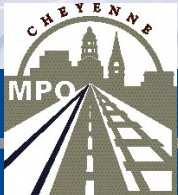
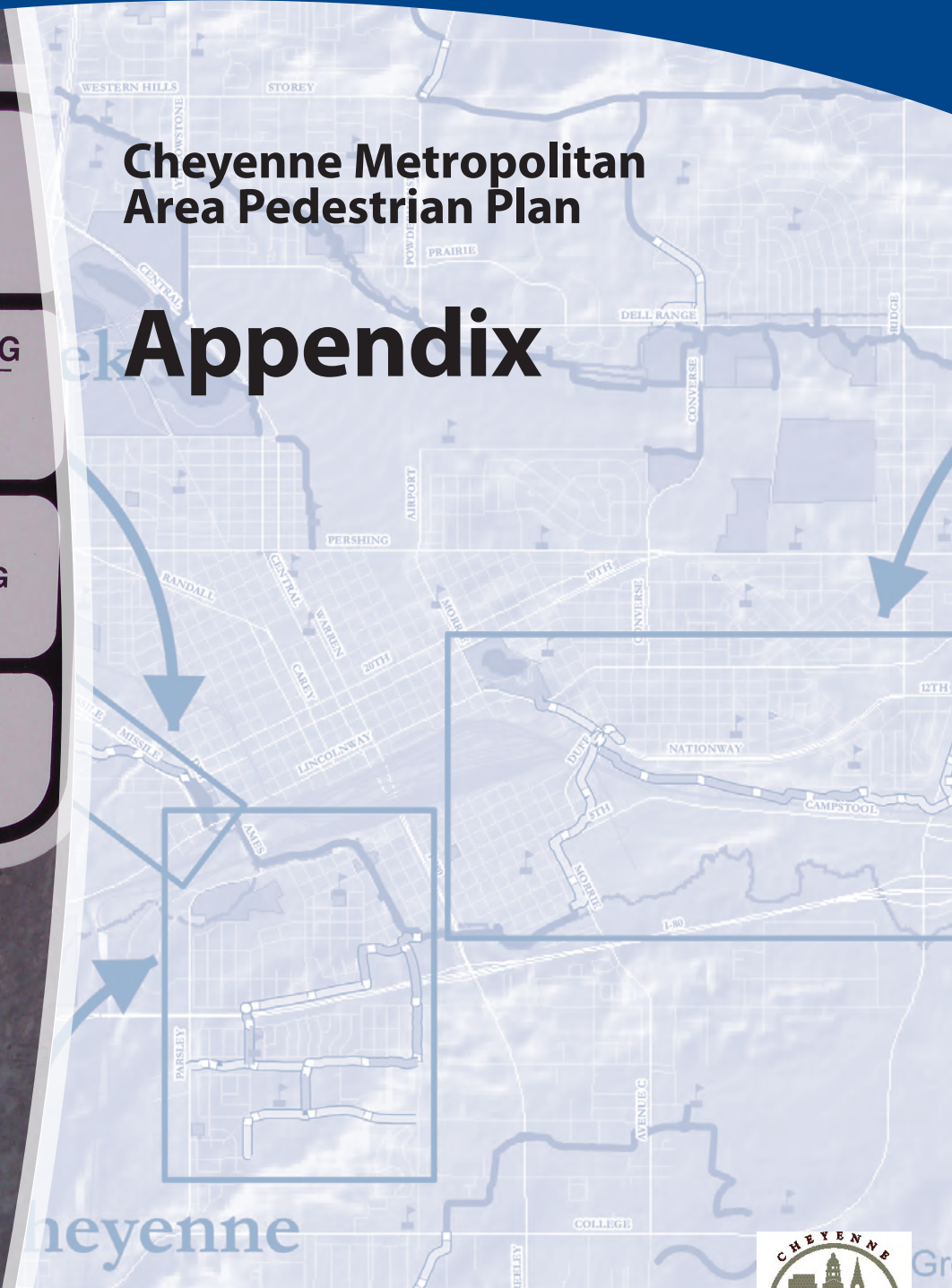
FLASHING

DON'T START  
FINISH CROSSING  
IF STARTED



STEADY

PEDESTRIANS  
SHOULD NOT BE  
IN CROSSWALK



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## Appendix A. Public Involvement Summary Report

### Introduction

This document details the public involvement efforts for the *Cheyenne Metropolitan Area Pedestrian Plan*. The public outreach approach was designed to accommodate multiple methods of public input and solicit feedback regarding existing pedestrian conditions and prioritization of potential improvements. The project team engaged agencies, stakeholders, and the general public from across the region to develop the plan.

### Community Workshops

Two community workshops invited area residents and other stakeholders to provide input on pedestrian conditions and potential solutions. The community workshops were publicized through a press release and flyers in the Cheyenne Metropolitan Area. Approximately 20 participants attended each of the meetings and submitted oral and written comments. With the assistance of group facilitators, participants submitted comments on large-scale maps, flip charts, and questionnaires. The first workshop gathered comments regarding existing pedestrian conditions and potential solutions. The second workshop solicited feedback on potential improvements and project prioritization. The results of the two workshops are summarized below.

#### Community Workshop #1

The following feedback was collected during the first community workshop of the Cheyenne Metropolitan Area Pedestrian Plan, held on June 9, 2009 at the Cheyenne-Kiwanis Community House.

#### Site-Specific Pedestrian Issues

- Pershing Boulevard at Carey Junior High School: Demand for pedestrian crossings of Pershing Boulevard to reach supermarket across the street from school
- Fragmented sidewalk network on Evers

Boulevard in vicinity of Jessup Elementary School

- Uncomfortable pedestrian environment on Vandehei Avenue near I-25 interchange (difficult intersection crossings, sidewalk one side of overpass)
- Bicycle/pedestrian facilities desired along Bishop Boulevard between Vandehei Avenue and Horse Creek Road
- Difficult pedestrian crossing environment at the intersection of Pershing Boulevard/19th Street/Converse Avenue
- Difficult pedestrian crossing environment at the intersection of Pershing Boulevard and Windmill Road
- Improved pedestrian connectivity desired in vicinity of Henderson Elementary School
- Traffic calming desired on streets in vicinity of Bain Elementary School
- Limited site distance near the intersection of Pershing Boulevard and Morrie Avenue (high wall on intersection's northwest corner)
- Improved pedestrian crossings desired on Capitol Avenue near 23rd Street
- Formalized pedestrian crossings desired on Dell Range Boulevard between Ridge Road and College Drive
- High pedestrian crossing volumes (students) on Pershing Boulevard near Henderson Drive
- High-visibility crosswalks are desired throughout the city
- Conflicts arise when motorists making left or right turns do not yield to pedestrians proceeding straight in a crosswalk
- Increased separation from motor vehicle traffic desired along the greenway following Converse Avenue east of the airport

#### Safe Routes To Schools Suggestions

- Bicycle rodeos
- Free helmet giveaways
- Partner with Chamber of Commerce to encourage bicycling among local businesses

- Bike safety trainings
- Bicycle/pedestrian safety classes at all elementary schools during the first week of school each Fall
- Install colorful balloons on crosswalk signs to increase visibility of pedestrians
- Speed enforcement exercises during first week of school

### U.S. 30 At East Pershing Boulevard Spot Improvement Exercise

Suggested improvements include the following:

- Prohibit right turns on red
- Reroute Cleveland Avenue or eliminate Pershing/Cleveland intersection (this intersection is currently located very close to the U.S. 30 at Pershing intersection)
- Install pedestrian refuge islands
- Leave intersection alone until urban development increases demand for pedestrian improvements

### Workshop Questionnaire

Workshop participants were asked to complete a questionnaire discussing their thoughts on Cheyenne's existing pedestrian system, and to provide input on what could make the system better. The following section summarizes questionnaire responses. The Project Team received eight questionnaires.

- 1. What routes (e.g., specific roads or greenways) are walkers using now?**
  - Greenways in residential neighborhoods
  - Yellowstone Road
  - Dell Range Boulevard
  - Converse Avenue
  - I-25 crossings
  - The intersection of College Drive and 12th Street exhibits a good pedestrian environment
  - Dry Creek Greenway
  - Greenway along Crow Creek
- 2. What are the major walking destinations?**
  - Schools
  - Shopping malls
  - Parks
  - Mylar Park
  - Recreation areas
  - State offices
  - Holly Center
  - Ridge Road near Albertsons
- 3. Are there any barriers to walking (e.g., difficult street crossings, "missing links", etc.)?**
  - Dell Range Boulevard
  - Pedestrian push buttons at some intersections are not conveniently located, and include complicated signage
  - Some pedestrian push buttons do not "react" in a timely manner, encouraging risky pedestrian crossing behavior
  - Minimal police enforcement of traffic laws (e.g., speeding)
  - Flooding of greenways
  - Maintenance issues on sidewalks in Downtown Cheyenne and surrounding neighborhoods
  - Vegetation encroaching onto some sidewalks
  - Difficult pedestrian crossing environment on Pershing Boulevard at Ridge Road
  - Bishop Boulevard (narrow shoulders)
- 4. What would make walking safer in Cheyenne?**
  - More greenways
  - Lower vehicle speeds (in general)
  - Lower vehicle speeds on Dell Range Boulevard
  - A more complete sidewalk system
  - Sidewalks detached from the roadway
  - Sidewalks wide enough for pedestrians to pass each other comfortably
  - Conveniently-placed pedestrian push buttons
  - Longer pedestrian "crossing times" at signalized intersections
  - Improved signal timing
  - Trimming of trees and shrubs that block sidewalks and impede sight distance
  - Restricted vehicle parking near intersection corners to improve sight distance for crossing pedestrians
  - Enforcement of School Speed Zones
  - High-visibility crosswalks with pedestrian-activated warning lights
  - Greenway extensions



**5. What would make walking more appealing or attractive?**

- Sidewalks detached from the roadway
- Safer pedestrian crossings
- Improved pedestrian crossings at intersections
- More places to “window shop”
- Improved pedestrian warning signage
- Sidewalks free of tripping hazard and overgrown trees/shrubs

**6. Where do you want to be able to go on foot that you can’t now?**

- Some destinations are too far away for walking
- Parks

**7. What are your top 3 priority projects/programs for funding/implementation?**

- Improved greenway crossing at Holliday Park
- Projects targeted at improving pedestrian safety
- Detached sidewalks
- On-street bikeways
- Projects that improve pedestrian access to schools, parks, and recreation areas
- Bicycle/pedestrian facilities along Bishop Boulevard between Vandehei Avenue and Horse Creek Road

**8. Any other comments?**

- Thank you for the opportunity to comment

## Community Workshop #2

The following feedback was collected during the second community workshop of the Cheyenne Metropolitan Area Pedestrian Plan, held on October 22, 2009 at the Cheyenne-Kiwanis Community House.

### School Site-Specific Pedestrian Issues

- Afflerbach Elementary School: Connection desired south on Avenue B-2 to South Fork
- Anderson Elementary School: Wider sidewalk desired on Point Bluff between Plain View Road and Apache Street; priority Greenway connection noted as used by parents and buses even when wet, muddy, or snowy

- Arp Elementary School: Connection desired between rear of school and Avenue C-2; wider sidewalk requested along Avenue C from north of Gopp court to south of Allison Road
- Davis Elementary School: Pedestrian refuge island desired at mid-block school crossing across Yellowstone Road; demand for intersection improvement at Western Hills Boulevard and Education Drive; and Walking School Bus program desired at school
- McCormick Junior High School: Traffic calming and crossing improvements desired along Western Hills Boulevard at Moccasin Avenue, Pawnee Avenue, Education Drive, and Yellowstone Road, as well as Carlson Street and Yellowstone Road

### Workshop Questionnaire

Workshop participants were asked to complete a questionnaire discussing their thoughts, concerns and suggestions for the Cheyenne Metropolitan Area Pedestrian Plan and Safe Routes to School Plan. The following section summarizes questionnaire responses. The Project Team received three questionnaires.

**1. What elements of the Safe Routes to School recommendations (e.g., physical projects and/or programs) do you like?**

- Making sure sidewalks are adequate
- A better plan for bus/parent drop off areas

**2. Are there any particular locations near schools where additional physical improvements might be needed?**

- Carey Jr. High School, high traffic location on Pershing Blvd
- East High School, high traffic location on Pershing Blvd
- Wider sidewalks near Central High School and Carey Jr. High School

**3. Are there any other programs (e.g., education, encouragement, enforcement, evaluation) that you would recommend for the Safe Routes to School Plan?**

- Education about the routes and encouragement to use them. Maybe a school award for most students who walked.
4. **What elements of the Cheyenne Metropolitan Area Pedestrian Plan recommendations (e.g., physical projects and/or programs) do you like?**
- Yellowstone Rd corridor improvements
  - Greeley Hwy improvements
  - Dell Range Blvd improvements
  - All of it
5. **What other physical improvements would you recommend?**
- Pedestrian refuge islands at all busy intersections
  - Stoplights at Kennedy Rd and Central Ave
  - Sidewalks along Kennedy Rd and Carey Ave through Pioneer Park
  - Improved, wider sidewalks in older neighborhoods where current sidewalks are narrow and attached to curbs
6. **Are there other programmatic measures (e.g., education, encouragement, enforcement, evaluation) you would recommend?**
- Have companies encourage pedestrian/bicycle commuting with discounts, etc.
  - Motorist education regarding pedestrian safety and driving respectfully
  - Reinforce efforts by addressing the importance of creating pedestrian friendly environments in new development (e.g. connectivity, streets with slower traffic, detached sidewalks, etc).
7. **Any other comments?**
- It might be helpful to have a more accurate count of pedestrians for planning. Maybe get volunteers to do pedestrian counts. A school class could do this as a project.
  - Pedestrians don't always get a lot of respect, even when in intersections with traffic lights.
  - We love the fact that Cheyenne actually asks citizens for input. A new experience for us! You have skilled people working on these issues and working for residents like us. We

appreciate it and we also know we are not "experts" so you lead us to great improvements! We are also very willing to pay more taxes for infrastructure that doesn't seem to be a popular "Wyoming idea."

## Additional Feedback

The City of Cheyenne received the following feedback from stakeholders in the Cheyenne Metropolitan Area Pedestrian Plan process.

### November 12, 2009

A mother and Parent Teacher Organization (PTO) member expressed concerns to the City of Cheyenne during the planning process about the pedestrian environment near Rossman School. She was concerned that the Walterscheid Boulevard "flashers" have been removed. She also reported on behalf of the PTO to say that they would like to see a crosswalk at one of the east entrances to the parking lot across Walterscheid Boulevard. Overall, she was concerned that there are no safe ways to walk from her neighborhood to Rossman School because there are no sidewalks on Parsley Boulevard and College Drive.

### December 8, 2009

A member of the Greenway Advisory committee expressed serious concerns that motorists stop in the crosswalk at intersections where the Greenway crosses, such as Windmill Road and Dell Range Boulevard and Converse Avenue and Dell Range Boulevard. The City has also received comments that this same problem occurs where the Greenway crosses Cleveland Avenue off of E. Lincolnway.

## Appendix B. Online Survey Summary Report

### Introduction

This document describes and summarizes the online survey conducted as part of the Cheyenne Metropolitan Area Pedestrian Plan and presents results of the survey.

The project team conducted an online survey of residents throughout the Cheyenne Metropolitan Area. The purpose of the survey was to solicit information about how residents use the pedestrian transportation system and what improvements they would like to see. The online survey received 166 responses.

### Survey Instrument

The survey asked respondents the following questions:

#### 1. Why do you walk? (check all that apply)

- For recreation/exercise
- To socialize
- To get to/from work
- To get to/from school
- For shopping/errands
- To get to/from transit
- To walk my dog/pet
- I never walk
- Other (please specify)

#### 2. How often do you walk?

- Daily
- Weekly
- Monthly
- Rarely
- Never

#### 3. When do you typically walk? (check all that apply)

- Weekday mornings
- Weekday mid-days
- Weekday evenings

- Weekend mornings
- Weekend mid-days
- Weekend evenings

#### 4. What is the average distance you walk per week?

- Under 2 Miles
- 2-5 Miles
- 6-10 Miles
- More than 10 Miles

#### 5. What types of walkways do you use most frequently? (select top two)

- Sidewalks (along major streets)
- Sidewalks (along side streets)
- Paved off-street trails/greenways
- Unpaved off-street trails/greenways
- I walk in the roadway/street

#### 6. Using the scale below, ranging from strongly agree to strongly disagree, please tell us about your general impressions of walking in Cheyenne.

- There is enough buffer between sidewalks and moving traffic
- Sidewalks and trails/greenways are wide enough
- Sidewalks and trails/greenways are clear of obstructions
- Sidewalks and trails/greenways are in good condition (e.g., surface quality)
- Sidewalks and trails/greenways are clean
- Destinations are within reasonable walking distance
- There is enough lighting on sidewalks and trails/greenways
- There are sufficient amenities for walkers such as benches and drinking fountains
- It is easy to cross major streets while walking



**7. What prevents you from walking in Cheyenne more often? (check all that apply)**

- Lack of sidewalks or trails/greenways (e.g., sidewalk gaps, missing curb ramps, etc.)
- Sidewalks or trails/greenways are in poor condition (e.g., poor pavement, overgrown vegetation, etc.)
- Wide roads/streets that are difficult to cross
- Lack of marked crosswalks or pedestrian crossing signals
- Motorists don't stop for pedestrians
- High vehicle speeds
- Insufficient lighting
- Lack of time
- Weather
- Concerns about crime
- Destinations are too far away
- Other (please specify)

**8. Please list specific problem areas for walking in Cheyenne. Indicate the location (intersection or street block) and the type of the problem (e.g., gap in sidewalk, unsafe crosswalk, narrow sidewalk, etc.).**

**9. Please rate your preference for the following types of pedestrian improvements:**

- Lowest Priority Somewhat of a Priority More of a Priority Highest Priority
- Infill of sidewalk and trail/greenway gaps
- Improvements to crosswalks that are uncontrolled or difficult to cross
- Adding or improving signalized intersections
- Americans with Disabilities Act (ADA) improvements (e.g., curb ramps)
- Traffic calming projects
- Safe Routes to School programs
- Pedestrian education, safety, and awareness campaigns

**10. Other comments about pedestrian issues in Cheyenne:**

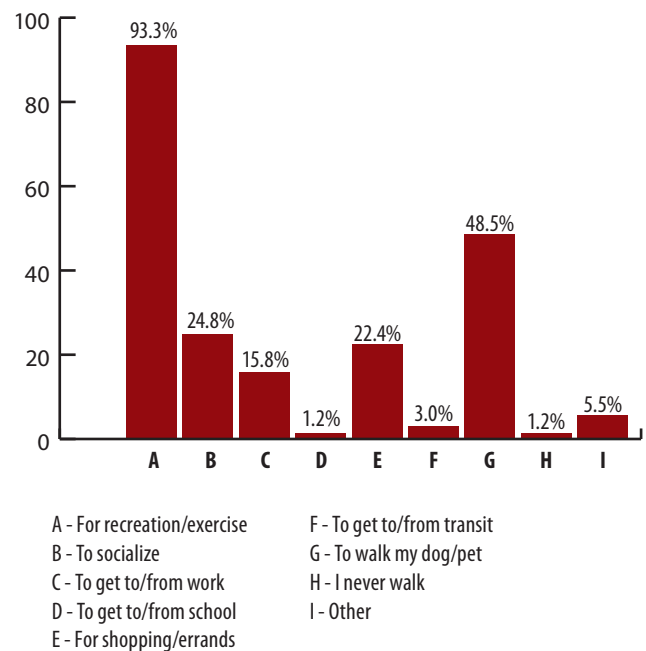
**11. Where do you live? (nearby intersection or address)**

## Results

The following section presents the results of the Cheyenne Metropolitan Area Pedestrian Plan online survey.

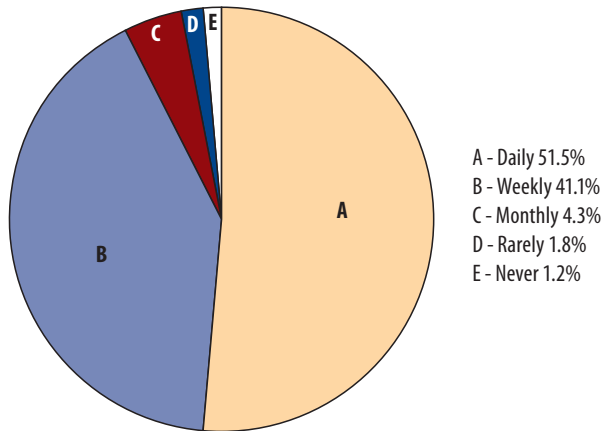
When asked why they walk, most respondents (93.3%) answered for recreation or exercise. Other common responses included to walk the dog/pet (48.5%), to socialize (24.8%), and for shopping/errands (22.4%). All responses to the question can be found in Figure B-1.

**Figure B-1: Responses to the survey question “Why do you walk?”. Respondents were invited to choose all reasons that apply.**



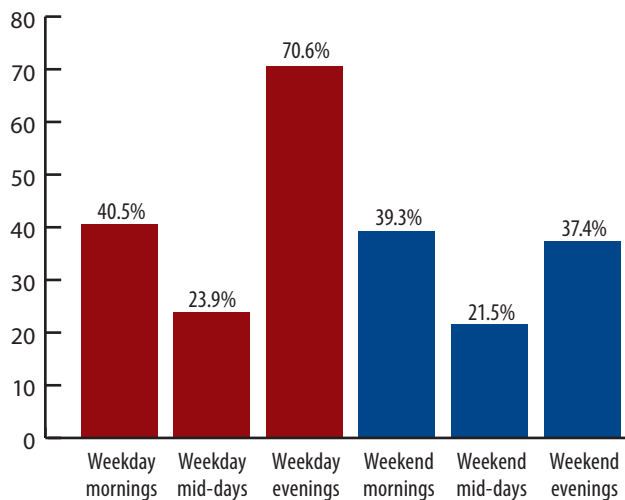
When asked how often they walk, most respondents either answered daily (51.5%) or weekly (41.1%). Few respondents answered monthly (4.3%), rarely (1.8%), or never (1.2%). These responses on walking frequency are shown in Figure B-2.

**Figure B-2: Responses to the survey question “How often do you walk?”**



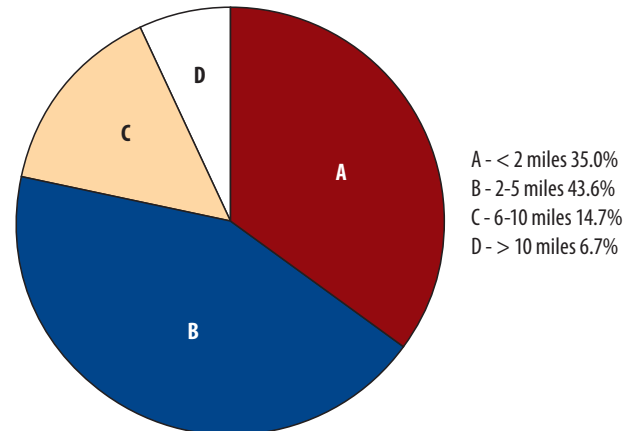
A majority of the survey respondents (70.6%) reported typically walking on weekday evenings. The fewest respondents (21.5%) reported typically walking on weekends mid-day. All responses for when individuals typically walk are shown in Figure B-3.

**Figure B-3: Responses to the survey question “When do you typically walk?”. Respondents were invited to choose all reasons that apply.**



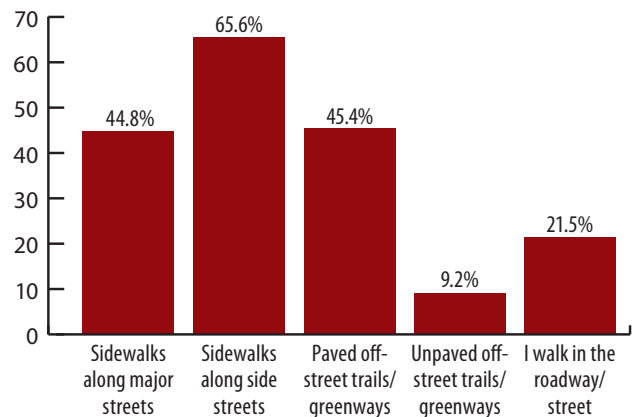
When asked the distance they typically walk in a week, the largest percentage of respondents (43.6%) reported walking two to five miles per week. About one-third (35.0%) reported walking fewer than two miles per week, while 14.7% of respondents said they walk six to 10 miles and 6.7% said they walk more than 10 miles per week. These responses are shown in Figure B-4.

**Figure B-4: Responses to the survey question “What is the average distance you walk per week?”**



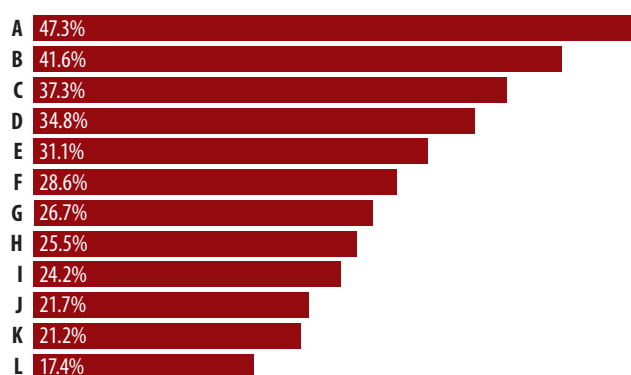
Respondents were asked to reveal the two types of walkways they use most frequently. The greatest percentage of respondents (65.6%) reported using sidewalks along side streets frequently. Just under half of respondents reported frequently using paved off-street trails or greenways (45.4%) and/or sidewalks along major streets (44.8%). About one-fifth of respondents (21.5%) reported walking in the roadway or street frequently. The smallest percentage of respondents (9.1%) reported walking on unpaved off-street trails or greenways frequently. These responses are shown in Figure B-5.

**Figure B-5: Responses to the survey question, “What types of walkways do you use most frequently?” Respondents were invited to choose the two types of walkways they use most often.**



When asked what prevents them from walking in Cheyenne more often, the greatest percentage of respondents (47.2%) reported weather. The second most common response was “Motorists don’t stop for pedestrians” (41.6%). All responses for this question are shown in Figure B-6.

**Figure B-6. Responses to the survey question, “What prevents you from walking in Cheyenne more often?”** Respondents were invited to choose all reasons that apply.

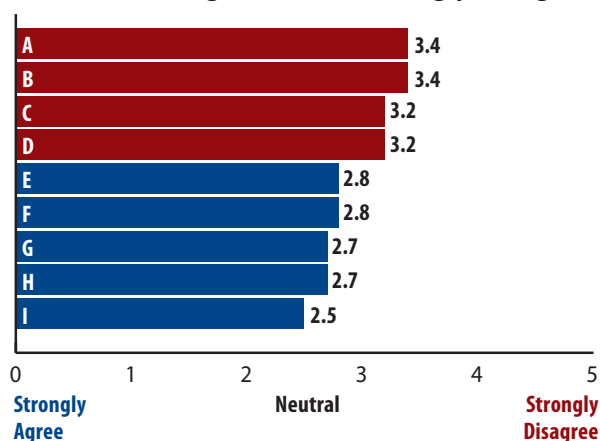


- A - Weather
- B - Motorists don't stop for pedestrians
- C - Lack of time
- D - Lack of sidewalks or trails/greenways
- E - Destinations too far away
- F - Wide roads difficult to cross
- G - High vehicle speeds
- H - Insufficient lighting
- I - Sidewalks or trails/greenways in poor condition
- J - Concerns about crime
- K - Lack of marked crosswalks or ped. crossing signals
- L - Other

Survey respondents were asked to rate pedestrian conditions in Cheyenne based on their agreement with a number of statements. Figure B-7 summarizes the responses by the average rating where 1 = Strongly Agree, 2 = Agree, 3 = Neutral, 4 = Disagree, and 5 = Strongly Disagree. Overall, survey participants responded with fairly neutral opinions. The first four statements (in red below) received average ratings on the negative side of the spectrum, while the final five statements (in blue below) received average ratings on the positive side of the spectrum. It is worth noting that survey respondents felt more negatively about amenities, pedestrian crossings,

lighting, and buffers on sidewalks. Respondents felt somewhat more positively about the cleanliness, physical condition, and width of sidewalks and paths, as well as walking distances to destinations.

**Figure B-7. Average rating responses to the question, “Using a scale from strongly agree to strongly disagree, please tell us about your general impressions of walking in Cheyenne.”** Responses are averaged where 1 = Strongly Agree, 2 = Agree, 3 = Neutral, 4 = Disagree, and 5 = Strongly Disagree.



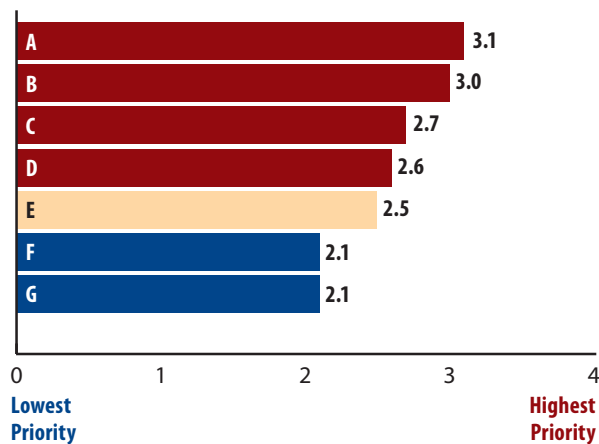
- A - There are sufficient amenities for walkers such as benches and drinking fountains
- B - It is easy to cross major streets while walking
- C - There is enough lighting on sidewalks and trails/greenways
- D - There is enough buffer between sidewalks and moving traffic
- E - Sidewalks and trails/greenways are in good condition (e.g. surface quality)
- F - Sidewalks and trails/greenways are clear of obstructions
- G - Destinations are within reasonable walking distance
- H - Sidewalks and trails/greenways are wide enough
- I - Sidewalks and trails/greenways are clean

Survey respondents were also asked to rate their preference for particular pedestrian improvements. summarizes the responses by the average rating where 1 = Lowest Priority, 2 = Somewhat of a Priority, 3 = More of a Priority, and 4 = Highest Priority. With 2.5 as a neutral score, some improvements received high priority ratings overall, while others received lower priority ratings. The first four statements (in red below) received average ratings on the higher priority side of the spectrum. The fifth statement about American Disabilities Act (ADA) improvements (in tan below) averaged a neutral rating, while the final two statements (in blue below) received average



ratings on the lower priority side of the spectrum. It is worth noting that survey respondents felt Safe Routes to School programs, crosswalk improvements, sidewalk and path infill, and signalized intersections have the highest priority, while traffic calming projects and education, safety, and awareness programs have lower priority.

**Figure B-8. Average rating responses to the question, “Please rate your preference for the following types of pedestrian improvements.” Responses are averaged where 1 = Lowest Priority, 2 = Somewhat of a Priority, 3 = More of a Priority, and 4 = Highest Priority.**

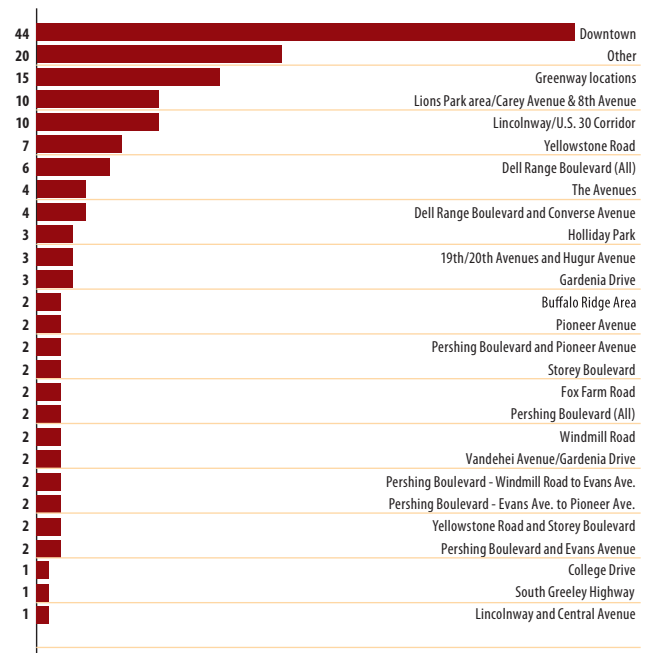


- A - Safe Routes to School programs
- B - Improvements to crosswalks that are uncontrolled or difficult to cross
- C - Infill of sidewalk and trail/greenway gaps
- D - Adding or improving signalized intersections
- E - Americans with Disabilities Act (ADA) improvements
- F - Pedestrian education, safety, and awareness campaigns
- G - Traffic calming projects

## Open-Ended Responses

Survey respondents were asked to identify specific problem areas for pedestrians in the Cheyenne Metropolitan Area. Figure B-9 summarizes the locations identified and all responses are shown in Table 1. Priority project locations are listed with their project label. Some non-project locations were grouped together, such as downtown locations and general Greenway locations. Any non-project location that appeared more than once appears in the graph. Non-project areas that appeared only once were grouped together into “Other.”

**Figure B-9. Responses to the survey question, “Please list specific problem areas for walking in Cheyenne.” Respondents were invited to list up to five locations.**



Finally, survey respondents had the opportunity to provide additional feedback regarding pedestrian issues in Cheyenne. These comments are summarized below and all comments are listed in Table 2. Survey respondents made recurring comments about the following issues:

- Sidewalk width
- Sidewalk buffers/separation from the street

- Presence of crosswalks, sidewalks, pedestrian signals, and pedestrian signage
- Motorist, bicyclist, and “Share the Road” education
- Motorist enforcement
- Sidewalk repair/maintenance
- Responsible parties for sidewalk maintenance
- Snow removal
- Obstructions on sidewalks
- ADA accessibility
- Unleashed dogs
- Amenities, such as restrooms, drinking fountains, and benches
- Storm drainage

Furthermore, survey respondents made comments in support of the following:

- Pedestrian countdown signals
- Walkable destinations
- Direct routes
- More Greenway paths
- Maps and signage
- Health campaign

**Table 1. All responses to the survey question, "Please list specific problem areas for walking in Cheyenne. Indicate the location (intersection or street block) and the type of the problem (e.g., gap in sidewalk, unsafe crosswalk, narrow sidewalk, etc.)."**

Yellowstone @ Storey - Gaps
Sidewalks along streets are too narrow. Two adults cannot walk abreast.
Not shoveling snow
Carey and 8th Ave you can't be seen crossing here and 8th in general is too wide and they don't even use it all during CFD
South side of Cheyenne (County area) hardly any sidewalks anywhere although I have seen lots of people using wheelchairs
Post more signs about Trail Manners on the Greenway, Bikes are quiet and move too fast around walkers. Trail Manners signs including; Ring your bell or say "On Your Left" when passing walkers or slower bikers.
21st and Central (By Starbucks)
Converse and Del Range-18 wheelers drive over sidewalk on NE corner.
Many sidewalks are very broken up and pose trip hazards.
Lack of connectivity of sidewalks/ trails
Greenway is not a problem it just needs to be in more places.
Unsafe crosswalk at bridge at I-25 and Vandehei
Crossing Yellowstone - all locations
The intersection at Eighth and Carey really stinks for walkers, and yet there are a number of walkers/runners/stroller pushers who cross Eighth there.
No sidewalk for 1/2 block between W 32nd and W 31st on North east side of street AND Southwest side too
Dog poop, goose poop, and in the past goat poop - south side greenway
There is little lighting at night in the Buffalo Ridge Area.
Crossing to get to Dildine Elementary School at College and intersection can be a bear with morning and afternoon traffic Needs a light there or blinking red for pedestrians during school a.m. and p.m.
Not enough benches especially in the shade downtown.
College drive at the I-80 interchange. This prevents LCCC students from walking or riding to school.
walking is seasonal, come winter forget it due to lack of snow removal
Right Turn lane from Lion's Park to 8th Ave is a blind curve, very dangerous, and should be removed!!!
Crossing into Holliday park at 18th and Morrie.
Dey just south of Pershing - heaved sidewalks
Dog and Canada Geese feces on walkways in Lions & Holiday Parks
12th and College difficult to cross (East, West Routes)
Not enough walkways or bikeways for that matter
Crossing Warren and Central avenues at 22nd street is often difficult because of traffic
Central Ave between 24th and 25th both sides of sidewalks are closed
Around Sunnyside Baptist Church, dogs and fast traffic, narrow sidewalks
Pershing between Converse and Concord - crumbled sidewalks, narrow sidewalk and too close to the street
As above - grass can be 3 feet tall on the side near the road. Along the apartments from Taft--> East.
Some walkway are in need of repair
Sidewalk not level. Pioneer 19th to Pershing
Uneven/broken sidewalks-- Evans, east 22nd, east 23rd and other streets in the same area
Airport Parkway between Converse & Cheshire - no sidewalks along rights-of-way



Crossing Dell Range at Converse. An overhead walkway would be good. Cars would rather run over you.
Some of the side walks have cracks and are uneven.
Carey & 8th cars can't see peds
Downtown, 17th street, too many weirdo's that hang out at Pioneer Hotel and parking garage
South side of town, Morrie Ave., Avenue C no sidewalks
Crossing Warren or Central anywhere downtown
Sidewalks in Avenues is too narrow
Side streets have dogs that run to fences barking---fences are mostly right next to the sidewalks, startling
When walking downtown vehicles do not stop for pedestrians when there is a crosswalk; City buses are the worst.
Sidewalks in the downtown area are horrible and dangerous
Sidewalks in my neighborhood (streets around the hospital-West building) are in poor condition
Wannabe gangs hiding under roads in greenway tunnels
I think most of the walkways/sidewalks in Cheyenne are unsafe. Also it would be great to have a bike lane
The sidewalks on 17th street, the block in front of Just Dandy from one corner to the next needs to be redone.
Greenway on highway 30 always has water in the underpass (and lots of it)
Willshire and some places on Gardenia overgrown trees and bushes making sidewalks very narrow
Crossing any major intersection on Dell Range is scary
17th St Downtown
North off New Bedford and along Yellowstone- can't get from neighborhood to Albertsons's without having to take the long way around
Side walks are narrow, cracked and not always there. I walk around downtown and the capital area.
Newer developed areas such as Del Range are designed for fast traffic and unsafe for walking pedestrians. Areas such as downtown where pedestrians are expected are wonderful. Traffic stops for pedestrians downtown all of the time. In newer areas such as Del Range this is not the case.
Greenway by Martin Luther park to overgrown, to many places feel unsafe
Infrastructure of the city is not set up for walking. Many stores are in segregated areas away from homes so that you have to drive to shop/run errands.
Ridge Road
Dell Range
Pershing at Evans
400 block of E 19th side walk very uneven and unsafe
Greenways need better drainage! Under college drive and Highway 30.
I'd like to see brighter lights along the greenway between Johnson Jr. High and Goins Elementary
gaps in sidewalk, 23rd & Van Lennen area
I have never felt unsafe walking in and around Cheyenne
17th street sidewalk between Capital and Pioneer is very uneven.
Fox Farm: College Drive to South Greeley Hwy; lack of any improvements
Same reason, sidewalks are too narrow in residential areas, it is too far to businesses, over growth of trees and bushes
Gap in sidewalk, Yellowstone south of Vandehei
Along Yellowstone Rd. In winter businesses to not shovel their sidewalks. When I complain to businesses where I do business, they tell me that it is the city's responsibility.
Converse and Dell Range - very hard to cross over to the opposite side of the street
E. Pershing and Evans--unsafe crosswalk



The entire Greenway is a problem as it is cement. I walk alongside the Greenway when possible or in the street to avoid the cement surface of the Greenway.
Lions park to the greenway that is along Dry Creek.
Powderhouse has a gap in sidewalk
Warren and Evans...No car ever looks for pedestrians and never allows the right away to the pedestrian, crossing from the post office to the blood bank.
Tunnel on the greenway to get across Dell Range is in poor condition
Greenway - bikes don't respect walkers they tend to think they own the whole road when there are 2 of them
South side area is not continuous (goes from walkway to sidewalk) area near creek is not well lit.
East 18th Street on south side between Maxwell and Warren--unsafe sidewalk
Tunnels under US 30 on east side of town at Frisbee Golf park are always flooded. Need to fire the engineers who designed that crossing.
People need to trim trees and bushes in sidewalk areas - various places throughout city.
Green way access to all of Cheyenne
Uneven sidewalks, Tripping hazard Both sides of Randall and Pershing to Central Ave
Sidewalks along Warren between 23rd street & Lincolnway in terrible disrepair
Downtown residential sidewalks are in generally poor condition.
Most everywhere except the Greenway and Parks have sidewalks that are too narrow
Many historic slab sidewalks downtown historic area need to be re-leveled and curbs and gutter are always full of debris.
Yellowstone from Carlson to Western Hills
Lincolnway downtown, very difficult to cross.
Major one way streets surround the main downtown making it difficult to walk anywhere in the downtown area
Many streets in Buffalo Ridge do NOT have sidewalks - this is IN the City
Sidewalks in residential areas are obstructed by over grown trees and bushes
No sidewalk at all along Nationway.
Capitol - no clear crosswalks between 20th & 24th.
Anywhere downtown and in surrounding neighborhoods - cars parked on sidewalks
Few (if any) curb cuts for wheelchairs from capitol complex to the east on 26th, 25th, 24th, 23rd streets
Missing crosswalks - all over town
Sidewalks along E. Lincolnway between Hot Springs and Converse are way too narrow and too close to traffic.
Not enough lighting
South Greeley highway lots of driveways cross it, too wide
More pet pick up stations on the Greenway, besides in the parks. I bring my bags but some people need reminders.
All over town at red light intersections-vehicles stop on or over painted crosswalks.
There is a general lack of lighting on all sidewalks and all parts of the greenway.
Dangerous intersections (for pedestrians)
Sidewalks are an abomination
Crossing Lincolnway - all locations
In the winter, many aren't very good about shoveling walks. Failing to do so creates hazards for walkers when the clumps of snow melt a little and form treacherous pathways. This is true in the Avenues, which is where I live.
Sidewalk very uneven from tree roots between W 32nd and Pershing Blvd on Dey Ave (noted on Garden Walk)
No or few dog poop or trash containers - on any greenway that I have been on
Safety at night is also a concern.

Too much gas smell walking down Pioneer Avenue.
The greenway does not link between the Frisbee golf course (hwy 30) to the Sun Valley area
walking paths except for the greenway are not found
Lincoln Way around the Depot is scary to cross with children because of the number of turning vehicles
Sidewalks around Lions park perimeter
All of town during icy weather
Sidewalks are cracked and/or crumbling on inner city side walks between Central Ave and Evans
Eastridge area - Newton Drive and Essex Drive - Not enough street lights & a lot of overgrown trees in addition to construction
Greenway from College to Central is usually kept nice.
Not enough lighting
People park on the sidewalk
Residential/side street sidewalks are too narrow in general around town
Central and Lincolnway the Ped light never says walk crossing central
Sidewalk between Morrie and Converse on Pershing is in need of repair and difficult to walk on.
some of the sidewalks are buckled from tree roots and easy to stumble if don't pay good attention
Crosswalks need to be outlined better, there are many downtown that the paint has worn off.
Wintertime people don't shovel sidewalks at all. Sidewalks on Willshire very uneven in many places you
There are more bicyclists and some do not make it known when passing.
18th St downtown
Walking at Lions Park -- sidewalks dump you off into parking lots, it's not possible to walk a circuit other than around the lake!
In older neighborhoods the sidewalks are in terrible condition and make using anything with wheels such as strollers difficult.
No clearly marked greenway on Parsley road
Storey
Pershing
19 & Hugur
When on the greenways, I have had to go off on the grass several times so the city pickups could drive down them. Guess city employees can't walk.
Uneven sidewalks - tripping hazard, 23rd & Van Lennen area
Some of the sidewalks are in poor condition, preventing my elderly Mother from walking safely, the sidewalks around Morrie and 21st street
Connectivity to all parts of the city/attached county
New residential areas sidewalks are wider, but two people still can not walk together without one in the street
No good pedestrian routes Vandehei, west of Yellowstone to Davis Elementary School
Along Yellowstone Rd., north of Albertson's, there isn't a sidewalk at all, and one has to walk in the street.
W. Pershing and Pioneer Ave--unsafe crosswalk
Having to cross Windmill rd while using the green way
The children at Alta Vista school have one the most dangerous walk home routes. Logan, 19th, 20th, and even Pershing are all streets those kids walk. I don't know what could be done, but it needs to be safer.
It's almost impossible to cross Windmill because the drivers don't stop when they are turning right on a red light
Pershing Blvd. on north side between Converse and Carey Junior High School--broken sidewalk
Need more north-south greenway instead of just east-west.
Green way by Hwy 30 is poorly lit with a lot of broken beer bottles people hang out where they can't be seen
Would be nice to have cross walks designated downtown even if not a signaled intersection, i.e.:22nd & Central





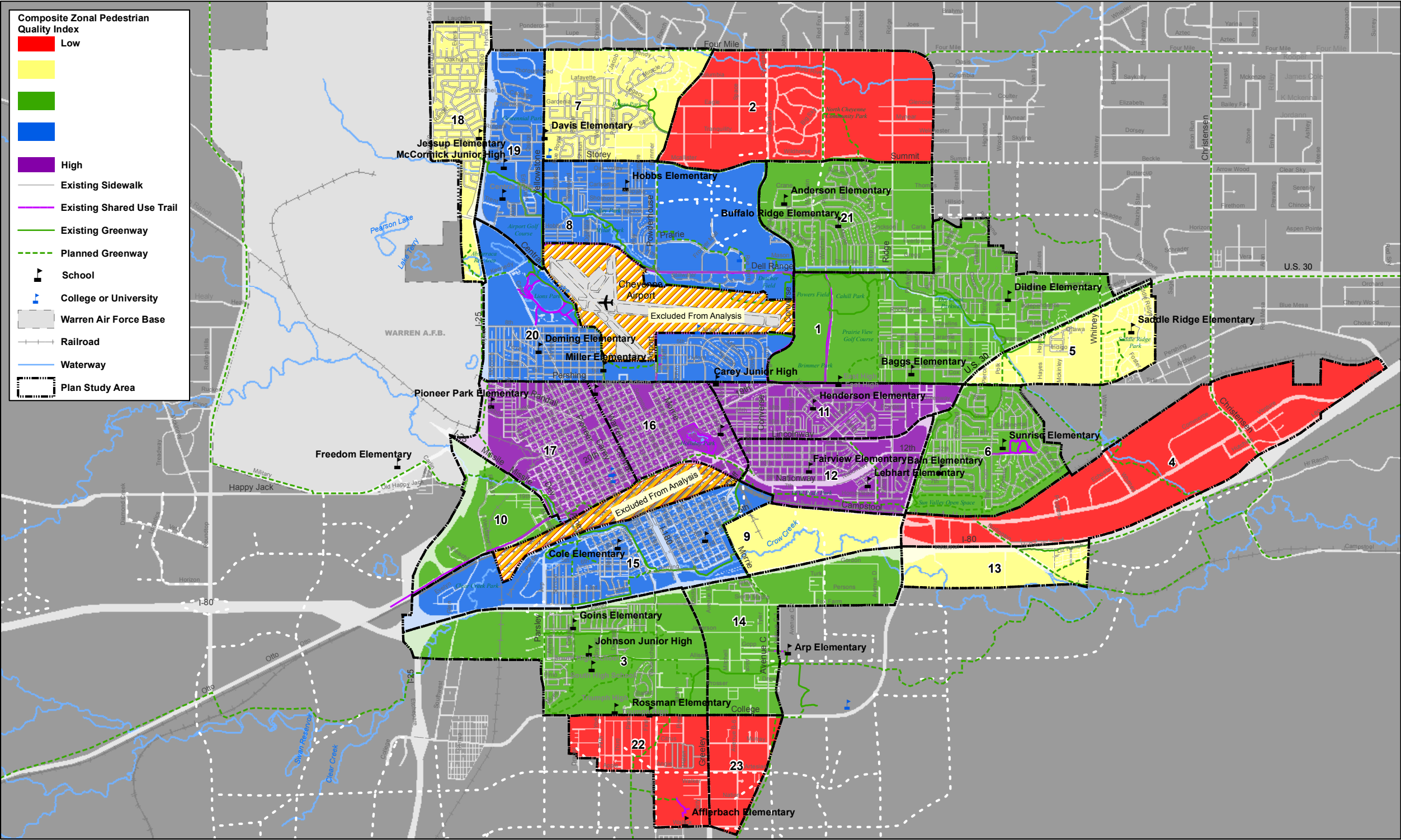
Obstructive trees and shrubs.
Road difficult to cross along 12th/Nationway and Storey and Yellowstone Rd. and sidewalks are too narrow problems
Why are all the new gutters all of different designs?? Who does this planning??
Education drive
VERY short walk time to cross Warren and Central Ave, from any street!
Communities that are doing well economically have downtowns that are walkable, strollable, filled with quality of life improvements that draw people for eating and shopping.
Too many parked cars on residential streets making it difficult to stay on sidewalks
Sidewalks are in poor repair all around town
Anywhere downtown and in surrounding neighborhoods - vegetation impeding sidewalks
Some curb cuts impassable for wheelchair--NE corner 26th & Carey, NE corner 20th & Carey
Walkway not complete
Dell Range traffic too fast, sidewalk too close to roadway
Don't allow any new subdivisions or commercial projects to be constructed without a separation between the sidewalk and the street. It's ugly, dangerous and makes the sidewalk useless in the winter when the snow plow comes.
Drivers talking on cell phones have no idea what they are doing vehicle wise.
Lack of biking lanes
In the summer, some residents feel no obligation to manicure their shrubbery, forcing walkers off the sidewalk and into the street. This is true in the Avenues, which is where I live.
Curb collapsing in drain on northwest corner near intersection of Randall and Snyder across from Loaf and Jug
Hard to get across Pershing Boulevard. Even at light, cars are turning and don't watch pedestrians.
Dell Range and Yellowstone Road.
One cannot cross the major highways without carrying one's will and last testament
Crossing Lincolnway...anywhere
Very narrow and obstructed sidewalk corner of 26th and Warren
19th, 20th and Huger, Rollins - Hard to cross the streets at busy times of day.
Sidewalks along Taft can have overgrowth, broken bottles, unkempt lawns from sidewalk to curb
Some path ways are not clearly marked-
Homeowners need to keep bushes and shrubs trimmed because they crowd the narrow sidewalks and force people into the road.
Walk lights are too short and don't allow walker to cross street without running before traffic starts going
City buses need to look better when pulling out; it is very scary walking near them.
Could not walk with a stroller or use a wheelchair in many places.
Lighting on Green way behind Edgewater Ave behind Texas Roadhouse is good but only for a short stretch
Lighting at Lion Park
Walking along busy streets and navigating the obstacle course that is side streets -- Cheyenne is not a friendly walking town
20th & Huger
Sidewalks are not clear - trees in the way 23rd & Van Lennen area
Need better pedestrian routes at all large shopping areas ( Dell Range, 19th & Converse, strip malls)
Lot of sidewalks need repair from tree roots and residents can not afford the cost
Downtown, motorists steal the right away.
Walk signals work slowly or not at all--W. Pershing and Carey
Many areas around town are not wheelchair accessible.

Have to dodge cars when crossing at Storey between La Rue and Yellowstone.
Clean downtown area gutters by posting notice on one side of street the day before so the streets with cars parked on them can actually be swept and cleaned regularly and don't sweep on trash day!!
Crosswalks at Pawnee at Western H. B.
Lincolnway traffic downtown travels faster than the posted speed limit...and very close to the sidewalks
Cheyenne needs more than just the Depot Square and 15th street to be walkable and filled with activity
Tree roots are making sidewalks raise and making it dangerous
Greenway doesn't connect
Anywhere downtown and in surrounding neighborhoods - snow not cleared in any fashion, let alone a timely fashion
Some areas where historic wide offset sidewalks replaced by narrow on-street steep sloped sidewalks--N. side of old St Mary's gym parking lot (now owned by hospital) and N. side of 23rd. between Maxwell and Van Lennen
Construction
Converse and Del Range-I estimate a driver runs the red light ever 10 minutes.
No activities in the vicinity of sidewalks/trails
At Pershing and Pioneer, the pedestrian crossings really stink. They take too long, and I think that discourages walkers and encourages jay-walking.
Powder House and Story. The area along Powder House from
Condition of sidewalks in CBD esp. the north side of Lincolnway
You will always have folks in cars with no respect, or texting -that don't even see you at the intersection.
Cheyenne is suburban sprawl -- have to drive a car to get a gallon of milk
The avenues are hard to walk and streets are too narrow
Downtown, motorists who want to turn left or right on red pose a real threat.
Poor lighting around lake in Lions Park
17th Street - get rid of on-street parking, plant more trees, widen sidewalks, and make it a mall type area
Holliday park needs to continue the cement path all around the outside edge of the park for rollerblading and needs to be widened so walkers can also walk with bikes and bladers. The blacktop areas of walking are very hazardous.
Crosswalks at Osage at Western H. b.
No street lights on Gardenia to be able to cross safely
Boys & Girls Club on Snyder - difficult crossing Snyder for kids/parents at 5-5:30
Hospital delivery trucks block sidewalk and traffic lane on 24th between House and Evans
Motorist not paying attention
Lack of shelters and other amenities along sidewalks, no connectivity to transit
Fox Farm Road. No side walk and some areas are blocked for pedestrians.
Traffic controls/traffic speeds in Rainsford district.
Very few vehicles give pedestrians the right of way here :(



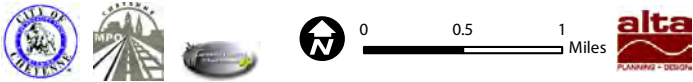
## Appendix C. PZA Opportunity Constraint Summary





**Composite PLOS by Zone**

Cheyenne Metropolitan Area  
Pedestrian Plan  
Source: Cheyenne - Laramie County Cooperative GIS Program  
Date: August 2010



Zone	Opportunity	Constraint	Suggested Improvements
1	<ul style="list-style-type: none"> <li>This Zone is a significant recreational attractor.</li> <li>Dildine and Baggs Elementary Schools may attract and generate a significant number of pedestrian trips.</li> </ul>	<ul style="list-style-type: none"> <li>Pershing Boulevard, Windmill Road and Dell Range Road are barriers that define the boundaries of this Zone.</li> <li>Several walkways within this Zone are less than five feet wide.</li> </ul>	<ul style="list-style-type: none"> <li>Complete greenway trails to enhance pedestrian travel opportunities through Zone.</li> <li>Enhance at-grade crossings along major roadways.</li> <li>Widen walkways as roadway repaving occurs.</li> </ul>
2	<ul style="list-style-type: none"> <li>Several planned greenways will enhance opportunities for non-motorized travel routes.</li> <li>Low speed, low traffic roadways have potential as neighborhood walking routes.</li> </ul>	<ul style="list-style-type: none"> <li>The predominant land use in this area is single family residential. Low population density, low transit availability and the distance from commercial uses limit the potential for utilitarian walking trips.</li> </ul>	<ul style="list-style-type: none"> <li>Complete greenway trails to enhance pedestrian travel and recreation opportunities through this Zone.</li> <li>Focus on local roadway improvements to enhance opportunities for intrazone travel.</li> </ul>
3	<ul style="list-style-type: none"> <li>Many LCSD #1 schools are located in this Zone.</li> <li>Planned greenways will enhance opportunities for pedestrian travel.</li> <li>A relatively complete walkway network enhances the opportunity for pedestrian travel.</li> <li>The central portion of the Zone contains neighborhoods with relatively high populations of pedestrian dependant sub-populations (e.g., people older than 65 and younger than 16).</li> </ul>	<ul style="list-style-type: none"> <li>Barriers to pedestrian travel include the South Greeley Highway and I-80.</li> <li>Existing land use patterns create longer travel distances for trips with origins and destinations on the east or west sides of the Zone (e.g., longer blocks and larger parcels).</li> <li>Walkways in established neighborhoods are relatively complete but are generally less than five feet wide.</li> </ul>	<ul style="list-style-type: none"> <li>Enhance connections to LCSD #1 schools.</li> <li>Retrofit intersections that do not meet current ADA standards as roadway reconstruction occurs. Consider prioritizing intersections with heavy pedestrian traffic, locations where improvements have been requested, or intersections near schools.</li> <li>Widen existing walkways to enhance travel opportunities for all pedestrians</li> </ul>
4	<ul style="list-style-type: none"> <li>Planned greenways will provide some non-motorized transportation routes.</li> <li>Existing and planned commercial and industrial employment will increase the potential pedestrian traffic in this Zone.</li> </ul>	<ul style="list-style-type: none"> <li>Roadway network has low network connectivity and density.</li> <li>Roadway network is comprised primarily of roadways designed for motor vehicle use.</li> </ul>	<ul style="list-style-type: none"> <li>Improve transit connections during morning and evening commute hours to existing businesses.</li> </ul>
5	<ul style="list-style-type: none"> <li>Saddle Ridge Elementary is a key origin/destination in this Zone.</li> <li>New construction allows the installation of wide walkways and ADA-compliant curb ramps.</li> </ul>	<ul style="list-style-type: none"> <li>US 30 is a barrier to pedestrian travel into and out of the Zone.</li> <li>Network connectivity and roadway density in this Zone is limited.</li> </ul>	<ul style="list-style-type: none"> <li>Install signal controlled or grade-separated crossing of US 30 at Whitney Road.</li> <li>Increase pedestrian connectivity by creating non-motorized accessways along longer blocks and in cul-de-sacs.</li> </ul>

Zone	Opportunity	Constraint	Suggested Improvements
6	<ul style="list-style-type: none"> <li>The pedestrian network is mostly complete.</li> <li>Transit service is provided in the northern portion of the Zone.</li> <li>Moderate population density and proximity to varied land uses increases the potential number of pedestrian trips originating in this Zone.</li> </ul>	<ul style="list-style-type: none"> <li>Existing walkways are generally less than five feet wide.</li> </ul>	<ul style="list-style-type: none"> <li>Widen walkways as roadway repaving occurs.</li> </ul>
7	<ul style="list-style-type: none"> <li>The walkway network in the neighborhood surrounding Davis Elementary School is mostly complete.</li> <li>The walkway network has good connectivity and a low incidence of barriers within the Zone.</li> </ul>	<ul style="list-style-type: none"> <li>Barriers to travel include Yellowstone Road on the west side of the Zone and Storey Boulevard on the south side of the Zone.</li> <li>The walkway network in the northern and eastern portion of the Zone incomplete.</li> </ul>	<ul style="list-style-type: none"> <li>Improve crossing conditions along Yellowstone Road and Storey Boulevard.</li> <li>Widen walkways as roadway repaving occurs.</li> <li>Retrofit intersections that do not meet current ADA standards as roadway reconstruction occurs. Consider prioritizing intersections with heavy pedestrian traffic, locations where improvements have been requested, or intersections near schools.</li> </ul>
8	<ul style="list-style-type: none"> <li>A relatively complete walkway network exists within this Zone.</li> <li>The proximity of commercial land uses increases the number of potential pedestrian destinations.</li> <li>Future residential developments can incorporate pedestrian friendly walkways designs without requiring a retrofit.</li> </ul>	<ul style="list-style-type: none"> <li>The existing walkways are generally less than five feet wide.</li> <li>Dell Range Boulevard is a challenge for inter- and intra-Zone travel.</li> <li>Some intersections are not ADA-compliant</li> </ul>	<ul style="list-style-type: none"> <li>Improve crossing conditions across Dell Range Boulevard.</li> <li>Widen walkways as roadway repaving occurs.</li> <li>Retrofit intersections that do not meet current ADA standards as roadway reconstruction occurs. Consider prioritizing intersections with heavy pedestrian traffic, locations where improvements have been requested, or intersections near schools.</li> </ul>
9	<ul style="list-style-type: none"> <li>Crow Creek could provide a good pedestrian connection through this Zone.</li> <li>This Zone is relatively close to varied land uses in Zone 15.</li> <li>This area is Zoned for future industrial and mixed uses.</li> </ul>	<ul style="list-style-type: none"> <li>Current land uses (agricultural and industrial) are not large attractors or generators of pedestrian trips.</li> </ul>	<ul style="list-style-type: none"> <li>Enhance connections to Zone 15 as development occurs.</li> <li>Development of this area should follow existing pedestrian design standards and include pedestrian amenities found in mixed-use areas (e.g., benches and trash receptacles).</li> </ul>
10	<ul style="list-style-type: none"> <li>According to the Community Plan, this area is expected to increase in commercial density.</li> <li>This Zone is close to the downtown core and existing residential neighborhoods.</li> </ul>	<ul style="list-style-type: none"> <li>Missile Drive is a moderate barrier to accessing downtown commercial</li> <li>The existing roadway network is low density and provides low connectivity.</li> </ul>	<ul style="list-style-type: none"> <li>Improve crossings of Missile Drive.</li> <li>Development of this area should follow existing pedestrian design standards and include pedestrian infrastructure and amenities found in mixed-use areas (e.g., benches and trash receptacles).</li> </ul>



Zone	Opportunity	Constraint	Suggested Improvements
11	<ul style="list-style-type: none"> <li>The existing walkway network is nearly complete.</li> <li>Areas of mixed -and use increase the number of pedestrian attractors and generators.</li> <li>Good transit access exists throughout the Zone.</li> <li>The Zone has a high population density (both general population density and higher need pedestrian sub-populations).</li> </ul>	<ul style="list-style-type: none"> <li>Existing walkways are generally less than five feet wide.</li> <li>Pershing Boulevard and Lincolnway are moderate barriers.</li> </ul>	<ul style="list-style-type: none"> <li>Widen walkways as roadway repaving occurs.</li> <li>Retrofit intersections that do not meet current ADA standards as roadway reconstruction occurs. Consider prioritizing intersections with heavy pedestrian traffic, locations where improvements have been requested, or intersections near schools.</li> </ul>
12	<ul style="list-style-type: none"> <li>The presence of Lebhart Elementary and Fairview Elementary create targeted origin and destination points.</li> <li>The existing roadway and walkway networks provide generally good connectivity and density.</li> <li>The existing walkway network is nearly complete.</li> </ul>	<ul style="list-style-type: none"> <li>Nationway bisects this Zone and limits the number of pedestrian crossing opportunities.</li> <li>Existing walkways in this Zone are generally less than five feet wide.</li> </ul>	<ul style="list-style-type: none"> <li>Create a protected crossing opportunity along Nationway.</li> <li>Widen walkways as roadway repaving occurs.</li> <li>Complete an ADA retrofit of intersections within this Zone.</li> </ul>
13	<ul style="list-style-type: none"> <li>The Community Plan indicates future commercial and industrial land use in this Zone.</li> <li>The roadway and walkway network in this Zone is largely undeveloped.</li> </ul>	<ul style="list-style-type: none"> <li>Future land uses indicate that this Zone will have relatively low pedestrian generation potential, but higher pedestrian attraction potential.</li> <li>I-80 is a barrier to pedestrian travel.</li> </ul>	<ul style="list-style-type: none"> <li>Development of the future roadway network will follow pedestrian friendly designs without requiring a facility retrofit.</li> <li>Improve transit connections during morning and evening commute hours.</li> </ul>
14	<ul style="list-style-type: none"> <li>The Community Plan states that the future land use of this area is mixed-use with a residential emphasis.</li> <li>Areas of mixed land-use increase the number of pedestrian attractors and generators.</li> </ul>	<ul style="list-style-type: none"> <li>The walkway network in this Zone is incomplete.</li> <li>Existing walkways are generally less than five feet wide.</li> <li>Some intersections are not ADA-compliant.</li> <li>Low roadway network density and connectivity.</li> </ul>	<ul style="list-style-type: none"> <li>Complete the walkway network.</li> <li>Retrofit intersections that do not meet current ADA standards as roadway reconstruction occurs. Consider prioritizing intersections with heavy pedestrian traffic, locations where improvements have been requested, or intersections near schools.</li> <li>Increase the density of roadways and other pedestrian accessways.</li> </ul>
15	<ul style="list-style-type: none"> <li>Good walkway and roadway density and connectivity.</li> <li>Areas of mixed land use increase the number of pedestrian attractors and generators.</li> <li>Complete walkway network. In some areas, walkways are at least five feet wide.</li> <li>There is an overpass of I-180 that and a greenway crossing along Crow Creek at First Street that increase pedestrian connectivity.</li> </ul>	<ul style="list-style-type: none"> <li>Barriers to pedestrian travel include Greeley Highway, UPRR tracks and I-80.</li> <li>Some intersections are not ADA-compliant.</li> <li>Some walkways are less than five feet wide.</li> </ul>	<ul style="list-style-type: none"> <li>Widen walkways as roadway repaving occurs.</li> <li>Retrofit intersections that do not meet current ADA standards as roadway reconstruction occurs. Consider prioritizing intersections with heavy pedestrian traffic, locations where improvements have been requested, or intersections near schools.</li> <li>Install a protected crossing of Greeley Highway.</li> </ul>

Zone	Opportunity	Constraint	Suggested Improvements
16	<ul style="list-style-type: none"> <li>• High attractor and generator score, low barrier score.</li> <li>• Areas of mixed-use development increase pedestrian activity.</li> <li>• Good quality of existing intersections and walkways.</li> </ul>	<ul style="list-style-type: none"> <li>• In some areas, walkways may be less than 5 feet wide.</li> <li>• Some intersections are not ADA-compliant</li> </ul>	<ul style="list-style-type: none"> <li>• Widen walkways as roadway repaving occurs.</li> <li>• Retrofit intersections that do not meet current ADA standards as roadway reconstruction occurs.</li> <li>• Continue to provide pedestrian amenities including pedestrian wayfinding signs and street art.</li> </ul>
17	<ul style="list-style-type: none"> <li>• This Zone has good roadway and walkway connectivity and density. Walkways are generally wide enough to accommodate pedestrian traffic with comfort.</li> <li>• Areas with mixed land use increase the number of pedestrian attractors and generators.</li> <li>• This Zone has high transit connectivity.</li> <li>• Existing undercrossing at Ames Avenue increases north/south connectivity.</li> </ul>	<ul style="list-style-type: none"> <li>• Barriers to pedestrian travel include the BNSF Railroad.</li> <li>• Several walkways on the west side of the Zone are less than five feet wide.</li> <li>• Some intersections are not completely ADA-compliant.</li> </ul>	<ul style="list-style-type: none"> <li>• Widen walkways as roadway repaving occurs.</li> <li>• Retrofit intersections that do not meet current ADA standards as roadway reconstruction occurs. Consider prioritizing intersections with heavy pedestrian traffic, locations where improvements have been requested, or intersections near schools.</li> <li>• Improve lighting and pedestrian access at the Ames Avenue undercrossing.</li> </ul>
18	<ul style="list-style-type: none"> <li>• This Zone has a good roadway and walkway connectivity and density.</li> <li>• The southern portion of this Zone contains a relatively high density of pedestrian dependent sub-populations (e.g., people older than 65 or younger than 16).</li> </ul>	<ul style="list-style-type: none"> <li>• Some intersections are not ADA-compliant.</li> <li>• Most walkways are less than five feet wide.</li> <li>• This Zone has little access to transit.</li> <li>• The predominate land use in this Zone is residential. The small number of commercial destinations may limit the potential number of walking trips taken for utilitarian purposes within this Zone.</li> </ul>	<ul style="list-style-type: none"> <li>• Widen walkways as roadway repaving occurs.</li> <li>• Retrofit intersections that do not meet current ADA standards as roadway reconstruction occurs. Consider prioritizing intersections with heavy pedestrian traffic, locations where improvements have been requested, or intersections near schools.</li> <li>• Focusing improvements on the neighborhood network could increase the number of trips taken for exercise purposes within this Zone.</li> </ul>
19	<ul style="list-style-type: none"> <li>• This Zone has a good roadway and walkway connectivity and density.</li> <li>• The walkway network in this Zone is mostly complete.</li> <li>• Several pedestrian generating land-uses are located in this Zone including several schools, parks and a commercial node on Vandehei Avenue near Stockman Street.</li> </ul>	<ul style="list-style-type: none"> <li>• Some intersections are not ADA-compliant.</li> <li>• Most walkways are less than five feet wide.</li> <li>• A sidewalk is provided along one side of the Vandehei Avenue overcrossing, but pedestrian facilities on either side of the bridge are incomplete.</li> </ul>	<ul style="list-style-type: none"> <li>• Provide complete facilities on both sides of the Vandehei Avenue overcrossing.</li> <li>• Widen walkways as roadway repaving occurs.</li> <li>• Retrofit intersections that do not meet current ADA standards as roadway reconstruction occurs. Consider prioritizing intersections with heavy pedestrian traffic, locations where improvements have been requested, or intersections near schools.</li> </ul>

Zone	Opportunity	Constraint	Suggested Improvements
20	<ul style="list-style-type: none"> <li>This Zone has a good roadway and walkway connectivity and density.</li> <li>The walkway network in this Zone is mostly complete.</li> <li>This area has good existing transit service.</li> <li>Areas with mixed land-use increase the number of pedestrian attractors and generators.</li> </ul>	<ul style="list-style-type: none"> <li>Some intersections are not ADA-compliant.</li> <li>Most walkways are less than five feet wide.</li> <li>The airport limits pedestrian connectivity to this Zone.</li> </ul>	<ul style="list-style-type: none"> <li>This area could benefit from focused encouragement programs.</li> <li>Widen walkways as roadway repaving occurs.</li> <li>Retrofit intersections that do not meet current ADA standards as roadway reconstruction occurs. Consider prioritizing intersections with heavy pedestrian traffic, locations where improvements have been requested, or intersections near schools.</li> </ul>
21	<ul style="list-style-type: none"> <li>The walkway network in this Zone is mostly complete.</li> <li>Schools and some commercial development provide a variety of land uses and increase the number of potential pedestrian trips beginning and ending in this Zone.</li> </ul>	<ul style="list-style-type: none"> <li>Barriers to pedestrian travel include crossings of Dell Range Boulevard, Converse Avenue and Storey Boulevard.</li> <li>Some intersections are not ADA-compliant.</li> <li>Most walkways are less than five feet wide.</li> </ul>	<ul style="list-style-type: none"> <li>Provide enhanced crossings of Dell Range Boulevard, Converse Avenue and Storey Boulevard.</li> <li>Widen walkways as roadway repaving occurs.</li> <li>Retrofit intersections that do not meet current ADA standards as roadway reconstruction occurs. Consider prioritizing intersections with heavy pedestrian traffic, locations where improvements have been requested, or intersections near schools.</li> </ul>
22	<ul style="list-style-type: none"> <li>Planned Greenways will enhance pedestrian connectivity.</li> </ul>	<ul style="list-style-type: none"> <li>Some intersections are not ADA-compliant.</li> <li>Most walkways are less than five feet wide.</li> <li>The Greeley Highway is a barrier with limited crossing opportunities.</li> </ul>	<ul style="list-style-type: none"> <li>Widen walkways as roadway repaving occurs.</li> <li>Retrofit intersections for ADA compliance. Install ADA-compliant curb ramps as the walkway network is completed.</li> <li>Provide additional protected crossing opportunities along South Greeley Highway.</li> </ul>
23	<ul style="list-style-type: none"> <li>Planned greenways will enhance pedestrian connectivity.</li> </ul>	<ul style="list-style-type: none"> <li>Some intersections are not ADA-compliant.</li> <li>Most walkways are less than five feet wide.</li> <li>The Greeley Highway is a barrier with limited crossing opportunities.</li> </ul>	<ul style="list-style-type: none"> <li>Widen walkways as roadway repaving occurs.</li> <li>Retrofit intersections that do not meet current ADA standards as roadway reconstruction occurs. Consider prioritizing intersections with heavy pedestrian traffic, locations where improvements have been requested, or intersections near schools.</li> <li>Provide additional protected crossing opportunities along South Greeley Highway.</li> </ul>



## Appendix D. Costs

Table 1. Infrastructure Element Costs

Infrastructure Element Costs		
Infrastructure Element	Cost	Unit
High-visibility Crosswalks (preformed thermal plastic)	30	LF
Pedestrian Countdown Signal	300	EA
Stop Bar Installation (preformed thermal plastic)	225	EA
10' Greenway Construction	70	LF
Railroad Underpass Lighting*	N/A	N/A
Warning signs	300	EA
Remove & Replace Curb Cut w/ADA Ramp	1500	EA
Remove & Replace w/ADA Fillet	3500	EA
Curb Extensions	6000	EA
Sidewalk Infill - 5' Wide, including Curb & Gutter	30	LF
Sidewalk widening	25	LF
Sidewalk Construction - 5' Wide	40	LF
Sidewalk Construction - 8' Wide	60	LF
Sidewalk Construction - 10' Wide	70	LF
Sidewalk Construction - 12' Wide	80	LF
* Cost not included		



Table 2. Projects with Infrastructure Element Details

Street/Path	Notes	Length (Miles)	High-visibility Crosswalks (preformed thermal plastic)	Pedestrian Countdown Signal	Stop Bar Installation (preformed thermal plastic)	10' Greenway Construction	Railroad Underpass Lighting	Warning signs	Remove & Replace Curb Cut w/ADA Ramp	Remove & Replace w/ADA Fillet	Curb Extensions	Sidewalk Infill - 5' Wide, including Curb & Gutter	Sidewalk widening	Sidewalk Construction - 5' Wide	Sidewalk Construction - 8' Wide	Sidewalk Construction - 10' Wide	Sidewalk Construction - 12' Wide
		LF	EA	EA	LF	LS		EA	EA	EA	EA	LF	LF	LF	LF	LF	LF
Priority Corridors																	
Lincolnway/U.S. 30 Corridor (Includes intersection improvements at Central, Warren and Capitol)	Ames Avenue to Nationway	1.5	40		12					18			155	560	110	475	300
Ames Avenue (Includes intersection improvements at Lincolnway & Deming)	West Lincolnway to Deming Drive	0.3	125	4	5		1		5	5							
Arp Elementary Connector	(This project is in planning. No costs are provided)																
Converse Avenue (Includes intersection improvements at Dell Range Boulevard)	Ogden Road to Dell Range Boulevard	0.5	155		4	2,480		1	3	9							
Van Buren Avenue (Includes intersection improvements at Dell Range Boulevard)	Dell Range Boulevard to U.S. 30	0.7	270		1					4		2,100	1,970	1,330			
Vandehei Avenue	(This project is in planning. No costs are provided)																
East Pershing Boulevard	North College Drive to Windmill Road	1.0								14			3,700	1,260			
Intersection Improvements																	
West College Drive and Walterscheid Boulevard			40	8													
West Lincolnway and Capitol Avenue	Included in Linonlyway/US 30 corridor cost estimate		40	8	4					4							
West Lincolnway and Ames Avenue	Included in Ames Avenue corridor cost estimate			6	3				2	2							
East Lincolnway, East 13th Street, Dunn Avenue and Nationway			90	8	3			2	2	3	1			150			
Dell Range Boulevard and Van Buren Avenue	Included in Van Buren Avenue corridor cost				1					4							
Dell Range Boulevard and Windmill Road				8	4					4							
Dell Range Boulevard and Converse Avenue			170	8	4			1		4							



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