Casper Wyoming

Safe Routes to School

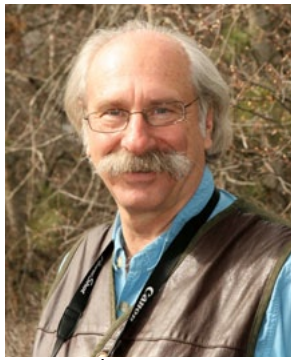
Walkable and Livable
Communities Institute

Mr. Josh Deifel
MPO Supervisor
Casper Area MPO
City of Casper
200 N. David
Casper, WY 82601

March 18, 2011

Dear Mr. Deifel:

I have dedicated the bulk of my life to helping the world get back on its feet by improving communities' built forms to be more walkable, livable and welcoming of people of all ages and abilities. As executive director of the Walkable and Livable Communities Institute, I am pleased to have the opportunity to assist communities like Casper as they strive to ensure the most vulnerable amongst us – our children – have safe access to their schools, their playgrounds, their homes, their lives.


Dan Burden,
Executive Director,
WALC Institute

Having met with and seen the commitment of Casper school officials, city and county staff, parents, students and community members who took part in this study, I am a believer in your future. The right people already are coming together to make Safe Routes a reality, and as momentum grows, many more will join the movement. Casper also is a leader in blending land-use and transportation planning into one greater discipline, which puts it several steps ahead of many communities that are working to undo the problems created in America when we engineered activity out of our daily lives.

There is no doubt, though: Casper has its fair share of challenges to achieving Safe Routes, such as policy oversights, siting of schools in remote areas, streets that encourage too-fast vehicle speeds, the wind and cold, and more. The good news is that all of these challenges can be overcome and this report provides guidance for beginning to do just that.

The task is immense, and work on it must begin now. Until we have healthy communities, we cannot have healthy people. In addition to supporting improved health, Safe Routes and active commutes to school help to boost students' academic performance, broaden their social networks and help them learn important self-reliance skills that will last them a lifetime.

Although this report provides guidance to support Casper in energetically working on all five E's of the national Safe Routes to School program (Engineering, Education, Encouragement, Enforcement and Evaluation), emphasis is placed on changing the built environment by planning, engineering and re-working streets that build communities as whole, livable places.

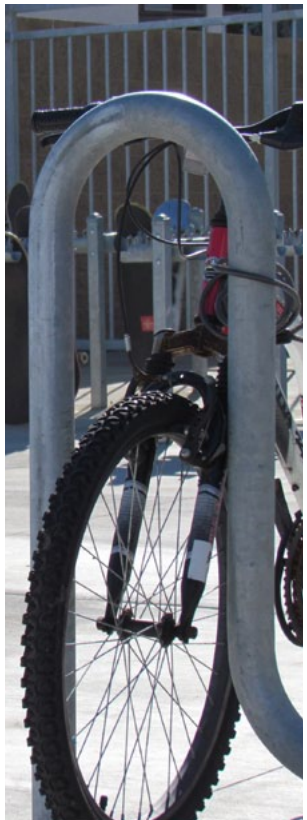
Much work has come before this study, and much more will follow. But it is my observation that once people come together and agree to work upon a common vision that is immediate and compelling and then lay out a plan, the desired outcomes come quite fast. When that happens in Casper, I and many others will share your stories and successes broadly. May the winds of change bring much good to you, and through you.

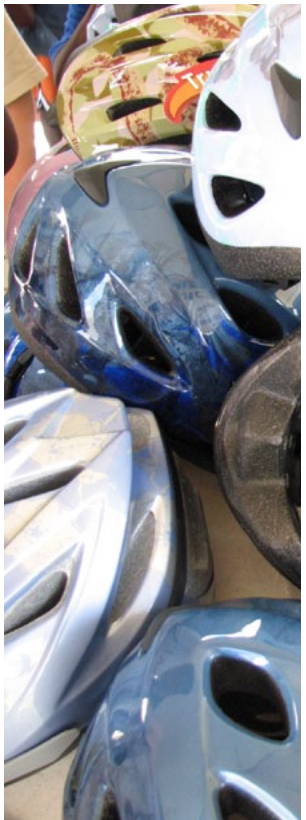
Sincerely,

Dan Burden, Executive Director
Walkable and Livable Communities Institute

CasperWyoming

Safe Routes to School





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Safe Routes Matter

The loss of active living in the U.S. has had serious impacts on children, including increased health problems. To help combat this, the national Safe Routes to School movement aims to create conditions that support walking, biking, skateboarding, scooting or blading to and from school.

Whether to our jobs or to supermarkets or to the places we play or to run errands, we all need safe routes. Arguably, though, the people who need them the most are children heading to school.

In the U.S., walking or biking to school used to be a normal practice. In fact, in 1969, nearly 90 percent of children who lived within a one-mile radius of school walked or biked to school; more than 40 percent of all children did so. In recent years, however, "active" ways of getting to school have become the exception: now, only 42 percent of children who live within a mile of school walk or bike to school; and only 15 percent of all children do so.

WE ALL NEED SAFE ROUTES. ARGUABLY, THE PEOPLE WHO NEED THEM THE MOST ARE CHILDREN HEADING TO SCHOOL.

The loss of this active-living practice has serious implications, perhaps the most important of which has manifest in the country's childhood obesity problem. Additionally, as we have turned our focus away from ensuring children can walk or bike safely to school, we also have allowed our streets to become designed only for vehicle speed and capacity, not for people. When we restore our streets as places that are safe for our children, we will also be supporting neighborhoods that are vibrant and safe for all.

The international Safe Routes to School movement helps create conditions that support children who walk, bike, skateboard, scoot or blade to and from school. The Safe Routes approach is comprehensive and includes 5 E's: education, encouragement, enforcement, engineering and evaluation. Communities can work on any individual 'E' to address a need at their school, but can expect more success if they address all of them. Engineering approaches are covered in detail in this report, but other aspects of Safe Routes programs and opportunities are included.

Safe Routes in Hamburg, NY.

Safe routes in Montreal, Canada.

Background

The Casper area is undertaking this Safe Routes program, in large measure, to make a positive difference in how Casper's children live.

This Safe Routes to School report has been compiled by the Walkable and Livable Communities Institute for the City of Casper. In April 2010, the WALC Institute and its team member, the Local Government Commission, submitted a response to a Request for Qualifications for a Safe Routes to School program issued by the Casper Area Metropolitan Planning Organization. In the response, the WALC Institute team stated that a successful Safe Routes program requires the following:

- A strong, lasting team of supporters in all levels of organizations and agencies who understand the benefits of active transportation.
- Identification of barriers to active transportation and a clear plan for addressing existing conditions.
- An energized community of parents, students and school officials who are excited to set goals and determine criteria to chart success.

DARK, COLD MORNINGS HAVE LONG EXISTED IN CASPER, BUT ONLY IN RECENT YEARS HAS A SHARP DECLINE BEEN NOTED IN STUDENTS GETTING TO SCHOOL UNDER THEIR OWN POWER. WHAT IS DIFFERENT?

The Casper Area is undertaking this Safe Routes program, in large measure, to make a positive difference in how Casper's children live. Casper is unique in Wyoming and in the Rocky Mountain states because of its "school of choice" program, which allows students or parents to pick any school for greater educational opportunities. In other words, students are not assigned to schools based on their neighborhood or geography. This creates significant added traffic growth and challenges in encouraging active transportation – since students do not necessarily attend schools in their neighborhood. Busing and parent drop-off/pick-up create longer commute times and distances. Peak hour congestion impacts drivers but it also affects those children who choose to walk or ride their bikes to school.

Vehicular traffic has been growing steadily in the Casper region. This is due to many factors, but it is certainly impacted by school placement and the transportation choices offered to students. How can the Casper Area address vehicular traffic and encourage active transportation? A Safe Routes program is a good place to begin. It offers us a way to analyze lifestyle choices and dependencies when it comes to our transportation system. Can students comfortably walk or bike to school? If not, we look at why. Could an improved network of sidewalks, trails and bike lanes make students feel more comfortable biking or walking to school? Safe Routes allows us to identify deficiencies and prioritize improvements.

A successful Safe Routes program is not solely about improving network and connectivity; there are numerous other conditions (temperatures, time of sunrise, isolation, perceived sense of danger) that play a significant role in whether students can and do walk or bike to school.

Dark, cold mornings have long existed in Casper, but only in recent years has a sharp decline been noted in students getting to school under their own power. What is different?

Overly wide roadways have been built, partly in response to sprawl, and this has yielded a growth in traffic. Streets and intersections in the Casper Area are much wider than they need to be. Wide streets and intersections encourage motorists to drive faster than the posted speed limits and this has been observed in Casper as well. The environment has been re-designed to accommodate peak hour traffic, discouraging active transportation. Sadly, the effect is cumulative: the more vehicles on the roads traveling at higher speeds, the fewer walkers and bicycles one can expect. When parents do not see other children biking or walking to school, they often do not feel comfortable encouraging their children to do so, either.

Safe, if cold, routes to school. Manchester-by-the-Sea, MA

The Casper Area is not alone in this problem; this is a national concern. The solution requires a comprehensive approach that addresses land use practices, engineering designs, school placement, and the community's vision for itself. Through assessment, conceptual design assistance to address existing conditions, planning that enforces the community's vision, and the development of educational and encouragement programs, Safe Routes programs thrive. In the Casper Area Comprehensive Plan, active transportation and Safe Routes are important to the community – they are specifically mentioned. Yet, the built environment is not reinforcing this.

With this Safe Routes program, the Casper Area is choosing active transportation over growing vehicular traffic. The result for the community will be improved physical health and social health, transportation independence and equity. This report provides an assessment, recommendations and resources to implement a successful Safe Routes program.

In developing this report, the WALC Institute team has taken into consideration prior studies, including the Garden Creek/Sedar Draw Conceptual Trail Design Study of 2004 and the Casper Walkability Study of 2008 and resulting recommendations from city staff.

CASPER IS NOT ALONE IN THIS PROBLEM; THIS IS A NATIONAL CONCERN.

These studies promote a vision for a safe, efficient, convenient and cost-effective multi-modal transportation system. They encourage designing and re-designing streets to be pedestrian-friendly and compatible with adjacent land uses in their scale, width and design speeds. They also call for improving the network of trails and sidewalks, calming traffic and reducing speeds through residential neighborhoods, and collaborating with the Natrona County School District on the development of pedestrian walks and paths.

The WALC Institute team also reviewed ways to leverage the emerging bicycle and trail network by increasing connectivity, conducting 'road diets' and adding bike lanes near the schools studied. The trails are viewed as part of a transportation network, not just as amenities supporting recreation.

Proud walkers in Bannon Creek, CA.

Unique bike racks in Homer, AK.

A field trip in Bend, OR.

Process

The WALC Institute team, the Casper Area MPO and local partner organizations conducted assessments, workshops and audits at and near eight area schools. The audits in particular helped participants see streets through a new lens.

Dan Burden, executive director of the WALC Institute, visited Casper for two days in July to discuss project expectations and to identify stakeholders and the eight schools to be part of the study. The eight schools were selected in cooperation with the Casper Area MPO and are considered representative models for the Safe Routes project.

Dan distributed photographs and field notes from his visit of each school to the entire project team, including the Local Government Commission, to the Casper Area MPO and to the Natrona County School District to help them prepare for assessments that took place over the course of four days in October. Dan and the project team worked with the Casper MPO and local partner organizations and agencies to conduct workshops, assessments and audits at the schools.

Dan later presented how to weave school transportation issues in with Smart Growth at a well attended Smart Growth regional conference. He developed a rapport and gained much knowledge by talking with many leaders who attended this conference.

Over those four days, each school participated in roundtable discussions that engaged key stakeholders to define issues, opportunities and assets; discussed potential traffic-calming solutions, pedestrian improvements and streetscape improvements for the area; and introduced discussions about the best elements of active living and of walkable and livable communities.

Time was allotted to allow participants who had concerns or comments related to motorist behaviors, traffic calming, and the safe routes to school project to be heard. Additionally, the project team and stakeholders discussed the first steps to building a sustainable Safe Routes program.

Walking Audits Opened Eyes

After meeting with stakeholders inside each school, everyone headed outside for walking audits to learn about design elements that contribute to safe routes to school and a healthy community as well as elements that discourage walking, biking and active living.

Walking audits have become an important tool in helping to develop safe routes to all the places people go. During a walking audit, participants experience for themselves the elements of the built environment that affect active transportation. Walking audits in Casper included CY Middle, on the previous page; Dean Morgan Middle, below left; and Willard Elementary, below right.

A workshop at CY Middle.

A walking audit at Park Elementary.

Participants observed school arrival and dismissal with an eye toward how the intersections serve pedestrians and bicyclists and how to calm the traffic, while discussing model programs and success stories. They saw streets through a new 'lens' and were able to identify many of the common barriers to walking and biking.

Following the walking audits, the project team presented school program and engineering design concepts that support Safe Routes. They showcased examples of traffic calming concepts working in various parts of the United States.

Also during the four-day assessment, focus groups were held with four diverse groups of stakeholders: planners and engineers from the City of Casper and Natrona County School District; police and fire officials; recreation and Safe Kids representatives; elected officials; and city management and school administration.

The project team made an evening presentation to the public to share best practices for safe routes to school, active living and "complete" streets; and how transportation planning and land-use can create healthier, family-focused communities where people can "age in place." The project team also discussed findings from the on-site assessments, sought input from and addressed issues identified by the community, and shared preliminary designs of traffic calming features and concepts based on the walking audits and stakeholder feedback.

As the assessment unfolded, over-arching concerns and observations began to emerge about overly wide streets, vehicles blocking sidewalks, the perception of speeding around schools, undefined pick-up and drop-off areas, parents feeling frustrated when expressing concerns to the school district, the unpopularity of Schools of Choice, the lack of buffer between sidewalks and streets, snow removal and safety.

Themes of achievement also were noted: stakeholders identified well-marked crosswalks, well-sited schools in residential neighborhoods on grid street networks, and committed school principals.

The recommendations contained herein address existing assets, challenges and opportunities, near- and long-term solutions, and next steps for creating safer routes to Natrona County schools.

Observing drop-off at Grant Elementary.

Safe Routes are Achievable

The committed Safe Routes team in Casper is poised to succeed. Although solutions here will be unique, the town is not on its own; many others are testing tools to address common problems, and are quick to lend knowledge and support.

Communities around the nation are successfully creating new, safe and healthy opportunities for their children to walk and bike by promoting best practices and designs that support Safe Routes to School.

These communities are unique geographically, socially, culturally and economically, but no matter how different from one another, they all share two defining assets that have led to their achievements in Safe Routes to School: a diverse and dedicated team of individuals and a comprehensive, evidence-based approach centered on the Safe Routes' 5 E's -- engineering, education, encouragement, enforcement and evaluation.

COMMUNITIES AROUND THE NATION ARE SUCCESSFULLY CREATING NEW, SAFE AND HEALTHY OPPORTUNITIES FOR CHILDREN.

These elements embody the national Safe Routes movement that has become a catalyst for the creation of safe, healthy and livable communities -- in urban, suburban and rural contexts around the globe -- and a source of inspiration and motivation across fields of expertise to improve the built environment.

With resources provided by the Safe Routes to School National Partnership, the National Center for Safe Routes to School and the WALC Institute, the highly committed Safe Routes team in Casper will be well equipped to implement a district-wide Safe Routes program and evidenced-based approach that creates safe and appealing routes to be enjoyed and embraced by all.

Safe Routes principles for improving the built environment focus on creating safe and accessible routes by improving paths, creating safer crossings and slowing down traffic, while at the same time, recognizing the importance of a balanced roadway environment that can accommodate the needs of all modes of transportation, be it foot, bicycle, or motor vehicle.

Common Safe Routes practices include connecting and expanding sidewalks; using landscaping and street trees as a pedestrian safety buffer and also as means to capture and treat storm water runoff on site; modifying intersections so that crosswalks are highly visible and curbs are compliant with the Americans with Disabilities Act; incorporating road diets and expanding bike lanes as traffic calming measures to slow vehicle speeds; and supporting policy that keeps schools within walking distance of neighborhoods, trails, parks, and other amenities.

When these transportation and infrastructure improvements are carried out together with community outreach and education initiatives, safety and awareness campaigns, and promotional events and incentive programs, Safe Routes organizations are better able to address barriers that prevent children from walking and biking to school safely, and assure positive outcomes from Safe Routes efforts.

Safe routes in Marin County, CA.

Key Concepts

Streets and Parking
Streets should support walking, bicycling and vehicle movement. Vehicles travel lanes should be no more than 10 feet wide and, when possible, should be separated from on-street parking by a two-foot valley gutter. There should be no more lanes on a road section than needed to safely carry out its mission. On-street parking gives motorists a place to wait when picking up children and uses as little as a third of the space of off-street parking. Restricting parking times along the curbs next to the school allows these areas to be used for student drop-off and pick-up. Signs should inform motorists to remain in their cars at all times. Head-out (or reverse) angled parking is a safe and efficient way to provide on-street parking. Head-in angled parking and parallel parking also can be good options. Off-street parking may be unavoidable but can often be minimized.

Security
Schools should be integrated into neighborhood designs to provide high levels of "watchfulness" over children. Homes, apartments and townhouses should be near the streets and their "A" sides — their fronts, where abundant windows allow occupants to look outside — should face the streets where students will be walking and bicycling. This provides "eyes on the street." Each school building should have windows. Low fences and landscaping features can define play areas and access points. Bicycle parking should be located where it is highly visible and protected from the elements.

Separation
It is best to separate the different modes of travel (walking, bicycling, bus and parent driving) at the school. Sidewalks and school entries should be designed to keep walking and cycling students from crossing the pathway of motorists. Parking lots should be designed so students do not need to walk through them to enter or exit the school. Where sidewalks and driveways must cross each other, a level sidewalk should continue. Additional design elements such as colorized or raised crossings should give motorists a clear message that they are to slow down and yield to students.

Separation of modes of travel.

Trees
Street trees not only provide shade and a nice environment, but also help protect students walking and bicycling. When placed within four to six feet of the street, trees create a vertical wall that helps lower vehicle speeds and absorb vehicle emissions. They also provide a physical buffer between cars and children. On streets with a narrow space between the sidewalk and curb (also known as the "furniture zone"), trees can be planted in individual tree wells placed between parking stalls, which further reduces travel speeds. Depending on the species, they should be spaced 15 to 25 feet apart.

Dropping Off and Picking Up
With high rates of students arriving and leaving school in cars, there are many "conflict points" between motorists, walkers and bicyclists. If volumes of traffic are high, on-school drop-off and pick-up patterns can include compact stacking areas that are monitored at all times by adults to ensure that children are only exiting vehicles at the front of the queue when all cars are stopped. It is helpful to have a "valet" program through which adult volunteers or older students – under the guidance of staff – open and close car doors and help students find their parents. On-street parking and nearby parking options, such as a church parking lot, can help. Signs ask parents to turn off their engines, which helps reduce vehicle emissions and protect children's lungs.

Sidewalks
Sidewalks, trails, walkways and ramps should be on both sides of the street around the entire perimeter of the school. Where sidewalk gaps exist or ramps are missing, they should be fixed on a priority basis, working out block-by-block from the school. Sidewalks around the school should be at least eight feet wide and separated from the curb by a "furniture zone" that can accommodate planter strips, tree wells, hydrants, benches, etc. Where appropriate, on-street parking or bike lanes provide an additional buffer to the sidewalk.

Access
Students should have easy access to the campus from every direction. Adjoining properties should not be walled off from the school or from the routes to school. Walking and bicycling students should be able to use links that shorten trip distances and disperse drop-off/pick-up traffic.

Shared Parks
Neighborhoods are most complete when public spaces such as parks are collocated with schools. In this way, a community's important assets are available in one place. Parking is shared, shade is available, neighbors keep watch over the park and the school, students have quality places to play or wait for their parents, and social exchange amongst all age groups is fostered. Collocated facilities help hold a community together, providing the highest level of conservation and sustainability while building cooperation, collaboration and social capital.

Intersections
Intersections near schools should be designed to keep motorists' speeds under control — typically no higher than 15 to 20 mph — no matter what time of day. Turning speeds are especially important and can be controlled with mini-circles, roundabouts and raised intersections. Additionally, curb extensions (also called "bulb outs") and inset parking make it easier for drivers and pedestrian students to see each other and slow motorists down.

Crossings
Around schools, drivers should feel that they are entering a pedestrian realm and that people may be using crossings any time of day. Where crossings are located, streets should be designed so that traffic is slow — between 15 and 20 mph — and sight lines are good. At higher speeds, motorists are less likely to yield to pedestrians and the risk increases. Crossings are best with good lighting, when one lane can be crossed at a time, and when students and drivers can clearly recognize each other. Median islands, curb extensions (or "bulb outs") and raised crossings help create these conditions.

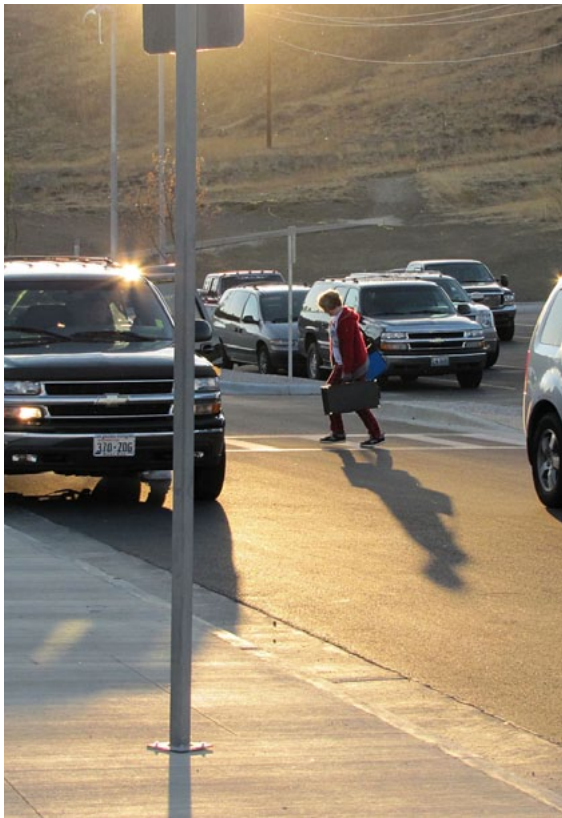
Trails.

Shared parks.

Crossings.

Casper’s Path to Safe Routes

Casper’s challenges can be overcome. Solutions will require commitment and cooperation, but with the contributions of school officials, elected leaders, parents, students and other stakeholders, the Casper Area will succeed in creating Safe Routes for all.



For this study, eight schools were chosen to represent the very broad range of challenges at all schools in the district. During the assessment, we saw multiple barriers to active transportation. We observed parents engaged in dangerous behaviors during drop-off/pick-up and we observed how children reacted in complicated situations. For instance, we saw children dart into a street - without looking first for cars - to get around a muddy pathway. To an adult, this is not logical, and certainly not predictable; to a child focused on not falling or getting wet, it is common sense.

At the schools we visited, we found that the administrators are keenly aware of the problems associated with driving and busing students; they expressed these challenges with clarity. They indicated they are seeking help from many agencies and organizations to provide pragmatic solutions to congestion and the decline in active transportation.

Based on our assessments of the eight school sites and workshops with stakeholders and local leaders, it is our finding that the following are the key issues affecting safe routes in the Casper Area:

- Policy -- a review of the Casper Area Comprehensive Plan reveals that principles relating to schools may be missing from important policies.
- Schools of Choice – children do not necessarily attend the school located in their neighborhood so busing or driving is required.
- Vehicle Speed - at every school studied, many motorists are traveling at speeds too fast for school areas.
- Weather – high winds and cold weather deter active transportation in winter months. Also in the winter, snow plowing often creates banks of snow in areas near schools where children otherwise could walk.
- Darkness – sunrise is often late during the late fall and early winter, and this means that students are traveling to school in the dark.
- Wide Roads and Wide Intersections – roads and intersections that are too wide discourage active transportation.
- Sidewalks – in too many areas, sidewalks have gaps, are not connected, are too narrow and are built against the curb with no buffer from the street. Vehicles parked in driveways and along streets often block sidewalks.
- School Siting – schools outside the urban core have limited access points, and newer schools are not being located within neighborhoods, causing challenges to walking and biking as viable modes of travel to school.
- Perception of Safety – parents and principals voiced concerns that traffic congestion near schools and on school grounds created conditions that are not safe for their children to walk or bike through; additionally, “stranger danger” is a concern that should be addressed.

Opportunities for each school are unique and are detailed in this report. The following sections offer specific recommendations, address relevant principles and practices, and provide a broad set of solutions. To assist in implementation of the recommendations, we have created preliminary engineering drawings for a representative school, Willard Elementary, to illustrate the improvements needed at many Casper schools when funding is available. We also have created a Design Guide for the Casper Area - provided in the Appendix - with tools and direction to help manage complex issues around schools as the area develops. Also included in this report is the WALC Institute’s Town Maker’s Guide for Livable Schools, a document that illustrates the principles most useful for encouraging active transportation and describes a community-centered school.

Design guidelines for the Casper Area, provided in the Engineering section below, describe tools that will help manage complex issues around schools as the area develops.

Analysis of the Comprehensive Plan

Casper's comprehensive plan reflects a desire for pedestrian-scaled environments, but principles related to schools are noticeably absent. Strengthening this document will help encourage thoughtful development that is in line with the community's vision.

Our focus is on Safe Routes to School and how the built environment either encourages or discourages active transportation. Previous sections of this report describe the benefits of Safe Routes and subsequent sections detail engineering strategies to achieve them. This section focuses on whether the community's current guiding document - the Casper Area Comprehensive Plan (2000) – encourages safe routes to school and active transportation. Where the document falls short of supporting Safe Routes, recommendations are provided.

We understand a process is underway to update the comprehensive plan and that elements evaluated herein may change significantly as a result of the current process. Therefore, it is important to view the recommendations below with an eye toward how they may influence the planning process and be incorporated into the new document.

Casper Area Comprehensive Plan

The Plan's Executive Summary recognizes Casper's desire to create pedestrian-scaled environments that reinforce the community's image. The Executive Summary explains the Plan's purpose as "a living document" linked to long-range planning, zoning, and site planning that ultimately leads to thoughtful development in line with the community's vision.

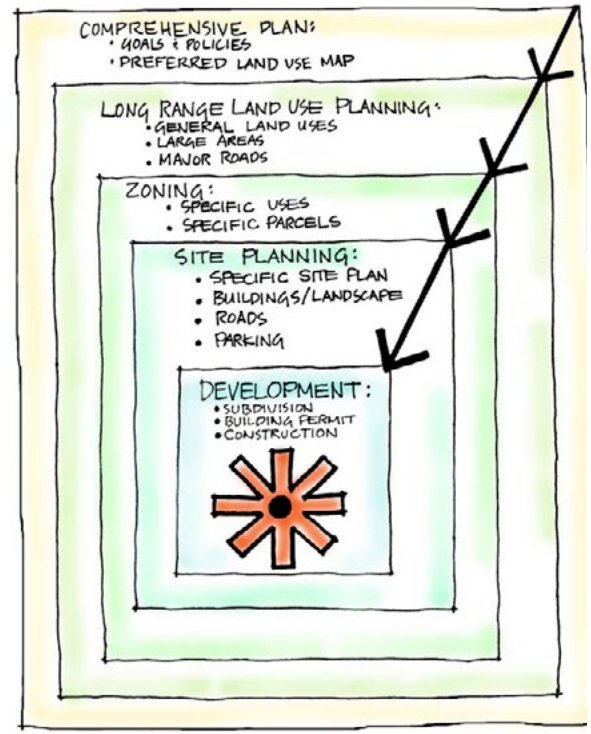
Principles related to schools are noticeably absent from the Comprehensive Plan.

The Plan is organized into three major sections: Policy Framework, Land Use Concept Plan and Background Material. The Policy Framework section expresses several intentions, one of which is to "establish interagency coordination between the municipalities, County, and other agencies."

The coordination between agencies within the Casper Area serves as an example for others: the communication, support, and participation from departments within the City of Casper and across outside agencies has been exemplary. Obvious effort has gone into fostering a team atmosphere with representatives from different organizations very comfortable working together, fostering a congenial and professional atmosphere.

The Policy Framework section also contains an outline of the Concepts, Visions, and Goals that the community should promote concerning land use, infrastructure, and public programs and services. This includes development, design and location guidelines, or "siting," for land uses that are promoted by the Land Use Concept Plan. The Land Use Concept Plan identifies where land use types would be most logically located, in an effort to anticipate new development, establish reliability for developers and residents concerning future land uses, and to influence the free market in a way that promotes development to better meet the expectations of citizens.

The Background Material section summarizes the existing conditions (as of 2000) so that the community may use this material to measure its level of success in promoting the Plan's Vision and Goals.



As created for the Casper Area Comprehensive Plan in 2000, this figure illustrates the relationship between comprehensive planning, land-use planning, zoning and site development.

Policy Framework

The key Policy Framework concepts identified in the Plan focus on five principles:

1. Concurrency – Facilities and services should be in place when new development occurs to reduce the burdens of growth on existing residents.

2. Compatibility – New development should be compatible with existing development and the natural environment.

3. Connectivity – The Plan promotes all modes of travel to connect people to shopping, services and employment centers. It encourages mixed-use development to connect people with the services they demand on a regular basis. It does not, however, specifically mention schools.

4. Compactness – The Plan promotes a compact development form, a strong central business and commercial district, clustered neighborhoods, and a unified parks and street system. Interestingly, schools are not referenced under this principle. Compactness is focused on discouraging the premature development or commitment of land that might negatively impact the community's ability to grow in the future. The focus is on discouraging development patterns that place undue financial hardships on the community to provide services (water, sewer, power, police, fire, roads and other services). Whereas the Plan focuses on enhancing the feasibility of infill development or redevelopment that is contiguous or complementary to existing development, it does not reference school siting as it relates to compactness.

5. Character – The Plan strives to promote the unique character of the area by protecting existing neighborhoods from encroaching land uses that negatively affect quality of life and property values. This section defines Character as how the community looks and encourages thoughtful design of gateways and public facilities. Though schools are not specifically mentioned, the section does dictate that schools (as public facilities) be thoughtfully designed to reflect community character.

This section ends with the following statement: "In any planning effort, compromises must sometimes be struck between purposes where they conflict. But if the balancing question at the time of compromise is 'which decision will do the most to enhance the quality of life,' the community that emerges in the years ahead will be the community the citizens of the Casper area really want it to be, and the one their heirs will thank them for" (7). If we apply this idea to how we site schools, we recognize that schools should be at the heart of the community, built to inspire and pay tribute to Casper, its people and resources. Where schools fail to do this, they are out of step with the community's guiding principles.

Recommendation: The five principles should specifically mention schools and address school siting. Decisions about school siting require the cooperation of the school district and local government. When a school is built or modified, the community is affected and it is the role of the school district and government staff to balance multiple viewpoints and priorities in order to build the school that best serves the community. Principles related to schools are noticeably absent from the Comprehensive Plan. A good resource on School Siting comes from Oregon in the form of the *Oregon School Siting Handbook*, which focuses on school siting for livable communities, at http://www.oregon.gov/LCD/TGM/docs/schoolsitinghandbook.pdf?ga=t

The Vision

The Casper Area community came together to create a vision in their Plan to "aspire to and work towards" (8). The Casper Area's Vision is composed of 12 components that address housing, parks, transportation, development, gateways and the economy.

This report addresses those components where schools should be considered by placing a recommendation beside them.

1. Diverse Economy - An expanded, more diversified, and stable local economy that continuously grows new jobs that pay a higher wage than the current average.

   Observation: This vision focuses specifically on creating jobs that pay higher wages than the current average; redeveloping under-utilized industrial areas; improving tourism and retail; providing adequate infrastructure and capital facilities; and balancing the housing supply with demand.

   Recommendation: Educational opportunities should be considered under this vision, as it seems logical that improved access to educational opportunities would align with diversification and economic growth.

2. Vital City Center – A vibrant downtown that provides a blending of land uses and fosters a unique living, working, regional shopping, and entertainment experience.

   Observation: This vision focuses on creating a special Downtown Use District; increasing intensities and mixing uses; enriching the district's uniqueness and appearance through urban design, streetscape, landscape and signage improvements; increasing consumer services; and expanding residential uses within the Downtown.

   Recommendation: This focus is important in terms of livability but the Policy Framework should also address schools or school siting in the Vital City Center. Consider including a focus on providing educational opportunities within the City Center for greater access and integration. When quality educational opportunities are present, this has the potential to attract residential uses and diversified businesses that often support the school or its users. If schools are located outside of the city core and away from jobs, housing will also locate on the city's edge. This contributes to expanding service areas and sprawl and prevents local businesses from complementing one another. It also creates greater impact on roadways.

3. Compact Development – A compact development pattern of cohesive neighborhoods and corridors.

   Observation: This vision focuses on directing growth to encourage infill development and redevelopment; encouraging mixed uses; requiring facilities and infrastructure to be available concurrent with the impacts of development; and ensuring compatibility.

   Recommendation: Consider how Casper Area schools encourage or discourage compact development. Do the zoning requirements for school siting support this vision? Requiring schools to be located on large swaths of land is not sustainable from many viewpoints: the roadway impacts, the health impacts to individuals driving as opposed to walking or biking, and the time spent commuting as opposed to engaging in other activities. The school district would be advised to move away from minimum acreage requirements and the resulting practice of building massive schools that are not integrated with neighborhoods or surrounding land uses.

   In fact, Casper is home to many schools located within neighborhood and urban environments on "grid" streets with sidewalks and multiple points of access. This model should be the standard. Additionally, instead of building all-new facilities, renovating existing facilities should be encouraged to provide greater benefit to the community, expend less tax money and help achieve the vision of the Comprehensive Plan.

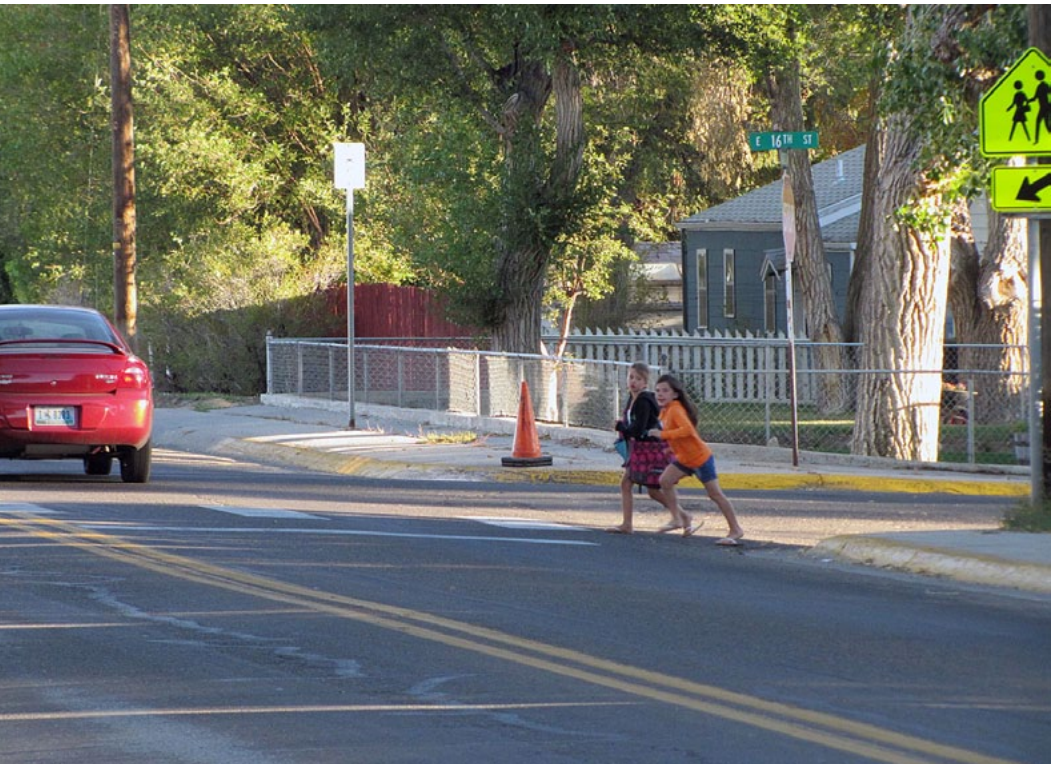
   It is also important to recognize that neighborhood schools play a key role in creating cohesive residential neighborhoods. Schools often function as neighborhood centers accessible to all residents within a quarter- or half-mile radius. Many jurisdictions work with school districts to encourage joint-use and co-location of facilities on school campuses. Playgrounds, sports fields, libraries and auditoriums are available to all the residents of the neighborhood. It is this level of coordination to which Casper should aspire.

4. Cohesive Residential Neighborhoods – Stable, safe, easily accessible, interconnected, cohesive residential neighborhoods.

   Observation: This vision focuses on minimizing changes to existing residential neighborhoods; allowing for compatible commercial uses in residential neighborhoods; and eliminating inconsistent land uses.

   Recommendation: Consider how residential neighborhoods are connected to critical services, including schools, and whether schools can be or are integrated into existing and planned neighborhoods. Locating schools within neighborhoods provides convenient and easy access to schools for parents and children, reducing roadway demand, school congestion, air pollution, and morning commute times for parents. One way to accomplish this is by renovating existing facilities or by building multi-story schools that use land more efficiently.

Despite the crosswalk and crossing signs along this street near Grant Elementary in Casper, four motorists failed to yield to these children, forcing them to dart across the street when there was a short break in traffic.



5. Open-Space Connections – A system of connected parks, open spaces, and trails that enriches the lives of citizens by providing opportunities for education, nature, art, fishing, wildlife observation, exercise, hiking, conservation of natural areas, and social interaction.

   Observation: This vision focuses on increasing the inter connectedness of open spaces; providing recreational opportunities; utilizing abandoned rights-of- way and drainage ways for an improved pedestrian network; and defining the need for new parks and recreational facilities.

   Recommendation: Consider how trails and open space connections can be prioritized to provide safe routes to school. Additionally, recognize the value of open-space connections in terms of transportation equity and active living – not just in terms of recreational uses.

In a memo dated May 26, 2010, the Public Services Director and Parks Division Manager recommended that the City of Casper "enter into an agreement with Natrona County School District #1 for the development of pedestrian paths and walks on or adjacent to School District property." This supports the prioritized list of projects compiled by the City of Casper which identified pedestrian improvements near and around schools – as originally recommended in the Casper Walkability Study adopted in 2008.

Having a system of parks, open spaces, and trails not only provides recreational and social opportunities, but these connections can also be viewed from a transportation and active living standpoint. Active living is a way of life that integrates physical activity into daily routines, with the goal of accumulating 30 minutes of activity each day for adults and 60 minutes for children and youth. Individuals may achieve this goal by walking or bicycling for transportation, exercise or pleasure; playing in the park; working in the yard; walking or riding a bike to school or work; taking the stairs; and using recreational facilities.

A connected network provides residents with non-motorized transportation options to access schools and other destinations they regularly enjoy. The focus should be on integrating city-wide policies and plans to balance land uses and create transportation systems that put people, not cars, first.

Sample policy language for active living can be found in the "Families, Parks and Recreation Element" of the City of Orlando's Comprehensive Plan. Active Living by Design is a program meant to create environments with comprehensive supports for active living. Residents should have easy access to physical activity programs and healthy environments should be considered a high priority. Workplaces, schools, and other organizations should be encouraged to provide regular incentives which promote physical activity. Healthy community environments should provide safe, convenient, and integrated facilities such as sidewalks, greenways, and neighborhood parks that enable people to be active." See: http://www.cityoforlando.net/fpr/Html/PDFs/FPR_Vision_Plan.pdf

6. Views of Casper Mountain – Protected strategic view corridors of Casper Mountain.

   No observations or recommendations related to creating safe routes to schools.

CONSIDER THE CHARACTER THAT SCHOOLS, AS PUBLIC FACILITIES, DISPLAY.

7. Casper's History –A community that supports reuse and restoration of buildings that define the history of the Casper area.

   Observation: This vision focuses on identifying and protecting existing historic structures.

   Recommendation: Consider how historic buildings can be reused and restored as schools to create greater educational opportunities, program diversity and access. Consider researching how educational institutions might serves as attractants for economic development through public-private investment.

8. Distinct Character– An attractive community with a distinct character as reflected by the streetscape, buildings, neighborhoods, and public facilities.

   Observation: This vision focuses on protecting Casper's character; attracting new development; and promoting high-quality design. It also includes Goal 46: Ensure new developments are pedestrian-friendly.

   Recommendation: Consider the character that schools, as public facilities, display. Do schools demonstrate high-quality design? Are schools sited to encourage active transportation such as walking and biking? Are adjacent land uses expected to provide pedestrian and bicycle facilities around or through them to allow access to schools?

9. Attainable Housing – A community that offers a full range of housing types to meet the needs and expectations of people of all incomes, lifestyles, and age groups.

   Observation: This vision focuses on creating housing options that accommodate a broad range of demographics and ensure people of all income levels have access to housing.

   Recommendation: Consider how attainable housing connects to critical services, including schools, and ensures diverse school populations. Housing should be integrated into the neighborhood with bike and pedestrian facilities, parks, schools, retail, restaurants, and offices located adjacent to the housing or as part of any housing development. Ensure that housing of various price ranges and types is provided in more areas. Provide incentives to developers to build wider ranges of housing types to let more people settle into or remain in their preferred neighborhoods, even when their income levels shift.

10. Cultural Amenities – A community that supports artistic enrichment and cultural opportunities as vital parts of the community's values, quality of life, and economic vitality.

    Observation: This vision focuses on encouraging public-private partnerships to support cultural and civic facilities; expanding public art; centralizing facilities for synergy; and encouraging the use of schools as community facilities.

Recommendation: Although school facilities are included, consider adding language that addresses educational opportunities as more than just a basic service (75) but also as another cultural amenity. If access to educational opportunities is prioritized by the community, it is not reflected in the Plan. References to schools are mainly related to facilities – as opposed to the community's vision and goals for providing educational opportunities to residents. This might include joint-use of school grounds, use of the facility as a community meeting space, or to encourage adult education, after-school programs, etc. Schools then take on a greater role within the community; they are not just seen as a basic service but as central to the life and vitality of the community.

Historically, schools played a greater role in the culture and social life of a place. As facilities, they are usually ideal for everything from theatre to sporting events to community meetings. Casper should look at national trends toward diversification of educational opportunities. Cooperatives, home-schooling associations, and even traditional schools are becoming more varied. For instance, schools today can support migrant education and accommodate the children of families who move between work centers based on crop rotation or fishing seasons.

11. Transportation Choices – A safe, efficient, convenient, cost-effective, multi-modal transportation system.

Observation: This vision focuses on integrating land uses and transportation facilities; designing streets to be pedestrian-friendly; improving the network of trails and off-street paths and sidewalks; promoting traffic-calming designs and speed-reducing solutions; ensuring the Transportation Plan and Comprehensive Plan work together to adequately address the community's transportation needs; improving automobile alternatives; creating continuous and direct routes; and requiring concurrency between traffic facilities and development. The goals contained in the vision point to the community's intention of providing multi-modal transportation options.

Recommendation: Consider how school siting encourages or discourages multi-modal transportation. For example, the following goals are in the Plan, but a missed opportunity to implement these goals is evident at the brand new CY Middle School and its adjacent land development. Numerous driveways are already installed for future development with three-lane road segments. Narrower road widths with bike lanes, and cross access easements with less driveway connections when buildings are constructed (not before) would help achieve the following goals already in the Plan:

- Goal 58 - Restrict the number of access points to new developments to limit curb cuts and the number of intersecting streets along major roadways.
- Goal 60 - Design new streets and redesign existing streets to be pedestrian-friendly and compatible in scale and width, with design speeds appropriate for adjacent land uses.
- Goal 62 - Promote traffic calming designs and solutions to reduce speeds through residential neighborhoods.
    - The Casper Area could capitalize on the connections between the neighborhood behind the school and CY Middle School by finishing the trail connections from the school to the neighborhoods and linking this into the existing trail network to continue into downtown.
- Goal 66 - Provide direct pedestrian and bicycle connections from residential neighborhoods to schools, parks, public facilities, shopping areas, and downtown.

12. Attractive Gateways - A series of gateways and major travel corridors that are planned and built to create a positive and attractive image and identity for the area.

Recommendation: Consider how corridor projects can be prioritized to create positive and attractive conditions especially around schools and other facilities. The recommendations at several schools included in this report are for the addition of mini traffic circles to calm traffic. Mini traffic circles provide a wonderful gateway opportunity that can speak to the character, history and sense of place of the neighborhood.

Although schools and educational opportunities could be included within these twelve components, the Casper Area should also consider updating the components to add one that is specific to providing quality educational environments integrated within the community. Language relative to schools, school siting and providing educational opportunities is noticeably absent from the Plan. The Casper Area should consider its vision and goals relative to educational opportunities.

"Drivable, bikable, walkable"

Overall, the Policy Framework describes the values and ideals expressed by the community for its future. The plan states, "Although the Policy Framework may be used to create specific regulations for land use and development, the Framework is not regulatory" (49). It is the role of the governing bodies of the Casper Area to balance current projects with the community's intended vision. However, although guidelines are included for Residential Use; Retail, Service and Employment Areas; River and Drainage Areas; Open Spaces; and the Transportation System, guidelines specific to schools or school siting are not included as part of the community's vision for itself.

The community has indicated that it wants to be drivable (through a focus on roadway connections to alleviate deficiencies), bikable (by ensuring that all Casper Area streets provide adequate space for non-motorized travel) and walkable " where pedestrians can easily walk to activity areas, schools and parks" (89-90).

Noted within the Plan's creation was the following: "One of the repeated themes heard throughout the planning process was that sidewalks and pedestrian facilities are lacking or in need of repair throughout the Casper Area. A continual sidewalk/shoulder system should be created to accommodate pedestrian travel" (90).

Recommendation: Since one of the goals of this document is to provide the base data against which updates will be measured, it would be useful to catalog and assess sidewalk improvements from 2000 to 2010. Additionally, the Plan states that the City needs to "designate a system of preferred on- street and sidewalk corridors which link neighborhoods to key destination points through a network of identified and well maintained routes" to improve bikability (90). Again, it would be useful to measure the Casper Area's success in this area from 2000-2010. The Casper Walkability Study from 2008 could be a useful resource, but the community should be aware that sidewalk projects are funded separately from the Long Range Transportation Plan 2030 and are supposed to be part of all roadway projects. The top projects in the Transportation Plan involve roadway widening or adding turn lanes at intersections. Continuing to invest in widening roads projects by adding lanes at intersections, and not funding sidewalk projects, creates a built environment for cars, not people and this is counter to creating livable communities and the vision Casper Area residents have set forth.

The Plan acknowledges that the Casper Area non-motorized transportation program must offer "a comprehensive package of facilities (streets, sidewalks, and trails) which promote the safest and most pleasant ways to travel" (94). A successful Safe Routes to School program is a good indicator of "safe and pleasant" routes that encourage active transportation. It also supports the vision set forth by area residents.

Those guidelines which support safe routes to school are:

- Residential Use Guidelines (75): Residential uses should be conveniently located in relation to schools (Guideline 4). Residential uses should be developed using a grid system of streets and alleys with pedestrian scale blocks (Guideline 7).

- Retail, Service and Employment Area Guidelines (77): In Guideline 1, strip commercial development is to be avoided, but access and design are in relation to the operating capacity of the road network, as opposed to encouraging access for pedestrians and bicyclists. Guideline 10 states "direct local street and pedestrian connections from the surrounding neighborhood will be required" (79).

  Recommendation: Language relative to pedestrian/bicyclist comfort, convenience and access should be included. The Casper Area should consider adding Smart Growth language here.

- Open Space Guidelines (86): Guideline 9 states that parks should "be connected by a trail system that provides public access along major creeks and rivers, and connects with regional open space resources to promote recreation" (86).

  Recommendation: This Guideline should encourage connections to key amenities, including schools, and promote active transportation in addition to recreational opportunities. The community should also consider adding language relative to community health and wellbeing.

  Open spaces should be connected or adjacent to schools, whenever possible (Guideline 10).

Streets and sidewalks should allow for landscaping and other special design treatments, be designed to respond to uses, include art along pedestrian corridors and be considered during construction to ensure "a sense of spaciousness and activity at the street level" (Guidelines 1 - 4).

- Transportation System Guidelines (95): Streets should be designed to slow traffic in residential neighborhoods (Guideline 1).

- Streets should not accommodate the automobile at the expense of other modes of transportation. Improvements identified to achieve a desired level of service for the automobile must not negatively impact the level of service of pedestrians and bicycles (Guideline 4).

STREETS SHOULD NOT ACCOMMODATE THE AUTOMOBILE AT THE EXPENSE OF OTHER MODES OF TRANSPORTATION.

Recommendation: There is opportunity to update the discussion on vehicle Level of Service (LOS) to move towards more flexible LOS targets, a Multi-modal LOS model (which is being added to the Highway Capacity Manual in early 2011), or move away from an LOS system altogether. Allowing for lower LOS can be appropriate where increased density and mix of uses can increase transit ridership, bicycling and walking, and in turn decrease vehicle trips and emissions. A growing number of communities understand that LOS E or F conditions can actually have positive impacts in targeted areas, such as main street commercial districts. For example, local businesses can benefit from passing vehicles traveling at speeds that actually allow them to see the shops. A multimodal LOS model that balances pedestrian, bicycling, and transit trips may also be considered and models that capture these modes continue to evolve.

To go further, there is a growing concern about the emphasis on LOS in communities where safety has been made a priority, because it is a system that is a measure of drivers' delay that represents the worst time for cars only, and therefore can lead to engineering decisions that run counter to safety concerns for all users. Reducing vehicle delays typically comes at a cost to the pedestrian, bicyclist, and disabled and should be very carefully considered.

Streets should incorporate pedestrian levels of service measurements including directness, continuity, street crossings, visual interest and amenities, and security (Guideline 5).

- Provide street crossings for pedestrians which include crosswalks, lighting, median refuges, corner sidewalk widening, ramps, signage, signals and landscaping. Crosswalks should be well marked and visible to motorists (Guideline 6).

Recommendation: Consider adding language which describes other features such as curb extensions or bulb-outs.

- Trails, sidewalks and on-street bicycle facilities should be established along a series of identified "preferred streets" as a means of establishing an interconnected base network. The first step to improving on-street facilities for bicyclists and pedestrians is to designate a system of "preferred" on-street and sidewalk corridors which link neighborhoods to key destination points through a network of identified and well-maintained routes (Guideline 3).

Recommendation: "Well-maintained" should be defined. It may mean that sidewalks and trails should be cleared of snow to ensure year-round use. A useful snow removal resource chapter from the City of Minneapolis, Minnesota can be found at: http://www.ci.minneapolis.mn.us/snow/snow-shoveling-rules.asp.

- Guideline 5 states that amenities should "link activity centers, landmarks, and parks in as direct a line as possible, providing visual cues that draw people along it."

Recommendation: This Guideline could be updated to specifically mention schools.

Land Use Plan Element

The plan states, "In many places, sprawl and growth have defeated the objective of creating livable neighborhoods, by escalated housing costs, increasing traffic congestion, and deteriorating the social fabric of the community. The priorities contained in this Plan, in the form of its Visions and Goals, Development and Design Guidelines, and Land Use Concept Plan, establish a strategy for growth in the Casper Metropolitan Area that has the ability to stand the test of time" (18).

DEFINE WHAT "LIVABILITY" AND "LIVABLE COMMUNITIES" MEAN FOR THE CASPER AREA.

The Land Use Plan contains a set of priorities for protecting and enhancing the quality of life residents enjoy by creating attractive, affordable, and livable neighborhoods that have sufficient open space and public services. Although not specifically defined in the Plan, "livability" and "livable communities" are referenced and have significant implications relative to the Land Use Concept. Where various land uses should be anticipated and encouraged impacts livability and quality of life.

As the primary guidance tool used by the Casper Area, the Land Use Concept Plan should define livability. We can glance its meaning by noting the themes identified as central to the community relative to land use:

- Create a sense of place
- Restore and establish connections to the river
- Invest in the public realm through well designed and maintained streets, streetscapes, sidewalks, trails and parks
- Broaden the mix of land uses, allowing residents to live, work and play in their neighborhoods
- Facilitate movement, access and connections in the Casper Area
- Design buildings to enhance the community
- Target investment dollars where positive change is already underway
- Preserve and enhance heritage resources
- Provide a balanced network for movement that includes car, bicycle and foot. Design all rights-of-way to be shared, attractive and safe for all modes. Facilitate choice in transportation.

The Plan specifically states, "Establishing safe routes to school is a critical element in all development and transportation planning" (36).

Recommendation: Define what "livability" and "livable communities" mean for the Casper Area. Explain how transportation equity, active transportation, safe routes to school and multi-modalism are central to livability. Additionally, because the plan states that safe routes to school are a critical element of all development and transportation planning, consider adding a section on schools, school siting and Safe Routes to School to the updated Plan.

A livable street in Bend, OR.

Concluding Thoughts on the Plan

"The Comprehensive Land Use Plan is the Casper Area's official policy guide to how land should be used and developed. The purpose of the Plan is to capture, at the most general level, the community's values, intentions, and aspirations for the physical growth and development of the area. It is meant to be of the collective thinking of the community and a vehicle for building consensus on the directions of future growth" (18).

Prepared in conjunction with Casper area municipalities, the Plan is a strong statement that the community supports compact development, cohesive residential neighborhoods, connected streets and open space, and providing transportation choices.

Given that the document is a decade old, it could be considered ahead of its time in that it covers many smart growth concepts; there are more recent examples of planning efforts that fall short of what the Casper Comprehensive Plan envisioned in 2000.

The plan touches on schools throughout the document, and includes a discussion on Natrona County School District #1 (NCSD) under the "Utilities and Services" subsection of the "Current Conditions and Trends" chapter. In 2000, existing educational facilities required $77 million in repairs (148). Compared to other facilities within the State, Casper Area schools were in worse condition on average and the school district had identified $7 million in improvements to deal with capacity issues for NCSD. These are significant figures and indicate challenges.

Given the importance of where schools are located and the authority granted to the NCSD to make school siting decisions, it would be beneficial to build stronger ties and shared vision with NCSD as part of the Community Plan. For example, a section could be added that outlines collaborative school planning as a vision with corresponding goals that outline how to cooperate, coordinate, and share data. Another goal that already exists, but that could be strengthened under this vision, is to further develop opportunities for shared/joint use of facilities.

The Plan could also include a coordinated regional Safe Routes to School effort as a vision and/or goal to show an area-wide commitment to improving student safety. In efforts to build collaboration between different entities involved in the school siting process, a common challenge typically emerges: a lack of understanding about the mandates, regulations, process and costs that each governing body must deal with. It may be worthwhile to include a goal that acknowledges this reality and pledges to increase knowledge and capacity by establishing a framework for cross-education and regular discussion between policy-makers.

The Plan covers many aspects of what we call "Complete Streets," policies that assure that the streets are safe and inviting for all users, without using that phrase. The various aspects throughout the document that relate to bicycling and walking could be brought together to highlight the importance of a comprehensive approach and called out as a vision of a "Complete Streets" transportation system with specific goals to support this.

Overall, the Comprehensive Plan operates at the most general level and does not set forth regulations to be carried out at the local level, but it can further encourage jurisdictions in the Casper area to consider specific aspects when they develop plans and conduct project review. The Comprehensive Plan can encourage smart growth that supports healthy schools by referencing checklists that outline ideal project-level components. For example, the WALC Institute has produced a "Healthy Development Checklist," which is included in the Appendix of this report. This checklist covers land use, transportation, and open space details. Also of interest is the Active School Neighborhood Checklist developed by the Arizona Department of Transportation (see the Resources Section within this chapter) which includes policies and street/neighborhood design aspects that schools and cities/counties can collaboratively evaluate.

The Casper Area might also consider a Community Health and Wellness Element in its updated Plan. A Health and Wellness Element allows the community to set its vision and goals for improving the physical health and emotional well-being of residents. The Element can define healthy living determinants, review current conditions relative to healthy determinants, and outline the policies and actions necessary to improve community health. Safe Routes to School is a natural component of a Community Health and Wellness Element.

The 2000 version of the Plan does not recognize Casper as a healthy, environmentally sustainable place. The Plan does not discuss air and water quality, ways to reduce energy demand and consumption, transit

options, or how the built environment impacts public health. Although pedestrian-friendly neighborhoods are encouraged, safe access to an array of neighborhood services, schools, medical facilities and recreational destinations that can be comfortably reached by walking, bicycling or public transit could be furthered. Does the Casper Area enjoy locally grown, healthy food choices? Do residents and visitors enjoy high-quality, clean and well-utilized parks and facilities supportive of residents' active lifestyles? In the Plan, facilities are generally discussed but not in terms of the community's expectations for healthy living.

In the Plan, educational institutions – their value, siting, and the diversity of programs – are not addressed. The updated Plan might consider how the community is teaching its children to make healthy choices in order to sustain happiness and longevity in future generations. Wellness-oriented language in the Plan would provide a foundation for policies, plans and implementation strategies.

Active living in Casper near Roosevelt School.

Casper Area MPO & Safe Routes to School Planning

Along with transportation planning, the MPO devotes time and effort toward future development, community enhancement and improving the quality of life within the Casper Area. The MPO is responsible for helping support the economic vitality of the community, increasing the safety and security of both motorized and non-motorized individuals, promoting and maintaining safe accessibility and mobility, and preserving and protecting the environment.

The Casper Area MPO has identified seven focus areas for improved planning (MPO, 2006):

1. Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency;
2. Increase the safety and security of the transportation system for motorized and non-motorized users;
3. Increase the accessibility and mobility options available to people and for freight;
4. Protect and enhance the environment, promote energy conservation, and improve quality of life;
5. Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;
6. Promote efficient system management and operation; and
7. Emphasize the preservation of the existing transportation system.

Providing opportunities for active transportation and safe routes to school support these focus areas.

Additional Resources

Schools at the Heart of Communities is a joint project of the Oregon Transportation and Growth Management Program and the Oregon School Boards Association that provides principles for planning new schools and case studies of successful schools in Oregon.
http://www.osba.org/Resources/Article/Community_Relations/~/media/Files/Publications/Critical%20Issues/cineighborhood.ashx

Planning for Schools & Livable Communities: The Oregon School Siting Handbook includes challenges, opportunities, and recommendations on school siting, as well as several case studies.
http://www.oregon.gov/LCD/TGM/docs/schoolsitinghandbook.pdf?ga=t

Safe Routes to School 2009 Policy Report: Moving to the Future – Building on Early Achievements.
http://www.saferoutespartnership.org/media/file/SRTS-09-FinalPolicy.pdf

Edge-ucation: What compels communities to build schools in the middle of nowhere?
http://www.governing.com/topics/education/Edge-Ucation.html

Linking School Siting to Land Use Planning - Atlanta Regional Commission.
http://www.atlantaregional.com/File%20Library/Local%20Gov%20Services/gs_cct_schoolsitetool_1009.pdf

Schools as Centers of Community: A Citizens' Guide to Planning and Design - National Clearinghouse for Educational Facilities.
http://www.edfacilities.org/pubs/pubs_html.cfm?abstract=centers_of_community

Travel and Environmental Implications of School Siting – U.S. Environmental Protection Agency.
http://www.epa.gov/livability/pdf/school_travel.pdf

Active School Neighborhood Checklist - Arizona Department of Transportation.
http://www.azdot.gov/Highways/swprojmgmt/Enhancement_Scenic/saferoutes/PDF/Documents_Active_School_Neighborhood_Checklist.pdf

Community Health and Wellness Element, General Plan - City of Richmond, California. Retrieved December 2010.
http://www.cityofrichmondgeneralplan.org/docManager/1000000797/11%20Health.pdf

Snow Shoveling Rules - City of Minneapolis, Minnesota. Retrieved December 2010.
http://www.ci.minneapolis.mn.us/snow/snow-shoveling-rules.asp

Creating Livable Communities through Smart School Siting - Pro Walk Pro Bike 2010. Retrieved December 8, 2010.
http://www.slideshare.net/pwpb2010/pro-walk-probike-nthp-presentation-september-2010

School Siting Criteria - United States Environmental Protection Agency. Retrieved December 2010. (NOTE: These guidelines are in the public review period and are not endorsed as EPA-recommended guidelines at this point.)
http://www.epa.gov/schools/siting/criteria.html#Desirable_Attributes_of_the_Ideal_School_Site

Active Transportation to School: Trends Among U.S. Schoolchildren, 1969-2001 - American Journal of Preventative Medicine. Retrieved December 2010.
http://www.ajpm-online.net/article/S0749-3797(07)00110-9/abstract

Examples of Public Schools Siting Policies From Local Comprehensive Plans - Florida Department of Community Affairs. Retrieved December 8, 2010
http://www.dca.state.fl.us/fdcp/dcp/SchoolPlanning/Files/schoolcompplans.pdf

Casper Area Comprehensive Plan
http://www.casperwy.gov/Portals/0/docs/Planning%20and%20Zoning/casper-complan.pdf

Casper Area Long Range Transportation Plan
http://www.casperwy.gov/Transportation/TransportationPlanningMPO/LongRangeTransportationPlan/tabid/487/Default.aspx

School Siting Considerations

A school's physical relationship with its surroundings affects whether students can easily – and safely – walk, bike or roll to school. Thus, school siting issues should be considered in developing any program to promote active modes of getting to and from school.

In any Safe Routes to School assessment, it is important to consider a school's physical relationship to its surroundings. For example, at the site plan scale, it is key to evaluate how a sidewalk connects to the school's entrance and how it relates to driveways and parking lots. On a larger scale, it is important to evaluate how a school relates to the neighborhood around it, particularly people's homes. This is critical because the proximity of homes and schools has been found to be the most important influence of walking and bicycling to school (Active Living Research 2009), and thus this issue deserves some additional discussion.

It is also important to note that billions of dollars of taxpayer money are used for school construction on an annual basis. Given this investment, it is important for communities to have school buildings and sites that are meaningful, lasting and are able to serve a neighborhood that changes through time. In addition, since current demand for Safe Routes funding to improve conditions for walking and bicycling at existing schools far exceeds the money available, it is critical to ensure that the location and design are appropriate.

Renovating older schools should be considered, as well. Many were built to high construction standards close to where families live, but may now require updates to meet revised standards. In doing a cost benefit analysis of building new versus renovation, it is critical to assess the less obvious costs borne by the community, including costs to extend utilities, roadways and services such as fire response, demolition and disposal fees, environmental analysis expenses, and changes to bus service. The Council of Educational Facility Planners International guide, *A Primer for the Renovation/Rehabilitation of Older and Historic Schools* (2004), includes an excellent list of significant "hidden costs" that must be considered, including:

IT IS CRITICAL TO ENSURE THE SCHOOL LOCATION AND DESIGN ARE APPROPRIATE.

- Utility extensions and other infrastructure charges (permits, sewer fees, etc.)
- Site development costs, particularly those paid by municipalities or other units of government
- Review fees related to environmental regulation and testing
- Capital and operating costs related to busing
- Roadway extensions and improvements

The school siting process can be very complicated, with many factors that districts have to consider, including educational programming and safety. The ability of children to walk and bicycle to school should be evaluated as a critical component of safety, and an analysis can have the most impact when it is discussed at the earliest possible stage of the school siting process.

The good news is that many factors that support Safe Routes goals also support other objectives that school districts typically strive for or are mandated to address.

An analysis conducted by the Ad Hoc Coalition for Healthy School Siting (2008) found and documented research that showed that community-based schools can:

- Increase academic performance
- Reduce vehicle congestion
- Save money
- Improve student health and safety
- Increase social interaction and social networking in an unstructured environment
- Teach lifelong traffic and perceptual skills
- Increase equity
- Increase educational opportunities

Of course, school attendance policies impact how far students have to travel to school and whether they arrive by car, bus, bicycle, or foot. The fact that Natrona County School District currently has a "schools of choice" policy means that the distance between home and school is beyond walking distance for some students. However, it is still worth considering the impact of where the school is located for the reasons outline above, and for those who also value choice. For example, a school sited close to where people live provides the opportunity for families to make their own choice about how they travel to school, instead of children having to rely on parents or taxpayer-funded buses to provide transportation.

When a school district considers building a new school, a collaborative and open planning process that brings together district policy-makers and staff, city and county representatives, residents, and parents leads to schools that are cherished and respected by the community.

In particular, collaboration between school districts and cities and counties can lead to outcomes with far-reaching benefits. Communities with a high degree of collaboration have been able to

build and maintain facilities that would not have been possible otherwise, utilize each other's data to better plan for future needs, and create vibrant real-world life-long learning opportunities.

Collaborative projects have higher-quality outcomes, are easier to implement, face fewer legal challenges, better serve the public and make better use of available resources. Keys to success include recognizing that there is common ground and interest in working together, that there are distinct planning needs and regulations for each group involved, and the importance of early and regular communication.

It is difficult to generalize about the ideal school site size. It depends on factors such as educational programming, the number of students to be served, and the density and location of its student populations. However, as the amount of acreage increases, the chances of finding enough land that meets siting criteria within existing communities becomes less likely. This in turn increases the likelihood that a new school is located on the fringe of a community, or even further out from the population it is trying to serve. Recognizing this and in conjunction with the understanding that each locality has other factors it needs to balance, the Council of Educational Facility Planners International dropped its endorsement of minimum site-size recommendations. Flexibility of site size and design is now seen as a key policy component.

Finally, it is important to note that many national organizations are pledging their support for community-centered schools, including but not limited to:

- American Association of School Administrators
- National School Board Association
- Council for Educational Facility Planners International
- U.S. Department of Education
- International City/County Management Association
- American Architectural Foundation
- National Governors Association
- Smart Growth America
- The U.S. EPA Smart Growth program
- America Walks
- Active Living by Design

Resources Cited

Walking and Biking to School, Physical Activity and Health Outcomes. Active Living Research, May 2009.
http://www.activelivingresearch.org/files/ALR_Brief_ActiveTransport.pdf

"Revising California Department of Education School Siting Policy Documents." Memo to the California State Superintendent of Public School Instruction. Ad Hoc Coalition for Healthy School Siting. January 31, 2008.
http://lgc.org/freepub/docs/community_design/reports/school_siting_policy_brief_jan31_2008.pdf

A Primer for the Renovation/Rehabilitation of Older and Historic Schools by the Center for Educational Facility Planners International and the US Environmental Protection Agency, 2004.
http://www.ncptt.nps.gov/cefpi-a-primer-for-the-renovation-rehabilitation-of-older-and-historic-schools-2004-16/

Additional Resources

The US EPA released a public review draft of its voluntary school siting guidelines on November 18, 2010. The guidelines were developed to provide a framework and approach to help communities consider and balance environmental risks and community benefits in siting new schools:
http://www.epa.gov/schools/siting/

The National Trust for Historic Preservation's 2010 document *Helping Johnny Walk to School* includes specific policy recommendations to encourage community-centered schools and provides case studies:
http://www.preservationnation.org/issues/historic-schools/helping-johnny-walk-to-school/helping-johnny-walk-to-school.pdf

Schools for Successful Communities (2004) by the Council of Educational Facility Planners International includes examples of how school siting relates to smart growth and provides local level case studies:
http://www.epa.gov/smartgrowth/pdf/SmartGrowth_schools_Pub.pd

Town Maker's Guide: Livable Schools

The Town Maker's Guide to Livable Schools illustrates many of the important components that help make a school supportive of active living, walkability and livability.

The guide is provided in the Appendix and as an electronic attachment to this report.

Although the guide highlights many of the key components of properly placing and designing school sites for livability, there are others to consider. The following resources can be of help:

- National Center for Safe Routes to School, www.saferoutesinfo.org
- Council of Educational Facility Planners International, www.cefpi.org
- American Architectural Foundation, www.archfoundation.org
- National Trust for Historic Preservation, www.preservationnation.org

Engineering Recommendations

Many school sites in Casper reflect conditions across the country: activity has been engineered out of daily life. Thus, engineering improvements must be included in strategies to regain active-living practices. The good news in Casper: opportunities abound.

A highly energized and committed group of people is associated with Casper's Safe Routes endeavor, and with each individual school studied. This bodes well for the success of this Safe Routes undertaking.

As much as enthusiasm and commitment are abundant in the people associated with this project, so too are the opportunities for improvement to the built environment and policy to support Safe Routes. Many barriers to active transportation have been documented. At most of the schools, the following issues will need to be addressed:

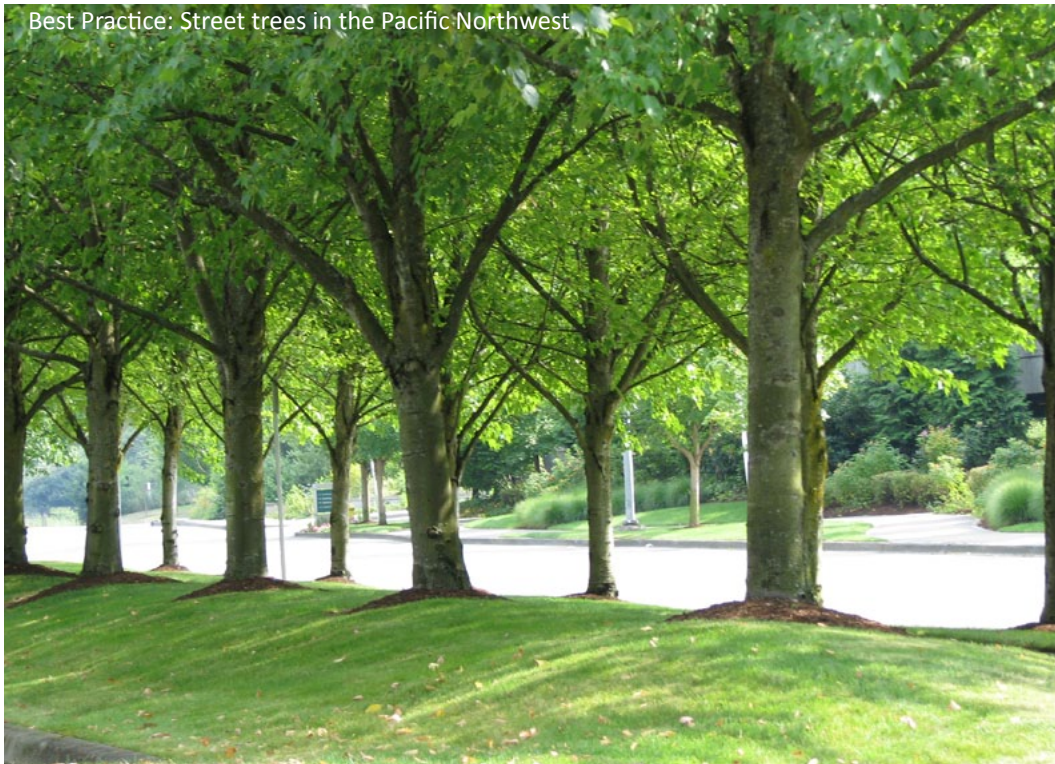
- Vehicle speeds too fast for the surrounding contexts
- Crossing points and crosswalks that are not well defined or visible
- Inadequate lighting at dusk and dawn
- Lack of separation between cars, cyclists and walkers
- Streets, intersections and driveways that are overly wide, which contributes to high vehicle speeds and long distances for pedestrians to cross
- Sidewalks that are poorly maintained or missing complete sections
- Lack of bicycle and skateboard parking
- Lack of crossing guards or adult support at crossings
- Treatments that do not comply with the Americans with Disabilities Act
- It was not clear that every school has snow-handling equipment and resources to ensure approaches to schools are clear after snowfall

The issues above can be addressed with engineering improvements. Some are easy and inexpensive - for example, changing travel lane widths and adding bike lanes by using only paint or striping -- and some are significant community investments, such as developing connected network of trails.

This section summarizes findings and recommendations to improve conditions at each school. One school, in particular, appears to be an ideal site for many of the engineering improvements suggested in this report. Thus, we have created preliminary engineering drawings for Willard Elementary to illustrate how immediate, short-term and long-term engineering improvements can be made at all Casper schools in support of Safe Routes.

First, however, it is valuable to address the change in perspective needed to create a community that is truly supportive of Safe Routes to School, active living and a mix of transportation options. And to help the community as it implements changes, a section following the school-specific recommendations addresses potential concerns about the changes that may emerge.

Existing conditions on the way to Grant Elementary.


Best Practice: Street trees in the Pacific Northwest

Changing a Mindset, Not Just a Street

A note from Dan Burden, Executive Director of the WALC Institute

The recommendations of this report were developed with a goal of protecting those who too frequently are not given full consideration: our children.

Each of the recommendations made represents a broad set of expectations that traffic speeds should be brought under control near each school, and motorists should become more focused and vigilant. That a steady, but lower speed of traffic should be encouraged. If implemented, each of the measures will help singly, but in combination they will have their greatest effect. It is the cumulative mix of proposed treatments that will create the desired outcome of supporting walking and biking by bringing down speeds and increasing the percentage of motorists (often parents) who will yield to and otherwise behave correctly around children heading to school.

Expect complaints and resistance. In some cases, commutes will be slightly longer, although usually by a matter of seconds, rather than minutes. But parents and community members can – and should - adapt to slight losses of efficiency by leaving a minute or two earlier for their combined trip, so that they are not late for work and don't feel compelled to drive fast near schools.

By adopting and implementing these recommendations, Casper will be joining hundreds of communities throughout the country that concede a marginal reduction in roadway efficiency in select places in exchange for livability and supporting those, like children, who want or need to walk and bike for transport.

And it won't be only parents and commuters who need to adjust. In fact, some of the recommendations will require drivers of delivery trucks, snow plows, buses, fire trucks and other machinery to adapt to the new road designs. They will do so successfully and the combined system will work for all.

As you read this report, consider the main goal of the entire study: to provide safe routes to and from school for people – children – who do not drive and who have much to gain from commuting under their own power. Envision the recommended changes and you will see how they will help each driver who comes to or passes a school to be more alert, yielding, caring and considerate when in the vicinity of children.

Expect complaints.
But parents and community members can – and should – adapt to slight losses of efficiency.
Consider the main goal: to provide safe routes to and from school for children.

Best Practice: Active transportation in Upper Arlington, Ohio.

Willard Elementary School

Attendees:

- Dr. Leslie Madden - Principal
- Catherine Morris, Orientation and Mobility Specialist, and Jason Gutierrez - NCSD
- Diane Guerttman - Safe Kids of Central Wyoming
- Leah Reeb - Casper Area MPO
- Ken King, Austin Burgess, Lex Dyer, and Craig Kidder - Casper Fire Department
- Marge Cole - CATC
- Mike Thompson - Casper Police Department
- Project team

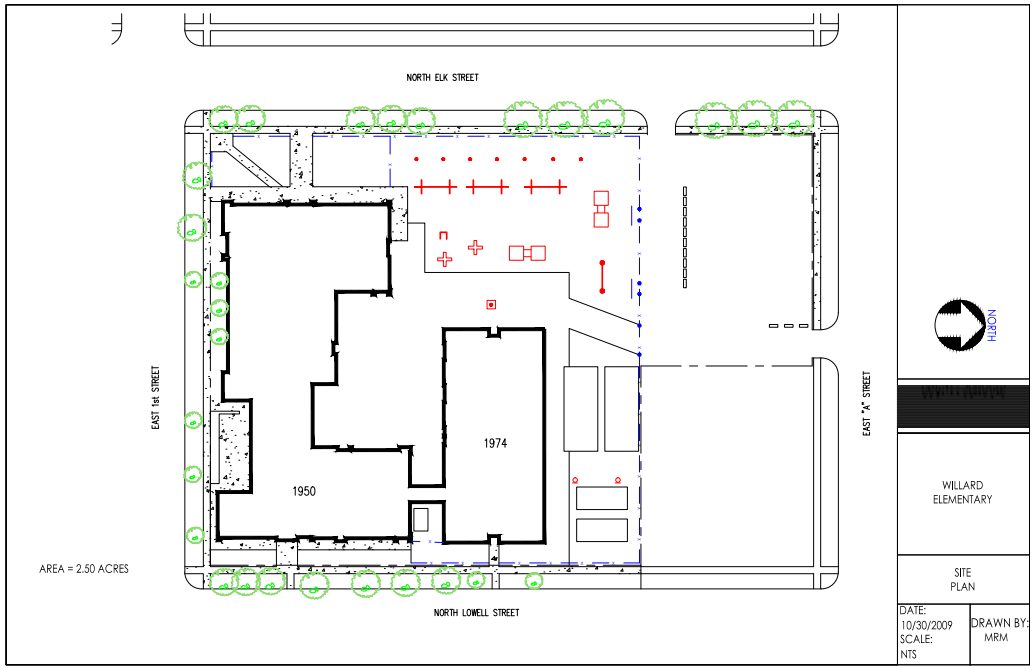
Assets:

- Neighborhood school site
- Connected urban street network grid
- Crosswalks marked correctly
- Many children come from the immediate neighborhood

Willard Elementary School

Issues and Opportunities:

- Some crosswalk markings are faded and curb ramps missing from some intersections near the school.
- The school serves children with special needs but a lack of pedestrian infrastructure makes fire escape routes challenging. There are not enough crossing guards to aid children with special needs along the routes to school.
- High vehicle speeds on 1st and 2nd streets pose additional dangers for children walking and biking; the traffic shifts to 1st as a cut-through for people avoiding 2nd.
- The wait time is too long for pedestrian signals to cross 2nd at Elk.
- Additional on-street parking is needed to keep cars off the sidewalk.
- A better defined parent drop-off/pick-up is needed; parents double-park during drop-off and more so for pick-up, causing children to run across the parking lot in order to reach parents' cars.
- Conflicts exist where the sidewalk crosses driveways into the parking lot.



Existing site.

A better defined parent drop-off/pick-up area is needed.

Crosswalks and curb ramps are missing in places.

Willard Elementary School

Given its significant challenges, combined with ample opportunity to employ "low-hanging fruit" solutions, Willard Elementary is viewed by the project team as an ideal site for many of the engineering improvements suggested in this report. Additionally, like other school sites studied as part of this project, the school administration of Willard is energized and mobilized to create Safe Routes, increasing the chances of success. Thus, preliminary engineering drawings are provided for Willard as an example of how engineering improvements can be made at all Casper schools in support of Safe Routes. The drawing details are provided below and as electronic attachments to this report.

Recommendations: Immediate

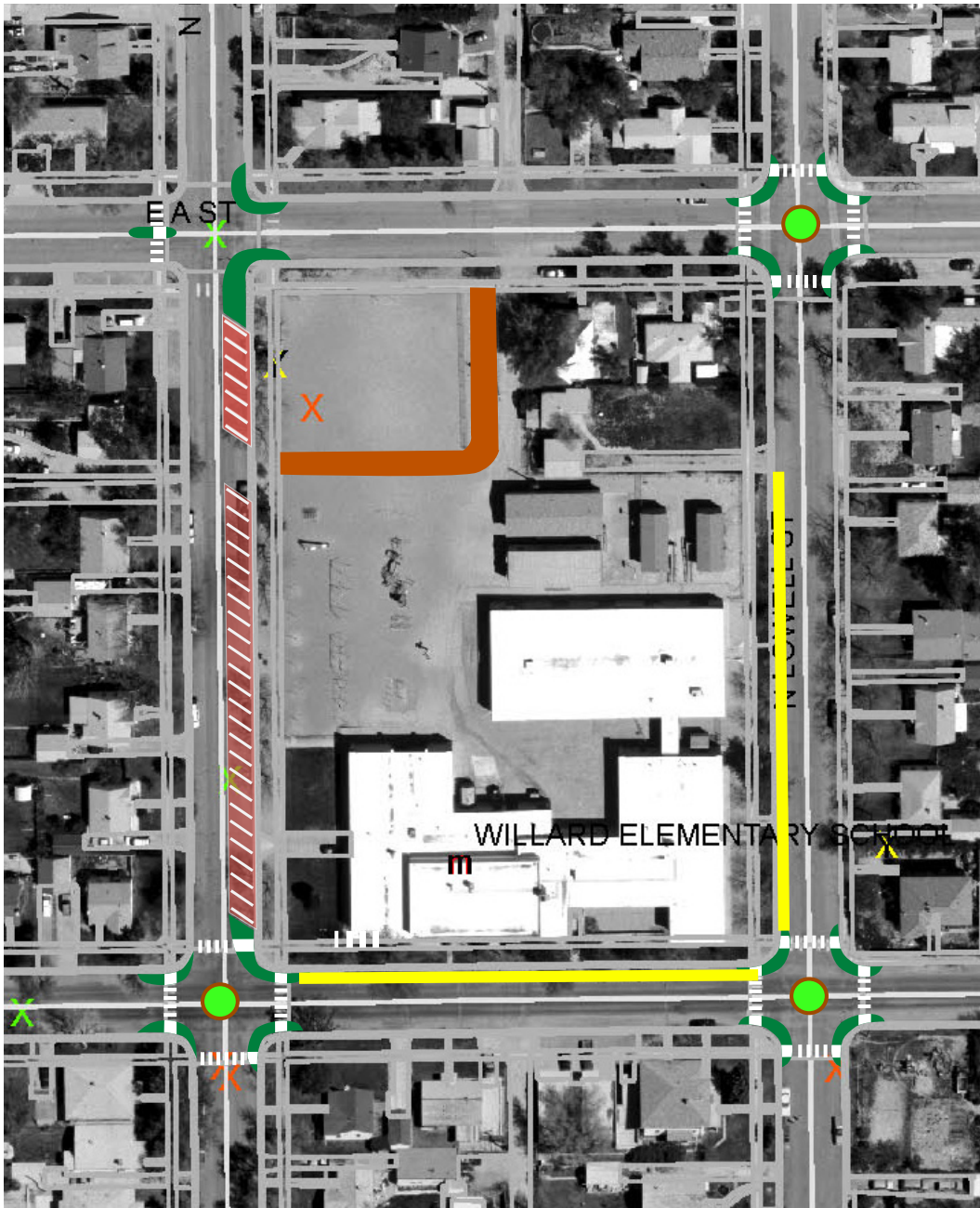
- As part of Safe Routes to School plan, create and print maps of the safest routes for children to walk to school.
- Ensure crosswalk markings along the route are bold, in particular on all legs of intersections near school and at major crossings such as Yellowstone. This will require periodic re-striping.
- Review and correct the pedestrian signal timing to cross 2nd St. at Elk St.
- Stripe head-out angled parking along east side of Elk St. in front of the school and bus parking lot for better containment of pick-up/drop-off and visitor parking.

Recommendations: Short-term

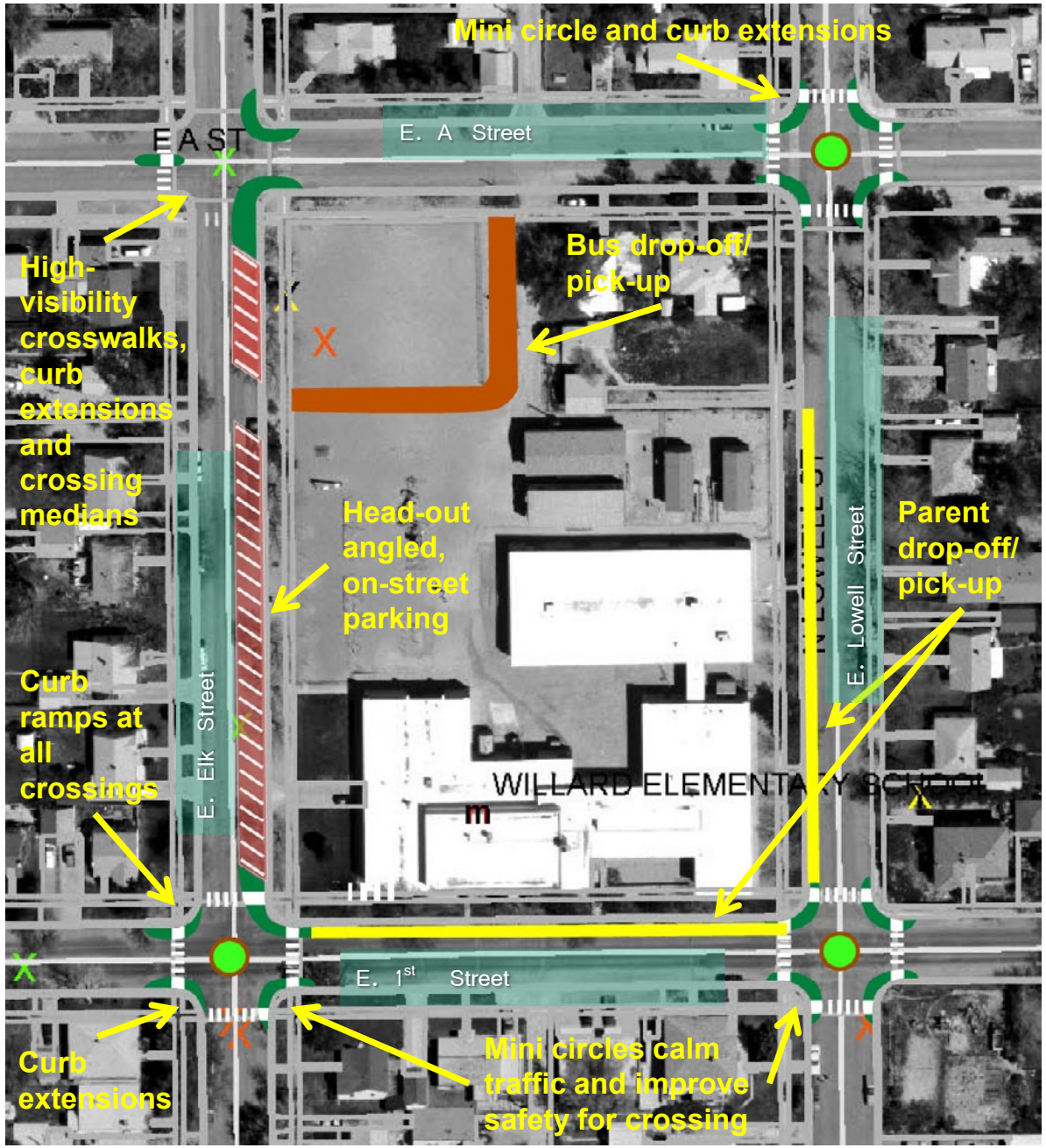
- Install curb ramps on intersection legs near school where they are currently absent.
- Improve sidewalk network by filling in missing segments near school.

Recommendations: Long-term

- Work with the state DOT to implement a road diet on Yellowstone as part of corridor improvement with added bike lanes.
- Use Safe Routes to School funds when available to close existing gaps in sidewalk network.
- Incorporate traffic mini-circles, or other options such as chicanes or raised crossings, along 1st Street at Elk Street and A Street at Lowell Street to slow down vehicle speeds.

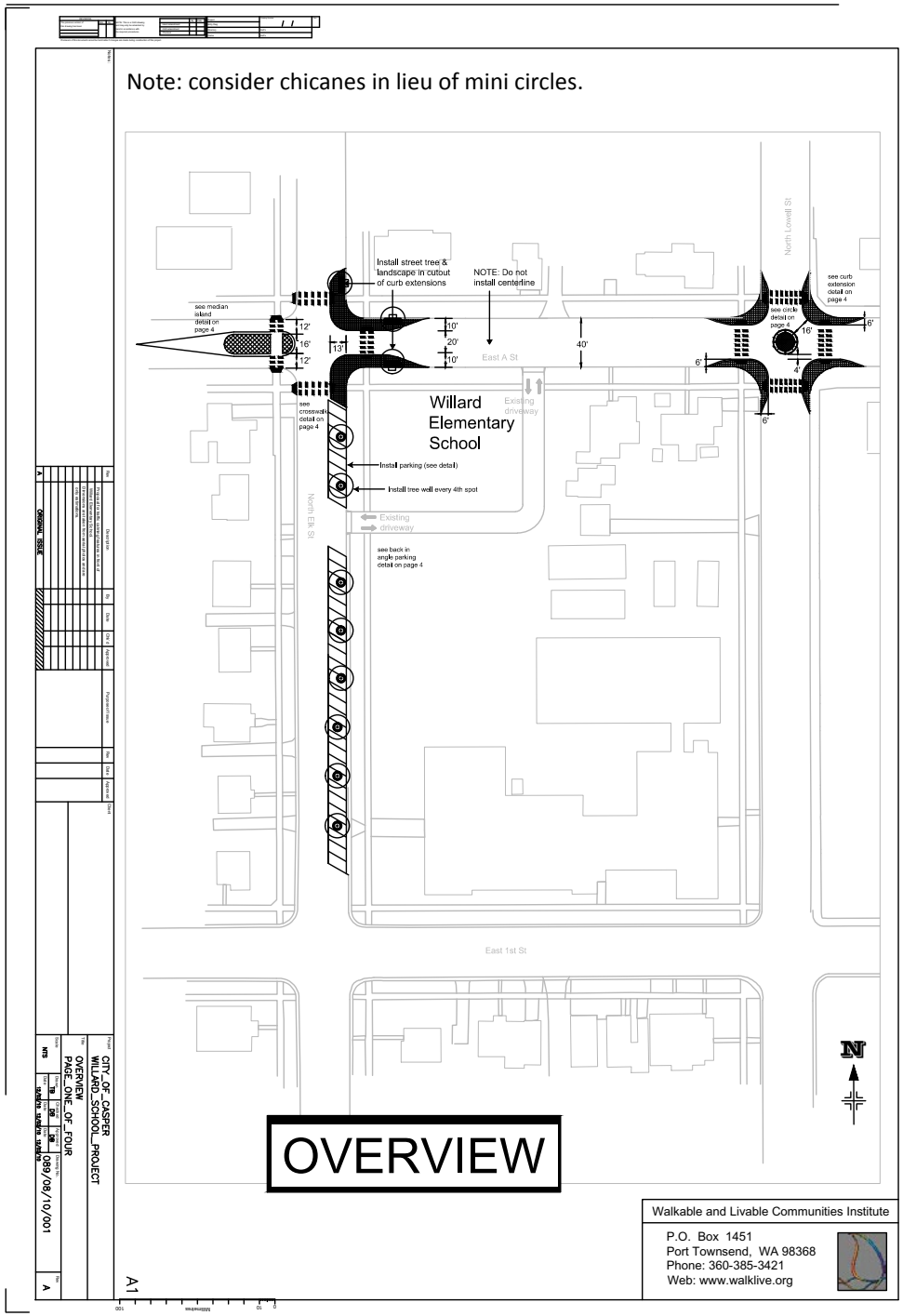


Willard Elementary School



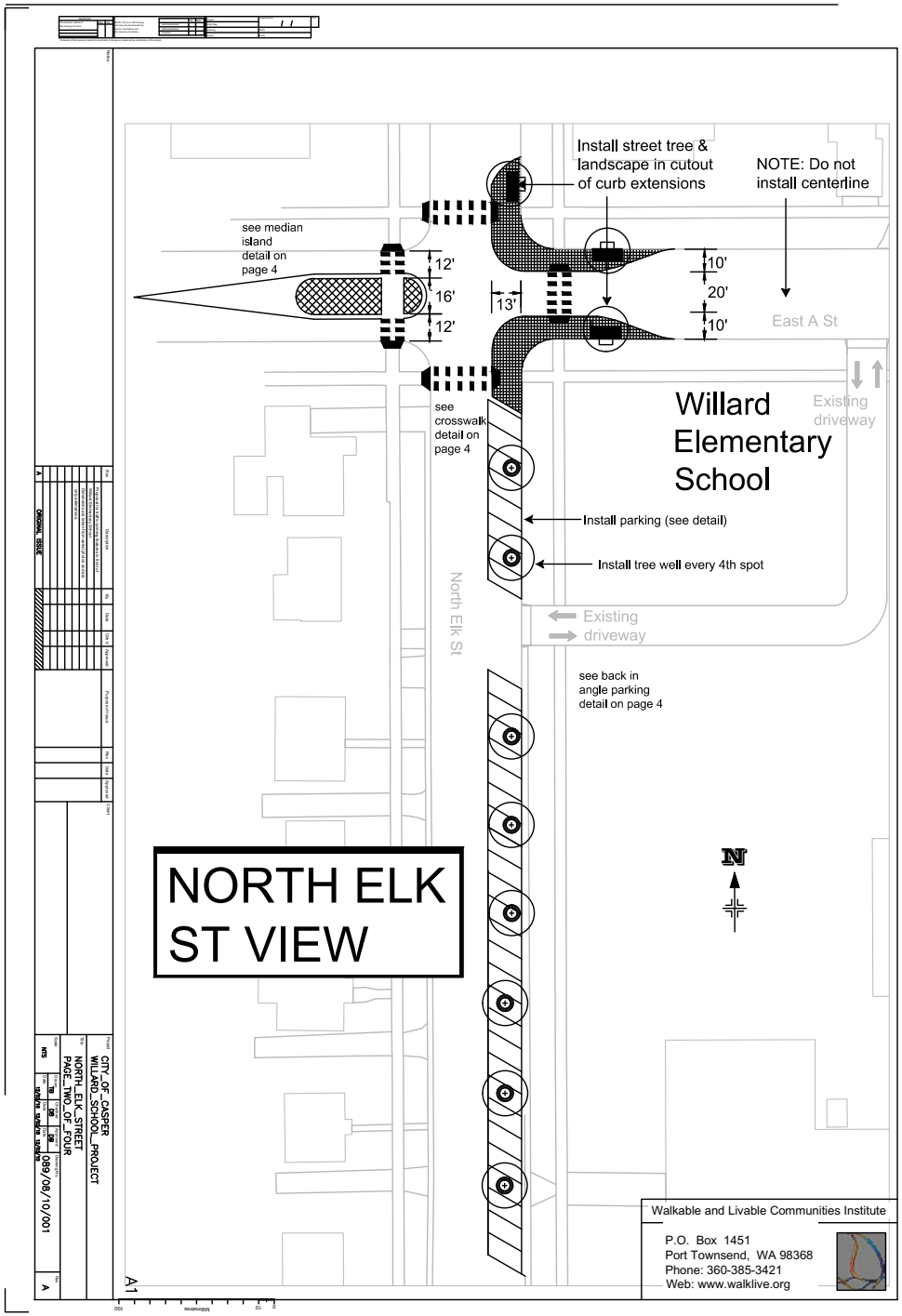
Willard Elementary School

See electronic attachments for detail in drawings.



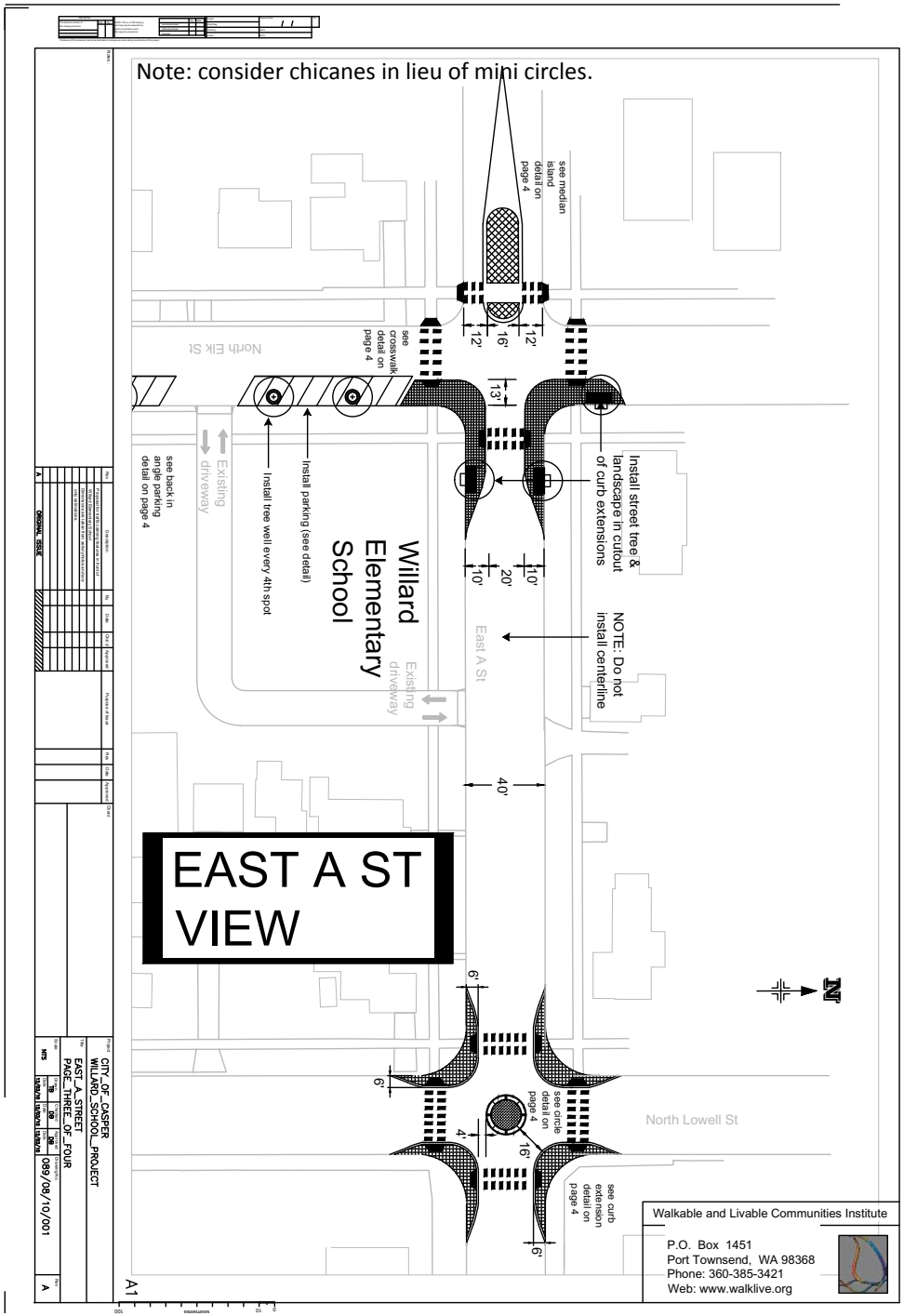
Willard Elementary School

See electronic attachments for detail in drawings.



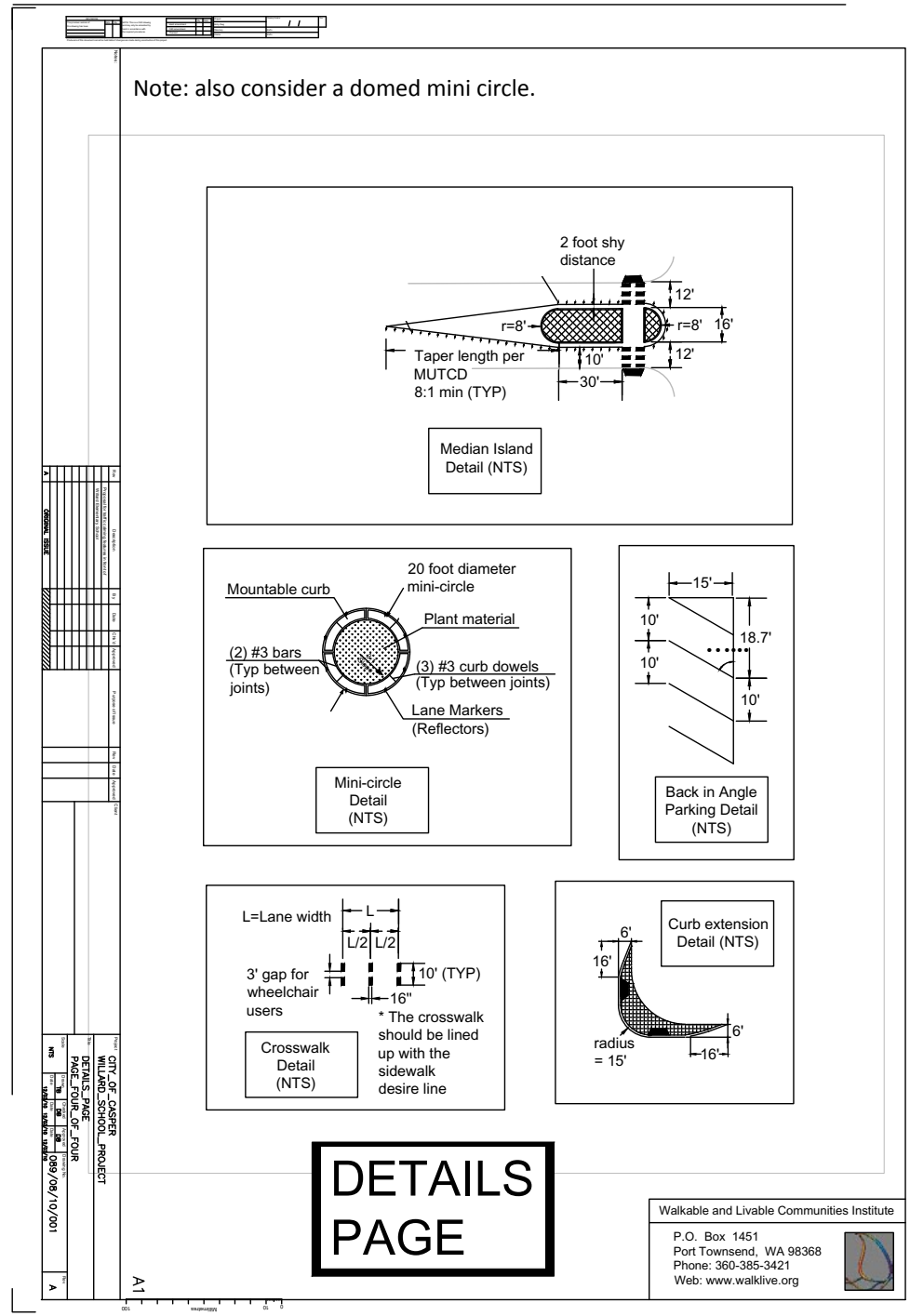
Willard Elementary School

See electronic attachments for detail in drawings.



WILLARD ELEMENTARY SCHOOL

See electronic attachments for detail in drawings.



Bar Nunn Elementary School

Attendees

- Mayor Jerry Petty – Town of Bar Nunn
- Diane Guerttman – Safe Kids of Central Wyoming
- John Blase – Natrona County Sheriff's Department
- Rene Rickabaugh – School Principal

Assets

- Larger school site
- Strong parent and community involvement that includes elected official support, police and principal engagement, as well as local advocates for biking and walking
- Bicycle and pedestrian trail connection to school built with Safe Routes to School funding
- Secure bicycle parking area

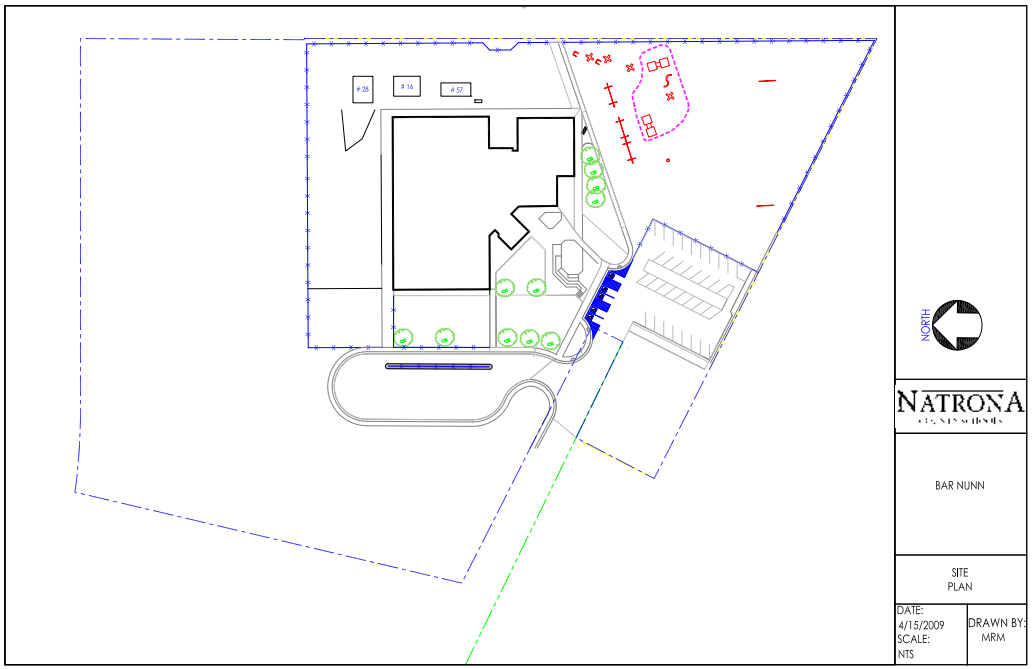
Bar Nunn Elementary School

Issues and Opportunities

- There is only one vehicular access point to school campus.
- The parent drop-off/pick-up zone requires further definition since pick-up and drop-off currently occurs in several locations.
- Parent and visitor parking at present is not designated. Parking should be delineated.
- The alley access to school complicates current drop-off/pick-up procedures.
- All planning and design efforts need to take into account how pedestrian infrastructure relates or will relate to the school's entrance and how the school relates to the surrounding neighborhood it serves.

Retain the bicycle parking.

Strong involvement is present.

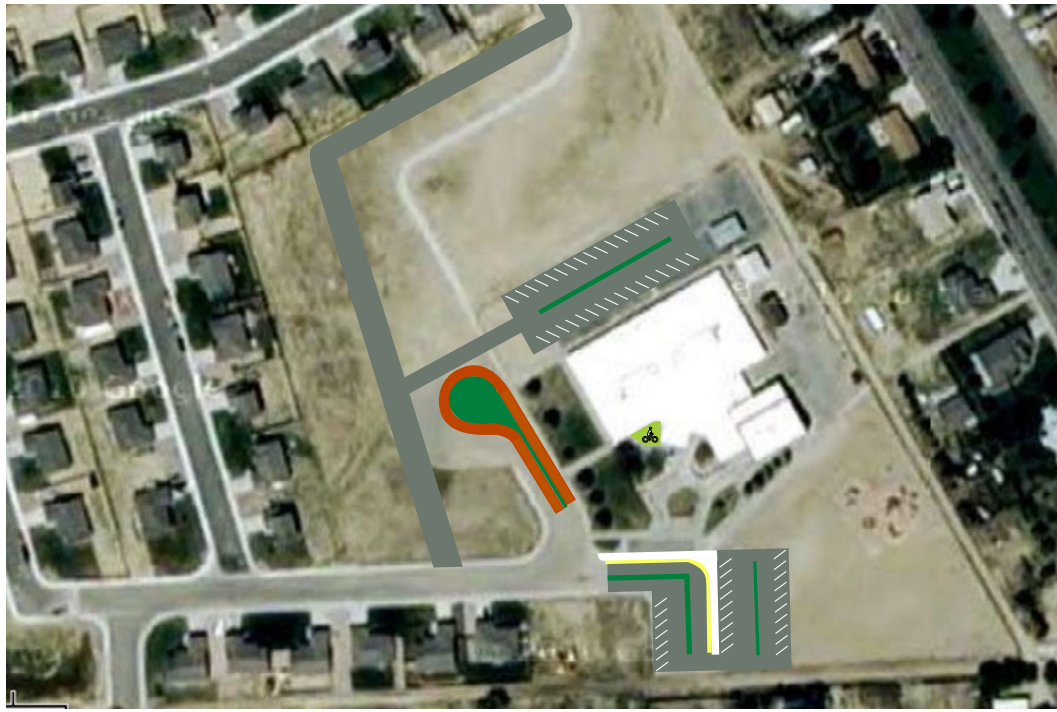


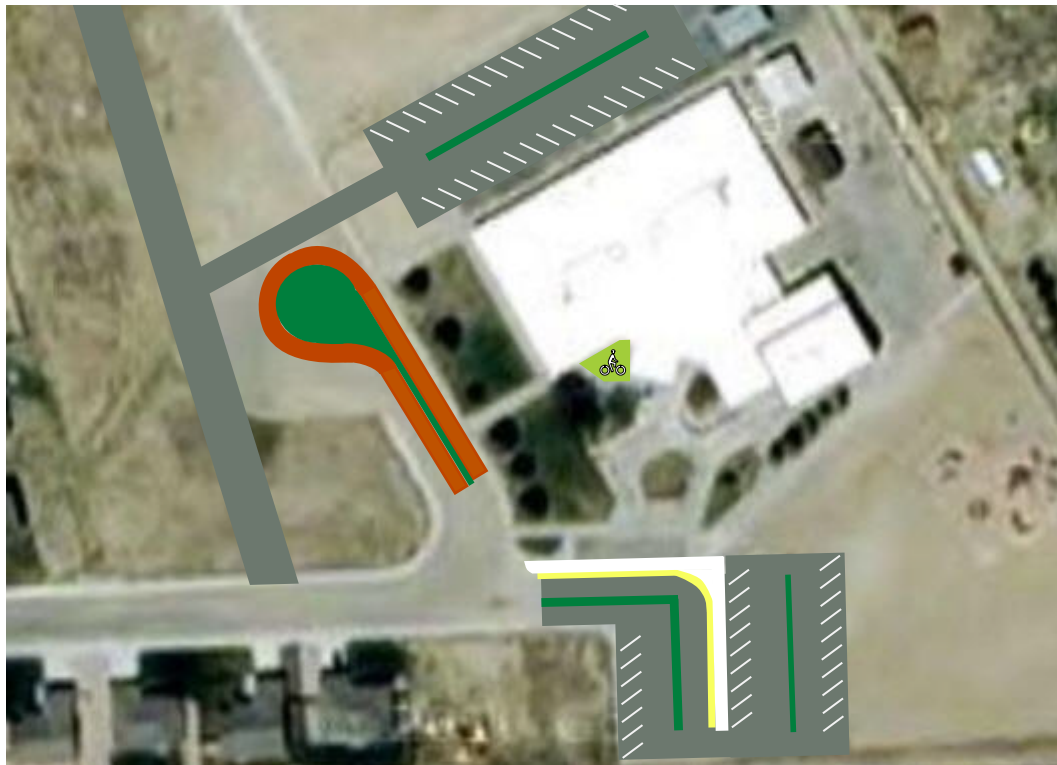
Existing site.

Re-configure drop-off/pick-up.

Re-configure existing parking.

Bar Nunn Elementary School





Recommendations: Immediate

- Move the bicycle parking to right in front of the school.
- Re-configure existing parking, moving current staff parking from south side to north side of school.
- Separate pedestrian access points from vehicle entrances when re-configuring parking.
- Create a visitors' parking lot on the south side of the school. Create a drop-off and pick-up loop in the front of the school and a curb separating visitors' parking.
- Create a bus loop. The bus pick-up and drop-off area should be signed as BUS ONLY so pedestrians, bikers, and other vehicles steer clear of moving buses.

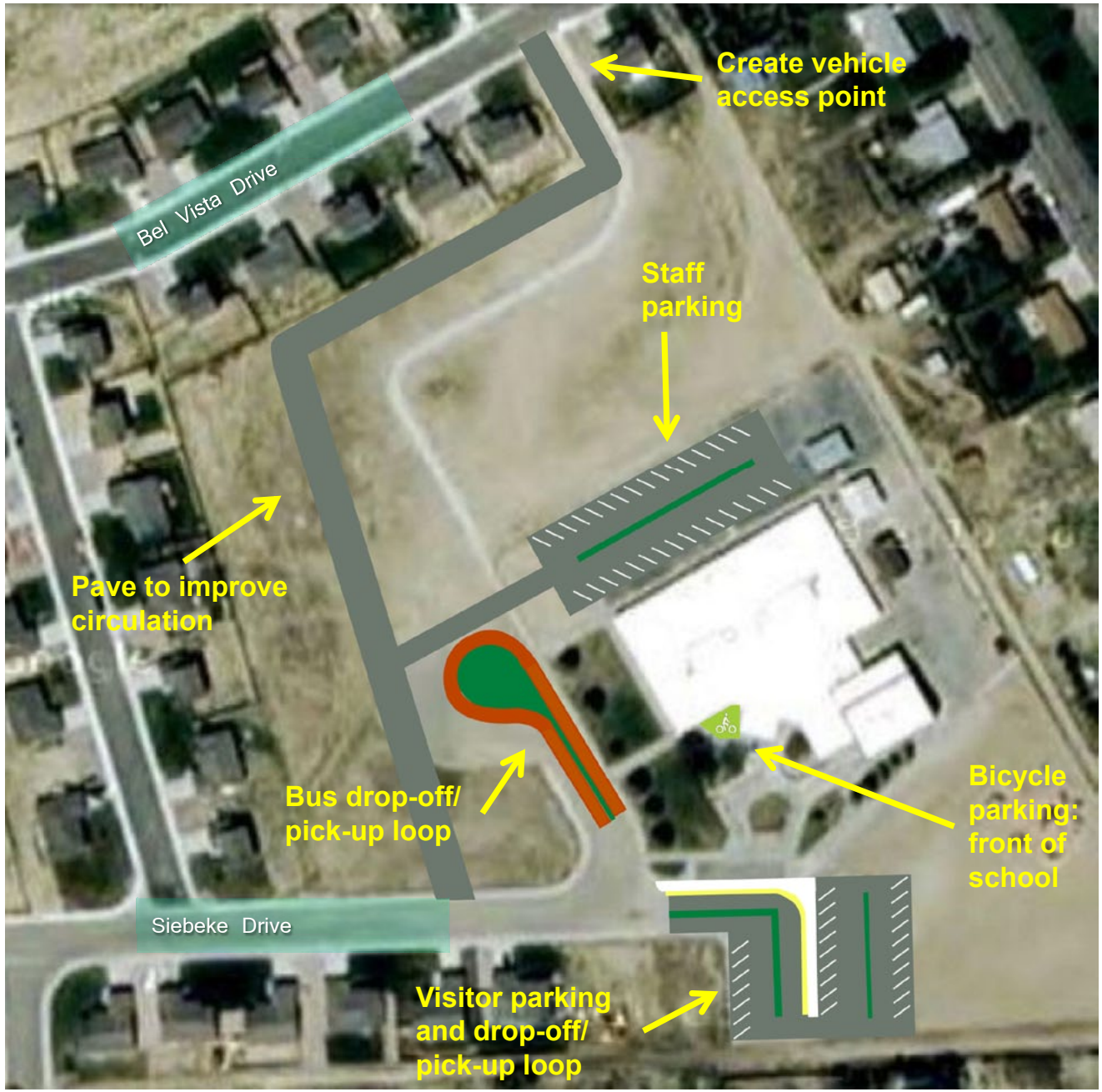
Recommendations: Short-term

- Pave part of the adjacent grass area and alley west of existing staff parking area to improve circulation of drop-off/pick-up and parent/visitor parking.
- Complete any sidewalk gaps leading to school grounds from adjacent street network to ensure that pedestrian infrastructure is contiguous along school routes.

Recommendations: Long-term

- Create a second vehicle access point on the north side of school campus for better and safer traffic circulation.

Bar Nunn Elementary School



CY Middle School

Attendees:

- David Dab - CY Middle School
- Dean Braughton - Principal
- Lisa Allen - Assistant Principal
- Kevin Padgett - Assistant Principal
- Jason Gutierrez - School District
- Kimberly Holloway - City Council
- David Hough, Craig Collins, Gary Clough, and April Getchius - City of Casper
- Mike Thompson - Casper Police Department
- Chris Dibble, Patrick McJunkin, and Anthony Boyle - Casper Fire Department
- Leah Reeb - Casper Area MPO

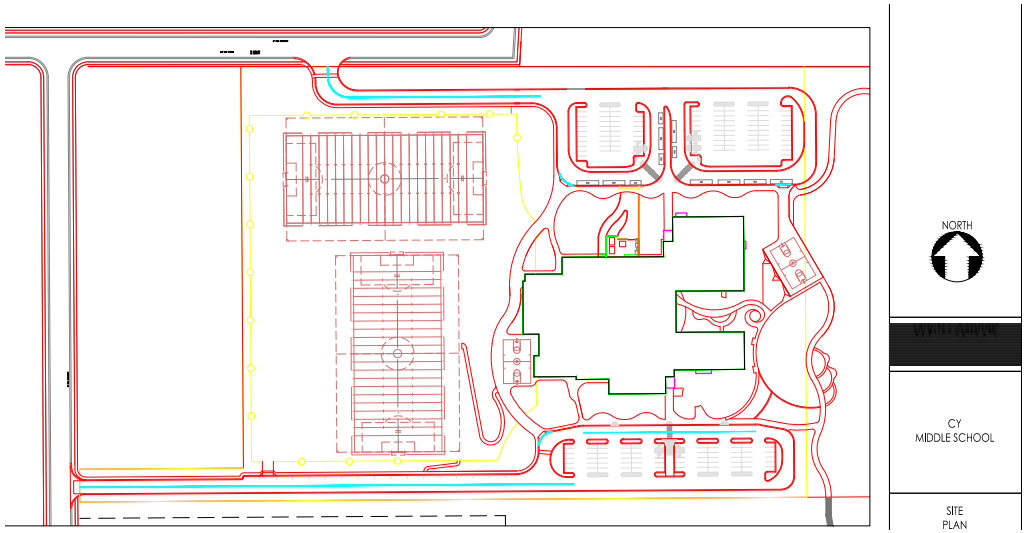
Assets:

- Residential nearby; additional planned housing will allow many children to walk, bike or roll to school
- Short distances to school
- Trail connections to neighborhoods started
- Sidewalk network connected
- Three approaches to access school
- Newly constructed school

CY Middle School

Issues and Opportunities:

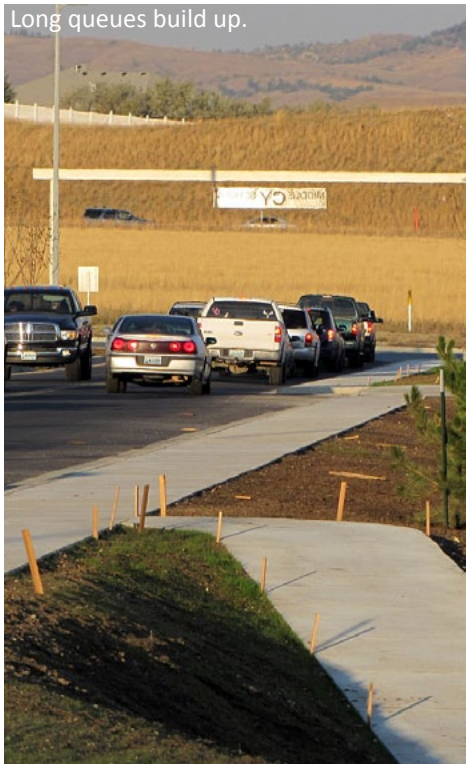
- The 40-acre site to the south of CY Middle School, which is reserved for a future high school, is remote and isolated from the neighborhoods.
- Separate signage for the buses and parents dropping kids off for sports and other school-related activities is not clearly marked.
- The steep grade at Wyoming Blvd. and Eagle Dr. intersection may be a problem during the winter. Heavy truck traffic poses additional safety risks.
- Traffic circulation needs to be addressed at the parent pick-up/drop-off site on the south side of the school and on Cyclone, especially at peak times.
- Consider parking for special events during planning and design.
- The trail behind the school is missing connections; trail connection to the southeast has unpaved steep slopes, which pose additional safety hazards.
- The wide travel lanes on Eagle and Talon, combined with a center turn lane (for future driveway access), create very wide three-lane roads and increase driver speeds, as well as safety hazards for pedestrians and bicyclists.
- Approach roads are over-designed and allow high vehicular speeds.
- Planter strips were not incorporated on newer streets; however, they should be in new designs.
- The current drop-off pattern and operations builds long queues. Back-ups need to be remedied in new designs.



Existing site.

More signage is needed.

Create better trail connections.



Long queues build up.

Roads are overly wide.

CY Middle School

Recommendations: Immediate

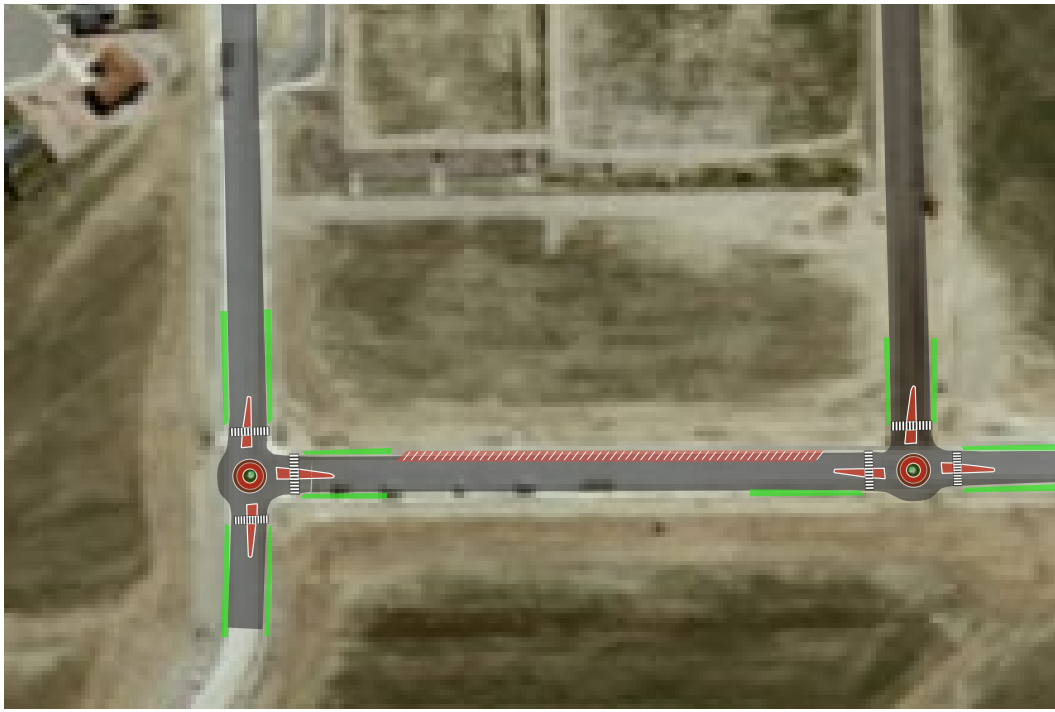
- Repaint to remove center turn lanes and center lines on the streets around the school. This helps slow vehicles and does not require construction. See "Addressing Potential Concerns," below.
- Road diets can be achieved by adding bike lanes and head-out angled parking on Eagle to reduce vehicle speeds and accommodate event parking.
- Wayfinding signage and pavement markings can be added to better direct parents in pick-up and drop-off procedures.
- The school should consider allowing access to the north-side school entrance for parent pick-up and drop-off to alleviate vehicular back-up on the south side of the school, as the bus traffic is limited.
- The pedestrian crossing at Wyoming Blvd. from the neighborhood to the school needs to incorporate better crosswalk markings, a pedestrian countdown signal, and signs alerting motorists to the presence of pedestrians.

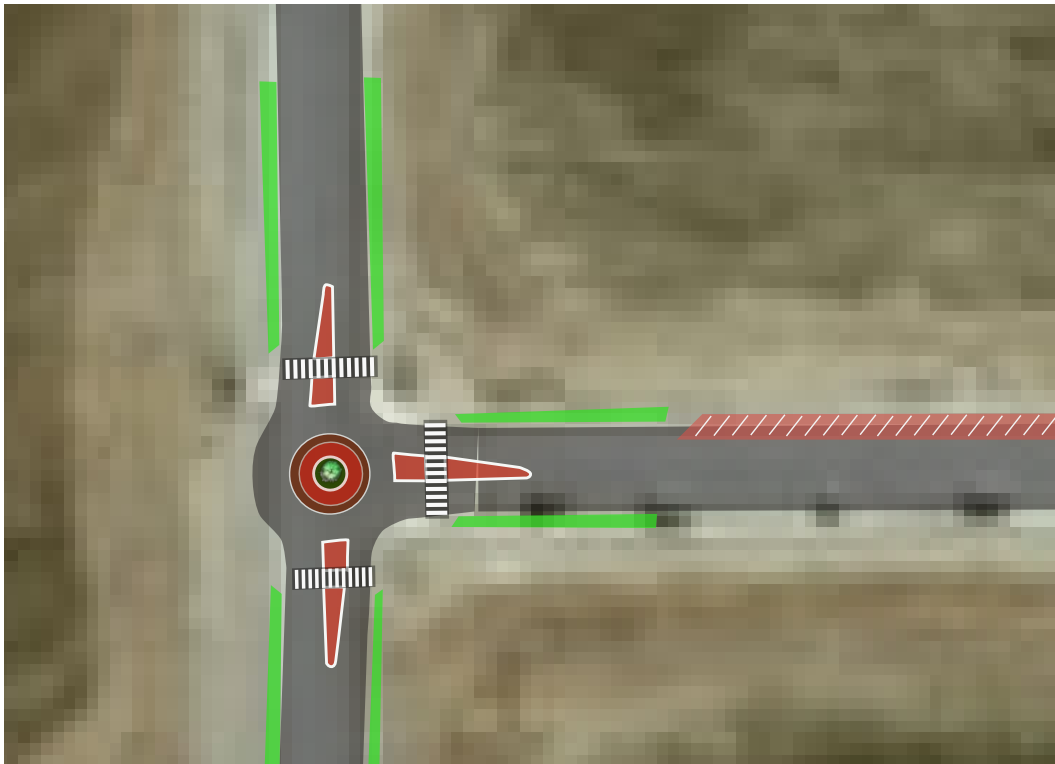
Recommendations: Short-term

- As one of the top ten projects in the Casper Walkability Study, CY Middle has significant trail connections that can be leveraged to connect the two paths on the east side of the school with the adjacent neighborhoods.
- The Safe Routes team and collaborative partners need to ensure that surrounding land use and zoning requires pedestrian and/or bicycle connections through the future high school, commercial and residential developments, as well as the development on the north side of the school.
- Require cross-access easements on commercial/retail parcels as they develop to limit the number of driveways. Reduce the lane width design standard to 10 feet with no center turn lanes. Shared driveways are safer for walkers and bikers and are best practices for low impact development.
- Incorporate bicycle and pedestrian connections from neighborhoods with cul de sac streets on north side of the school into the overall design.
- Center turn lanes on approach roads can be removed to allow for bike lanes. Bike lanes are needed to separate sidewalks from motorists.

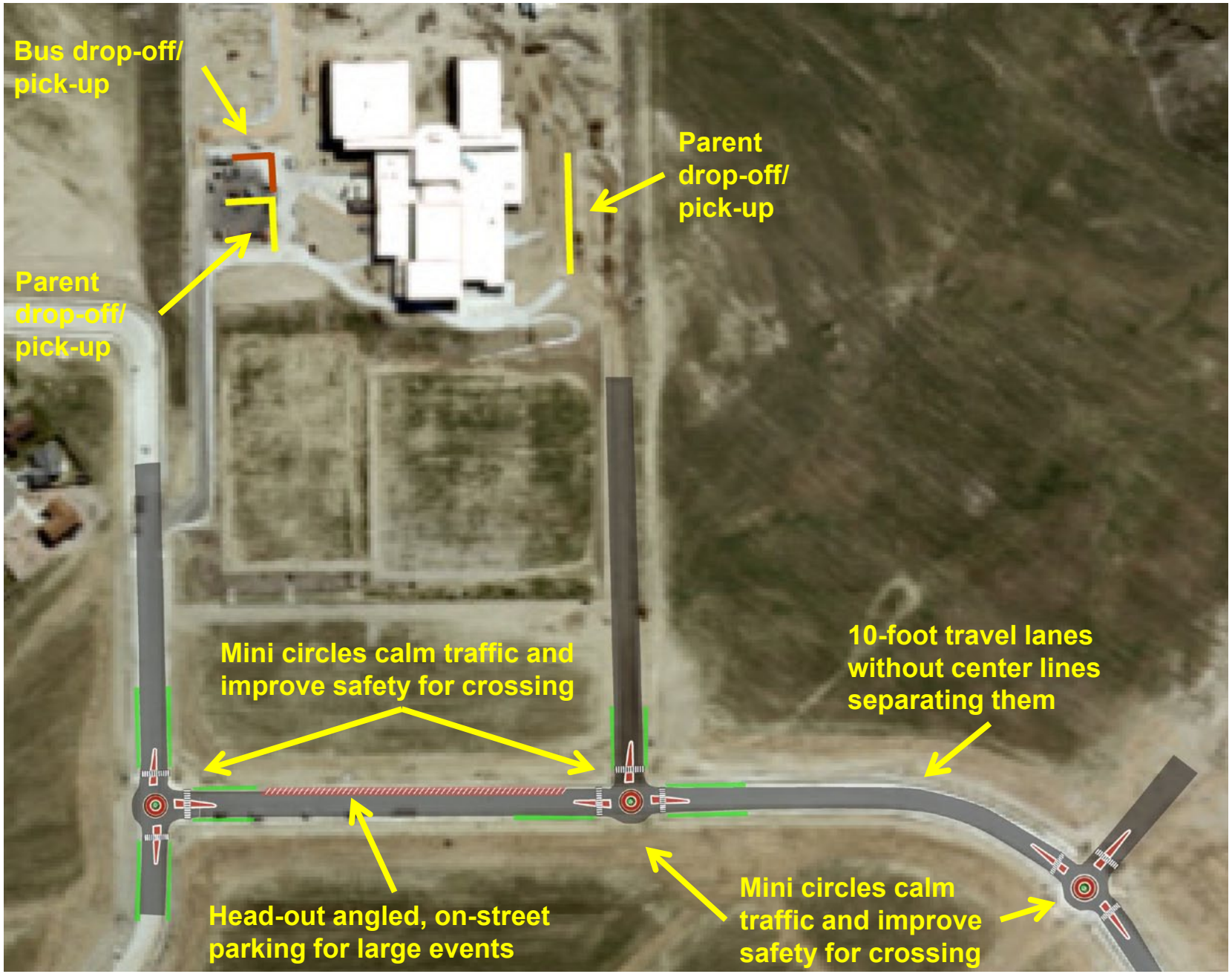
Recommendations: Long-term

- Install three mini traffic circles and head-out angled parking along Eagle.
- Through a combination of policy, code, and incentives, create nearby mixed-use neighborhoods with moderate density and multi-family housing types.





CY Middle School



Dean Morgan Junior High

Attendees:

- Chris Dibble, Ryan Neff, Patrick Bennett and Tim Cortex - Casper Fire
- Michaela Sisk, Scott Baxter and Andrew Beamer, Casper Engineering
- Peter Meters, Casper CMO
- Kate Sarosy, Casper City Council
- Larry Meeboer, Dean Morgan
- Catherine Morris, NCSD
- Tracey Durand, Parent
- John Hatcher and Lt. Mike Thompson, Casper Police

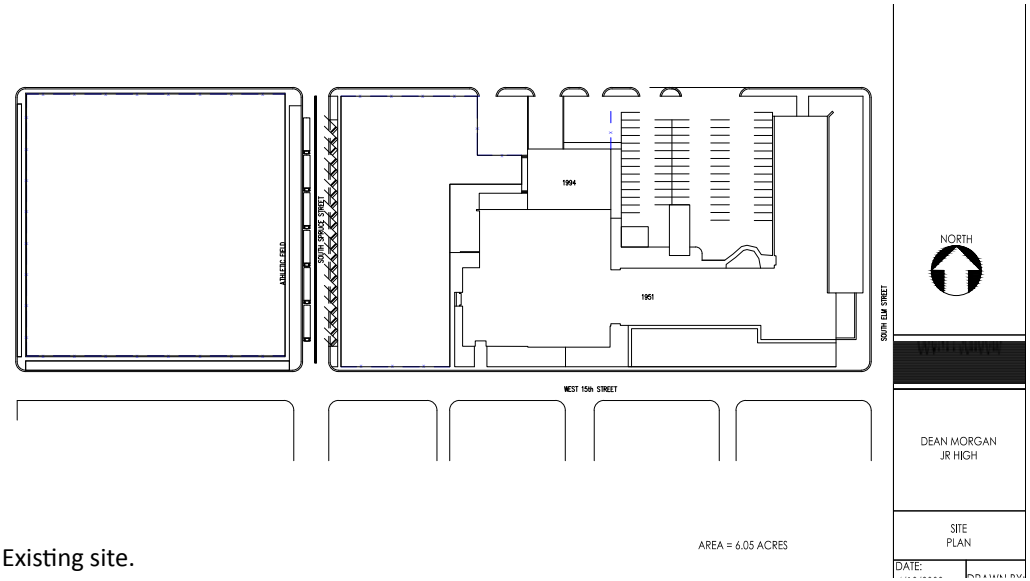
Assets:

- Grid street network and neighborhood around school
- Median at crosswalk on Oak St. at 15th Street
- Sidewalk network around school
- Excellent central location and easy access for many families
- Adequate open space near school and within school site

Dean Morgan Junior High

Issues and Opportunities:

- Adults are concerned about children crossing Spruce St. from school to athletic fields.
- A well-defined drop-off/pick-up area is needed for parents.
- Sidewalks are in poor condition due to stormwater and drainage issues.
- ADA-compliant curb ramps and crosswalks are missing along Elm.
- For change to occur here, significant community buy-in will be needed. See subsequent sections of this report for strategies and best practices.
- There are no curb ramps at 15th and Elm. These roads also are overly wide, which induces speeding and creates lengthy street crossings for pedestrians. Likewise, speeds appear to be too high at 15th and Oak, where the lanes also are too wide. Mark parking lane lines to help visually narrow the travel lanes.
- Pedestrians have observed problems at one-ways (12th and 13th streets) where one car stops and the next lane does not when a child is crossing the street.
- An opportunity exists to create a model project for the school and community to share park and playground space.



Existing site.

Sidewalks are damaged.

Drop-off/pick-up areas need improvement.

Curb ramps are missing.

Close Spruce to traffic during school hours.

Dean Morgan Junior High

Recommendations: Immediate

- For the safety of students crossing to the athletic fields from the school, close Spruce Street during school hours. This will still maintain the integrity of a grid street network. Enhanced crosswalks, trees and head-out angled parking on both sides of the street, and curb ramps at intersections will address daily traffic safety issues, provide additional parking for special events, and create a more people-friendly environment.
- Outreach to the surrounding community is needed to educate community members about how these changes will jointly address their issues, while improving the safety around the school.

Recommendations: Short-term

- Center lines on 15th can be removed to help calm traffic.
- Bike lanes should also be added for enhanced safety. It is noted that doing so would impact on-street parking.
- To visually narrow the street and slow vehicle speeds, paint the edges of the travel lanes 10 feet from the absolute center of the street. Paint either a parking lane line, or a strong edge line that is at least eight inches wide.

Recommendations: Long-term

- The traffic circulation of 12th and 13th streets needs further review for possible conversion to two-way with crosswalks and median islands. This would impact on-street parking.
- Curb extensions, ramps, and high-visibility crosswalks can be added on all legs of W. 14th St. at S. Elm St. and W. 15th St. at S. Elm St. Implementation should start closest to the school and move outward as funding allows.
- Consider this street renovation as an opportunity for the community and school to share park and playground space.

Dean Morgan Junior High

Grant Elementary School

Attendees:

- Todd Sheppard - Parent
- Tom Mesecher - School Principal
- Diane Guerttman - Safe Kids of Central Wyoming
- Chris Dibble, Ryan Neff, and Patrick Bennett - Casper Fire Department
- Mike Thompson, Scott Schulte, and Chris Hadlock - Casper Police Department
- Jason Gutierrez - NCSD
- Jason Knopp - City of Casper

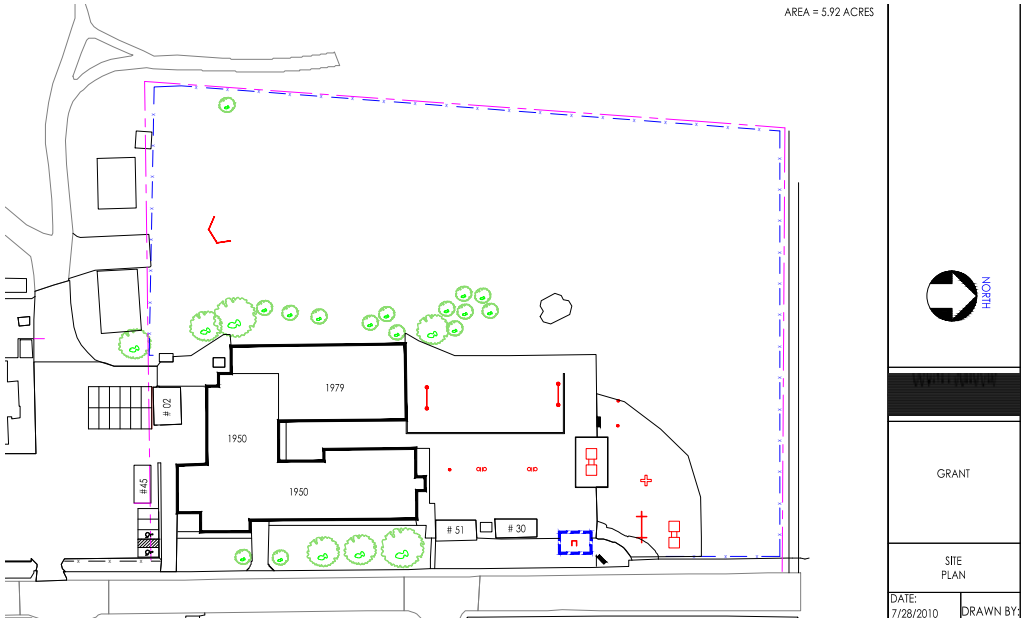
Assets:

- Traffic volumes around school mostly less than 2,000 vehicle trips per day
- Crosswalk striping
- Crossing guards

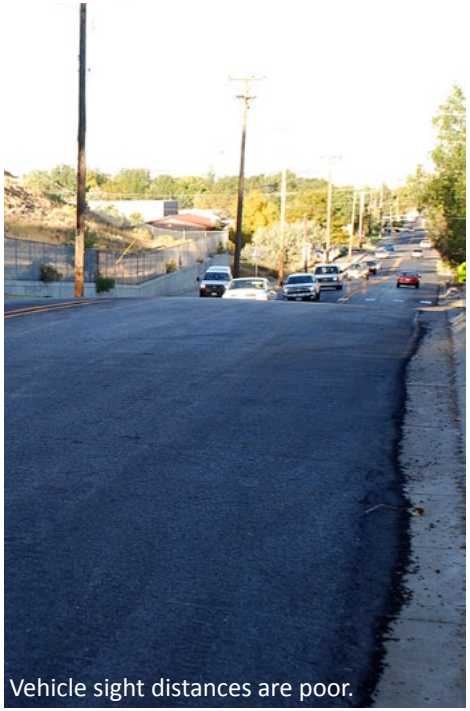
Grant Elementary School

Issues and Opportunities:

- Speeding, which residents report to be common on 15th and Oakcrest, is dangerous.
- Parent drop-off/pick-up is on the incorrect side of the street, as children have to cross the street to access the school.
- On 15th, a number of problems are noted: poor vehicle sight distances, ice in the winter causes sliding, and the street is overly wide.
- The sidewalk network near the school has gaps, and sidewalks are completely absent along the golf course from the school to 21st St.
- Irrigation water creates muddy and slippery conditions on the sidewalk causing kids to travel in the street to avoid these obstacles.
- Large gravel patches spilling over from play area onto sidewalk near 15th cause further obstacles.
- A walking school bus program will help mitigate safety concerns. Also, since kids are bused in from Midwest, about 45 miles away, park-and-ride programs should be offered. See subsequent sections of this report for strategies and best practices.



Existing site.



Vehicle sight distances are poor.

Curb ramps are missing.

Sidewalks have gaps.

Irrigation creates slippery conditions.

Grant Elementary School

Recommendations: Immediate

- Safe Routes education and outreach strategies can be implemented. Children can safely walk together as part of a walking school bus with volunteer parents to help alleviate safety concerns and distances barriers.
- Parking on the correct side of street for parent drop-off/pick-up needs to be enforced. Furthermore, new procedures should be implemented restricting parking on the curb-side of Oakcrest. During-drop-off/pick-up times, drivers should be required to remain in their vehicles.
- Better containment of gravel and irrigation water pooling onto the sidewalk is needed in front of the school.

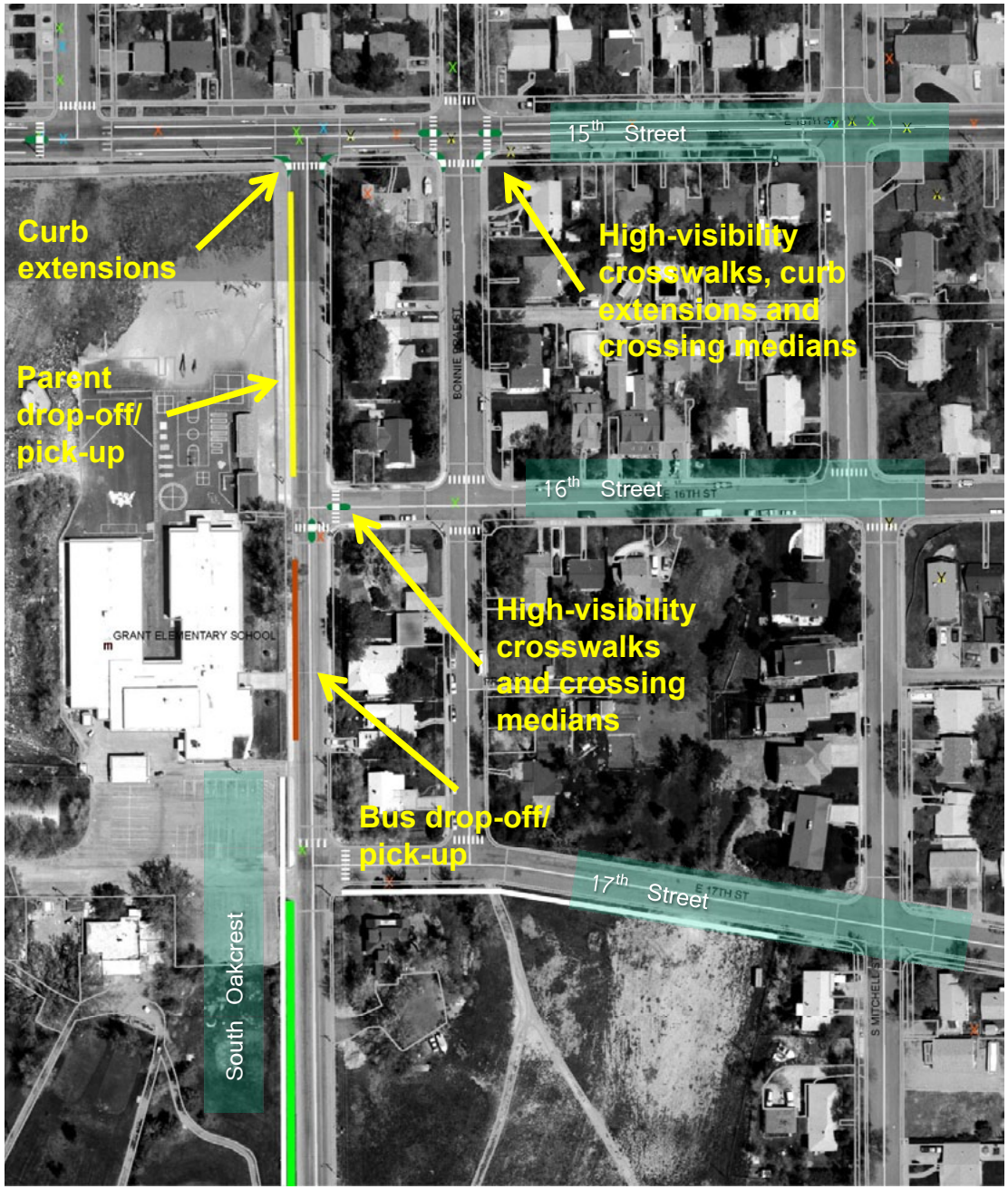
Recommendations: Short-term

- An eight-foot-wide sidewalk/multi-use path along Oakcrest from the school to at least 21st Street could be constructed with a six-foot parkway to allow snow to pile on the street edge, buffering pedestrians on path.
- 15th St. can be improved with a pedestrian median island on 15th at Bonnie Brae, curb extensions and new bike lane.
- Sidewalk gaps in network on streets near school should be filled in and curb ramps installed on all legs of intersections.
- The crosswalks on 15th and on S. Oakcrest (north of the school) need median islands for pedestrians, to reduce crossing widths and enhance safety.

Recommendations: Long-term

- Curb extensions and bike lanes along Oakcrest are needed to calm traffic.
- Bike lanes on 21st are needed to connect the bike network to the trail system. This may impact on-street parking on one side of the street.
- Additional on-street parking on 15th should be provided.
- Adapt the edge of the golf course to serve as a trail that connects to distant neighborhoods by installing a 10-foot-wide trail along the course's edge.
- Extend new medians down the hillside to slow traffic down and make crossings more visible to motorists.

Grant Elementary School



North Casper Elementary School

Attendees:

- Phil Hubert - Principal
- Jason Gutierrez – NCSD
- Craig Collins – City of Casper Planning
- Michaela Sisk and Scott Baxter – City of Casper Engineering
- Chief Mark Young and Marty Mittelstadt – Casper Fire Department
- Tom Forslund – Casper City Manager
- Chief Tom Pagel – Casper Police Department

Assets:

- Neighborhood school site with wide sidewalks in front of school; however, connecting sidewalks are narrow.
- Connected urban street network grid with correctly marked crosswalks and tight turning radii at intersections is a plus.
- A 10-minute delay between kids' release time and bus pick up time provides a safer environment for children who are walking and biking.
- The school principal is dedicated, motivated, and already conducts outreach periodically to the surrounding neighborhood.

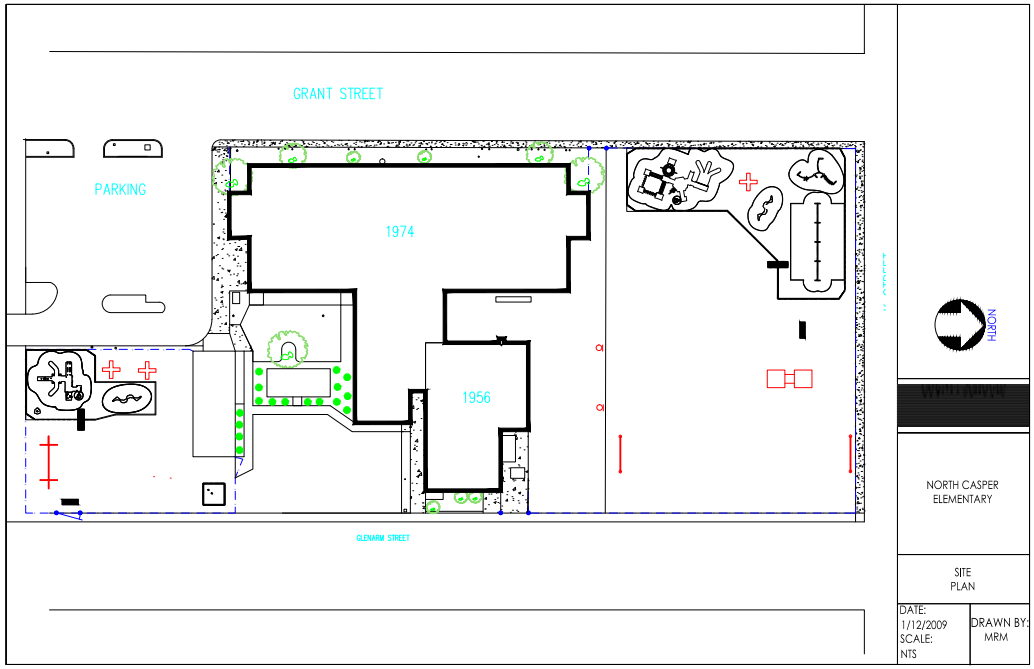
North Casper Elementary School

Issues and Opportunities:

- There are missing sidewalk segments with no right of way along K Street.
- The team observed sidewalks being blocked by vehicles in driveways and vehicles parking on sidewalks.
- Additional on-street parking is needed to address parking concerns.
- Crosswalk markings on all legs of intersections are needed near the school.
- Calming measures need to be introduced to reduce vehicle speeds on K Street.
- Wayfinding signage for school entrance is absent.

Better crosswalk markings are needed.

Sidewalks are missing.



Existing site.

Sidewalks and curb ramps are missing.

Remove the yellow paint and allow parking.

North Casper Elementary School

Recommendations: Immediate

- Re-stripe K Street with no center line from Center to Bryan Stock Trail.
- Bike lanes with widths of five feet and necessary striping to delineate bike lanes are needed along the north side of K. Six-foot bike lanes are needed along the south side of K. It is noted this would impact on-street parking.
- The “no parking” yellow line can be removed along east side of N. Grant Street for additional on-street parking.
- Additional school crossing signage can be mounted on to the backs of existing signs.
- Striping is needed at all crosswalk legs of the intersections at: N. Grant and K Street; K Street and Glen Arm Street; and H Street and N. Grant. Visible striping of crosswalks alerts motorists to expect pedestrians and should be provided for all crosswalks at an intersection.

Recommendations: Short-term

- Complete any sidewalk gaps leading to school grounds from adjacent street network; prioritize K Street for connectivity to athletic fields and the Boys & Girls Club.
- Construct ADA compliant curb extensions on street corners of K Street and Glen Arm near school.
- Accessible bike facilities may be needed on and around school grounds once Safe Routes strategies are implemented to encourage children to bike to school.
- Where sidewalks are very narrow, bike lanes are even more important, as they provide a buffer between vehicle travel lanes and sidewalks.

Recommendations: Long-term

- Construct well-designed traffic mini-circles or other slowing measures along K Street at N. Grant and Glen Arm streets as a traffic calming measure.

North Casper Elementary School

Oregon Trail Elementary School

Attendees:

- Laurie McLain - Parent
- Shawn Elm, Anthony Boyle, and Patrick McJunkin - Casper Fire Department
- Carolyn Griffith, Craig Collins, Jason Knopp, Tony Zettlemoyer and David Hough - City of Casper
- Randall Harris - School Principal

Assets:

- Strong parent involvement
- Well located to serve significant neighborhood population, most students live within one mile
- Mature trees
- Traffic Volumes on streets around school less than 7,000 average daily trips

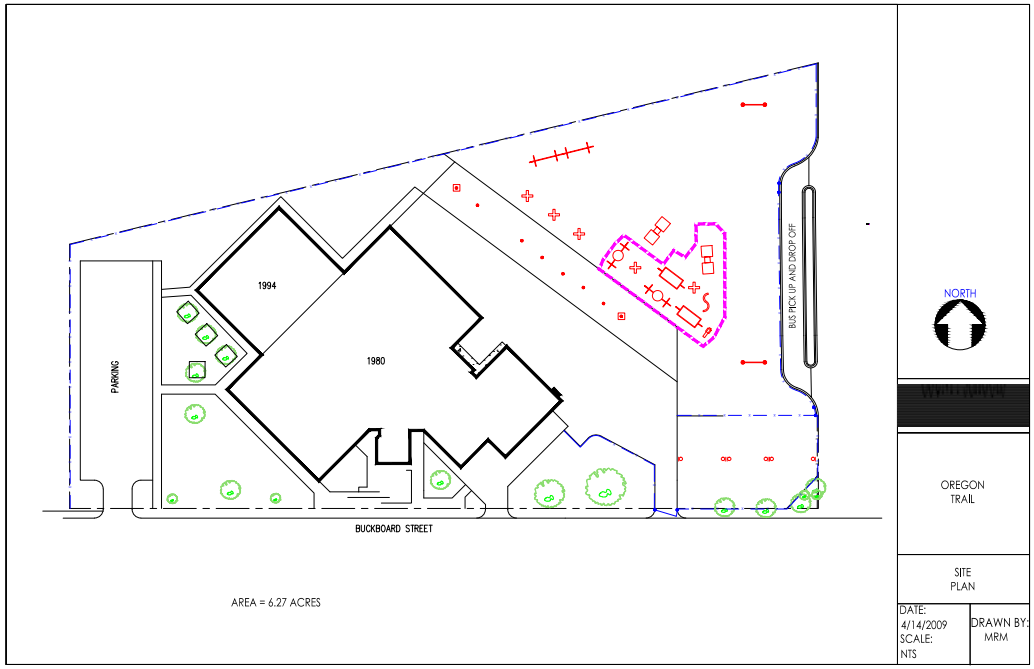
Oregon Trail Elementary School

Issues and Opportunities:

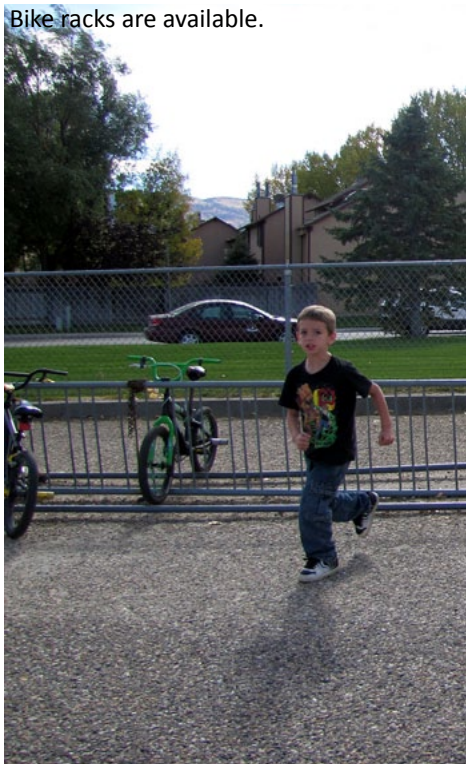
- There is only one way in and one way out for vehicles on school grounds.
- There is no clear entrance to the school.
- Crosswalks are not marked at intersections.
- ADA compliant curb ramps are absent.
- Bus drop-off area is congested from parents parking during arrival and departure times.
- An opportunity exists to link Oregon Trail to a newly planned park improvement.

There is no clear entrance to school.

Sidewalks are missing in places.



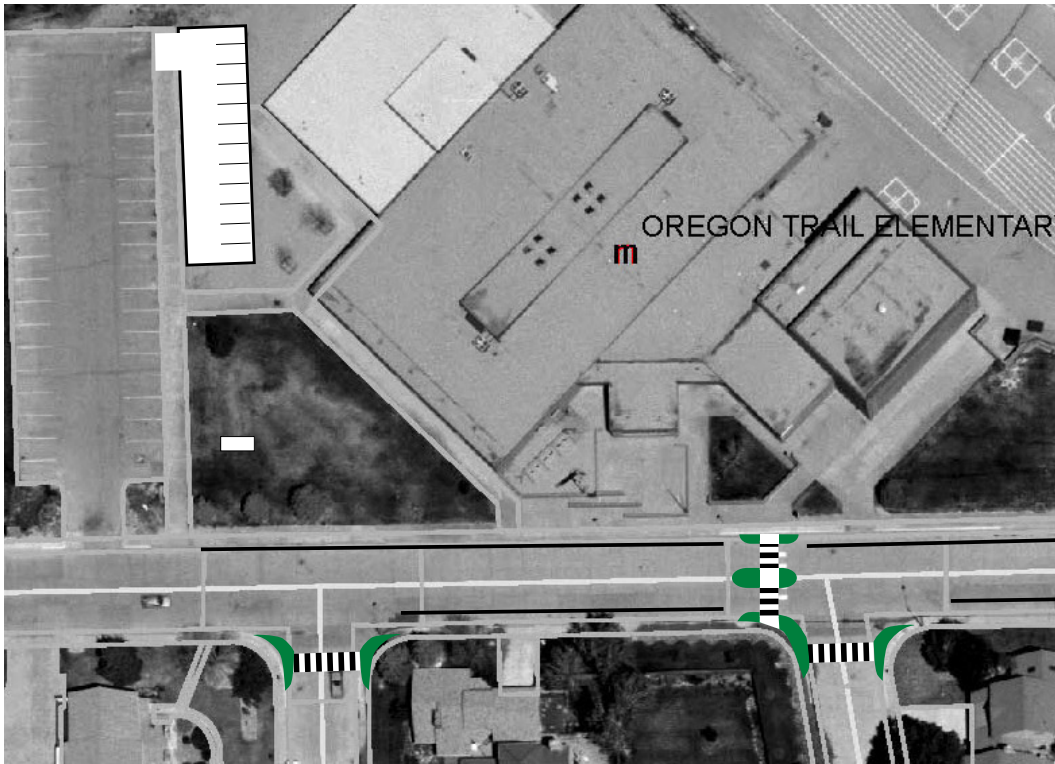
Existing site.



Bike racks are available.

Separate the bus zone from parent pick-up.

Oregon Trail Elementary School



Recommendations: Immediate

- A median island on Buckboard is needed with curb extensions on all corners at Buckboard and Stagecoach Drive.
- Parking can be addressed by partially removing yellow paint from the curbs on Buckboard to allow for additional parking.
- Crosswalk signage on both sides of sign post is need for pedestrians.

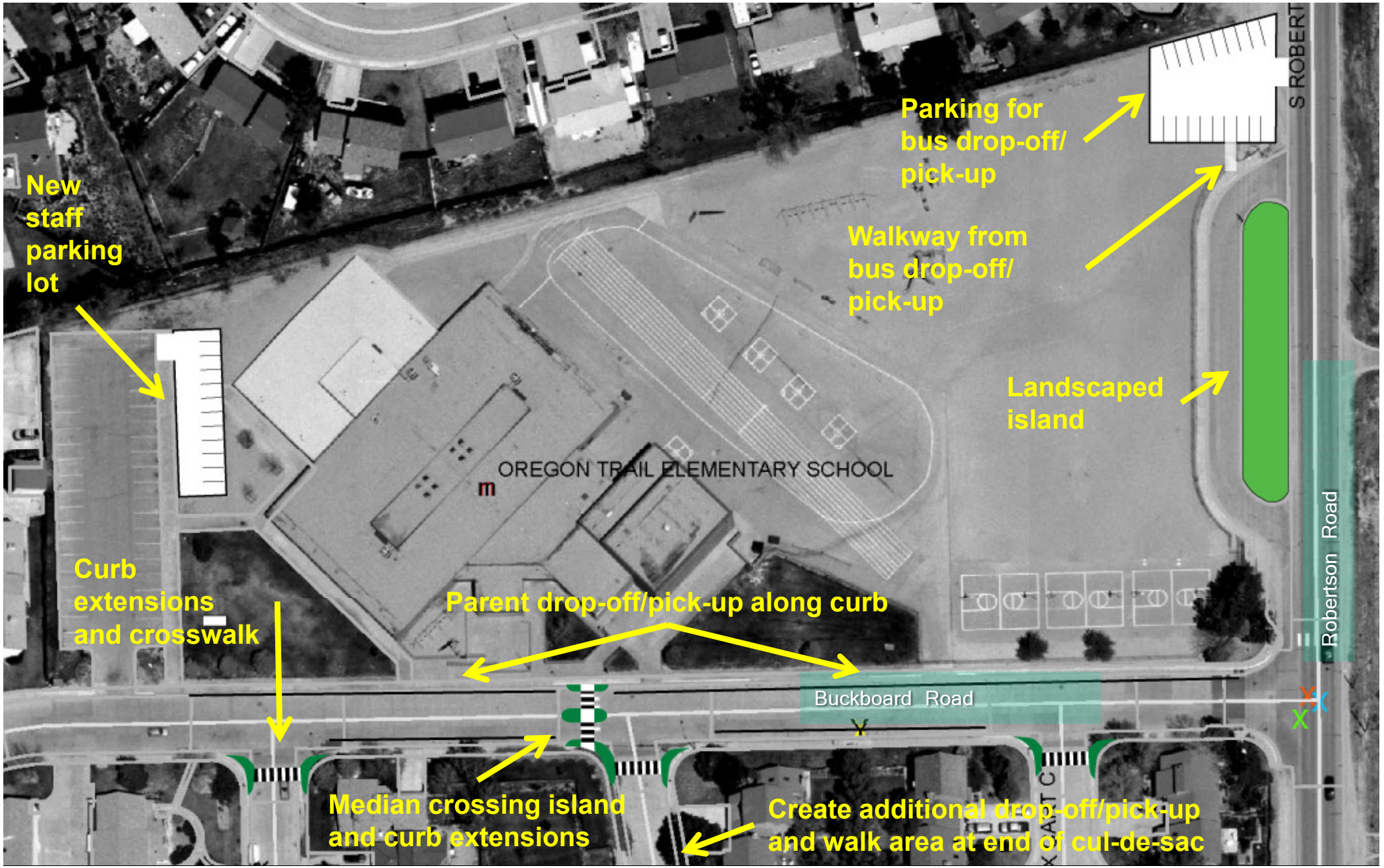
Recommendations: Short-term

- Provide paved parking slots near bus drop-off/pick-up areas.
- Separate bus zone and parent drop-off/pick-up areas by expanding the teacher and visitor parking lots.
- Provide wayfinding signage to direct parents through new drop-off and pick-up areas.
- Provide education to parents on the importance of adhering to new drop-off and pick-up procedures.

Recommendations: Long-term

- Connect Stagecoach Drive to Trevett to provide an additional, contiguous safe route to school.

Oregon Trail Elementary School



Park Elementary School

Attendees:

- Doris Waddell - Principal
- Kathy Fraser - Crossing Guard
- Streeter Boatright - Student, Bicycle Commuter
- Katrina Lorenzen - NCSD Student Wellness
- David Hough, Andrew Beamer, and Carolyn Griffith - City of Casper
- Danny Griswold - Casper Fire Department

Assets:

- Neighborhood school site with a city park on blocks north and east of school
- Connected urban street network grid with a successful road diet on Center Street, pictured below.
- Crosswalks marked correctly and tight turning radii at intersections
- Traffic volumes are not more than 5,000 average daily trips, with most streets around the school carrying fewer than 2,000 average daily trips

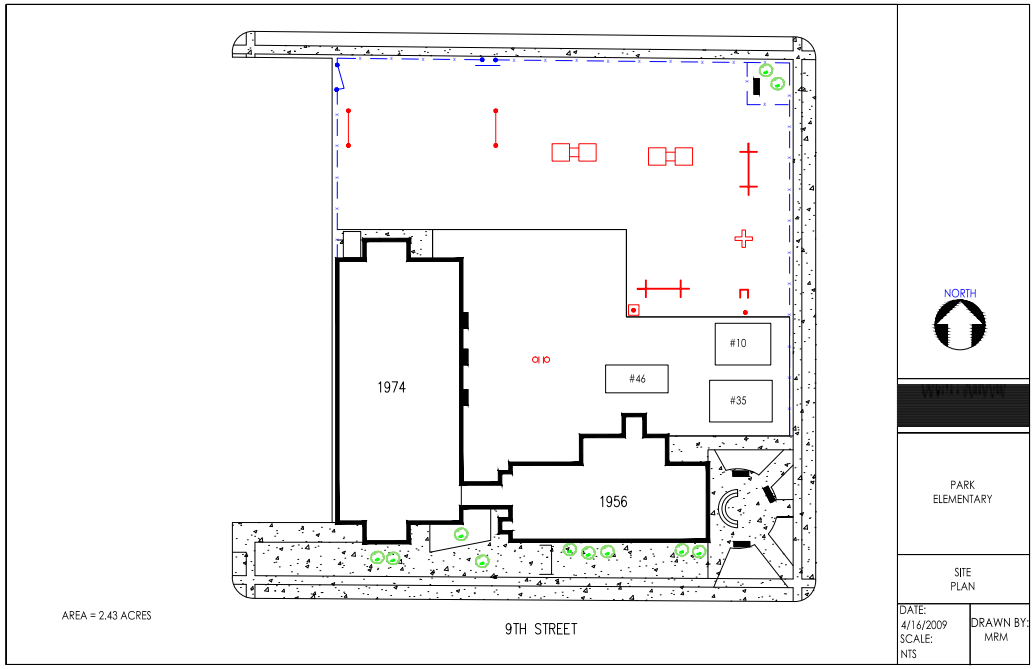
Park Elementary School

Issues and Opportunities:

- Most children live outside the immediate neighborhood and arrive/depart either by car or bus.
- Additional on-street parking needed for to alleviate haphazardly parked cars and serve as an additional safety buffer for pedestrians.
- Crosswalk markings are absent at all legs of intersections near the school.
- Vehicle speeds on 9th Street create an unsafe walking and biking environment for children.
- Current parent drop-off/pick-up needs to be further defined.
- Discussion to close 8th street to through traffic is till on-going.

Vehicle are parked on sidewalks.

Staff parking area.

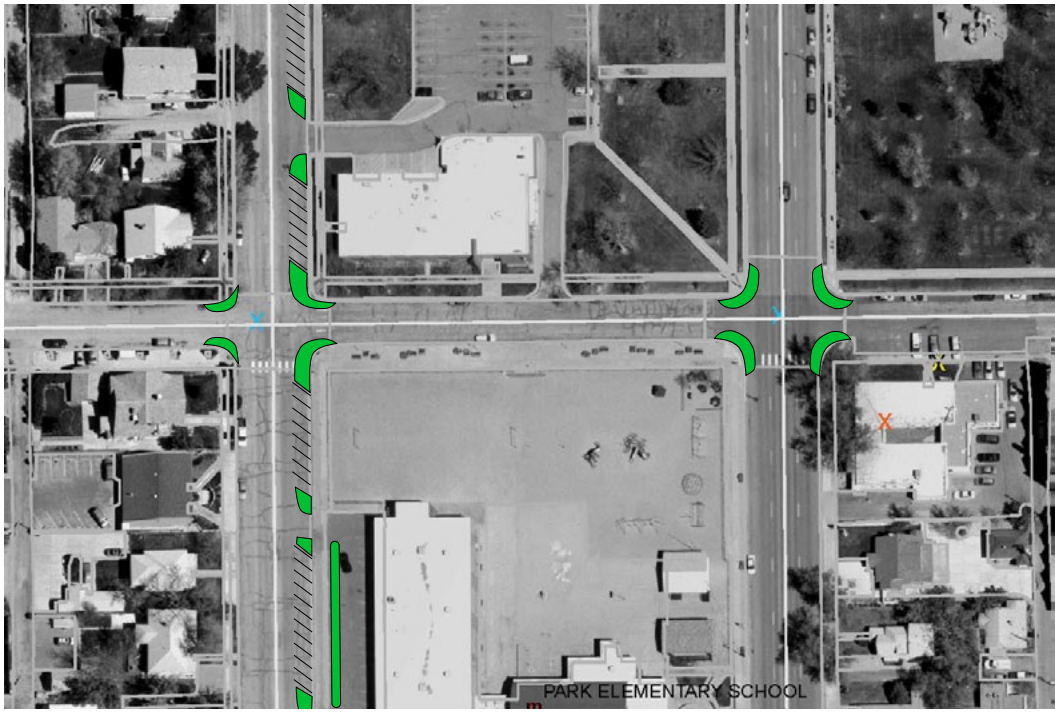


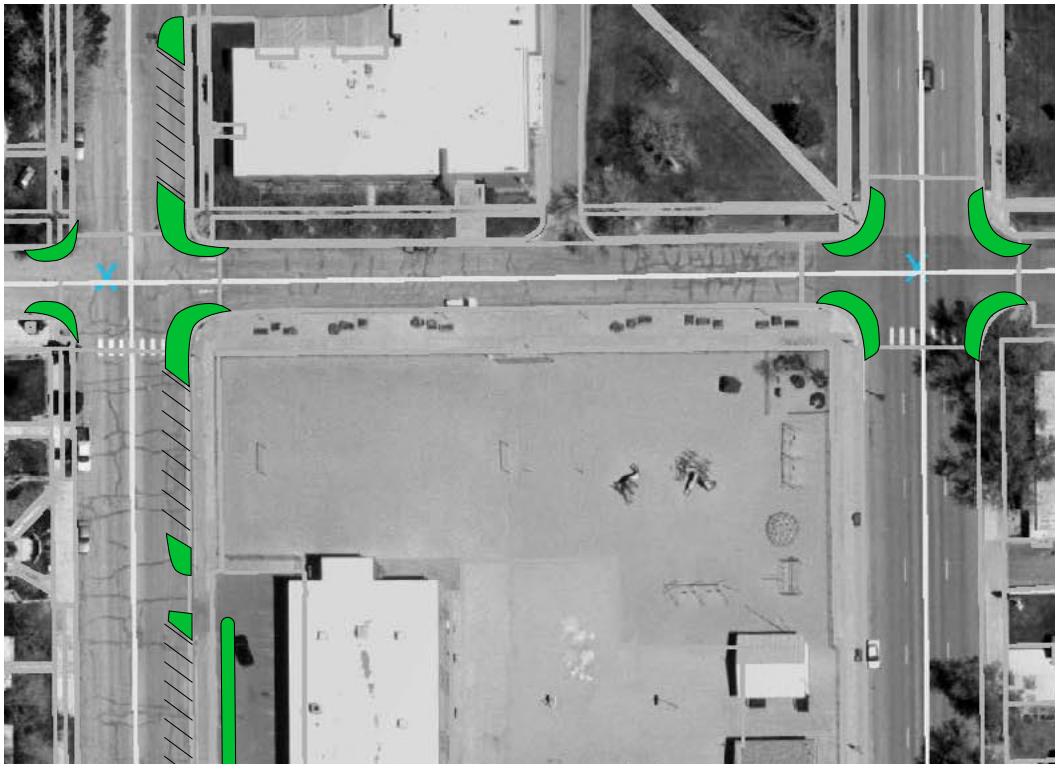
Existing site.

Bike racks are needed.

Street is overly wide, encouraging speeding.

Park Elementary School





Recommendations: Immediate

- Do not allow staff or others to park on the sidewalk, especially on school property.
- Move signage on 9th Street for crosswalk for added visibility.
- Stripe all legs of intersections adjacent to the school with crosswalk markings.

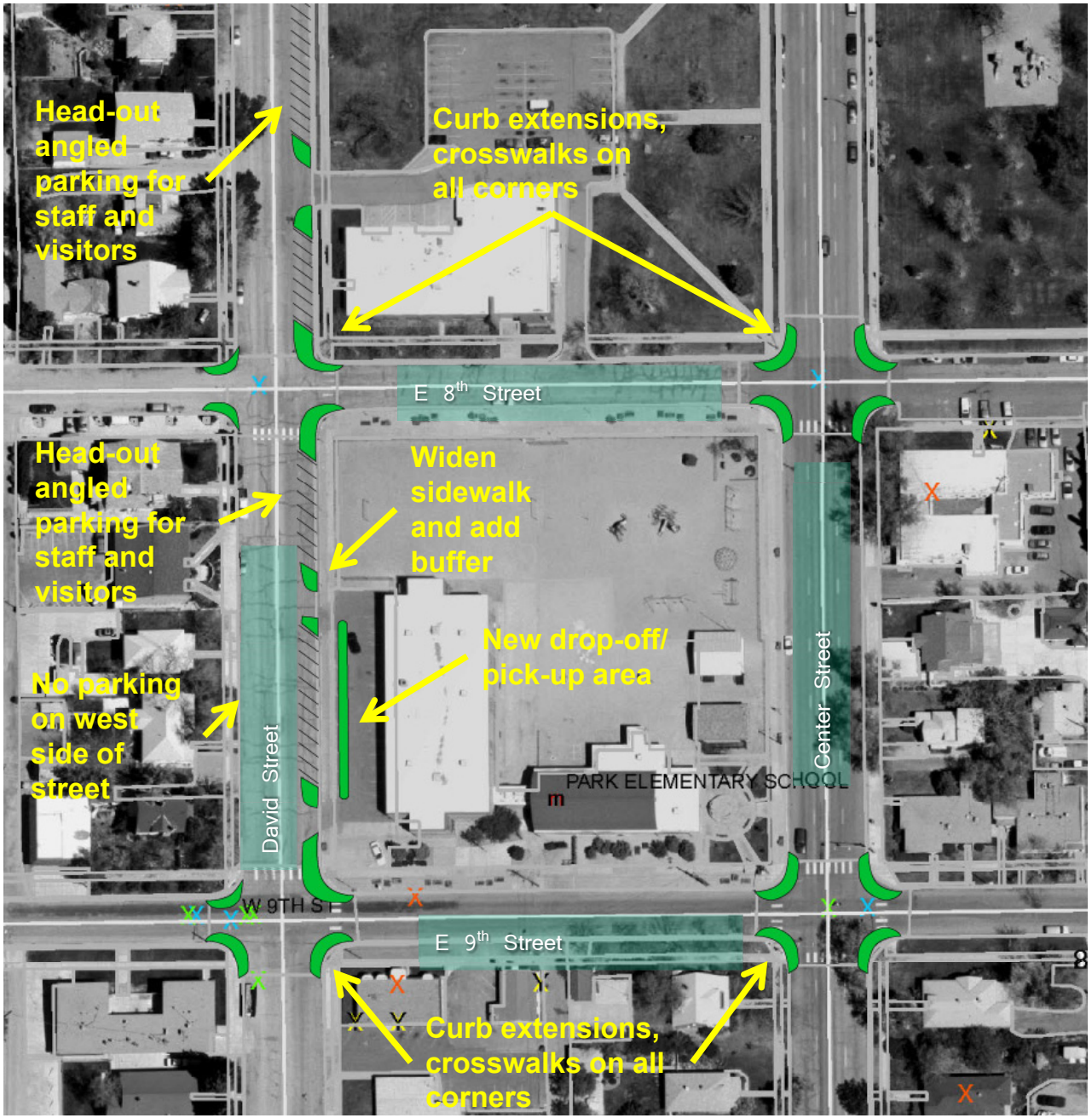
Recommendations: Short-term

- Consider adding head-out angled parking along S. David St. on the two blocks between 7th and 9th streets. Conduct a robust civic-engagement process to ensure the community is ready for it and that it succeeds.
- Widen the sidewalk along the east side of David St. along the school to increase pedestrian space.
- Re-configure existing teacher parking to be on-street and convert the staff parking lot to a parent drop-off/pick-up area.

Recommendations: Long-term

- Construct mini-circles along 9th Street at Center Street and S. David St. for traffic calming.
- Closing 8th St. to through traffic is not recommended as it will disrupt the grid network of streets, creating conflict and capacity issues at surrounding intersections.

Park Elementary School



Addressing Potential Concerns

Snow Removal

Snow removal from roadways in Casper is an important consideration. So too is providing safe routes to all the places children need or want to walk, bike or roll. The two priorities aren't mutually exclusive, but providing for both requires some flexibility and creativity. In fact, many communities throughout the country that face heavy snowfall in the wintertime - including parts of Montana, Colorado, New York, Utah and Minnesota - have successfully implemented traffic-calming devices such as those recommended in this report and are experiencing higher levels of active transportation, even in cold months.

Experience shows that typical traffic-calming devices, including those recommended herein, do not prevent snow removal or create unsafe conditions due to residual snow build-up. In fact, all of the jurisdictions consulted for this report advise that roadway safety is their highest concern. They have successfully trained their drivers and adjusted their equipment and operations in order to build and maintain roadways safe for all users, not just cars.

The best practices for snow removal on streets where traffic-calming measures have been installed include:

- Using modified equipment to accommodate traffic-calming measures, such as rubber-tipped plows or rollers attached to the plow's underside. Note that this may require an investment in different trucks.
- Assigning staff to set routes, creating familiarity with traffic calming device locations.
- Appropriately marking the location of traffic-calming devices.
- Customizing the geometric design of traffic-calming devices.
- Maintaining close collaboration and cooperation between state and town snow-removal teams so that snow is not simply moved from the street to the recently plowed walkway or trail openings, back to the street and back to the walkway again.

Snow removal in Hamburg, NY, where road diets and traffic-calming devices have been implemented.

The concepts presented above represent techniques employed by other jurisdictions with similar snow conditions, but may need to be adjusted for the specific climate and conditions in Casper. Residents should expect that transit and school walking trips will be given the first priority for snow removal.

Specific advice is offered by Kyle Endelman, Public Works Manager for Sammamish, Washington, an area with snowfall and significant traffic-calming investments in place:

"We plow with a variety of trucks including one-ton, three-yard dump trucks F450s/F550s and five-yard dump trucks. We typically plow to the right side of the road. When we plow around a traffic circle we enter the traffic circle plowing to the right and then we straighten the plow out to plow straight ahead. Then we move the plow back to the right as we exit the circle on the next road. We may have to do this several times depending on how many roads are connected with the traffic circle.

"We do the same when entering a speed calming curb cut-out. We straighten our blade out as we enter the cut-out and then we return the plow to the right-hand side. This prevents snow from accumulating along the crosswalk or ADA ramps. In some traffic circle areas we have found that single plows F450/F350s work better than our larger trucks."

Snow Removal - continued

In areas where recommendations include narrowing travel lanes, adding bike lanes, and removing center turn lanes, snow storage can be managed in various ways:

- Preferably, plow snow to the center of the street. The roadway dimensions remain the same whether the road features bike lanes or a center turn lane. Thus, the driver will have ample curb-to-edge-of-snow-bank width. In many conditions, snow from winter storm events will have already been cleared before school arrival or departure. When snow is stored in the center of the roadway there is still adequate driving width. Motorists are permitted to drive over the marked bike lane, which may not be clearly seen under these conditions. If it appears that there will be confusion, the city should post signs stating that motorists may use bike lanes during snow storage periods.

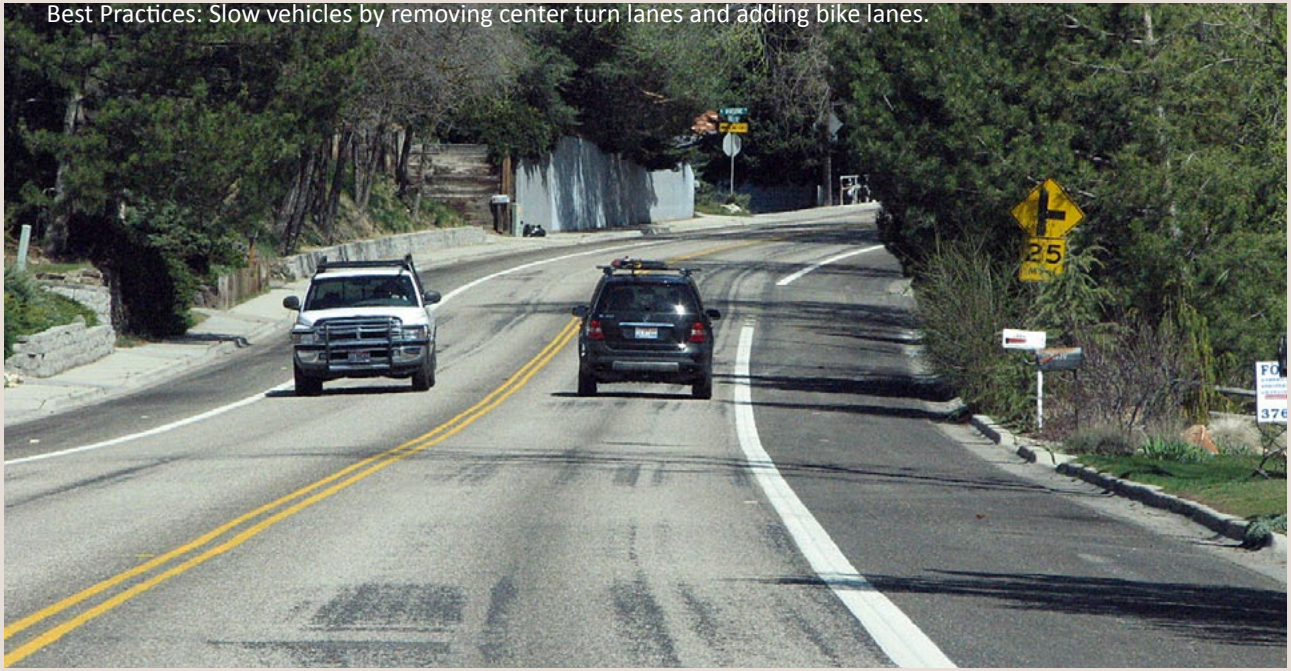
- If necessary, snow can be pushed into the bike lanes until the trucks arrive to take the snow to melting fields. Plowing operations should only push the snow to this spot, or extend into the planting buffer, when one exists, and not be pushed into sidewalk areas.

- To address liability if bike lanes are encroached upon by vehicles when plowed snow is present, the city should adopt an ordinance that states that when winter storms call for snow storage in the center of roads, motorists and bicyclists should be on alert; motorists should reduce speeds to 20 mph in the presence of bicyclists; motorists should yield to bicyclists and pass only when it's safe; and bicyclists may choose to ride on sidewalks. Extra efforts should be made to keep these sidewalks cleared.

Center Turn Lanes

Continuous center turn lanes serve to speed up vehicles and are most often used where traffic volumes are high, such as 12,000 trips-per-day or more. Near schools, the opposite effect is sought: to slow vehicles down. Thus, the center turn lanes near CY Middle and other schools studied are not appropriate and should be removed. The added space that will be created by repainting for bike lanes is in keeping with the goal to keep speeds low and offer an improved buffer between travel lanes and the sidewalk. The slowing of vehicles when turning will slightly reduce efficiency in favor of a safer overall walking, bicycling and driving environment.

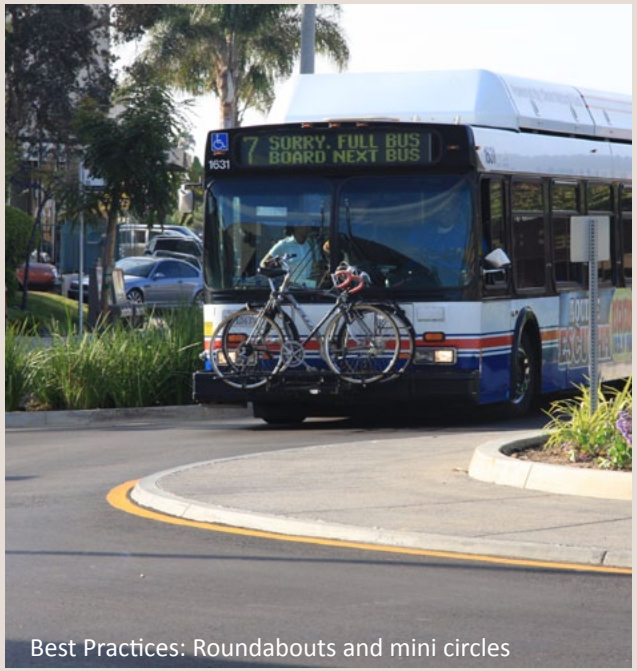
Best Practices: Snow removal policies.



Best Practices: Slow vehicles by removing center turn lanes and adding bike lanes.

Mini Circles, Roundabouts and Large Trucks

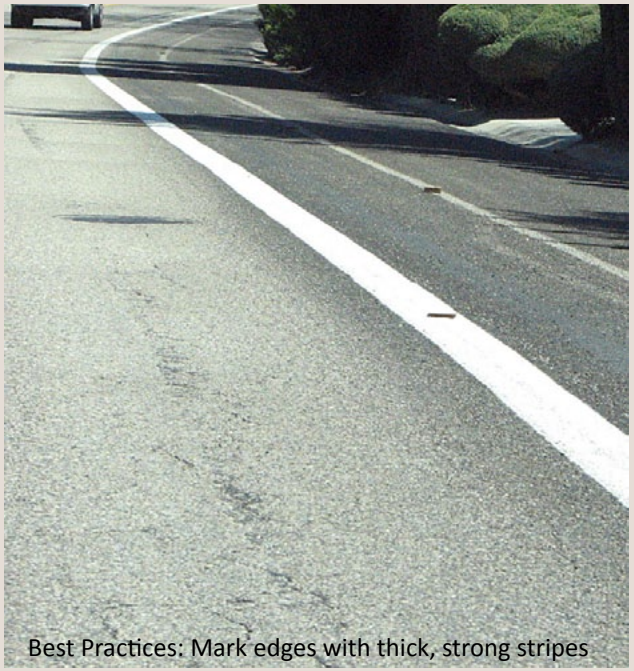
Traffic volumes near the schools studied and the volume of trucks using the streets do not appear to preclude the use of mini circles and roundabouts. Especially near schools, streets should provide safe access for all users, not just cars. The installation of mini circles can help achieve this. In particular, near Willard Elementary, there is sufficient street network nearby, such as Yellowstone and 2nd, that mini circles shouldn't create problems with general traffic or truck traffic. Once the mini circles are installed, some truck drivers may choose an alternate route, but their use of the streets with mini circles remains an option. All of the proposed treatments allow through movements and turning movements for all normal vehicle operations. In rare cases, a vehicle with a wheel base longer than 30 feet will make right or left turns from other streets.



Best Practices: Roundabouts and mini circles

Bike Lanes versus On-Street Parking

This report recommends a number of traffic-calming measures that can be created with paint, such as marking in bike lanes. Removing a combined five to six feet of width from travel lanes and instead applying it to bike lanes helps visually narrow the width of the street, and thus slows vehicle speeds, making the environment safer for all users. However, sometimes adding bike lanes is done so at the expense of on-street parking. In areas where on-street parking is important, use paint to mark strong edges on the sides of travel lanes. Paint the lines ten feet from the center of the roadway, creating travel lanes that are more narrow than on higher-speed roadways. The edge striping works best when it is at least eight inches wide, which makes it more visible and authoritative.


Best Practices: Mark edges with thick, strong stripes

Phasing and Building Community Support

Throughout this report a number of recommendations are made that will bring needed change but that will require motorists, commuters, city officials, parents and children to adjust. To build community support for the engineering improvements recommended, considering implementing the most significant changes first at a school that already has strong support from parents and the neighborhood. Engage all stakeholders early in the process, take time to build capacity and ask for their input on the details. As the features are being implemented, conduct community outreach to teach drivers and others how to comply with or navigate the new features. Once the features are constructed, and motorists have adapted, residents from other neighborhoods will see first-hand how well they work and it will be easier to implement other school projects.

Best Practices: Build community support

Trails and Sidewalks Near Golf Courses

This report recommends providing a trail link along a golf course near Grant Elementary. In this case, an evaluation may return that adding the trail linkage would require a few hundred feet of fencing or other protective barrier to keep trail users safe from errant golf balls. Or, such barriers may prove unnecessary. Either way, if a trail is built along the west side of the street, it is recommended that the school agree to maintain the pathway.

In terms of risk from golf balls, driveways and intersections generally create more risk to pedestrians and bicyclists than errant golf balls near golf courses. Without such a study having been conducted, it is assumed that students are at higher risk from cars and lack of the trail than they would be from golf balls.

A literature review was conducted regarding the risk of stray golf balls along popular trails running along golf courses and through golf courses. The search did not yield any unusual risk. In fact, 19 entries were evaluated and all reported satisfactory sharing, including:

- The Ritz Carlton Hotel at Half Moon Bay in California: A popular multi-use path runs through the golf course. A short stretch of fence was erected to protect bicyclists and pedestrians from golf balls. The fence, on one side of the path only, consists of typical eight-foot chain link with a curved chain-link attachment projecting perhaps a foot or two over the path. The upper portion of the fence is covered with a nylon mesh to keep errant golf balls from penetrating the chain links.

- Grand Forks, North Dakota: "We are not aware of any accidents or injuries as a result of the co-existence of the trail and bike path but had these concerns during the design. At the time we were designing, we debated placing a fence to protect the trail users and then referenced many other areas where this wasn't done and there weren't problems with trail users near the course." - Melanie Parvey-Biby, Greenway Coordinator, City of Grand Forks, ND (2005)

"The trail has been open for 6 years at the end of August 2005 and gets about 300,000 user visits annually. We have no evidence that the trail users have "disturbed" the golfers No accidents or injuries have been reported. Golf carts must yield to trail users. Stop signs are located on the golf cart path on either side of trail." - Carl Knoch, Director of Research and Development, Trail Facts (2005)

Casper Safe Routes: Design Guide

The following guidelines provide a baseline for engineering approaches that are more supportive of active transportation. They are not exhaustive, but represent a set of tools and principles that communities throughout the country are implementing with great success and should be adopted in Casper.

Casper Safe Routes to School Design Guide

2 Crosswalk Markings

Crossing Signs

3

4 Crosswalk Islands

Raised Midblock Crossings

5

6 Curb Extensions

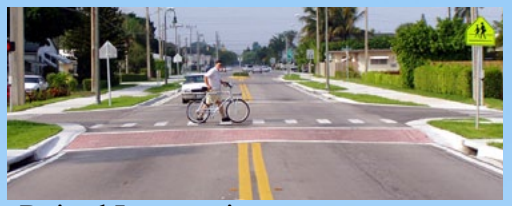
Mini Circles

7

8 Intersection Chicanes

Raised Intersection Crossings

9



10 Raised Intersections

Short Medians

11

12 Bike Lanes

Inset Parking

13

Signalized Intersections

14

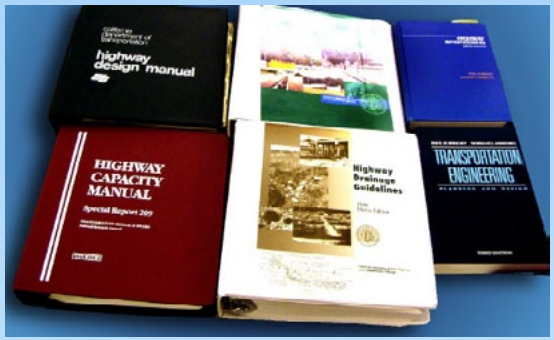
Casper Safe Routes to School Design Guide

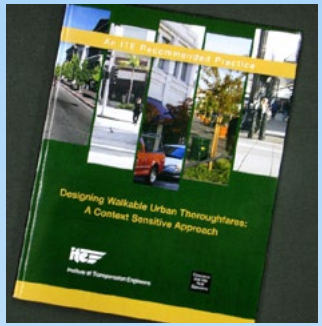
Overview

Why Added Guidelines? With recent, strong trends toward Safe Routes to School, Complete Streets Policies, sustainable transportation, traffic calming, rebuilding downtowns, neighborhoods/streets for people, the creation of compact villages for improved walkability and livability, and other measures reducing traffic growth, old engineering guidelines come up short. Engineers and risk management specialists insist that we need new guidelines.

Background: Conventional planning and engineering documents that built our current stock of roadways were written in a 60-80 year era where our only focus was on moving cars efficiently and safely. The negative impact of this approach on the value of inner city buildings and homes; on walkability and livability and active lifestyles; and on the safety of those outside of cars, was not fully understood, measured, or addressed. Over time, this practice added fuel to sprawl, degrading town centers. This practice was harmful to the civic, retail, economic and social life of streets. People with the greatest access to autos had the best transportation. This practice ignored children, older drivers and people with disabilities and many in our service industry. A focus on streets for efficient car movement also impacted health, wellness and quality of life of people of all ages. Autos replaced feet. Vehicle dependency kept growing, and eventually grew five times faster than the U.S. population. Now that there is a new era, which calls for a balanced transportation system, transportation equity, sustainability, urban infill and renewed prosperity of towns and regions, new outlooks and new tools are needed. These new tools must be understood by many. These design guidelines do not replace conventional tools used by the engineering community. State and national standards, operational manuals, engineering judgement and common sense always apply. Instead, this guide serves as a baseline for creative, insightful judgement of how to produce desired results of increased active transportation and increased property values. Many details need to be worked out and much learning must take place. Fortunately, you are not alone. Many other towns are using these tools with great success and there are many others in the region that you can check with as you begin this new era.

Left: A great neighborhood. Well before the modern science of traffic engineering was born in the mid-1920s, architects and developers knew how to build neighborhoods that kept traffic speeds low while creating maximum beauty and function for all means of travel. It is time for multiple professions to come back together, to influence one another, to build great places for people to live, work, shop, play and socialize. This guide will help us enter this new era.





These new guidelines should be formally adopted by elected officials. They supplement; they do not replace existing manuals. For the *Casper Safe Routes to School Program*, these guidelines are an important start to much broader thinking. Once these features are implemented around a number of schools, it is anticipated that others in the community will realize that many of these tools have broader community building applications. The authors urge planning and engineering communities to build each of the pilot projects to become exemplary models. By paying close attention to how well each thoughtfully designed and placed tool leads to the desired effect, and working to gain popular support by the majority who use these streets, these tools will prove their worth.

Casper Safe Routes to School Design Guide

Crosswalk Markings

Crosswalk markings should be highly visible at all times. As a general rule, the higher the volume and speed of traffic, the more essential it becomes to use brighter, wider, more visible and durable markings. Parallel (to direction of travel) bars shown in these photos are often the best design, allowing motorists' wheels to traverse the lines without significant wear. Markings are generally set so that motorist wheels track through voids, rather than over markings, lengthening the life and visibility of markings. Keep markings at least ten feet wide, and wider in higher speed locations, to aid visual detection. Another helpful tool, especially in snow country, is grinding into the pavement about one-third of an inch, then applying either a commercial laminate or hot ceramic mix (which is being tested in Golden, Colorado, and may last the life of the asphalt or concrete). In an ideal world, both lateral lines and edge lines are used. People with visibility issues find it helpful to have a detectable edge. When possible, keep crosswalk markings close to the intersecting streets (not set back).

Cost: Affordable to Moderate. Typical range from $250 to $2,000 each. Costs vary widely based on the quality of paints, laminates, scoring/imbedding and other means to prolong the life and visibility of markings.

Benefits: Identifies best crossing locations, further defines intersections, slightly increases yielding behavior, and a helpful reminder to motorists of their duty to yield. If motorists do not yield, good markings make it easier to enforce traffic laws, which ultimately creates higher compliance of the law.

Details: Although a variety of crosswalk markings are available, the best are not fully discussed in standard engineering documents. Crossings need to be visible year round (as much as possible) and markings are typically used in conjunction with signing and good street lighting. School crossing signs are required in locations away from signalized intersections, and they are advised in many signalized locations. Crosswalk markings are only a beginning point. By maintaining low speeds near schools, drivers' desire to yield increases.

Left: High visibility marking, Middle: Ladder style, preferred by visual impaired. Bottom: Additional markings are used for added compliance and complications. Note that crosswalk markings appear on a hill crest, where they are hard to detect. Give motorists a break by putting them on the alert to all crossings.

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Crosswalk Signs

Crosswalk signs should be visible at all times. As a general rule, the higher the volume and speed of traffic, the more essential it becomes to use brighter, wider, more visible and durable signing. The most recent version of the Manual on Uniform Traffic Control Devices (MUTCD) and other aids, should be consulted as a starting point. We provide supplemental and emphasis details and applications in this guide. When possible, "double sign" school signs on all approaches, as shown in the first two images to the right. This can be done when medians are used, and on narrower streets, by signing both sides of the street. Sign locations are important. Place signs (and lighting) together, and place signs where they are highly visible and where you anticipate crossings. There are a number of new enhanced signs that are believed to add to the effectiveness and compliance of motorist response. Some are shown here. We recommend that you "test" motorist behavior through careful observations, and, as appropriate, through your own "step out" surveys. Low yielding rates often indicate that higher level measures are needed. Engineering must go beyond even the best guides. Always observe and then customize your tools for desired results for each location.

Cost: Affordable to Moderate. Typical range from $250 to $2,000 each. Costs vary widely based on the quality of paints, laminates, scoring/imbedding and other means to prolong the life and visibility of markings.

Benefits: Identifies best crossing locations, further defines intersections, slightly increases yielding behavior, and they are helpful reminders to motorists of their duty to yield. Then if they do not yield, it is easier to enforce traffic laws, which results in higher compliance for law.

Details: Although a variety of crosswalk markings are available, the best are not fully discussed in standard engineering documents. Crossings need to be visible year round (as much as possible) and markings are typically used in conjunction with signing. School crossing signs are required in locations away from signalized intersections, and they are advised in some signalized locations. Consult the Manual of Uniform Traffic Control Devices for basic information, then be ready to exceed those guidelines for the desired effect.

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Crossing Islands

Crossing islands are one of the best tools for simplifying the crossing of wide streets. Used with curb extensions, they also get pedestrians out beyond parked cars and other visual obstructions. Crossing islands are used on all categories of streets, and they have their highest return on investment when they create more courteous yielding behaviors by motorists. Well designed crossing islands achieve yielding rates above 80%. Many other tools, like Rapid Flash Beacons, or raised crossings, or some other type of motorist alert, are used when it is necessary to increase yielding behavior. As a general rule, crossing islands are preferable to signal controlled crossings, due to their performance, much lower installation and maintenance cost, and reduced waiting times. Crossing islands are also used in conjunction with road diets--taking 4-lane, high speed roads down to better behaving 3-lane roadways. Crossing islands can also be used with signals (at intersections) and half signals (at midblock locations).

Cost: Affordable to Moderate. Typical range from $5,000 to $15,000 each, depending on width, complexity and other aids that may be needed for high levels of compliance. When signals are added, costs can be in the $30,000 to $60,000 range.

Benefits: Assists by simplifying street crossings, sometimes narrowing crossing exposure from 36-44 feet, down to 12 to 16 feet. Helps focus student crossing to those locations with the best sight lines. Helps alert motorists to crossing locations. Most commonly used on 2-lane roadways with daily traffic volumes below 12,000 ADT. Volumes above 8,000 may require added tools, such as Rapid Flash Beacons.

Details: Crossing islands, like most traffic calming features, perform best with both tall trees and low ground cover. When curves or hill crests complicate crossing locations, median islands are often extended over a crest or around a curve to where motorists have a clear (6 second or longer) sight line of the downstream change in conditions. Lighting of median islands is essential.

Islands can be as little as 8 feet wide. Generally they are 20-40 feet long, but they can be longer. Adding slow growth ground cover and tall trees helps with the detection of the islands and crossings, and landscaping helps eliminate ugly "sign gardens" conventional engineers use to make certain drivers see the islands. The two streets have reduced numbers of lanes, from 5-lanes (above) and 4 lanes (below).

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Raised Midblock Crossings

Raised Midblock Crossings are used between intersections, typically when blocks are long, or in other locations where speeds are higher than desired, or where sight distances are poor. Raised midblock crossings have many advantages, especially due to their ability to maintain speeds at 15-20 mph 24 hours a day. Raised crossings can be used in all climates, including snow country. The grade change is generally 1:16 to 1:20 when snow and ice are involved, but 1:12 in non-snow country. Color is often used in the design. Trees and other landscaping are important for detection, and for added neighborhood acceptance. Features, such as bollards, paver stones, curb extensions, colorized concrete or colorized asphalt are often specified for added effect. Raised crossings are used widely in snow cities such as Golden, Colorado, Ft Collins, Colorado; Minneapolis, Minnesota and Cambridge, Massachusetts.

Cost: Affordable to Moderate. Typical range from $5,000 to 15,000 each, depending on length and quality. The more colors and materials, the higher the cost (and effectiveness).

Benefits: Assists people on foot by simplifying street crossings, sometimes narrowing crossing exposure from 36-44 feet, down to 12 to 16 feet. Helps focus student crossing to those locations with the best sight lines and lighting. Helps alert motorists to crossing locations. Most commonly used on 2-lane roadways with daily traffic volumes below 12,000. ADT although they can be used with higher volumes. Volumes above 8,000 may require added tools, such as Rapid Flash Beacons.

Details: Crossing islands, like most traffic calming features, perform best with tall trees and low, easy to maintain ground cover. When curves or hill crests complicate crossing locations, median islands are extended over a crest or around a curve to where motorists have a clear (6 second or longer) sight line of the downstream change in conditions. Lighting of median islands is essential.

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Curb Extensions

Curb extensions are a nearly universal tool for school areas. In transforming overly wide streets, curb extensions (also known as bulb outs, elephant ears and nibs) bring down right turning speeds, identify important crossings, and make it much easier for motorists to see children and for children to see motorists. When used in a series, curb extensions can significantly bring motorist speeds to acceptable levels. Curb extensions can be used at intersections, midblock, inside of parking strips (tree wells) and other locations. Although many curb extensions are kept plain in appearance, at the entry to a neighborhood they can be landscaped to serve as a attractive gateways. Although there are many benefits to curb extensions, they greatly reduce crossing distances for overly wide streets. In an ideal world, students would not be asked to cross more than 20-26 feet.

Cost: Affordable to Moderate. Typically range from $3,000 to $30,000 each. Costs vary widely based on if the curb extension is attached to the curb, interrupting drainage, or left unattached, raising maintenance costs. Each community must take into account construction cost and maintenance costs.

Benefits: Slows motorists' speeds at most important locations, especially at intersections. Curb extensions open up sight lines for pedestrians to see motorists, and for motorists to see pedestrians. In some cases, they can become rain gardens, and otherwise reclaim non-essential road space, reducing crossing distances for vulnerable road users. The cost range of curb extensions is wide, largely due to the decision to attach or leave the curb extension unattached to curb lines.

Details: Apply truck turning templates when designing curb extensions. On low volume side streets it is suggested that oversized vehicles be permitted to cross over the street center. Many designs apply. All efforts should be made to make streets feel narrower, and to "read" slower.

Today experienced traffic engineers know that both slow growth ground cover and trees enhance road safety. Well landscaped curb extensions are often seen on approach 500 feet before intersections, keeping speeds low for longer distances. Use of landscaping has proven to be helpful in bringing down both speeds and crashes. Curb extension are one of the best tools to create safe and efficient crossings.

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Mini Circles

Mini Circles are one of the most popular and effective tools for calming traffic near schools. These inexpensive features do not interrupt drainage and they are the most affordable tool for bringing speeds under control. Mini-circles work outward from intersections on all three or all four legs of approaching traffic. Mini-Circles bring speeds down to levels where motorists are more courteous to pedestrians and they allow all types of turns, including U-turns, which can assist with school area traffic management. Mini-circles are popular in many neighborhoods, due to their ability to create a park atmosphere. Over 1,200 mini-circles are in place in Seattle, where they have reduced crashes 93%, and personal injury crashes 99%. Mini-Circles also work well in snow cities, such as Missoula, Montana. A common engineering mistake is to put in four way stops. This is a poor practice that leads to disrespect. Mini-circles require yielding behavior, not stopping behavior.

Cost: Affordable. Typically range from $8,000 to $35,000 each. Less expensive if built as new construction. More expensive mini-circles are designed as large gardens, or built in large intersections.

Benefits: Brings speeds and crashes down in all directions to 5-18 mph. Most commonly used on roadways with daily traffic volumes below 8,000.

Details: It bears repeating, **do not use stop signs** with mini circles. Mini-Circles are designed to keep traffic flowing quietly and effortlessly at low speeds. Mini-circles work best in many communities when not signed at all. When signing is necessary use Yield signs and Yield markings. Sometimes a simple directional arrow is used. Use with landscaping, especially tall trees (under- trimmed to 7 foot), and use low ground cover (typically with low maintenance xeroscape or native plant materials). The further out the mini-circle is viewed the greater the safety benefit. Truck turning templates are not used. Large (oversized) vehicles, such as emergency responders, make left hand turns the way they do today, going left across the face, when there is no approaching traffic.

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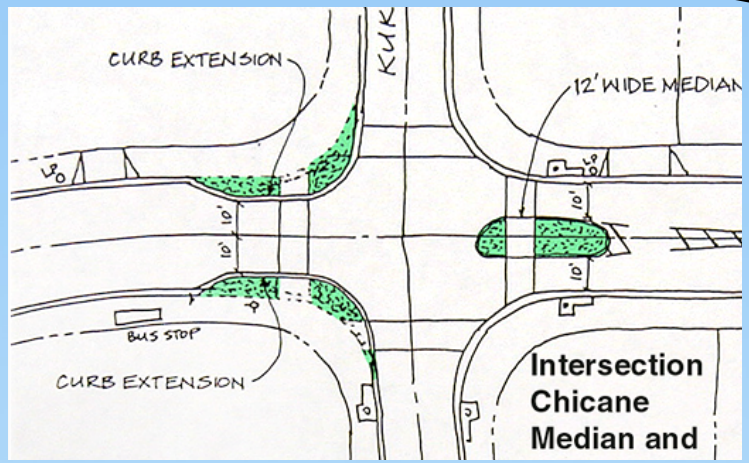
Intersection Chicanes

Intersection Chicanes involve two curb extensions on one side of the intersection, and a median on the opposite side. This combination of treatments brings the motorist toward the center, then brings them back toward the side. This resulting deflection path bring speeds down to the desired level of 15-20 mph. All raised areas become gardens for the neighborhood. Both sides of the intersection are narrowed, minimizing crossing distance and time. As a general rule the side with curb extensions is narrowed to 20-26 feet. Chicanes can be used on streets with volumes as high as 12,000 ADT. Use of intersection chicanes eliminate the cost of going to more expensive traffic signals, or noisy and problematic 4-way stop controls. These treatments are preferred by emergency responders and transit providers to more intrusive four way stops and raised crossings.



Cost: Affordable to Moderate. Typical range from $15,000 to $45,000 each. Costs vary widely, based on if curb extensions are attached to the curb (interrupting drainage) or detached (creating a higher maintenance cost).

Benefits: Assists by simplifying street crossings, sometimes narrowing crossing exposure from 36-44 feet, down to 12 to 16 feet. Helps focus student crossing to those locations with the best sight lines. Helps alert motorists to crossing locations. Most commonly used on 2-lane roadways with daily traffic volumes below 12,000. ADT.

Details: Intersection chicanes, like most traffic calming features, perform best with both tall trees and low ground cover. When curves or hill crests complicate crossing locations, median islands are often extended over a crest or around a curve to where motorists have a clear (6 second or longer) sight line of the downstream change in conditions. Lighting of median islands is essential.

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Raised Intersection Crossings

Raised Crossings are not only used in midblock locations, they are used at intersections. They can be used in right turn channelized island, or in regular intersections (see photo examples). Crossings are designed to restrict all through speeds to 15-20 mph 24 hours a day. Raised crossings at intersections can be used in snow country. The grade change is generally 1:16 to 1:20 when snow and ice are involved, but 1:12 in non-snow country. Color is often used. Features, such as bollards, paver stones, curb extensions, colorized concrete or colorized asphalt are often specified for added effect. Raised crossings at intersections are used widely in snow cities such Stamford, Connecticut and Cambridge, Massachusetts.

Cost: Moderate. Typical range from $10-20,000 each. Benefits: Reduces speed and brings crashes down to 12-18 mph. Most commonly used on roadways with daily traffic volumes below 12,000 ADT, they can also be used in select locations with higher volumes.

Details: Best used when roadways are overly wide and when there is a desire to bring down speeds. Raised crossings at intersections are often used to accent an especially important crossing leg and to control both through traffic speeds, and turning speeds. Crossings are ideal for school entries, and they are used on school properties, especially on entries to parking lots. Both the detection of the raised crossing and the slowing effects are enhanced when different colors, and International Yield pavement markings are used.

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Raised Intersection

Raised Intersections are used at intersections where round-abouts or mini-circles are not functional or practical, and where speeds need to be brought under control. They are different from raised intersection crossings, since they cover the entire intersection. This raises their value and cost considerably. Raised intersections are best constructed as new schools are built, but they can be applied to existing street sections as well. Raised intersections can be expensive, due to their potential to interrupt drainage. Meanwhile, they have many advantages to maintain speeds 24 hours a day. Raised intersections can be used in snow country. The grade change is generally 1:16 to 1:20 when snow and ice are involved, but 1:12 in non-snow country. Color is often used. Features, such as bollards, paver stones, colorized concrete or colorized asphalt are often specified. Raised intersections work well in snow cities such as Minneapolis, Minnesota or Cambridge, Massachusetts.

Cost: Moderate to High. Typically range from $60,000 to $125,000 each.

Benefits: Brings speed and crashes down in all directions to 10-15 mph. Most commonly used on roadways with daily traffic volumes below 20,000 ADT, although new treatments include volumes of 23,000.

Details: High emphasis crosswalk markings are used with raised intersections for an added slowing effect. Note the crossings are kept above the change in grade. Raised intersections are often used with curb extensions. Planned in advance with new construction, drainage is addressed at the base of the crossing grade. Use of colorized concrete, or pavers helps achieve an added slowing effect. Raised intersections can be used with signalized or non-signalized intersections. International yield lines are added for greater emphasis.

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Short Medians

Short Medians are similar to Mini-Circles, and they help bring down speeds near schools. Short medians are placed away from intersections, but they can be located near driveways. These inexpensive features do not interrupt drainage and they have many other advantages. Short Medians bring speeds down to levels where motorists are more courteous to pedestrians and they allow U-turns, which can assist with school area traffic management. Short Medians also serve as gateways, where they announce arrival at an important location, such as a school. They help put motorists on greater alert. They work well in snow cities, as well as more temperate climates.

Cost: Affordable to Moderate. Short medians generally range from $12,000 to $25,000 each.

Benefits: Brings speed and crashes down in all directions to 10-15 mph. Most commonly used on roadways with daily traffic volumes below 2,000 ADT.

Details: Short medians are generally used with attractive landscaping and lighting, but overhead lamps can also be used. For landscaping, use tall trees (under- trimmed to 7 foot), and use low ground cover (typically with low maintenance xeroscape or native plant materials). Landscaping helps bring down speeds from distances as far out as 500 feet. The further out the short median is viewed the greater the safety benefit. It is important to note that short medians require the removal of on-street parking for 100-150 feet.

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Inset Parking

Inset parking visually narrows streets and brings down traffic speeds, while providing the most sustainable and affordable parking. Speeds are brought down even more when tree wells are used to provide canopies in the street. Since it already has its own turn radii into each spot and provides access, on-street parking only takes up one-third of the amount of land as off-street parking. But the primary reason for maximizing parking on street is to help civilize streets that were overbuilt for speed.

Cost: Affordable to Moderate. Typically ranges from $5,000 to $10,000 per parking space, which is similar to the cost of off-street parking.

Benefits: Slows traffic speeds while maximizing the use of streets.

Details: Parking lanes are typically nine feet wide and fifteen feet deep. When streets are overly wide, adding on-street parking helps reduce the overall width of the street while bringing down travel speeds. Angled parking stores the maximum number of cars. When "head out" angled parking is used, parking can be provided in even tighter locations.

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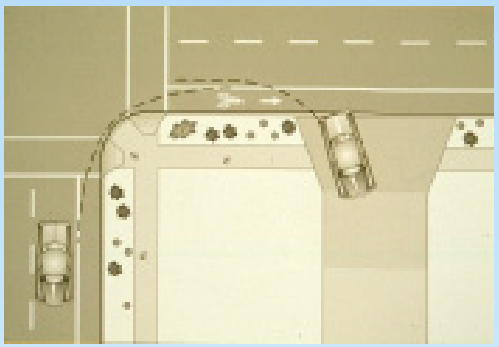
Bike Lanes

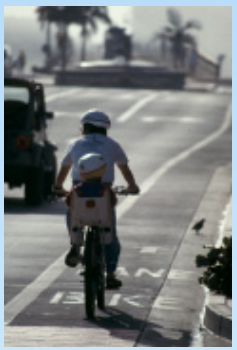
One of the most cost effective ways to reduce speed while improving overall vehicular flow and creating improved conditions for bicycling and walking, is the conversion of overly wide roads to bike lanes. Generally, travel lanes can be reduced to 10 feet. On multiple lane roads this often allows a shifting of lane width outward, then conversion to bike lanes. There are 22 benefits to bike lanes, and only 2 of these benefits are exclusively for bicyclists. All other benefits are to all users of the roadway. Narrower travel and storage lanes on all functional classification of at grade roadways are proving to be slightly safer, or as safer as wider lanes. Motorists appear to become slightly more attentive when lanes are narrowed from 11-12 feet. With higher than average truck or heavy bus flow, wider outer lanes can be incorporated. Engineering judgement applies.

Cost: Affordable to Moderate. Typically range from $3,000 to $10,000 per mile, includes signs and markings. Higher costs are for more visible markings, and higher grade material, which generally has a longer maintenance life.

Benefits: Few other changes to a roadway offer more benefits than adding bike lanes. Motorists benefit from added turning radii and improved sight lines. Bike lanes create added border width to fixed objects, separate motorists from sidewalks, allow for added operations, reduce the unravelling of the roadway edge, and provide other maintenance benefits.

Details: Bike lanes are marked at 5-7 feet in width. Bike lane lines are marked at 6", 8" or 10" in width, to create added slowing effects to motorists. Bike lane markings are incorporated, along with proper signage.





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Signalized Intersections

When intersections become so complex and challenging that signals are added, there is often ample justification to go beyond conventional standards to address the needs of people walking and bicycling. Quite often, engineering technicians are trained only to maximize the flow of vehicular traffic. Too often, the movements of other people are overlooked. As a result many people on bike or on foot are not detected, their needs are not fully addressed, or they are made to wait lengthy periods. Many people "learn" to find ways to avoid crossing at intersections. This is wrong, and the practice of overlooking pedestrians and bicyclists should be recognized as outdated, single mode, thinking. There are many steps to take. Here are a few of the most common:

- Set "Walk" signals for crossing minor streets to always recall to "WALK". In addition, set signal timing so that the walk interval is as long as feasible for the green time in the concurrent vehicle phase.
- Use the same practice on major street crossings, continuing to pay attention to special vehicular needs during peak hour flows.
- Use countdown signals on a soft replacement basis, and start with high priority walking locations, such as schools, important transit stops, plazas, parks, medical centers and town centers.
- Eliminate Right-Turn-On-Red (ROTR) if motorists are not using appropriate levels of care. Consider "pedestrian lead intervals" to step pedestrians out first, when high pedestrian counts, problems with turning motorists or other conditions warrant this phase.
- Use enhanced crosswalk markings, and bold stop bars to better identify crossings and to keep motorists out of crossing areas.
- Remove push button controls from people rich locations (unless these buttons activate signals on a recall demand).
- Generally, strive to recall signals on a frequent basis to minimize wait times for pedestrians. Full cycle lengths of 60-90 seconds are best. If this cannot be done during commute hours, see if this can be achieved in off-peak hours.

Cost: Highly affordable. Typically all costs are covered under normal maintenance, operations and staffing budgets. In many cases county or state agencies must be contacted to make changes. Training local technicians may be needed.

Benefits: Intersections are critical if walking, bicycling and motoring are to work, and work together. As signalized intersections are made equitable to all modes of travel more people will walk and bicycle. People who cross at intersections are more predictable. Drivers appreciate predictable and compliant behavior. The engineer has an essential role to play if high levels of compliance are to be achieved.

Additional Steps: The Other E's

In addition to Engineering improvements, successful Safe Routes programs develop effective ways to implement Education, Encouragement, Enforcement and Evaluation as key components of their programs.

In the previous section, The WALC Institute provided assessments and recommendations on integrating safe routes to schools into Casper's general and comprehensive land use plans. This policy and environmental-change strategy is typically a top-down approach and falls under the Engineering element of the Safe Routes program.

Good engineering in tandem with adopting new policies, practices and designs that improve the built environment are integral to increasing walkability and livability, and creating a safe and satisfying environment that takes into account all modes of transportation; however, even with excellent pedestrian and bicycle infrastructure in place, there is no guarantee that the children and parents will actually use it.

In some cases, the barriers that hinder children from walking and biking to school are multi-faceted and require a more comprehensive approach that incorporates non-infrastructure strategies to achieving the desired outcomes of a Safe Routes program. For instance, additional barriers may exist in the minds of parents, such as "stranger danger," perceived distance and convenience, traffic safety and time, and habits and behaviors. That is why it's important to plan for and implement bottom-up strategies to complement the top-down engineering and policy-change initiatives. The additional components needed to address non-infrastructure barriers are the other four E's of Safe Routes: Evaluation, Education, Enforcement and Encouragement.

When combined with engineering, these other four E's provide cost-effective solutions to garnering parent, student, school and neighborhood participation, increasing the number of children walking and biking to and from school, improving walkability and livability in the area, and producing a safer, healthier, and more vibrant community for all to share and enjoy.

In this section, the WALC Institute provides:

- An overview of evaluation, education, encouragement, and enforcement programs, extending beyond engineering and the built environment.
- Best practices with supporting case studies to serve as models and sources of inspiration for Casper's Safe Routes program
- Opportunities for improvement, next steps and supplemental resources for planning and implementing a comprehensive evidence-based approach.

Glenwood Springs, CO.

Columbus, OH.

Tampa, FL.

Education

Education is a key component of all Safe Routes programs and can act as a complementary initiative to Casper's engineering and policy-change efforts to improve the built environment. It is important to stipulate that educational endeavors should be carried out before launching any incentive programs or promotional events that encourage children to walk and bike to school.

If school-aged children are going to be traveling on foot or on bike from their homes to school multiple times a week, they need to have a firm grasp of the "rules of the road" and understand how to travel safely, whether chaperoned or not, while navigating the route. Each of us should receive traffic safety training.

Education and training on pedestrian and bicycle safety is better administered to children in activities which allow them helmet-on practice sessions delivered through age-appropriate programs. Parents, neighbors, and drivers play a large role in creating a safe environment for children walking and biking and should be given educational opportunities as well. Safe Routes education is not a one-size fits all strategy for children, parents, neighbors, and drivers and thus needs to be tailored to meet the needs and interests of both children and adults accordingly. This chapter discusses Best Practices relative to educating students and the community for an effective Safe Routes to School program.

Education – Students

Safe Routes strategies for educating students to walk, bike and roll safely should be hands-on, age-appropriate and centered around pedestrian skills, bicyclist skills, personal safety, and health and the environment. Ideally children should receive a comprehensive bicycle and pedestrian training program on these topics which includes skills practice on the road. There are a number of innovative and engaging ways to administer education and training, but the delivery depends on program capacity, time, budget and the number of children.

Crested Butte, CO.

Tallahassee, FL.

Kenne, NH

One-time instruction at a school assembly or orientation is good for reaching a mass audience quickly, particularly when there are other competing demands for class time. These events are great opportunities for introducing walking and biking to children and engendering school-wide excitement. Be creative when presenting material to a large group of children; fun, short, visual formats works best, utilizing songs, skits, or photo slide shows with popular music. The downside is that children may not retain all the information or have difficulties applying everything they learned from one, brief session. So it is also important for schools to reinforce key messages throughout the year in newsletters, announcements, or special events.

Even with safe infrastructure in place, many parents still are apprehensive.

Integrating key messages into classroom lessons and physical education courses is optimal. Walking and biking education fits nicely into the physical education curriculum and most states mandate that children participate in a certain amount of structured physical activity each year. There are a variety of techniques for integrating key messages to all subjects. For instance, art students can design posters for special Safe Routes events, math students can calculate averaging walking distances and speeds, geography students can draw maps of routes to school, and language arts students can write about their walk to school or create a collection of short stories about the adventures of walking and biking to be published in the school's newsletter or journals.

The Parents' Role is Important

Parental involvement is paramount to teaching children walking and biking skills, and most importantly, personal safety. Parents serve as role models for good pedestrian behavior, and often accompany children walking or biking to school.

However, even with safe infrastructure in place, many parents are still apprehensive about letting their children walk and bike; for example, some parents are concerned about strangers wanting to harm their children or criminal activity along routes to school. Other reservations stem from the possibility of bullying or other violent acts that children might encounter along the way.

To alleviate these concerns, a priority for the Safe Routes program will be to address real dangers associated with crime -- through education, enforcement and encouragement. Bullying can be addressed by incorporating a violence prevention component into the Safe Routes program. Other strategies for mitigating fears and misconceptions about child safety can be implemented through chaperoned walking school buses and biking squads, where adults are present.

Walking and biking skills are also acquired and assessed in a structured session, where students can receive supervised, firsthand experience and reinforced practice. Here children are able to apply their skills by practicing street crossing procedures and bicycle handling drills.

Bicycle Skills Training: DeSoto County, Florida

The DeSoto County Safe Routes Program secured a mini-grant and in 2008 joined forces with the DeSoto County Health Department to hold a bike rodeo at the annual Back to School Health and Safety Fair. The rodeo hosted children and their parents from three elementary schools who received free back-to-school immunizations, school supplies, and bike safety tips. During the bike rodeo, 432 children were fitted for bike helmets and received training in bike safety skills and bike handling. (See picture below.)

A bike course was set up and bikes were provided for children to practice what they learned. To reinforce the skills that children learned, bike rodeos were held again in the middle of the school year during physical education classes and attended by all 3rd, 4th, and 5th grade students in the district. The event was so popular in its first year, supplemental funding was provided by the county's Traffic Safety Task Force and other local and state partners to make the bike rodeo a staple at special school-related events for years to come.

Contact: Bonnie Hoffer, DeSoto Traffic Safety Task Force, at (863) 993-4601.

Institutionalizing Pedestrian/Bicycle Safety: Rockville, MD

In Rockville, all public elementary school students have received bicycle and pedestrian education as a standard part of the curriculum since 2004. The program was initiated by City of Rockville staff and is now coordinated by physical education teachers.

The curriculum includes a series of interactive lessons for each grade. Students in Kindergarten through 2nd grade learn basic pedestrian concepts. Older elementary school students focus on bicycle safety fundamentals such as proper use of a bicycle helmet, rules of the road, and bicycle handling techniques.

Students practice pedestrian and bicyclist skills through simulated scenarios. In addition, the school's safety patrol practices bicycle and pedestrian safety skills and then reinforces safety messages to students.

At Farmland Elementary, few students bicycled to school before the program began. Afterwards, the bicycle rack was full every day. The local biking association has extended the reach of the program. The Maryland Pedestrian and Bicycle Safety Education Program is now available to public and private schools, law enforcement agencies and community organizations throughout Maryland, as well as online to any interested community. See: http://www.saferoutesinfo.org/case_studies/pdfs/MD.rockville.pdf

Contact: Carrie Sanders
Department of Public Works
Phone: (240) 314-8529
Email: csanders@rockvillemd.gov

Endorsed activities such as bike rodeos and walking school buses are fun and informative ways to instill walking and biking skills. These activities can take place in physical education courses, at special school-sponsored events or during after school programs and are generally supervised by trained volunteers. These sessions are also opportunities for parents to get involved, learn the benefits of the program, and even learn strategies for teaching and reinforcing safe walking and biking behaviors at home.

Educational Programs

When educational programs are effectively implemented, Safe Routes program members and school faculty can anticipate an influx in the number of walkers and bikers arriving and departing school campuses; however, drivers, neighbors, and parents who are not intimately involved in the Safe Routes process may be out of the loop and not realize that more pedestrians will be crossing intersections and more bikers will be sharing the roads. By applying the six-step evaluation process to developing a community outreach and awareness plan, Safe Routes program members in collaboration with local and regional partnerships and associations can target those outside influences who have the greatest ability to either contribute to or detract from creating a safe walking and biking environment through media, wayfinding and signage, and enforcement activities.

Outreach
Web-based tools and social media can help foster support in a community, and are especially convenient for parents, considering recent advances in smart phones and Internet capabilities. Cost-effective outreach and awareness initiatives utilize school websites, Twitter accounts, Facebook pages, blogs, and podcasts to promote Safe Routes programs and special events. They provide methods of broadcasting key messages to the community.

Moreover, though, social media tools offer opportunities to create dialogue and engage parents, teachers, school leaders and students in addressing issues, celebrating successes, and sharing desires for next improvements or programs. Although capital outlay is not required in order to develop many online tools, Safe Routes programs must invest resources - in the form of staff time - in managing the tools, providing appropriate information in a timely manner, and facilitating group conversations -- such as comment threads or wall posts on Facebook - to ensure the tools are performing to their potential.

Social media tools offer opportunities to create dialogue. Programs need to invest resources - staff time - in managing them.

Print materials such as newsletters and flyers also are effective for reaching a large audience. These materials can be sent home in children's backpacks, placed at school front desks, and even provided to area businesses that are willing to distribute the materials to their customers or provide space on counters for people to take one. A number of free materials are provided by the National Partnership for Safe Routes to school that can be used without restriction for any non-commercial marketing and promotional endeavors. See the break-out box below for links to those materials.

Other ways to create awareness among drivers and to slow speeds near and around schools is to plan and develop a signage and wayfinding system that reminds drivers to slow down and also builds a sense of community spirit. Messages such as "Drive 25, Keeps Kids Alive" and "Give Our Kids a Brake" simultaneously get the point across and foster a cooperative attitude.

Wayfinding tools that guide drivers, pedestrians and bicyclists to community amenities, such as parks, schools, and other destinations, are also opportunities for improving safety and access in a community. Furthermore, enhancing enforcement activities near school as a deterrent for traffic violations or crime is an additional strategy to creating a safe walking and biking environment and is discussed in detail in the next section.

Opportunities for Casper
Through education, students can learn how to safely walk and bicycle through hands-on, age-appropriate training. The physical activity can also support fun educational programming that develops mathematics, geography, writing and other skills. Parents and neighbors can be re-

Educating the Community: Dommerich Elementary School, Maitland, FL

Parents, neighbors and drivers play a large role in determining the safety level of routes to school. Their actions as drivers can have either a positive or negative impact on creating a safe environment for children walking and biking to school. Parents are drivers too and, just like other divers, they get distracted or exhibit negligent driving behaviors in areas where there are high concentrations of children. Residents and business can either help or hinder efforts to make it safer for children on the road. And drivers near schools, who are typically a mix of parents, residents, faculty and staff can also fail to comply with speed limits and traffic laws, which further perpetuate unsafe conditions near schools for walkers, bikers, and vehicle passengers who are likely to be children.

One approach to educating is happening in Maitland, Florida, at Dommerich Elementary School, where parents are educating students and other parents through different layers of their Safe Routes to School Efforts. One facet is an effort "One Less Car" that reached out to the 150 bus-riding students, providing education about the ways public transportation helps the environment and makes the roads safer for those who are able to walk and bike.

Contact: Kris Hirschmann at (407) 623-1407

minded about rules of the road, the need to be on the lookout for children around schools, and pick-up and drop-off policies.

Parents can serve as role models when walking or bicycling with their child. Everyone can benefit from learning more about health and the built environment. Specific opportunities for developing and expending Safe Routes educational activities that complement Casper's current endeavors to improve the built environment are as follows:

- Continue to partner with the Department of Public Health's Safe Kids Wyoming program to support education and encouragement efforts.
- Provide education to students regarding how to walk and bicycle safely. There are aspects that can be taught to all age levels and a wide variety of ways to go about it. Examples of curriculum are described on the Safe Routes to School National Partnership website: http://www.saferoutespartnership.org/state/bestpractices/curriculum
- Build additional strategic partnerships to develop a county-wide community outreach and awareness campaign.
- Promote the Safe Routes Program and broadcast key messages through multiple media outlets.
- Plan and develop a wayfinding and signage system that helps build community spirit and reminds drivers to slow down
- Work with local law enforcement to reinforce a police presence near schools during morning arrival and afternoon departure times.

The Walking School Bus: C.P. Smith Elementary School, Burlington, VT

C.P. Smith Elementary School's walking school bus has operated every Wednesday since March 2005, as part of a Safe Routes to School program. While the neighborhood bordering the school has a fairly complete sidewalk system, some families were concerned about their children walking to school with the considerable traffic congestion along the route. In winter 2005, parents organized a meeting to discuss their concerns and develop guidelines for a walking school bus. The group determined the bus route, time of departure, meeting points and other details. Now, every Wednesday morning the bus departs from a walk leader's house with a small group of children. For late arriving students, a closed garage door indicates that the bus has left the station. The group continues along a major roadway picking up children along the way. Some parents join in the walk while others escort their children to the stop and leave when the bus arrives. There is no written schedule, however organizers plan to install signs along the route indicating stops and schedule. Before the walking school bus began, approximately six children walked this route to school. Now on Walking Wednesdays there are between 25 and 40 children and the traffic congestion along the route has all but disappeared.

http://www.dpw.ci.burlington.vt.us/transportation/bikewalk/safety/

Contact: Jill Nye-McKeown at jill@localmotion.org or 802-860-7505.

Parent Education: Dorset County Council, Dorset County, England

Dorset County Council's innovative Parent Safety Drive was piloted at Sherborne's Abbey Primary School in 2003. Linked to the development of school community supported travel plans, it focused on changing parent attitudes on motor vehicle use in a practical, non-threatening way. The focus of the program was to:

- Improve parents' driving standards
- Reduce the number of child road casualties
- Encourage more sensible use of the motor vehicle
- Reduce the number of parent vehicles within the immediate environment of the school

Parents spend an hour with an experienced driving instructor who shares useful defensive driving and hazard awareness advice and tips using familiar local streets. There is no test or assessment involved. Parents drive on a range of roads including congested urban environments and quieter but faster rural roads. Safer parking and reversing techniques are included in the session together with an opportunity to discuss in-car safety issues and suggestions for locations to park to encourage park-walk options. Highway code knowledge is revisited as well.

It is promoted as a rare chance to refresh driving skills, perhaps for the first time since taking a driving test. There is a fee for the drive of $18 per hour, but a subsidy is planned.

Visit Dorset County Council's road safety web pages to find out more about driver improvement schemes at www.dorsetcc.gov.uk/rsafe.

Additional Resources

Outreach Materials

- Safe Routes graphics and logos: http://www.saferoutesinfo.org/resources/marketing_graphics-and-logos.cfm
- Safe Routes flyers and postcards: http://www.saferoutesinfo.org/resources/marketing_flyers-and-postcards.cfm
- Safe Routes News releases: http://www.saferoutesinfo.org/resources/marketing_press-releases.cfm
- Tip sheets for promotion Safe Routes programs and getting media coverage for special events: http://www.saferoutesinfo.org/resources/marketing_tip-sheets.cfm
- Safe Routes Podcast: http://www.saferoutesinfo.org/podcast/index.cfm

Bicycle and Pedestrian Education Curriculum - Students

Pedestrian and Bicycle Information Center (PBIC) children and teens education issues and programs: http://www.bicyclinginfo.org/ee/ed_child_main.cfm

National Center for Safe Routes to School, strategies for educating children: http://www.saferoutesinfo.org/guide/education/strategies_for_educating_children.cfm

National Center for Safe Routes to School, education resources: http://www.saferoutesinfo.org/guide/education/resources.cfm

Youth Educational Sports, Inc, educational bike/ped materials: http://yesports.org/categories/educational-materials-2.html

Ride Smart: It's Time to Start, bicycle helmet video for tweens: http://www.nhtsa.dot.gov/Bicycles

Bike Safe Bike Smart, a bicycle safety video for tweens, from the National Highway Traffic Safety Administration: http://www.nhtsa.dot.gov/Bicycles

The Federal Highway Administration at www.fhwa.gov offers the following:

- Bicycle Safety Education Resource Database: Searchable database by audience, riding skill level and bicycling topic.
- Good Practices Guide for Bicycle Safety Education. For program developers or those seeking an existing bicycle safety education program.

Personal Safety

U.S. Department of Justice Personal Safety for Children: A Guide for Parents provides information for parents on how to talk to children about safety, advice to parents about how to keep children safe, and tips to children about how they can protect themselves: http://www.ncjrs.gov/pdffiles1/ojjdp/psfceng.pdf

Stop Bullying Now is a site that provides resources for adults and educational messages for children on bullying: http://stopbullyingnow.hrsa.gov/kids/

Health and the Environment

My Pyramid: Activities and physical activity messages for children. www.mypyramid.gov

VERB Youth Campaign: Activities and resources for tweens and parents encouraging movement every day. http://www.cdc.gov/youthcampaign/index.htm

U.S. Environmental Protection Agency Kids Club: Classroom activities and information for parents and educators. http://www.epa.gov/kids/

City of Portland Office of Transportation Kids on the Move Curriculum: Focuses on safety and the impact of vehicle use on the environment. Free and downloadable from the internet. http://www.portlandonline.com/transportation/index.cfm?a=222273&c=40561

Encouragement

Although walking and biking to and from school have a profound influence on childhood development, health and wellness, convincing parents and children to change their routine habits and behaviors can be challenging for even the most dedicated group of Safe Routes to School advocates. Often, good infrastructure, traffic calming measures, and education courses to enhance children's walking and biking skills are not enough to facilitate change. In this case, extra encouragement and incentives may be necessary before parents and children consider walking and biking over driving.

Encouragement is one approach that Safe Routes programs use with a combination of engineering, education, and enforcement strategies to promote active transportation and to advance Safe Routes efforts. In most cases, Safe Routes education is accompanied by encouragement strategies. These two components, combined, increase the number of children walking and biking to and from school by educating children and adults about the safety and benefits of doing so and rewarding participation, proper application of skills, and good pedestrian and bicyclist behaviors.

Best practices: Planning for Encouragement
It is important that encouragement efforts suit the particular size of each school and reach the intended audience. Prior to introducing encouragement activities and incentives into schools and at school-sponsored events, the Casper Safe Routes to School program needs to assess the current situation at each school to ensure that the right type and appropriate amount of encouragement activities and incentives are provided.

This action step is particularly important in Casper in regards to the "school of choice" program since students may be coming from neighborhoods that exceed walkable and bikable distances.

The National Center for Safe Routes to Schools has compiled a short list of questions to answer to aid in this assessment:

A skateboard rack at a school in Redondo Beach, CA.

- Are children who live within a 1.5-mile radius of school NOT walking or biking? If the response is yes, the Casper Safe Routes program needs to find solutions to the problem. Encouragement strategies can be answers to a number of barriers that hinder children and parents from participating in walk and bike to school programs. For example, a simple survey could determine if parents would consent to letting their kids walk or bike if they were accompanied by adult volunteers. Chaperoned walking school buses and bike trains that meet regularly create a dual education and encouragement opportunity to address distance and personal safety barriers, and teach children about pedestrian and bicycle safety.

- Do children live too far from school to walk or bike? The majority of encouragement strategies can accommodate children and parents who live beyond walking and biking distances to school. A park or other suitable location can be selected where parents can park and then walk or bike the remainder of the way to school. Although this approach does not eliminate the need for the car, it allows children the opportunity to utilize an active mode of transportation for at least a portion of their trip, providing them many of the benefits of active living.

- The Safe Routes program can also work with parents and volunteers to develop a revolving schedule that allows them to share responsibilities by taking turns chaperoning a few children each on certain days of the week.

- What is the level of interest and volunteer capacity? Answering this question is important to determine the initial size and capacity of the program. Programs can then develop realistic goals and objectives for education and encouragement activities and measure their impacts to ensure that safe routes efforts are indeed making a difference.

- Is it safe to walk and bike? If the answer is yes, then encouragement activities can begin without delay once the program has decided on the best strategies. If there are mixed results, then encouragement activities along routes and on school grounds that are deemed safe can begin, while improvements are being made to unsafe routes.

Best Practice: T-shirt giveaway in Tampa, FL.

Best Practice: Family walks in Seattle, WA.

Best Practice: Encouraging “rolling” to school, too, in Tampa, FL.

Best Practices: Encouragement Activities and Incentive Programs

Encouragement activities and events are quick and generally easy to launch. They can play an important role in building interest and excitement for Casper's Safe Routes program, which can also be useful for fostering collaboration and maintaining support for long-term engineering projects that usually require more time and resources to carry out. The chief priority among all successful encouragement endeavors is to have fun. Special events are great ways to boost interest and enthusiasm for walking and biking in the community.

Be creative! Be bold! These events need to inspire, excite, and motivate parents and children to choose walking and biking over driving as their preferred mode of transportation to and from school. Consider balloons and banners for elementary and middle schools or a live radio station remote broadcast for high schools.

Streets are for people, too, in Baltimore, MD.

Fun Events

Plan fun walking and biking activities, like bike rodeos or walkathons. These one-day events can be held annually to celebrate Walk to School Day or Earth Day, or several times throughout the year, depending on the program's budget, volunteer capacity, and community interest and involvement.

Do not shy away from being unique -- Safe Routes programs and their partners can designate new themes and days to celebrate safe routes, such as a Car Free Day, Walk and Roll Day, and field trips that are all about walking and biking.

Provide cool giveaways appropriate for the age group, such as stickers and bike bells for elementary schools, t-shirts and helmets for middle schools, and gift cards to sporting-goods stores or a new bike as a grand prize for high schools.

PROVIDE COOL GIVE-AWAYS THAT ARE APPROPRIATE FOR THE AGE GROUP.

Special events are also opportunities to generate awareness and support for the Safe Routes program, and engage the broader community in local Safe Routes efforts. Building community partnerships and soliciting sponsorships and prizes are additional strategies to help fund and sustain these events for years to come.

To guide local programs in planning for special events, the National Center for Safe Routes to School compiled this list of steps, which is also available on their website at www.saferoutesinfo.org:

1. Find partners including parents, school personnel, law enforcement and community members.
2. Plan the celebration, including a safe route and any needed volunteers and incentives.
3. Register for International Walk to School events at www.iwalktoschool.org. To register and receive valuable tips and free resources for International Walk to School Day in the U.S. and other special events that promote Safe Routes, visit http://www.walktoschool.org.
4. Promote the event.
5. Have fun.

Media Outreach

Try to secure media coverage by simply calling local news outlets, explaining the importance of the event, and asking whether they can cover it. Sometimes, a news outlet will not be able to send a reporter but will announce the event in advance, and may even publish or post a picture if the event organizers submit a good image the day of or even the day after the event.

The use of children's images or identities may be addressed by school policies, school district policies or legal counsel's advice. Safe Routes programs should review school policy, work with the school board and school administration, and consult legal advice before providing images or identities of children to news outlets.

See the National Center for Safe Routes to School's media guide in the Appendix, which also is available at: http://www.saferoutesinfo.org/guide/media/index.cfm.

Also, see the Center's tip sheet on liability issues in the Appendix, which also is available at: http://www.saferoutesinfo.org/resources/collateral/liabilitytipsheet.pdf

Extracurricular Activities

Activities and contests, such as the mileage club or walk-and-roll club, are fun ways to encourage kids of all ages to either begin walking or biking to school or increase their current amount of physical activity. Children are rewarded with incentive items when they reach a certain distance or "mileage," or after they walk or bike to and from school a set number of times. All students can participate, including children with special needs who require supervised physical activity.

TRY TO SECURE MEDIA COVERAGE BY SIMPLY CALLING LOCAL NEWS OUTLETS AND EXPLAINING THE EVENT.

Prior to implementing these strategies, there are a few logistical considerations that Safe Routes programs need to address, such as recruiting a coordinator and visible record-keeping methods that keep participants motivated, such as punch cards or posting tally sheets on the school bulletin board to be viewed by all. In brief, the National Center for Safe Routes to School provides these quick steps to establishing a mileage club or similar encouragement activity , which also are available on their website at www.saferoutesinfo.org:

1. Identify coordinator and (if necessary) obtain school's support.
2. Decide where children can accrue mileage (to school, at home, on campus).
3. Create system for logging and tracking mileage or number of times walked / bicycled.
4. Decide on incentives.
5. Promote.
6. Kick off.
7. Recognize and reward participation.
8. Track participation.
9. Make changes as needed.

Ongoing activities are a combination of education and encouragement strategies to overcome a number of barriers, especially those stemming from distance or personal safety, that hinder parents from allowing their children to walk and bike to school.

These activities occur daily, weekly, or monthly throughout the entire school year and generally consist of one of a number of the following encouragement strategies:

- Walking school buses or bike trains
- Park-and-walk campaigns
- On-campus walking activities

Walking school buses and bike trains consist of groups of supervised children who meet at a designated location and walk or bike a pre-planned route to school. These activities are optimal for encouraging parents and children who would otherwise be deterred by distance, personal safety, or high traffic volumes.

If distance, increased traffic and congested drop-off and pick-up zones are the major impediments to increasing the number of children walking and biking, incorporating park-and-ride encouragement strategies into walking school buses and bike trains is one solution to alleviating these unsafe conditions. Walking and biking groups can meet in a parking lot, where parents and volunteers can leave their cars and walk and bike to school with their children.

Walking school buses and bike trains can be loosely structured or highly organized, ranging from families in one neighborhood that decide to walk or bike collectively to more formal arrangements involving a devoted coordinator who recruits volunteers and participants, designs maps

of the designated routes, creates and updates schedules, and collects data. Although the latter involves more time and resources, it is also designed to involve more children and likely to generate more support for advancing other Safe Routes efforts. The National Center for Safe Routes to School has also compiled a list of quick steps for establishing a local walking school bus or bicycle train for both informal and formal structures, which is also available on their website at www.saferoutesinfo.org:

Loose, informal structure
1. Invite families who live nearby to walk or bicycle as a group.
2. Pick a route and take a test walk or ride.
3. Decide how often the group will travel together.
4. Start walking or bicycling.

Highly organized, more formal structure
1. Determine the amount of interest in a walking school bus or bicycle train. Contact potential participants and partners and identify a coordinator.
2. Identify the route(s).
3. Identify a sufficient number of adults to supervise walkers or bicyclists. (The Centers for Disease Control recommends one adult per three children for children ages 4 to 6 and one adult for six children for older elementary children ages 7 to 9. For bicyclists, one adult per three to six children is advisable.)
4. Finalize logistical details including setting a time schedule, training volunteers and promoting participation.
5. Kick off the activity.
6. Track participation.
7. Make changes to the activity as needed.

It is important to note that schools may require parents or guardians to accompany their children on these walking and biking trips or sign waivers for liability purposes. *10 Tips for Safe Routes to School Programs and Liability* is a National Center for Safe Routes to School publication that provides guidance on broaching this subject, but is not intended as legal advice and should not be used as such. It is provided in the Appendix and is available at www.saferoutesinfo.org/resources/collateral/liabilitytipsheet.pdf. Safe Routes programs should review school policy, work with the school board and school administration, and consult legal advice before drafting waivers and kicking off these activities.

Cordova, AK.

Tampa, FL.

On-campus walking activities are additional ongoing encouragement strategies that increase physical activity and address conditions where distance, disabilities, or safety conditions prevent children from walking and biking to and from school. These activities fit naturally into physical education or health classes and can also be conducted before school, after school or during recess if there are competing demands for class time.

Encouragement activities that take place on school grounds can be combined with pedestrian and bicycle safety education to reinforce responsible behavior on the road and include children who may otherwise not be able to participate in other Safe Routes activities. These activities do, however, require a coordinator and support from school administration. The National Center for Safe Routes to School provides the following steps to guide local programs in implementing on-campus activities in their schools:

- Identify a coordinator and obtain school's support.
- Determine the scope of the activity: who will be involved? When will they walk? Where will they walk? For how long will they walk?
- Set goals for walkers either by accumulated distance, amount of time or number of days walked.
- Obtain incentives (optional).
- Promote.
- Kick off.
- Track participation.
- Make changes to the activity as needed.

All of the ideas highlighted above for encouraging students to walk and bike to and from school is only the tip of the iceberg for a unique and spirited community like Casper. The WALC Institute encourages Casper's Safe Routes Program to be bold! Be creative! Consider today's tools and trends when planning and designing encouragement strategies; ask the children what interests them and try to find innovative ways to incorporate their interests as part of your educational and encouragement approach; do not be afraid to fail; and most importantly, never lose sight of the number one priority, which is always to have fun.

BE BOLD!
BE CREATIVE!

Additional Resources

For details on planning a Walk to School Day event, International Walk to School Day in the US registration, and additional resources visit: http://www.walktoschool.org/

For the ABC's of a Walking School Bus visit: http://www.walkingschoolbus.org/

The National Safe Routes to School Program publication entitled *The Walking School Bus: Combining Safety, Fun and the Walk to School* should be reviewed for detailed guidance regarding establishing a Walking School Bus in your neighborhood.

Humboldt Partnership for Active Living has compiled a plethora of educational and encouragement strategies, tips, and details on model projects around the globe in one convenient location: http://www.humpal.org/ed.encourage.html

NHTSA Promotional Toolkit provides tips and strategies to promote your program and keeping the program alive: http://www.nhtsa.gov/people/injury/pedbimot/bike/Safe-Routes-2002/promotion.html#1

Feet First in Seattle, Washington is a model program focused on promoting walkable communities and safe routes to school. This organization has an advanced membership program and walking ambassador program, and a successful online blog for spreading key messages. For details access: http://feetfirst.info

Enforcement

Traffic conditions near schools are one of the primary factors affecting parent's decisions to allow their child to walk or bike to school. Traffic congestion, excessive speeds and reckless driving behaviors create a dangerous environment for children traveling to school on foot or bike. When these safety hazards are left unchecked, parents are most likely to opt for driving or busing instead of walking or biking. The result is an unnecessary influx of vehicles on the roads, perpetuating a cycle of unsafe conditions and barriers.

That is why a combination of enforcement, engineering, education and encouragement strategies to calm traffic, increase awareness and improve driver, pedestrian and bicyclist behavior remain critical to any Safe Routes to School program. The enforcement element of Safe Routes programs is one of the complementary strategies that Safe Routes programs use to deter unsafe behaviors and encourage all road users to comply with traffic laws and share the road safely.

Identify unsafe behaviors
A first step to enforcement initiatives begin with recognizing unsafe behaviors on school routes and in drop-off/pick-up areas. Simply start by observing students arriving and departing from school and recording any noticeable obstacles or patterns of reckless driving behaviors. Examples of traffic violations, unsafe scenarios and discerning barriers that one might encounter during this observation can include, but is not limited to:

- Drivers speeding, violating drop-off/pick-up procedures, or failing to yield to students, especially at crosswalks
- Pedestrians crossing the street at an undesirable location, not looking left or right before crossing, or walking on the road when a sidewalk is present
- Bikers riding against traffic flow, not signaling, or without helmets
- Once the Safe Routes program has identified safety hazards around school and on campus, appropriate strategies for improving behaviors and overcoming obstacles can be chosen and implemented. Support from law enforcement will be an important part in addressing these safety hazards near schools; however, through a comprehensive approach there is a role that everyone can play in encouraging good behaviors, improving safety, and raising awareness.

Officers in Las Vegas, NV take part in walkability training.

The Law Enforcement Approach
Local law enforcement officers are true experts on traffic behavior. Their professional roles and responsibilities in keeping a community safe from harm involve an intimate knowledge of the consequences of vehicle crashes and the behaviors that cause them. Having local law enforcement at the table as partners is prudent, and brings a valued perspective on traffic safety while developing Safe Routes programs; however, current demands on departments and the level of participation they can provide differs from one community to the next.

When approaching local law enforcement to assist in Safe Routes efforts it is important to understand what their resources are and work within their means. Some officers may specialize in traffic violations or criminal activity and be assigned to only work in particular geographic areas in the community, while others may be assigned to work as school resource officers on

school grounds. All of these types of enforcement specialist can participate in Safe Routes enforcement efforts in the following ways:

- Teach safety issues to children, school officials, parents and the community.
- Evaluate local traffic concerns, observe problem areas and behaviors, and provide input about safe routes.
- Provide an enforcement presence that discourages dangerous behaviors on and off the school campus. This may mean issuing warnings to drivers breaking traffic laws. Drivers who have made a minor error will often respond to a warning from an officer by being more careful. Drivers who continue to violate traffic laws need to be ticketed.
- Monitor crossing guards and make sure they are acting safely in the street and are not taking chances or over-stepping their duties as guards.
- Monitor students to ensure that they cross at safe locations and do not take unnecessary risks.
- For more information on how local law enforcement agencies can assist in Safe Routes to School efforts visit: http://www.saferoutesinfo.org/lawenforcement/

Law Enforcement Methods

There are a number of methods that use technology and personnel to modify behaviors and improve travel safety for all modes of transportation. Increasing police presence near school during arrival and departure times can serve as a major preventative measure for speeding or other reckless behaviors that detract from Safe Routes efforts. In effect, enforcement initiatives should be providing a visible police presence versus merely writing tickets for traffic violations. Devices used to effectively decrease speeds and elevate awareness of local speed limits without an officer present are typically speed trailers or active speed monitors, which visually display drivers' real-time speeds compared to the speed limit. The former is portable and can be moved to different hot spots around schools, while the later is permanent and usually mounted above or below speed limit signs. Other deterrents such as photo enforcement, progressive ticketing, and a zero tolerance policy for speeding in school zones are also effective measures to reducing speeds and change behaviors.

Not yielding for pedestrians at intersections and mid-block crosswalks is also a major hazard for students walking to and from school. An innovative

Enforcement will discourage motorists from blocking sidewalks like above, in Redondo Beach, CA, and running stop signs, like below, near a school in Manhattan Beach, CA.

way to address this problem is through "pedestrian decoy" operations, where police officers disguised as common pedestrians cross the street while other officers remain hidden and observe their efforts. If drivers violate the law and neglect to yield, the officers on standby stop them and issue a penalty. This operation has the propensity to garner much publicity for Safe Routes programs and is currently being carried out as a best practice in communities big and small around the nation. To execute a successful "pedestrian decoy" operation, law enforcement should complete the following steps:

1. Identify high-risk locations for pedestrians and communicate these locations to law enforcement, traffic engineers, schools and the public.
2. Observe the locations to see the types of violations that are occurring.
3. Calculate a reasonable amount of time for a driver to see and react to the pedestrian and mark that distance back from the crossing with a cone or sign. One measure would be the "slide-to-stop" formula using a speed 10 mph over the posted limit.
4. Dress the "pedestrian" or police officer in high-visibility civilian clothes. He or she should not step into the street if the motor vehicle has passed the safe distance cone.
5. Identify violators and apprehend them. Other officers observe the crossing attempts from a hidden location that allows them to pursue and apprehend violators. If a concealed location is not feasible, the decoy officer can carry a radio to alert fellow officers of a violator.

Regardless of the methods used, these traffic calming initiatives should have built-in evaluation measures to determine their effectiveness. If results are favorable, then the deterrent strategy should be implemented long enough to change unsafe behaviors. If the method is not producing the results desired, then a new deterrent or combination of deterrents should be explored.

The Community Enforcement Approach

Community representatives also play an important role in calming traffic and improving driver, pedestrian and bicyclist behaviors on the roads and on school grounds. When a community is able to bolster law enforcement initiatives with strategies of their own, like offering training for adult volunteers to become crossing guards or establishing neighborhood speed watch programs, Safe Routes to School programs can have a huge impact on reducing the number of vehicle-related accidents and injuries in high risk areas.

One approach to getting children involved in promoting traffic safety at on-campus drop-off and pick-up areas is to establish a district-wide safety patrol program. Kids who become safety patrol officers are supervised and trained in helping other students get safely into school from bus and drop-off areas. They also become role models and help instill good behaviors amongst their peers. Safety patrol programs do require school approval and parent permission before the program is implemented. A committed volunteer needs to be recruited as well to provide training to these you safety patrol officers and coordinate activities.

An optimal community-based method for improving behaviors and increasing awareness of children on the road in high risk areas is through a crossing guard program. Crossing guards play a significant role in promoting traffic safety reminding drivers that pedestrians are present and by helping children cross busy roads and intersections safely. These programs involve having a reliable group of volunteers or funding available to compensate part-time guards and need to provide adequate training and equipment as well. For more information, the National Safe Routes to Schools Program has published guidelines for adult crossing guard programs, which are available for download at : http://www.saferoutesinfo.org/guide/crossing_guard/pdf/crossing_guard_guidelines_web.pdf

Opportunities for Casper

- Partner with local law enforcement to develop an enforcement plan. Identify unsafe behaviors and implement strategies to improve them over the long run.
- Provide officer training. Officer training is critical to an effective law enforcement program. The training should include information on what, when, where and how law enforcement should respond to maximize driver behavioral change and to reduce the number of crashes involving pedestrians.
- Recruit community representatives to find solutions. Whether it be a neighborhood sign campaign to remind drivers to slow down or painted murals in the middle of intersection and cross-streets, there are a number of innovative ways to engage the community in Safe Routes enforcement efforts.

A comprehensive Safe Routes to School approach and additional roles, resources and tips for law enforcement officers are available at: http://www.saferoutesinfo.org/lawenforcement/resources/parent_ed.cfm

For more information on neighborhood speed monitoring programs, visit: http://www.ci.seattle.wa.us/transportation/speedwatch.htm

Evaluation

Communities across the nation are developing Safe Routes programs to increase the number of students walking and biking to school. They custom-build their Safe Routes programs to meet the needs of their schools by introducing a number of engineering, education, enforcement and encouragement initiatives, but how do they know they are implementing the right strategies? How do they know the desired outcomes are achieved, especially when funding is limited, time is critical, and partnerships and participation depend on success? The answer is to conduct ongoing evaluation.

Evaluation benefits all Safe Routes programs

Developing an evaluation plan at the onset benefits all Safe Routes programs regardless of size and is vital to determining if the program objectives are being met and to assure that resources are directed toward efforts that show the greatest likelihood of success. Also, through ongoing evaluation, the communities can identify unforeseen barriers or issues that arise as a result of their intervention strategies and make the necessary adjustments while the program is underway.

Gathering data, determining root causes, deciding on realistic objectives, and measuring results are the principal activities associated with the evaluation component. This analytical process may seem daunting, but fortunately there is no need to re-invent the wheel as the evaluation process has overtime been streamlined and simplified into a 6 step process for programs to follow.

Evaluation is vital to determining if objectives are being met.

To begin developing an evaluation plan and collecting data for Casper's district-wide program, a blank worksheet and sample completed worksheet to help formulate an evaluation plan is included in the Appendix of this report. Gathering initial information and baseline data is important because it helps determine root causes that may not be evident from mere observation and serves as a measure for success.

Six Step Process for SRTS Program Evaluation

1. Plan the program/ Collect information
2. Write objectives
3. Decide what, how and when to measure
4. Conduct the program and monitor progress
5. Collect information and interpret findings
6. Use results

Source: National Center for Safe Routes to School

Several instruments and strategies for gathering data are readily available for immediate use. Safe Routes Parent Surveys and Student Tally Sheet are included in the Appendix and are available for download at http://www.saferoutesinfo.org/data/.

These tools should be used to gather data at the beginning of the school year, during special promotional events such as International Walk to School Day, and again at the end of the school year to document the program's progress.

Once surveys and tally sheets have been collected, the entire stack of forms can be sent to the Safe Routes National Clearing House for electronic data processing free of charge. For more information, a tip sheet that further describes how and why to use these tools is also included in the Appendix of this report.

Crafting objectives for a Safe Routes program can make planning for and evaluating a program much easier. These objectives should be measurable and attainable and include specific information about what is to happen to whom by when and in what amount. In fact, the "SMART" measurement is recommended by the national Safe Routes program addresses whether objectives are specific, measurable, achievable, relevant and time-bound.

Specific

A specific objective guides measurement while a vague objective is hard to measure. For example, to find out whether a Safe Routes to School (Safe Routes) program increased students' well-being is harder to measure than whether the program increased the number of steps they took before school.

Measurable
To qualify as measurable, there should be a tool, like a tally form, or methodology to capture the needed information.

Achievable
Objectives should be attainable. If only 25 percent of students live within two miles of school, it is not realistic to expect that Safe Routes will result in walking and bicycling by 50 percent of all students. It is important to consider all the information gathered before the program to derive realistic objectives.

Relevant
While it may seem obvious, the objective should relate to the intended activities. For example, if a Safe Routes program is focused on engineering improvements on one particular route to school, it is not relevant to have walkability of the entire community as the objective.

Time-Bound
An objective needs to have a time frame. If not, it may be arguable that an objective is yet to be met some time in the future, or someone may expect the objective be met sooner than is realistic. A date or time frame eliminates these uncertainties.

Sample measures for all Safe Routes components are available online at http://www.saferoutesinfo.org/guide/evaluation/appendix_i_examples_of_what_how_measure.cfm

Opportunities for Casper

Local Safe Routes programs make the mistake of deciding on and prioritizing certain engineering, education, enforcement and encouragement strategies based solely on observation and anecdotal data. Going through the analytical process of gathering information and data that supports an initial hypothesis will most likely unveil additional root causes that otherwise would have been neglected until the chosen strategies were not producing the intended results, wasting time, money and resources.

EFFECTIVE EVALUATION PROVIDES EVIDENCE-BASED QUALITY CONTROL.

Since the Safe Routes program in Casper is still developing, there is an opportunity to implement a district-wide evaluation plan for any improvements made to the built environment and other educational, enforcement and encouragement pursuits that will benefit all schools involved. It is important to note that a successful evaluation process requires some investment of resources.

At first, it is difficult to rationalize dedicating valuable resources to efforts that do not directly increase the number of students walking and biking; however, following an evaluation plan that captures and assesses local data is necessary to achieve success in Casper.

Effective evaluation provides evidence-based quality control tool for selecting and prioritizing the best engineering, educational, enforcement and encouragement strategies to address underlying problems and school-specific barriers. It also justifies supplemental funding and gives the Casper's Safe Routes program an edge in vying for competitive state and national resources. Lastly, it validates the overall success of the program and helps sustain activities when initial program funding expires.

Additional Resources

The online Parent Survey option is a free service that streamlines the data collection and submission processes, and saves local programs administrative time and money. To determine if this is appropriate for Casper visit http://www.saferoutesinfo.org/news_room/2010-12-01_new_online_data_feature.cfm.

The Safe Routes to School: Practice and Promise Guide describes what local Safe Routes programs are, why they are needed, how to measure success, and from whom others can learn. The publication provides enough information for those in decision-making positions to determine how to allocate scarce resources and to assure positive outcomes. See: http://www.saferoutesinfo.org/resources/program-development_guides.cfm

Readers interested in developing a deeper understanding of evaluation are encouraged to review the Safe Routes Evaluation Guide at http://www.saferoutesinfo.org/guide/evaluation/index.cfm

Partnerships

Casper should capitalize on introductions already made as part of this planning process to develop lasting partnerships. A working group will help identify roles, clarify expectations and provide opportunities for meaningful engagement.

A successful Safe Routes to School partnership brings together a diverse and committed group of people that will continue to grow and change as the program does. The Casper community is prepared to build on successful Smart Growth planning and engineering efforts and to capitalize on the energies of a team that is able to collaborate effectively and foster change.

Strategic partnership building is key to sustaining district-wide Safe Routes efforts and ensuring long-term success. To achieve maximum impact, Casper's Safe Routes to School partnership should be a county-wide consortium of individuals, organizations and agencies with diverse professional and cultural backgrounds. Many of the potential members already have come together as part of this planning process.

The team should include representatives from the Natrona County School District; City of Casper – planning, police, fire, public works, and recreation as part of the ACHIEVE program; Natrona County – planning, sheriff, and public works; Wyoming Department of Transportation's Safe Routes Coordinator; Safe Kids of Central Wyoming; Department of Health; and school principles, teachers, and PTA groups. By working together to implement a Safe Routes to School program, this partnership can create an ongoing forum for communication and support each other's efforts in creating a healthy, safe, and attractive environment that is enjoyed and embraced by all.

Additional non-traditional partners with aligning goals may already be working within the neighborhoods around schools with a parallel interest or intent to improve health and wellbeing, increase accessibility and walkability, or mitigate impacts to the environment through similar sustainable initiatives. These individuals or groups may well be parents, neighbors, mentors, community outreach workers, a church, or just avid walkers and bikers. They can act as champions for a particular school and be a valuable asset to the program.

Discovering and recruiting these non-traditional partners who already have an outreach mechanism, community trust, successful program, and "speak the language" of the neighborhood to understand nuance and culture can also enhance efforts. An example might be a grassroots non-profit successfully performing outreach within a neighborhood for an after-school program that students could walk or bike to after school.

The Safe Routes working partnership can gather information and identify issues; create a framework for community outreach and education that looks at incentives and encouragement for improving walking, biking, and enforcement; and expand the Safe Routes program and partnership school by school.

A partnership creates opportunities to work with the community to overcome any past history and learn concerns from a neighborhood perspective, engaging local stakeholders around the school, including: neighborhood associations, churches, community centers, fire and police departments.

Sustaining momentum and building a Safe Routes to School Program that encourages children to bike/walk to school requires a designated point person or program manager who is capable of leading a partnership tasked with addressing the underlying barriers that can affect successful implementation of the program.

This Safe Routes to School Program Manager should be able to understand the various partners' unique skill sets, current projects, initiatives, and resources so common goals can be attained under the Safe Routes program.

The various partners of the Casper Safe Routes to School program could be organized with defined roles around the framework of Safe Routes: Evaluation, Education, Encouragement, Engineering and Enforcement.

The following potential partners should be engaged in the Safe Routes effort:

Education
School district, Safe Kids of Wyoming, Department of Health, ACHIEVE program, parents, teachers, principals, and the PTA.

Tasks: Getting everyone on the same page to understand what works best for the individual school and doing outreach within the school and the community to educate everyone on the benefits of a Safe Routes to School program.

Encouragement
Principals, teachers, crossing guards, Safe Kids of Wyoming, Department of Health, ACHIEVE program, parents, PTA, other grass roots non-profits.

Tasks: Locating and providing incentives, finding the fun and tailoring the program to suit the needs of each individual school.

Engineering
City, county, and school planning/public works, MPO, recreation, fire, police, WYDOT.

Tasks: Prioritizing and completing the recommended engineering improvements at or near schools.

Enforcement
Police/Sheriff, parents, students, principals, teachers, school district, crossing guards.

Tasks: Regular and random police presence during pick-up/drop-off to encourage good motorist behavior. Enforcement of traffic laws around schools is a key component of a Safe Routes program to ensure safety, alleviating parental concerns about traffic congestion and "stranger danger."

Evaluation
PTA, Safe Kids of Wyoming, principals, teachers, parents, students, ACHIEVE program

Tasks: Collecting baseline data to understand current conditions using surveys. Craft an individual school plan to implement solutions with the many tools provided in a Safe Routes program.

While there are similar challenges at all schools district-wide, how the Safe Routes program is employed at each school will vary. Some schools have more parent involvement, others have more students who live nearby and are able to walk or bike more conveniently. Finding solutions to encourage the implementation of Safe Routes to School will need to be tailored to each school and the partnership can help facilitate the process.

The partnership can focus on getting the students, parents, and/or teachers involved from different angles, learning what perspective appeals to the parents and student populations; some examples include, physical health, personal transportation cost savings, time savings, or better academic performance.

Additional avenues to partner for achieving plan goals are partnering with the local before- and after-school programs for students to walk or bike to or from or involving residents and business owners along a safe route who might be interested in clearing sidewalks in the winter to keep routes clear.

Having a plan in place for one school, a few schools, or district-wide will depend on the partnership, but once a plan is agreed upon, it can be funded and carried out. Unique funding opportu-

nities can be discovered when the partners around the table pool resources to complete projects. Unique funding opportunities can happen once the partnership knows what the task is, how much it will cost, what it will take to implement. Knowing what is needed is much of the effort.

Funding for engineering improvements can come from various sources such as:

- Private foundations with missions seeking to reduce childhood obesity fund improvements that change the built environment to create opportunity for physical activity such as Robert Wood Johnson, Kellogg, General Mills, Aetna, Heinz and others.
- Road projects (new and resurfacing) by the WYDOT, Natrona County, or the City of Casper provide opportunities to add bike lanes, sidewalks, street trees, and enhanced crossings at intersections.
- State and federal government grant options include Community Development Block Grants, DOT Enhancement Funding, and HUD projects.
- Non-traditional government sources including air-pollution and water-quality agencies.
- The development community, which should be required to create projects that support the vision of the Comprehensive Plan, but also may contribute funding to improving children's access to school as a show of good faith and to help build goodwill toward their work.

Safe Routes and school coordinators can approach membership clubs such as Rotary; local retailers like Wal-Mart, Target, Home Depot, and Lowes; and local health foundations to provide in-kind donations such as giveaways for encouragement events, playground equipment, bike racks, signage, crosswalk striping, and staff time to help build a program at a school. The National Highway Traffic Safety Administration is a source that provides funding to train police and crossing guards for school traffic safety.

Lastly, a successful Safe Routes to School program partnership will circle back to have periodic evaluation with some trial and error as the process evolves. The value and contribution of partners can be realized by aligning efforts, policies, and initiatives to create significant local and regional impact.

Best Practice: Engage the engineering department as a Safe Routes partner.

Best Practice: Engage local leaders as Safe Routes partners.

	EVALUATION	ENGINEERING	EDUCATION	ENCOURAGEMENT	ENFORCEMENT
ACHIEVE Program	✓	✓	✓	✓	✓
City of Casper Fire Department		✓			
City of Casper Planning		✓			
City of Casper Public Works		✓			
City of Casper Police		✓	✓		✓
Crossing Guards				✓	✓
Department of Health			✓	✓	
MPO		✓			
Natrona County Planning		✓			
Natrona County Public Works		✓			
Natrona County Sheriff			✓		✓
Natrona County School District		✓	✓	✓	✓
Other non-profit				✓	
Parents	✓		✓	✓	✓
Principals	✓		✓	✓	✓
PTA	✓		✓	✓	✓
Safe Kids Wyoming	✓		✓	✓	✓
Students	✓		✓	✓	✓
Teachers	✓		✓	✓	✓
Wyoming DOT SRTS Coordinator	✓		✓	✓	

Concluding Thoughts

This study has laid out a path to creating Safe Routes in Casper. Now the difficult – but rewarding – work begins.

In the first section of this report, we noted that Casper has many challenges and opportunities to address on its path to creating Safe Routes to School for all children. This report serves as a good start for heading down that path, but now the difficult work begins.

Working with this report as a guiding document, but being mindful that no report replaces conviction, cooperation and action, Casper should address the engineering improvements identified at each of the eight schools, and then apply those same principles and concepts to all schools.

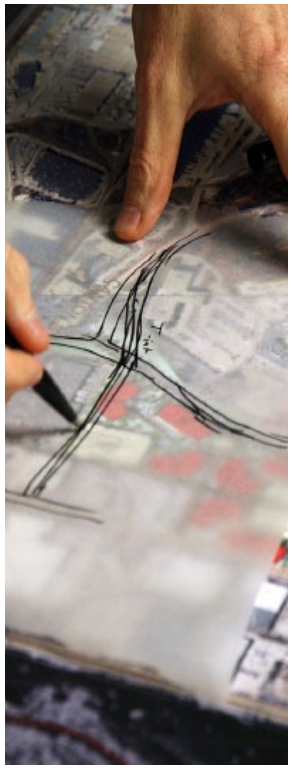
Attention also should be focused on fixing incompatible policies and setting up a working group that engages as many potential partners identified in this document as possible. And of course, employ the best practices described throughout the report and contact other Safe Routes programs for insight, support and encouragement. Finally, we could not include all of the relevant and important information about Safe Routes in the main body of this report. Thus, we've included an expansive Appendix that provides information very relevant to Casper, but that also applies to the nation. Starting with the Design Guide that is customized for Casper and including the WALC Institute's Town Maker's Guide to Livable Schools, the Appendix is chock full of resources and supporting documents that will aid Casper in its quest to create Safe Routes to School.

Let nothing but good winds blow through Casper.

No report replaces conviction, cooperation and action. Let nothing but good winds blow through Casper

CasperWyoming

Safe Routes to School



Appendix

Town Maker's Guide: Livable Schools

Preliminary Engineering Drawings for Willard Elementary School

Best Practices, Case Studies and Tools

Safe Routes to School Guides

Supporting Documents

Letter from Wyoming Department of Transportation

TOWN MAKER'S GUIDE:
Livable Schools

Walkable and Livable Communities Institute

STREETS/PARKING

Streets should support walking, bicycling and vehicle movement. Lanes should be no more than 10 feet wide and, if possible, should be separated from on-street parking by a two-foot valley gutter. On-street parking gives motorists a place to wait when picking up children and uses as little as a third of the space of off-street parking. Restricting parking times along the curbs next to the school allows these areas to be used for student drop-off and pick-up. Signs should inform motorists to stay with their cars at all times. Head-out (or reverse) angled parking is the safest and most efficient on-street parking. Head-in angled parking and parallel parking also can be good options. On-site parking may not be avoidable, but can be minimized.

CROSSINGS

Around schools, drivers should feel that they are entering a pedestrian realm and that people may be using crossings any time of day. Where crossings are located, streets should be designed so that traffic is slow — between 15 and 20 mph — and sight lines are good. At higher speeds, motorists are less likely to yield to pedestrians and the risk increases. Crossings are best with good lighting, when students cross one lane at a time, and when students and drivers can clearly recognize and respond to each other. Median islands, curb extensions (or "bulb outs") and raised table crossings help create these conditions.

DROP-OFF/PICK-UP

With high rates of students arriving and leaving school in cars, there are many "conflict points" between motorists, walkers and bicyclists. If volumes of traffic are high, on-school drop-off and pick-up patterns can include compact, stacking areas that are monitored at all times by adults to ensure that children are only exiting vehicles at the front of the queue when all cars are stopped. It is helpful to have a "valet" program through which adult volunteers or older students – under the guidance of staff – open and close car doors and help students find their parents. On-street parking and nearby parking options, such as a church parking lot, can help. Signs ask parents to turn off their engines, which helps reduce vehicle emissions and protect children's lungs.

SECURITY

Schools should be integrated into neighborhood designs to provide high levels of "watchfulness" over children. Homes, apartments and townhouses should be near the streets and their "A" sides — their fronts, where abundant windows allow occupants to look outside — should face the streets where students will be walking and bicycling. Each school building should have windows. Low fences and landscaping features can define play areas and access points. Bicycle parking should be located where it is highly visible and sheltered from the elements.

TREES

Street trees not only provide shade and a nice environment, but also create comfort and separation for students walking and bicycling. When placed within four to six feet of the street, trees create a vertical wall that helps lower vehicle speeds and absorb vehicle emissions. On streets with a narrow space between the sidewalk and curb (also known as the "furniture zone") trees can be planted in individual tree wells between parking stalls, which further tightens the visual appearance of the street and reduces travel speeds. Depending on the species, they should be spaced 15 to 25 feet apart.

SEPARATION

At the school, it is best to separate the different modes of travel (walking, bicycling, bus and parent driving). Sidewalks and school entries should be designed to keep walking and cycling students from crossing the pathway of motorists. Parking lots should be designed so students don't need to walk through them to enter or exit the school. When these conflicts cannot be avoided fully, raised table crossings are encouraged. Additional design elements such as colorized or raised crossings improve detection between motorists and students, and they give motorists a clear message that they are to slow down and yield to students.

SHARED PARKS

Neighborhoods are most complete when public spaces such as parks are co-located with schools. In this way, a community's important assets are available in one place. Parking is shared, shade is available, neighbors keep watch over the park and the school, students have quality places to play or wait for their parents, and social exchange amongst all age groups is fostered. Co-located facilities help hold a community together, providing the highest level of conservation and sustainability.

INTERSECTIONS

Intersections near schools should be designed to keep motorists' speeds under control — typically no higher than 15 to 20 mph — no matter what time of day. Turning speeds are especially important and can be controlled with mini-circles, roundabouts and raised intersections. Curb extensions (also called "bulb outs") and inset parking help motorists to see pedestrians and pedestrians to see motorists. They also reduce crossing distance time and exposure, and they slow motorists on all turns.

SIDEWALKS

Sidewalks, trails, walkways and ramps should be on both sides of the street around the entire perimeter of the school. Where sidewalk gaps exist, they should be fixed on a priority basis, working out block-by-block from the school. Sidewalks around the school should be at least eight feet wide and should be separated from the curb by a "furniture zone" that can accommodate planter strips, tree wells, hydrants, benches, etc. Where appropriate, on-street parking or bike lanes provide an additional buffer to the sidewalk.

ACCESS

Students should have easy access to the campus from each direction of approach. Adjoining properties shouldn't be walled off from the school or from the routes to school. Pedestrian and cycling students should be able to use links that shorten trip distances and disperse the traffic for pick-up and drop-off around the school.

Although this document highlights many of the key components of properly placing and designing school sites, there are others to consider. For example, educational programming plays a major role in the activities that need to be accommodated. More space for outdoor physical activity may be needed. The square footage of the building may be less or greater. Renovating an older school may be an option, which requires a cost-benefit analysis. Additionally, local conditions and policies need to be accommodated. School attendance policies affect the distance students must travel and whether they arrive by car, bus, bicycle, or foot. Rural environments, open attendance policies, charter schools and magnet schools can pose challenges to walkability, but motor trips can still be combined with walking trips through strategies such as "Park and Walk" programs.

The following can be of help:

National Center for Safe Routes to School, **www.saferoutesinfo.org**
Council of Educational Facility Planners International, **www.cefpi.org**
American Architectural Foundation, **www.archfoundation.org**
National Trust for Historic Preservation, **www.preservationnation.org**

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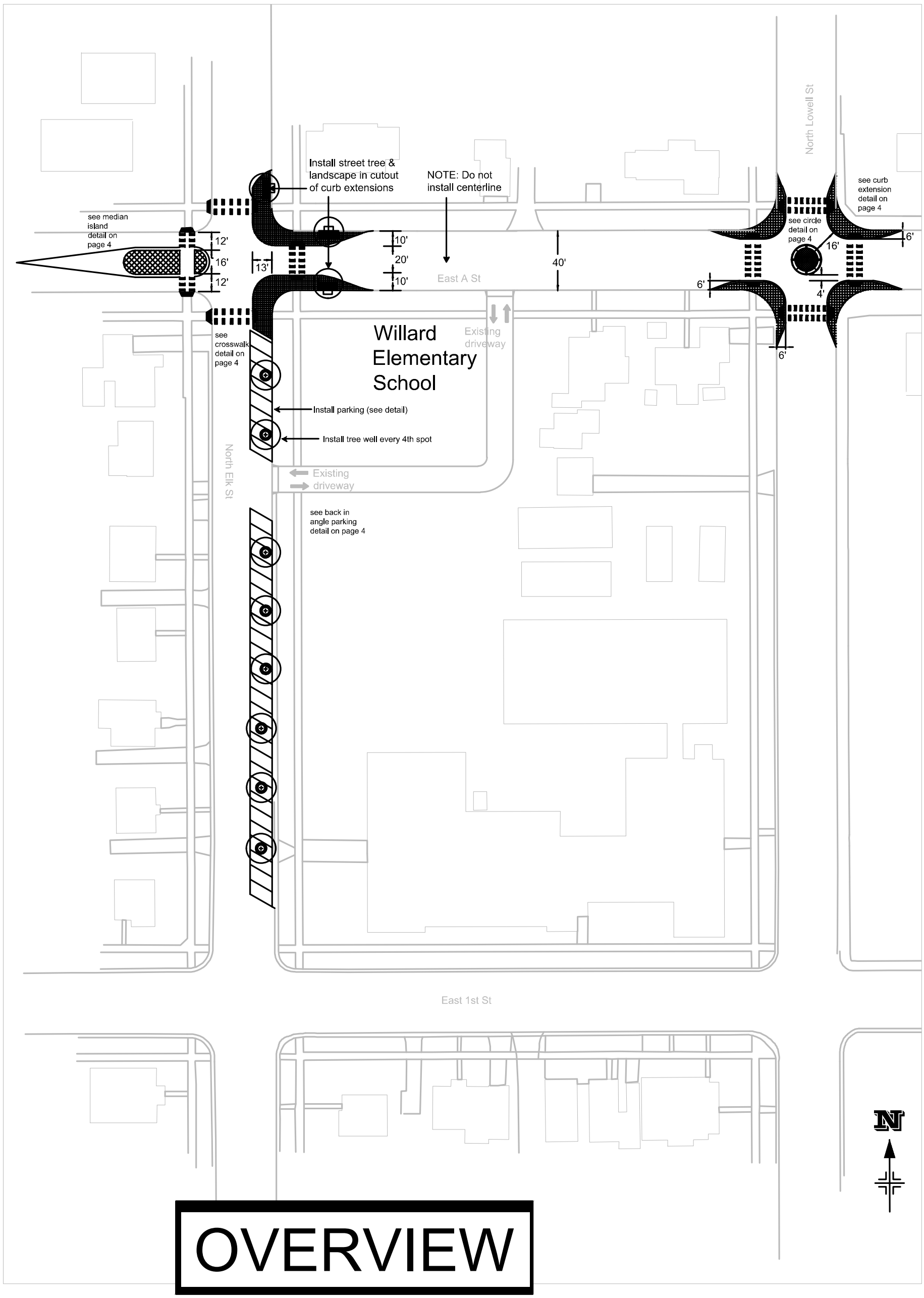
Illustrated by TDC Design Studio. November 2010.

Preliminary Engineering Drawings for Willard Elementary School

Willard Elementary School is an ideal site for many of the engineering improvements suggested in this report. Thus, preliminary engineering drawings were developed to illustrate how immediate, short-term and long-term engineering improvements can be made at Casper Area schools in support of Safe Routes to School and active living.

The drawings below also are provided as electronic attachments that contain layers and details for those who are interested.

Note: consider chicanes in lieu of mini circles.



OVERVIEW

Walkable and Livable Communities Institute

P.O. Box 1451
Port Townsend, WA 98368
Phone: 360-385-3421
Web: www.walklive.org

Rev	Description	By	Date	Chk'd	Approved
A	ORIGINAL ISSUE				

Proposal for traffic calming features in front of Willard Elementary School.
Dimensions are taken from aerial photos and are only estimations.

Project: CITY_OF_CASPER WILLARD_SCHOOL_PROJECT

Title: OVERVIEW PAGE_ONE_OF_FOUR

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Notes:

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Purpose of Issue

Drawing Number

Project: Entry Deg

Directory: Exe/fs

Frame: Exe/fs

Checked | Approved

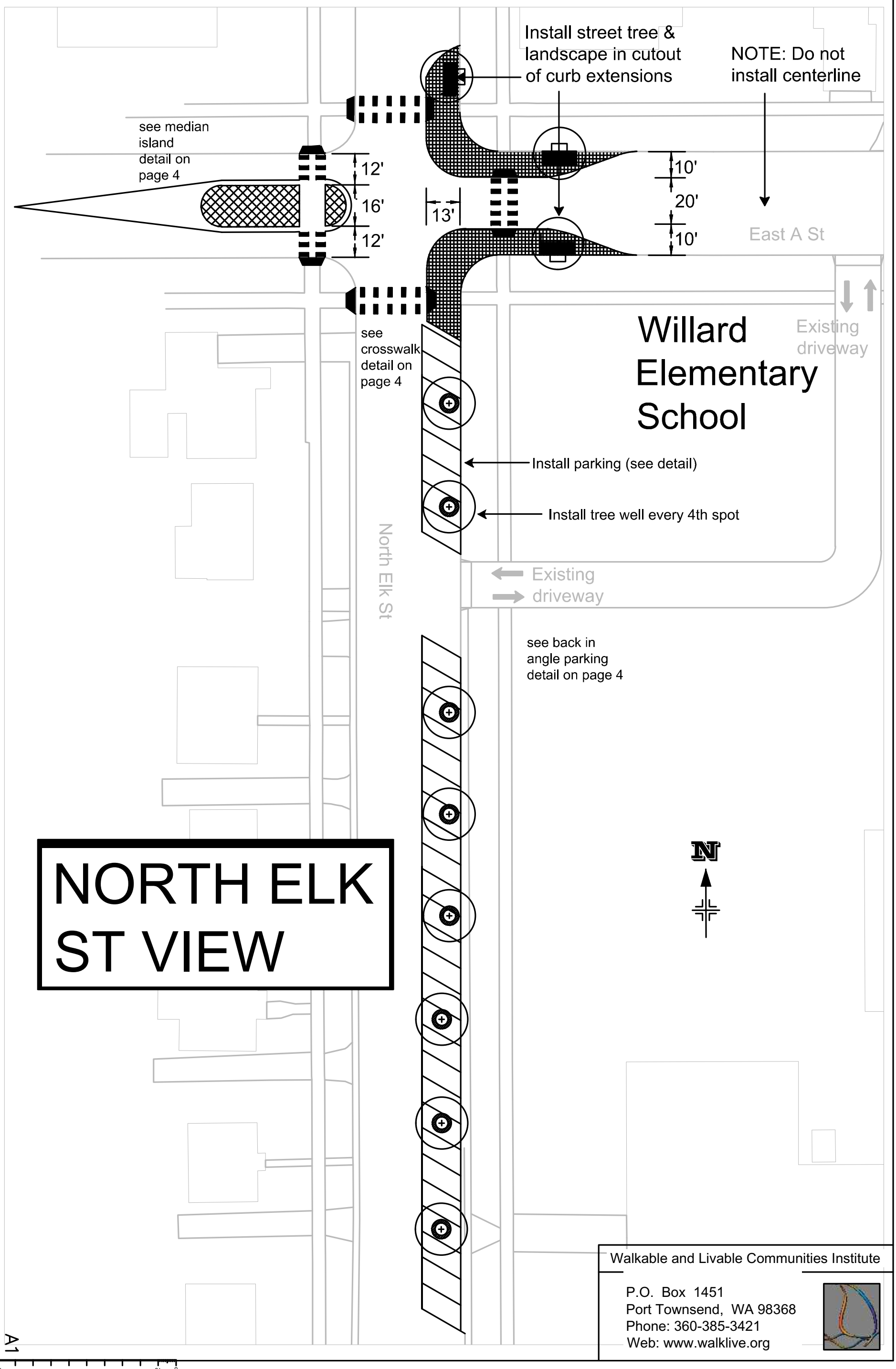
Hand amendment | CAD amendment | Checked

NOTE: This is a CAD drawing and may only be amended by hand in accordance with the required procedures.

REVISIONS

The previous version of this drawing has been

Producers of this document cannot be held liable if changes are made during construction of this project.



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Project: CITY_OF_CASPER WILLARD_SCHOOL_PROJECT

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Approved: DB Date: 12/03/10

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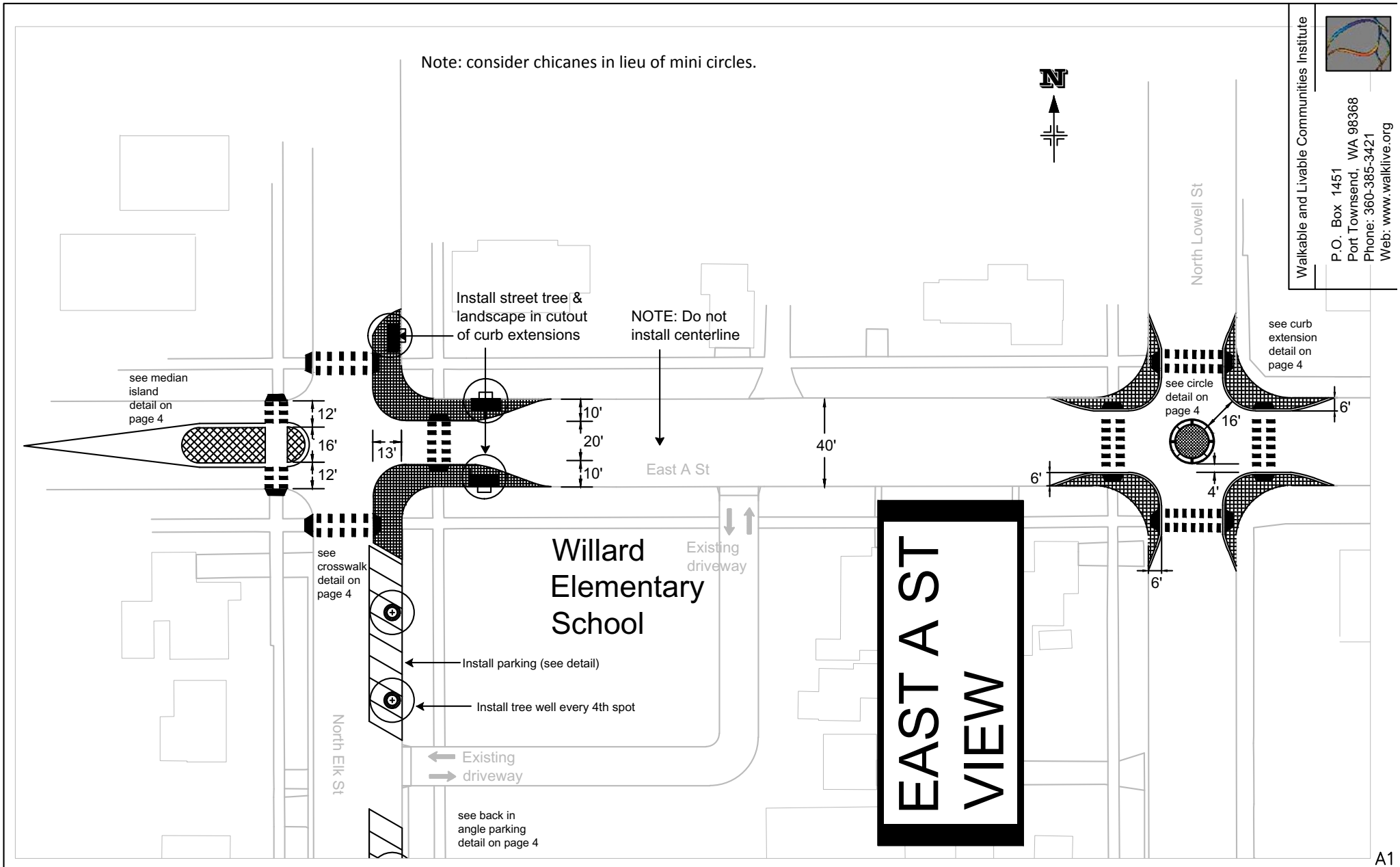

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Purpose of Issue	Rev	Date	Approved

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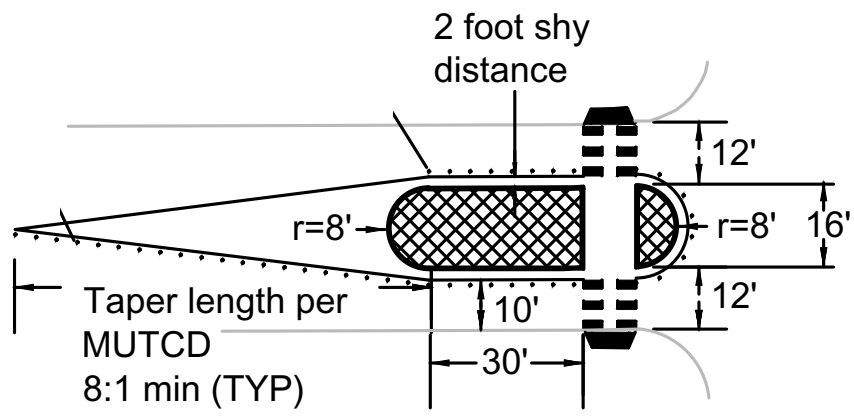
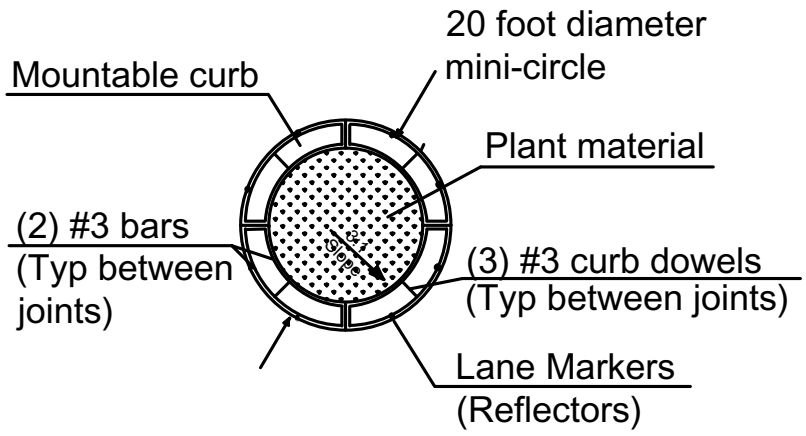
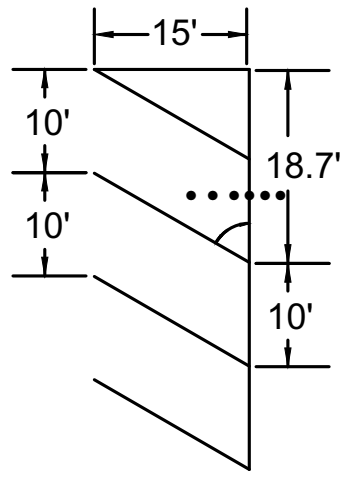
Note: also consider a domed mini circle.



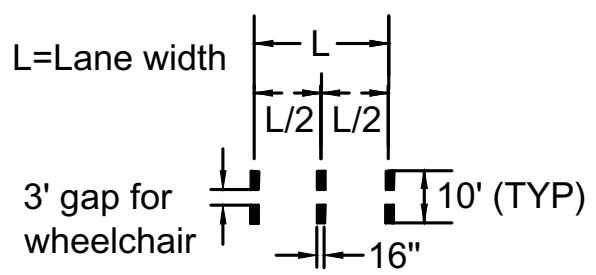
Median Island Detail (NTS)



Mini-circle Detail (NTS)

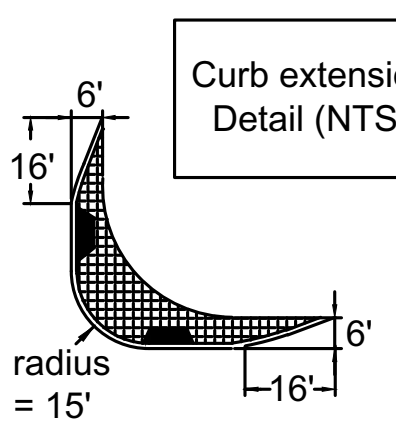


Back in Angle Parking Detail (NTS)



* The crosswalk should be lined up with the sidewalk desire line

Crosswalk Detail (NTS)



Curb extension Detail (NTS)

DETAILS PAGE

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Best Practices, Case Studies and Tools

The following free yet valuable resources should be reviewed and considered as the Casper Area develops and implements a quality Safe Routes to School program.

Sample Safe Routes to Schools Programs, from the Safe Routes to School National Partnership:
http://www.saferoutespartnership.org/local/4233

Parent Survey About Walking and Biking to School, from the National Center for Safe Routes to School:
http://www.saferoutesinfo.org/resources/collateral/Parent_Survey_English_Scan2009.pdf

Healthy Development Checklist, from Walkable Communities:
http://www.walkable.org/assets/downloads/healthy_development_checklist.pdf

Active School Neighborhood Checklist, from the Arizona Department of Transportation:
http://www.azdot.gov/Highways/swprojmgmt/Enhancement_Scenic/saferoutes/SafeRoutes_Common/Apply_Active_School_Neighborhood_Checklist.asp

Healthy, Active & Vibrant Community 2009 Toolkit, from Trailnet:
http://www.trailnet.org/HAVC_Toolkit.php

Safe Routes to School Guides

The following guides are made available online by the National Center for Safe Routes to School.

Teaching Children to Walk Safely as They Grow and Develop: A guide for parents and caregivers
http://www.saferoutesinfo.org/guide/graduated_walking/index.cfm

Adult School Crossing Guard Guidelines
http://www.saferoutesinfo.org/guide/crossing_guard/index.cfm

The Walking School Bus: Combining safety, fun and the walk to school
http://www.saferoutesinfo.org/guide/walking_school_bus/index.cfm

Student Drop-off and Pick-up
http://www.saferoutesinfo.org/guide/pdf/SRTS-Guide_Dropoff-Pickup.pdf

Media and Visibility
http://www.saferoutesinfo.org/guide/media/index.cfm

Education
http://www.saferoutesinfo.org/guide/pdf/SRTS-Guide_Education.pdf

Enforcement
http://www.saferoutesinfo.org/guide/pdf/SRTS-Guide_Enforcement.pdf

Evaluation Guide for Community Safe Routes to School Programs
http://www.saferoutesinfo.org/guide/pdf/SRTS-Guide_Evaluation.pdf

Many more guides and tools are available at www.saferoutesinfo.org.

Supporting Documents

The following documents provide background information and relevant perspective on community health, childhood obesity and the role of community design in public health.

Healthy Kids, Healthy Communities, from the Local Government Commission:
http://www.lgc.org/freepub/docs/community_design/fact_sheets/Healthy_Kids_Healthy_Communities.pdf

Walking and Biking to School, Physical Activity and Health Outcomes, from Active Living Research:
http://www.activelivingresearch.org/files/ALR_Brief_ActiveTransport.pdf

Active Education: Physical Education, Physical Activity and Academice Performace, from Active Living Research:
http://www.activelivingresearch.org/files/Active_Ed_Summer2009.pdf

Growing Demand for Communities that Promote Health, from Active Living Research:
http://www.activelivingresearch.org/files/ALR_Brief_WalkableCommunities.pdf

At the Intersection of Public Health and Transportation: Promoting Healthy Transportation Policy, from the American Public Health Association:
http://www.apha.org/NR/rdonlyres/43F10382-FB68-4112-8C75-49DCB10F8ECF/0/TransportationBrief.pdf

Letter from the Wyoming Department of Transportation

The following letter was submitted by the Wyoming Department of Transportation in response to the draft of this report.

Wyoming
Department of Transportation

"Providing a safe, high quality, and efficient transportation system"

Matthew H. Mead
Governor

John F. Cox
Director

May 6, 2011

April Getchius, AICP
Director
City of Casper Community Development Department
200 North David Street
Casper, WY 82601

Re: Casper Safe Routes to School Report

Dear Ms. Getchius:

Thank you for the opportunity to review the City of Casper Safe Routes to School Report recently commissioned by the Casper Area MPO.

The study was well done by the consultant and seemed to involve the schools and community as well as local officials. There seemed to be an emphasis on planning, land use, and development of neighborhood schools. Many areas in the study included recommendations with catchphrases such as "transportation equity", "livability", and "traffic calming". In general, these concepts are a good fit for local roads and streets, but must be closely examined and used with care on our collector and arterial streets. We must maintain a transportation network with the appropriate high functioning arterials to serve the users of our system.

There were some general comments and recommendations in the body of the report that we question and must be cautious of implementing. The report states that the streets are designed only for vehicle speeds & capacity, not people. Although some of the roads may be viewed as lacking pedestrian facilities, many of these roads began as somewhat rural roads and need to be upgraded as the area develops and has a demand for pedestrian facilities. Our current practice is to design for all needs projected during the design life of the roadway. As you are aware, large unanticipated developments are encouraged to incorporate enhancements to our system with the help of the city through the planning and development process.

The report also mentions that overly wide streets have yielded a growth in traffic. Wide roadways do not generate traffic, but accommodate it, while overly narrow arterial and collector streets actually encourage more use of neighborhood streets as alternate routes when congestion grows on the arterials. Our standard lane width is 12 ft. to accommodate standard semi trucks, fire trucks, and to move traffic efficiently. While the 10ft. lanes recommended in the report may be appropriate as traffic calming devices on neighborhood streets and access roads to the schools, we must maintain our highway system for all users and have an acceptable level of mobility as well as safety.

The report specifically recommends a "road diet" to include bicycle lanes for Yellowstone Street due to the proximity of Willard School. With Yellowstone being a major arterial on our system, we are uncomfortable with the road diet concept in that it will encourage the use of other streets in the area and likely drop to an unacceptable level of service for traffic and possibly pedestrians as well. Any modifications must meet our design standards including our Pedestrian and School Traffic Control Manual.

The report noted several issues with Wyoming Boulevard near CY Middle School including the grade of the roadway, the visibility of the crosswalk markings, pedestrian signals, and pedestrian signs. This area contains CY middle school as noted in the study, but also is close to the new Fort Casper academy. We are open to innovative improvements as the area develops on an as needed basis, but as noted earlier we must meet our design standards and maintain the integrity of this much needed arterial. Our standards for school zone signs and pedestrian signs require a minimum warrant that is currently not met across Wyoming Boulevard. Typically, we discourage crossings of high speed arterials with respect to school walk routes even with the pedestrian signals and markings in place in favor of other modes such as bussing. However, the crosswalks were recently installed with durable markings to increase visibility and longevity, and the new signals include pedestrian indications.

The idea that Casper and the citizens of Wyoming need to accept a reduction in efficiency for vehicles to make walking more attractive will be hard to sell especially for an arterial roadway. Congestion and delays on our main streets seems to cause frustration, more aggressive driving, and alternate routes into areas not intended for through and cross-town traffic.

One other concern we have is the recommendation of converting the one way pair of streets, 12th & 13th Streets, to two way traffic to reduce speeds, traffic volume, and to facilitate a more favorable crossing in the vicinity of Dean Morgan Middle School. While this is off of the State Highway System, it still has the potential to shift a portion of that traffic to the arterials on the Highway System by eliminating a valuable cross town arterial.

In summary, we agree in concept with making our community more walking and biking friendly for the school age children and other users, but changes to the Wyoming State Highway System must be done cautiously to still meet our design standards and maintain the functionality of the transportation network for all of our citizens.

If you have questions or would like to discuss any details in more depth, please feel free to contact me.

Sincerely,

Lowell Fleenor, P.E.
District Engineer

Mark Williams, P.E.
District Traffic Engineer

cc: District File
Sara Janes, Safe Routes to School Administrator, Cheyenne
Joel Meena, P.E., State Traffic Engineer, Cheyenne