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Site and Building Audits
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Abbreviated Program Plan Guidelines

Resources that informed this plan

Life Cycle Cost Analysis Form

Graphic Diagram of Owner VS. Leased Facilities

USGBC LEED Checklist

Total Project Budget Worksheet
Published for initial review in June of 2011, this document and associated site visits, correspondence and planning activities were completed periodically over the course of two years. The project was initiated by the Colorado State University, College of Natural Resources who assigned Tom Wardle, Colorado State Forest Service (CSFS) as the institutional contact. Mike Rush, CSU Facilities Management, led the effort that started by assembling a team of hard working professionals who had completed several highly successful projects for the CSFS. The outcome of this effort is yet another example of the long standing successful partnership between the CSFS and Facilities Management.

The intent of this plan is multifaceted. It is to provide a framework for future development; document an analysis or audit of existing facilities; describe the process for project initiation through completion; and discuss challenges associated with maintaining existing facilities as well as methods for determining life cycle cost analysis. Making specific and site based commitments to development is not the purpose of this plan but rather, to show the possibilities. From this planning, and certainly the resulting graphics; the Colorado State Forest Service (CSFS) can readily discuss options when construction and maintenance funding becomes available.

In an age of technology, video media, and what often feels like information overload, the focus in developing this type of document has shifted from a detailed point by point analysis to a broader, graphically compelling, fluid document that can serve a number of purposes. Information is presented, often combined with illustrations, in three dimensions to closely align with modern media. The product is a focused narrative, formatted into graphically intensive, page turner that reveals possibilities beyond the current priorities.

As an additional outcome, this plan illustrates the carefully planned development over the last several years at the Fort Collins, state office site. At the hands of several of the contributors to this document, the site now reads as a unified collection of well designed office and management buildings, that through the use of native materials and appropriate forms also speak to the building function. Components of these buildings, along with the new facilities completed over the last decade at various district office sites, inform a unified vocabulary used to develop the aesthetic guidelines.
The Colorado State Forest Service was officially established on December 2, 1938 and has a long history of successful environmental stewardship and land management. CSFS has been a part of Colorado State University since 1955. The agency’s website, http://csfs.colostate.edu/pages/csfs-history.html, offers a comprehensive historical summary of the organization where sustainable practices have been embraced since the inception of the organization. The mission of the Colorado State Forest Service is to achieve stewardship of Colorado’s diverse forest environments for the benefit of present and future generations. At the time of this writing the CSFS is involved in several initiatives to help stave off harmful insect proliferation in the state of Colorado as well as developing methods to mitigate mountain pine beetle infestations. The resulting discussions involve removal of dead or dying trees in mass quantity as well as closely monitoring and advising landowners and townships on the amplified fire danger.

On September 6, 2010 the most devastating fire in the history of Boulder County started in Emerson Gulch, located in Four Mile Canyon about five miles west of downtown Boulder. “The Four Mile Canyon fire is a harsh reminder about the importance of being prepared for wild land fire, particularly for those who live, work, and recreate in the wild land-urban interface,” said Jeff Jahnke, state forester and director of the Colorado State Forest Service.

Over 200 firefighters from at least 35 local, regional and national agencies struggled to contain the fire feeding on a forested area heavy with dead and down trees ravaged by mountain pine beetles. The Colorado State Forest Service was among them. Now that the fire is out, extension efforts have advised landowners on rehabilitation planning and efforts to prevent erosion and protect the watershed.

As the probability for devastating forest fires continues to increase, monitoring these changes in our state’s forests has become paramount. These are uncharted times for the Forest Service, tasked with managing ever-increasing challenges state wide with resources that continue to shrink.
identity & organizational culture

The organizational identity and office culture, experienced similarly from site to site, is one of caring and vision. A laid back family culture is evident in visiting with the members of the CSFS. This appears to be inherently associated with foresters doing what they love; caring for and working in the forests. This dedication, aptitude for problem solving and getting things done with often limited resources, is consistent across the CSFS.

process

In order to develop a comprehensive master plan to promote future development aligned with the long term success of the organization; we evaluated existing District Office sites, documented current conditions, listed potential areas for improvement, and identified the process for project initiation through occupancy.

We then compared this information with the recently developed strategic plan and made recommendations for future additions and potential development on a site by site basis. In further analysis, we looked at opportunities for further integration and collaboration with the College of Natural Resources, Colorado State University, and perhaps the CSU Extension and Experiment Station Offices which are also located across the state.

The Colorado State Forest Service (CSFS) maintains 17 districts throughout Colorado.
The CSFS is a division of the Warner College of Natural Resources at Colorado State University (CSU). The state office are located on the CSU Foothills Campus in Fort Collins. The CSFS currently employs approximately 144 full-time personnel across the state.

The District Offices are varied in terms of operations, facilities and equipment. An overview of the existing facilities and analysis of owned and rented buildings is included in the appendix (tab 14).

Each district office appears to function with a flexible operational focus somewhat independent of the other offices. There does appear to be some opportunities for sharing of equipment and facility resources, but the inherent distance and scheduling challenges associated with specific work in each district would make this difficult at best. Major maintenance and repair of equipment for each district is performed in Fort Collins. Minor maintenance, repair and service of equipment can be accommodated at the district sites if equipped with adequate shop facilities.

The CSFS also operates out of several Single Engine Air Tanker bases and is responsible for maintenance, operations and expansion at the Fort Collins Municipal Airport, the Colorado Plains Regional Airport and the Central Colorado Regional Airport. The following map indicates these locations and is combined with the district office locations.

(Colorado SEAT Bases map compiled with CSFS District Office locations)
Escalating over the past several years, the State of Colorado and the nation are in the midst of one of the most devastating economic downturns in the history of our nation. Resources are scarce, institutional downsizing and streamlining of programs has become the norm. Providing for the stewardship of forest resources to reduce related risks to life, property and the environment is becoming more and more challenging. In light of these difficulties, the CSFS, in cooperation with the College of Natural Resources has initiated not only this comprehensive master plan for the organization but also a strategic plan to help guide decisions as we recover economically and find the resources to mitigate what appear to be ever increasing environmental challenges.

Similar sentiments of “We can do it......we have to do it, even if we’re doing more with less”.... are echoed in discussion with the folks from across the state that make up the organization. The inherent founding principles of service and outreach are still in robust practice.

The Forest Legacy Program (FLP), a federally funded and state-administered program, supports efforts to protect private forest lands that are environmentally, economically and socially critical. In June 2000, the Colorado State Forest Service (CSFS) was designated by then-Gov. Bill Owens as Colorado’s lead agency for the Forest Legacy Program.

The Colorado Forest Legacy Program is a partnership between Colorado and the USDA Forest Service to identify and help conserve environmentally important forests from conversion to non-forest uses. The Federal government may fund up to 75 percent of program costs, with at least 25 percent coming from private, state or local sources. Greater Outdoor Colorado (GOCO) funds, private funds, local land conservation organizations and others commonly partner to provide this funding match.

The Forest Legacy Program helps prevent fragmentation of our forests and preserves natural vistas for all to enjoy. To maximize the public benefits it achieves, the program focuses on the acquisition of partial interests in privately owned forest lands...
(conservation easements). It encourages and supports acquisition of conservation easements (legally binding agreements that transfer a negotiated set of property rights from one party to another) without removing the property from private ownership. Most FLP conservation easements restrict development, require sustainable forestry practices and protect other values.

The CSFS contracted with Western Environment and Ecology, Inc., a Littleton consulting firm, to conduct a statewide Assessment of Need (AON). This assessment identified segments of the state where private forest land is at greatest risk of conversion to non-forest uses. The original AON was completed in 2001, with reviews and updates planned every five years.

2010 forest health aerial survey results

On Jan. 21, 2011, the US Forest Service and Colorado State Forest Service announced the results of the 2010 forest health annual aerial survey. Results reveal that the bark beetle infestation affected about 400,000 new acres in 2010 across the three forests in Colorado and southern Wyoming, bringing the total number of acres of infestation up to 4 million since the first signs of outbreak in 1996. This acreage includes lodgepole, five-needle and ponderosa pine tree types.
While the bark beetle continues to spread rapidly along the Front Range and into ponderosa pine trees, forest managers are focusing their efforts on public and employee safety to help protect them from the threat of falling trees and increased fire danger.

“The Colorado State Forest Service works with approximately 8,500 landowners annually to help them address forestry concerns on their property and implement forest management plans that will reduce fire hazards and create more resilient forests,” said Jeff Jahnke, state forester and director of the Colorado State Forest Service. “The annual aerial forest health survey is an important tool in identifying high-priority areas for treatment and helping landowners focus their efforts to achieve the greatest benefits.

wildfire protection & suppression

Wildfire protection within Colorado cannot be accomplished by any single agency. Cooperation and coordination between all agencies is the key to effective suppression. Colorado law identifies the sheriff as the fire warden for the county and the individual ultimately responsible for controlling and extinguishing prairie and forest fires on private and state lands within that county. (CRS 30-10-513) The state forestry role is to assist the sheriff and county fire departments with this responsibility. The Colorado State Forest Service (CSFS) fulfills this role by providing training, equipment, technical assistance and funding, and by facilitating interagency mutual aid agreements and annual operating plans.

Emergency Fire Fund (EFF) & FEMA

The EFF was established in 1967 by a few counties that recognized that some wildfires may exceed the counties’ resources and abilities to manage the fires. Participation in the EFF is voluntary. A 10-person committee, composed of county commissioners, sheriffs, fire chiefs and the state forester, oversees the administration of the fund. Currently, 43 Colorado counties and the Denver Water Board contribute to EFF. Emergency funding requests must originate from the county sheriff, and state forester approval is required. Once accepted, an EFF fire is managed under the direction of the CSFS.

CSFS is authorized by the Governor as the primary point of contact with the Federal Emergency Management Agency (FEMA) when wildfires pose an imminent threat to life and property. CSFS requests, and if awarded, administers FEMA Fire Management Assistance Grants (FMAG). FMAGs provide for up to 75 percent of eligible costs in the suppression of catastrophic wildfires.
urban & community forestry
The CSFS is available to help communities with their tree planting and tree care needs. Technical assistance includes help in devising plans to maintain and add to tree resources, and providing information and workshops on tree care. Caring for our trees not only protects our investment, but provides benefits for the future.

conservation education
Promoting public understanding of the role and value of Colorado's forests and other natural resources is critical to the mission of the CSFS. The agency is non-regulatory and our accomplishments proceed from our educational approach.

Conservation Education focuses on developing scientifically-sound messages and materials for use by personnel, partners and Colorado citizens. Our messages and materials are driven by the agency's strategic priorities. Project Learning Tree (PLT) is our flagship program for reaching younger audiences via workshops for K-12 educators.

reforestation
Reforestation efforts are another primary focus of the CSFS. After the fire is out it is often critical to plan for immediate threats to public health and life safety as well as the natural resources and the ecosystem. Where the fire has progressed with moderate to severe burn characteristics we often see soil volatility. Unrestrained soils are often impacted by fast moving storms with heavy rainfall that often following the fire season. This can cause severe erosion, flooding, and mudslides – all of which can affect watershed and water quality of the subject area. The CSFS often takes an active role in facilitation through organizing volunteers, developing remediation recommendations, and making tree seedlings available to private land owners to help mitigate the threats.
The CSFS Strategic Plan was written in October 2010 in response to complex forestry issues, rapid development in the wild land-urban interface, increasing demands for timely forestry information, a downturn in the state and federal economies, and competing demands for state and federal funding. It provides a blueprint to address these challenges while allowing the CSFS to continue to be flexible, resilient and responsive to changing needs. Several other planning documents were considered during development of the Strategic Plan, including the Colorado Statewide Resource Strategy and the Colorado Statewide Forest Resource Assessment. Programs and activities that CSFS is obligated to perform were also considered during plan development, as they are associated with specific funding or are legislatively mandated. The foundation of the plan includes the Vision and Mission Statements, the Desired Future State and the Guiding Principles, summarized below.

**Vision Statement:** To serve Colorado as the resource for technical forestry assistance and leadership.

**Mission Statement:** To achieve stewardship of Colorado’s diverse forest environments for the benefit of present and future generations.

**Desired Future State:** The Colorado State Forest Service achieves diverse, resilient and sustainable forest environments by:

- Providing professional forestry expertise and implementing forest management to accomplish stewardship objectives
- Increasing awareness that results in informed action and stewardship
- Informing, training, and preparing agency personnel and our public to anticipate and address wildfire hazards and changing forest conditions
- Effectively responding to wildland fire and emerging forest health issues
- Encouraging the continued development and advancement of a sustainable forest industry
Through an organization that:
- Is structured to anticipate and respond to changing forest environments, and the needs of our customers, partners and decision-makers
- Hires, develops, mentors and retains a knowledgeable, dedicated, safe and diverse workforce
- Optimizes the use of technology to enhance information access and improve internal and external service and program delivery

Guiding Principles: The Colorado State Forest Service abides by the following guiding principles.
As an agency, we:
- lead by example and act with integrity
- are a catalyst to action and results-oriented
- are quality-oriented and accountable

As an agency, we value:
- the people we serve
- our people, and we trust and support each other to do our best
- biological, social and cultural diversity

And as an agency, we strive to:
- communicate effectively and respectfully
- optimize time and resources
- anticipate and respond

Eight Strategies were identified to focus efforts to achieve the Vision, Mission and Desired Future State, as follows:
- Provide stewardship of Colorado's forests, demonstrating and implementing forestry best management practices.
- Increase public awareness that facilitates stewardship of Colorado's diverse forest environments
- Maintain and strengthen strategic partnerships
- Secure funding that ensures long-term agency fiscal sustainability
- Develop and strengthen CSFS leadership skills and ensure that informed decisions are made
- Optimize business and administrative practices, and infrastructure
- Recognize and value the potential and actual contributions of every employee, expect accountability and strive for performance excellence
- Strengthen internal communication and information exchange
The plan will be implemented over a five-year period, beginning in calendar year 2011, with annual review and updates.

In the last two years the Colorado State Forest Service completed two documents of importance to Strategic Planning. The first is the Colorado Statewide Forest Resource Assessment (Dec 2009), and the second is the Colorado Statewide Forest Resource Strategy (June 2010). These reports can be accessed in full at http://csfs.colostate.edu/pages/statewide-forest-assessment.html. The Colorado Statewide Forest Resource Assessment identifies important priority forest landscapes. The Colorado Statewide Forest Resource Strategy identifies the strategies to address these important priority landscapes. Together, these two documents provide a landscape level approach to distributing limited resources where they will achieve the greatest benefit. They were initiated in response to the 2008 Farm Bill, which contained a mandate for the USFS to identify forest areas of greatest need and opportunities, and develop a long-term strategy to address them. Grant funds are available for projects identified through this process, under the Cooperative Forestry Assistance Act (CFAA) which is also part of the 2008 Farm Bill. CSFS offices in areas identified as high priorities should be maintained or expanded to coordinate these projects, as identified in the Masterplan.

The Colorado Statewide Forest Resource Assessment is the first geospatial assessment completed by the Colorado State Forest Service. The objective of the assessment was to provide a spatial overview of Colorado's forests, and display areas in the state where resources are best focused to achieve desired future conditions. Existing scientific data sets were combined to provide a spatial overview of Colorado's forests, highlighting areas in the state where opportunities exist for a focused and collaborative investment of resources.

The Colorado Statewide Forest Resource Strategy builds on the assessment to provide strategic direction for the distribution of limited resources. It was cooperatively developed with a large group of stakeholders and addresses threats to urban and community forests as well as forested wildlands.

The following map shows the results of the Forest Resource Strategy and indicates the forest areas of highest value based on data sets described in the study. We have overlayed the location of the district offices to study the adjacencies and better understand the outreach opportunities that might inform future development.
district office locations over high value forest graphic
Colorado’s forests are at risk from threats that impact their ability to provide environmental, social and economic benefits now and in the future. Because limited resources are available to address these threats, it is imperative that we direct them where they will result in the greatest benefit. Threats include:

- fragmentation of forest landscapes
- decline in businesses that harvest and manufacture forest products
- insect and disease activity in forests at levels unprecedented in Colorado’s recorded history
- wildfire in the wildland-urban interface
- wildfire outside the wildland-urban interface
- community forests at risk to insects and diseases
- impacts of climatic conditions on forest resiliency and adaptability
- watersheds at risk from deteriorated forest conditions
- decline of riparian ecosystems
- air quality issues

During the strategy development process, 10 overarching strategies emerged from discussions. These strategies apply to all or nearly all of the threats the CSFS identified.

- Manage forests according to appropriate science based information to enhance multiple resource values.
- Promote active forest management to achieve desired short- and long-term conditions that provide for and enhance species, age class and structural diversity to improve resiliency and adaptability as climatic conditions change.
- Develop a strategic marketing and communications plan to promote the benefits of managing forest resources.
- Create, promote and sustain a viable forest products industry by ensuring a predictable, dependable timber supply.
- Use collaborative processes to coordinate planning and implementation of forest management across ownerships to protect communities, natural resources and important infrastructure.
- Utilize the Colorado Statewide Forest Resource Assessment to support planning and implementation of forest management.
- Focus on-the-ground efforts to leverage resources.
- Work with neighboring states to conserve working forest lands.
- Restore ecosystem function at an appropriate scale to achieve desired future conditions.
- Reduce process impediments that hinder the implementation of forest management and drive up costs.

Priorities for future development can be established to some extent from considering the strategic plan and the associated documents from a master planning perspective.
Recent projects for the CSFS have been well received and are embraced by the general public. Locations which have developed new facilities over the last several years include Canon City, Durango, Woodland Park, Boulder, Fort Collins, and most recently, La Junta. These projects have been developed using a similar vocabulary in terms of the architectural character, material qualities and in the layout of the offices with specific adaptations to the immediate site. This master plan has intentionally been developed around the existing owned facilities but some of the older facilities, especially those that are leased, do not present themselves well to the general public. It is recommended that as resources become available they be dedicated to some degree to help remedy this perception through maintenance, identification signage and graphics both at the vicinity and immediate site scale.

As part of this effort and to document existing conditions, the following owned offices were visited and abbreviated site and building audits were completed. Subject facilities include:

Abbreviated building audits are compiled in similar format in the appendix.
The Boulder District Office was completed in 2001 and is located on highway 66 just east of Lyons, Colorado. The facility is well marked with signage along the roadway but could benefit from an additional downstream sign in both directions as the location of the existing signs may not allow for adequate time to slow at highway speeds and find the facility. Site and building are in need of some minor attention but overall the facility presents well.
The office building should be replaced and reoriented parallel to the road instead of the current position which blocks site access and drainage. This will open the yard and service building to direct access from the road and unify district operations. It creates an outdoor room and establishes a more wholistic presence. The offices should be attached to the service building by an intermediate commons for collaboration with partnering agencies. If development in the vicinity allows, participation in extension of the city sewer line would be an improvement.
The Durango District Office was completed in 2003 and resides on the campus of Fort Lewis College. Fort Lewis campus is easy to find, but within the campus the CSFS office is not well-signed. Additional roadway signage in the campus would be beneficial. The existing building blends well with the campus context where like materials and colors are represented from surrounding buildings.
Significant work over the last several years has occurred at the Foothills Campus, which is State Office of the CSFS operation. The revitalization of the Fort Collins District office building was the initial renovation project that set the stage for the Fort Collins complex being developed as a campus with a recognized coherency. Originally constructed and occupied in the 1960’s the existing building was revitalized in 2003. The revitalization included converting existing cooler space to a seminar room and kitchen with interior fit and finish upgrades throughout the existing facility. As part of the project, the existing flat roof was replaced with a framed pitched roof and the exterior of the building was painted. The Tom Borden State Office Building was developed and occupied in 2005. The sloping roof planes are carried from outside in and create uplifting high ceilings in an open office environment. The main entrance to the facility is articulated with a large scale native Engelmann Spruce log beam
which was secured from southwestern Colorado. Structurally the diameter of this log is exaggerated but it is proportionally appropriate as a signature element. In 2009 the record storage building was completed. This small building was the result of collaboration with the Forest Service, the Construction Management program and Facilities. The project allowed Construction Management students the opportunity to build a storage unit as a semester project for a real client. The Forest Service graciously allowed the construction to occur at the Fort Collins campus. With a few enhancements, the building now serves as a greatly needed record storage building. The building is designed to be added on to in a modular fashion connected by the porch element.

In 2010, the Jim Hubbard Fire Management building was completed. This most recent addition combines the log pergola element of the adjacent district office building with the proportions and board and batten siding of the State Office Building.
Fort Collins

The State Forest Nursery on the Colorado State University Foothills Campus includes 21,000 square feet (sqft) of greenhouse space used in the production of tree seedlings. Irrigation water which is not absorbed in the production of the seedlings runs into a series of floor drains and is discharged to a constructed subsurface wetlands north of the greenhouse range. This run-off water, which can be discharged at rates as high as 500 gallons per day, contains fertilizer and fungicide residue not appropriate to discharge into either the storm or sanitary system. The constructed subsurface wetland has a surface area of approximately 2,500 square feet and is approximately 30 inches deep. Phytoremediation of the wasted irrigation water is facilitated by means of an evenly graded subsurface matrix of gravel contained within an impermeable membrane planted to Giant Bull Rush. After treatment, the waste irrigation water is discharged into the nursery grounds.

In creating a campus identity, the recently constructed buildings at the Fort Collins campus have a feature log element at each building entry. This element thematically ties the buildings together and begins to define a campus. Although the buildings differ in appearance, the use of the log element is unifying and clearly speaks of the Forest Service. Similar paint, wood stain and native sandstone enhance and unite the buildings further. The loggia, further described as a pergola, is a feature element located at the district office. It marks the symbolic center of the CSFS campus and has an axial orientation towards the fire management building. This element and associated landscape serves as a common meeting and gathering area. The notion of a log structure at entries should be explored at the Machine Shop, Greenhouse and at the entrance to the campus itself. At the campus entry a log and stone gate structure has recently been proposed. It is anticipated this gate addition will have log posts with native sandstone veneer and thoughtfully detailed cantilevered log beams as overhead elements.
Fort Collins

The Fort Collins State Office at the Colorado State University Foothills Campus would benefit from additional signage along Overland Trail alerting visitors of the upcoming required turn onto Laporte. Site signage along Laporte is easily identifiable and has been recently improved using natural materials including wood and stone.

With carefully planned development over the last several years, the Fort Collins site now reads as a unified collection of well designed office and management buildings that, through the use of native materials and appropriate forms, speak to the use of the Forest Service buildings. The use of cedar siding and exposed log and heavy timber elements is appropriate and highly desirable in architecture for Forest Service buildings. The downside of using these materials is that they require annual maintenance to avoid rapid deterioration. The buildings and elements on this site can serve as examples for the aesthetic guidelines section of this report.
The Fort Morgan District Office was upgraded in 2008 to improve energy efficiency and provide a new secure area for outdoor storage. Insulation was installed between the concrete roof and the office ceiling. The unutilized bay door to the shop was enclosed and two new overhead insulated metal doors were installed. Chain link fencing was installed adjacent to the office for secure outdoor storage. The building is in good repair. There is a phased Masterplan to address additional needs such as a conference facility and additional parking.
Burlington Northern Railroad

East Burlington Ave.
Addition of a second floor above the single story garage addition offers opportunity to expand program, along with providing mechanical space for air conditioning equipment. The existing building is renovated with new windows, garage door openers and code-compliant stairway access between levels. A free-standing building may be feasible directly east of the upper parking lot.
The site is currently owned by the Colorado Department of Personnel and Administration. Colorado State Forest Service is working towards ownership of the property. The office building was built in 1973 and is owned by Colorado State Forest Service. Once ownership is transferred, the site has immediate need for a new district office building.
Once the regional post office and medical facility, the Granby District Office is located 1 block off of Route 40 in downtown Granby. An update of signage and wayfinding from the main thoroughfare would aid the public in finding the office and may be beneficial for furthering community outreach efforts. The property is fully developed with the existing office and garage, thus any desires to expand in the future would require building a second story on the existing building or acquisition of a different piece of local property.
The Gunnison District Office is embedded on the campus of Western State College and also shares space with several other regional public sector entities in the facility. The office participates in the CSFS seedling program, providing regional landowners with trees for forest restoration on their properties. Because of this, the office interacts frequently with the public and could utilize some additional signage and wayfinding to make their presence known. The existing building blends well with the campus context where like materials and colors are represented from surrounding buildings.
The La Junta office is located on the Otero Junior College campus in La Junta. The new facility was occupied in September 2010 and was very successful in terms of budget allocations, schedule, and meeting the immediate and future needs of the occupants. The design of this office building was in keeping with the surrounding buildings and adjacent campus which may be more in keeping with facilities designed for the plains regions. The facility still has a residential character and scale with gable roof forms and a welcoming front porch to support public outreach functions. There is a long range plan to construct a new shop building to replace the current leased facility.
A new purpose-built structure frames the central yard and welcomes visitors. The main entrance and central yard are graded and paved for a firm, well-drained vehicle surface. Parking signage and wheel stops encourage orderly parking. Mobile containers organize operations and relieve crowding in the service building. Spill containment around the fuel depot and a rated enclosure provide safe flammable liquid storage. The concrete floor of the pole barn extends out through the 10 foot overhead door to outside for servicing tractors and larger trucks. This concrete apron is 10ft by 10ft. A portable walk-in cooler extends viability and protects tree seedlings from browsing deer.
The Woodland Park District Office was completed in 1996 and is located within the town limits of Woodland Park. The facility would benefit from a roadway sign, but is relatively easy to find once given directions that it resides behind the local Pizza Hut. The site and building have been well maintained and the site signage is appropriately proportioned and made from sandblasted sandstone. The natural materials feel appropriate to designate a Forest Service building.
recent history of successful development

lessons learned to inform this plan

Ten to 15 years ago plans for new district office buildings began with the concept of using modular houses and modifying them to accommodate the office functions at the district locations. Through initial study, it was determined that site built structures of Type V, light wood frame construction, designed to directly accommodate the B (office) occupancy would better serve the long term needs of the organization. The initial costs to complete the structures were slightly more than modifying off the shelf modular structures but the operating, maintenance and life cycle costs are inherently less over time. This coupled with a desire to begin to develop the structures with a more cohesive architectural vocabulary pushed development over recent years toward economical, yet visually appealing site built structures. Challenges in developing these buildings were typical and specifically included the need for a comprehensive analysis of required site utilities and infrastructure to better understand the total project costs associated with developing native sites.

In making recommendations for future buildings it is apparent that mechanical engineering for the structures with full specifications for bidding should be included in the design process. At the Woodland park and Boulder District Offices the mechanical and electrical systems were constructed using an outline specification provided by the architect through a design-build delivery method. It is evident that, with some additional upfront design costs to accommodate mechanical engineering and site observations, a better and more reliable mechanical system with better operational and maintenance costs can be realized.
Design work moved towards branding the buildings with native materials that spoke to the mission of the organization. Entry articulation through the use of the gable form embellished to some degree with wood truss-like structure or native heavy timber and/or log elements has been successful.

In future projects, the following evaluations may be of value:

Site selection for the Boulder District Office with a relatively high water table and inherent difficulties with the septic system design and some question in regards to the quality/treatment of the well water pose ongoing maintenance problems related to this site. The building was designed with an underslab drainage system which appears to be functional at the time of this writing, but these elements will require continued monitoring and maintenance in order to ensure continued safe operation. The existing restrooms in the facility were designed to be handicapped accessible. The existing men’s room has been modified to accommodate a needed shower in the facility. In order to remain code compliant, both existing restrooms should be re-designed and designated to unisex. One fully accessible restroom (the existing women’s) will accommodate the occupant load and allow the other to remain in its current condition with a shower, both as unisex restrooms.

The Woodland Park office appears to function well but, during the site visit, the number of people requesting information and advice were not easily accommodated in the existing space. While extremely busy on the day of the visit, people were well served. An enlarged reception/ informal meeting area would allow greater efficiencies in working with the general public. The existing roof, while still in good condition, is nearing the expected useful life and should be considered for replacement.

The Durango office is functioning well but was designed with exterior access only to the existing mechanical room. Due to heavy snowfall in this region, this exterior door is difficult at best to access during the winter months. Considerations for either interior access or extending the roof overhang should be considered to help mitigate this problem.

The facilities recently completed on the Fort Collins site are in good repair, with the exception of the loggia/ pergola elements which are in need of maintenance. It is important to note that the nature of stained logs and siding is inherently maintenance intensive. At many of the district offices, staff is left to carry out this maintenance. In general, to prevent drying and cracking, stained applications in our semi arid environment need to be repeated every 2-3 years. When left for longer than 3 years it is recommended that log structures and siding be treated before restaining. The basic cleaning process begins with cleaning the logs with a product from Sashco called “CPR” which removes the discoloration of the weathered log. Next step applies their stain product (Capture) which is then sealed with a clear coat (Cascade). These finish products are water base for easy cleanup. In other applications with more severe deterioration another product (High Sierra) may be utilized that contains a hybrid mix with some oil.
Recently illustrated by the Four Mile Canyon fire, the location of the district offices, most near major urban or semi urban areas with a direct transition to the forest is appropriate in some cases. These historic and strategic location parameters lend themselves to fire mitigation, outreach, and minimize fire fighting response times. The district offices can also serve as a planning hub in the midst of a large event.

Priorities for future development can be established to some extent from considering the strategic plan and the associated documents from a master planning perspective. The location of existing facilities and how the location relates to field work can also inform priorities. Perhaps the most important criteria for generating a proposed list of future development is the condition of existing owned facilities and how they could better serve the general public, research and outreach endeavors as well as the way the existing facilities present themselves to the general public.

1. Finding an annual funding source to accommodate controlled maintenance and building repairs at the existing facilities should be considered as the first priority. As time goes on, without proper maintenance, facilities eventually have to be replaced in lieu of repaired, and life expectancy is much less than buildings that are properly maintained.

2. The most immediate need for development and second priority is the Golden District Office. CSURF, the Colorado State University Research Foundation – Real Estate department is currently working with the Colorado State Department of Public Administration (DPA) to obtain the title to the site and associated facilities. Included in the immediate site master plans is a phased redevelopment of the Golden District Office Site.

3. Within the next ten years a new office building at the Canon City District Office is needed and identified as priority number three.

4. Within the next ten years, a new Fire Equipment Shop is needed at the Fort Collins District State Office to service modern larger vehicles. Identified as priority number four, the facility will need to be flexible, incorporating the latest machine shop and vehicle maintenance equipment systems. There will be inherent complexities in the facility design.

5. Within the next three to five years, a new facility will need to be leased to accommodate the Grand Junction District Office. A new facility should be considered for implementation as priority number five over the next ten years. In considering the proposed new facility opportunities may exist...
Funding available for facilities work is somewhat unpredictable and variable from year to year. Funding sources for future projects may be secured with return of Facilities and Administration (indirect) funds. Operational funds at the current time are not adequate to properly maintain the existing facilities and finding a permanent source for long term maintenance of the existing facilities appears to be paramount.

Historically, the CSFS has been able to save money through efficient financial management. The savings were allowed to accumulate year to year to finance critical capital and maintenance needs. A number of new facilities were funded over the last several years through this process. However, in 2007 the ability to carry over funding in savings accounts was curtailed by CSU administration. The administration is now evaluating the possibility of reestablishing these savings accounts, which would allow CSFS to begin to accumulate funds for future projects.

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**project funding**

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6. The La Veta District Office building is in need of replacement. As priority number six the development of a new facility should consider a new site as well. Here again, with reference to the San Luis Valley Research Center there may be opportunities of co-location and sharing of resources.

7. The recently completed La Junta District Office has a shop facility but it is located off site. As priority number seven, developing a new shop facility on site in the next ten to fifteen years would improve operational efficiencies.

8. Small enhancement projects should be considered at all sites as funding becomes available. For example, at the Fort Collins State Office, several proposed small projects will further unify the campus through the use of native materials at existing building entries enhancing public perception of the organization as a whole.

As an intentionally fluid document, it is fully anticipated that priorities will evolve over time. To begin to accommodate the “what if’s”, this plan illustrates a number of additional development opportunities in the immediate site master plan section that should serve as a point of departure as future projects are developed.
In terms of long range development, and hopefully spurred by subsequent program growth, there may be opportunities for combining some office locations of the CSFS with the Agricultural Experimentation Station which are also located in many counties across the state. At minimum, there appears to be opportunities for sharing of resources such as large public meeting space, conference facilities, and site utilities that might be advantageous to both groups. Opportunities for collaborative studies and stewardship also appear to be possible if venues for discussion can be developed. We have combined the location of the Agricultural Experimentation Station locations with the CSFS District Office locations in the following graphic to illustrate the location adjacencies.
We have also included a conceptual site based master plan for the WCRC to show the possibilities for a proposed consolidation. While this graphic has not been fully vetted or approved, it does begin to illustrate the site carrying capacity and opportunities for potential shared use and co-location between the two Colorado State University programs.

Western Colorado Research Center
potential development opportunities - immediate site master plans

In large part, concluding interviews with district foresters revealed that identifying space for future office expansion was important, but of perhaps greater importance was the need for additional shop and storage space. Included on the following pages are diagrammatic sketches of potential areas for additions that begin to illustrate the site carrying capacity.

conceptual cost estimating

At the time of this writing, the estimated total (all in) project cost associated with adding to existing facilities is approximately $400-500 per square foot, ($/sqft), for similar construction and office occupancy. In estimating additions to existing shop facilities or in estimating new shop facilities, $200 - $300 /sqft should be carried to accommodate the total project costs. A planning budget worksheet is included in the appendix which defines the lines included in a total project cost estimate. The range in shop facility estimating is largely dependent on fixed and moveable equipment inclusions in the budget. In estimating institutional projects, it is generally recognized that actual construction costs account for approximately 60%-70% of the total project costs. In considering future development, line item cost estimates should be developed at the early planning stages with a clear understanding of the construction market, specific regional location allowances, the anticipated time frame, as well as inclusions and exclusions if operational budgets and/or if phased design and construction is anticipated. Facilities Management has the staff to develop budgets for proposed projects and should be consulted in the earliest possible stages of project planning to develop current and inclusive estimates to accommodate total project development costs.

The following site specific or immediate site master plans illustrate a comfortable site carrying capacity from a master planning or potential development standpoint. If and when projects at the various district offices are realized, the following conceptual diagrams should serve as a point of departure in planning the additions.

identify potential projects

This document, while comprehensive, is intended to be fluid and updated over time. As economic conditions begin to improve over the coming years, facility funding may begin to materialize which will generate a renewed sense of participation in a visioning process. In the following site master plans, we have documented potential additions and new facilities based more on the site carrying capacity than on project priorities. In doing so, the plan should provide a conceptual and illustrative map to inform future discussions.
Boulder District Office

The sketch illustrates the potential for office, seminar or conference additions as well as areas that could use some attention from a good landscape architect. The existing site can also accommodate a high bay addition to the existing shop facility.

1. office/seminar or conference
2. associated parking/paving
3. shop facility addition
4. landscape opportunities enhancement

- immediate master plan
- existing site master plan
- potential additions
Canon City District Office

The office building will be replaced and reoriented parallel to the road instead of the current position which blocks site access and drainage. This will open the yard and service building to direct access from the road and unify district operations. It creates an outdoor room and establishes a more wholistic presence. The offices should be attached to the service building by an intermediate commons for collaboration with partnering agencies. If development in the vicinity allows, participation in extension of the city sewer line would be an improvement.
Durango District Office

The accompanying sketch illustrates the addition of needed bunkhouse space as well as future expansion of the existing office building to provide additional office space.

1. office/seminar or conference
2. associated parking/paving
3. shop facility addition
4. bunk housing

existing site master plan

immediate master plan

potential additions
Additions were considered on all new facilities even though some significant grading challenges exist around both the State Office Building and Fire Management Building. A new 12,000 square foot shop facility is proposed as well as entry enhancements at the existing storage building and greenhouse. The shop would be located on the lower south east portion of the campus. Ample room and site improvements are required around the shop for large vehicle maneuvering.
IMMEDIATE SITE PLANNING

FORT COLLINS
central campus expanded view

existing site master plan - central campus

1 office/seminar or conference
2 identity log feature
potential additions

immediate master plan - central campus

IMMEDIATE SITE PLANNING
FORT COLLINS
shop area expanded view

existing site master plan - shop area

immediate master plan - shop area

1 shop facility addition
2 identity log feature
3 associated parking/paving

potential additions
Franktown District Office

Addition of a second floor above the single story garage addition offers opportunity to expand program, along with providing mechanical space for air conditioning equipment. The existing building is renovated with new windows, garage door openers and code-compliant stairway access between levels. A free-standing building may be feasible directly east of the upper parking lot.

**Existing site master plan**

**Immediate master plan**

1. **Office & administration**
2. **Shop facility**

**Potential additions**
Golden District Office

The current master plan is a four phase plan that spans approximately ten plus years. The first phase consists of the construction of a new district office, demolition of the west half of the current district office building and construction of new parking. The second phase consists of the remodel of the east half of the existing district office for use as a conference facility. The third phase consists of the construction of a new conference facility and converting the existing conference facility into flex space. The fourth phase consists of demolishing the existing Quonset building and replacing it with a new garage facility. Reference the graphic master plan.
Golden District Office Phasing

LEGEND

**PHASE I**
(I) Construction of future district office  
(II) Demolish existing west half of old district office building  
(III) Construction of new parking spaces

**PHASE II**
(I) Remodel east half of district office building for use as conference facility

**PHASE III**
(I) Construction of future conference facility  
(II) Convert existing conference facility into flexible space

**PHASE IV**
(I) Demolish existing quonset hut. Replace with new garage facilities. (Duration of 10+ years)
Granby District Office

The Granby office is located on a land locked site and does not provide the ability to expand with more square footage. Adding a second story to the existing structure may not be a viable option and would need to be strongly weighed against the potential lease or purchase of an alternative location. In the near future, it would be recommended to consider an interior remodel to better utilize existing floor space adding more office functionality and reducing temporary bunk space. A small landscape enhancement along the city sidewalk to better retain grade and develop a public presence should also be considered.

GRANBY

potential additions

1 office & administration
2 apartment/bunk space
3 mudroom/lockers
4 move existing files
5 landscape enhancement opportunity
Gunnison District Office

The existing office is located on a large site on the Western State College Campus. This office space appears to provide ample room for existing and future functions. The existing open high bays on the shop could be enclosed and two additional bays added should they be needed. Two smaller existing structures on the site could be removed and consolidated into one large storage structure. This would better organize the site and provide shelter for equipment and vehicles that are currently parked throughout.

1. shop facility addition
2. identity log feature
3. equipment storage
4. associated parking/paving
La Veta District Office

A new purpose-built structure frames the central yard and welcomes visitors. The main entrance and central yard are graded and paved for a firm, well-drained vehicle surface. Parking signage and wheel stops encourage orderly parking. Mobile containers organize operations and relieve crowding in the service building. Spill containment around the fuel depot and a rated enclosure provide safe flammable liquid storage. The concrete floor of the pole barn extends out through the 10 foot overhead door to outside for servicing tractors and larger trucks. This concrete apron is 10ft by 10ft. A portable walk-in cooler extends viability and protects tree seedlings from browsing deer.
Woodland Park District Office

While the site existing landscaping is certainly in keeping with the overall surrounding sites, there appears to be opportunities for rebuilding the existing pergola and extended dedicated landscaped walkways to this area. This site can also accommodate a stand-alone high bay maintenance shop which could service larger engines.

WOODLAND PARK

existing site master plan

immediate master plan

1. office/seminar or conference
2. associated parking/paving
3. shop facility addition
4. landscape opportunities enhancement
5. rebuild pergola & extend

potential additions
In general terms and as described in the following sketches, the CSFS has embraced a vocabulary that includes native materials derived from the forest combined with similar forms and massing. Pitched roofs with exaggerated overhangs and covered porches promote a welcoming feeling that lends itself to the culture of the organization. Massings of stone strategically mixed with cedar horizontal lap and board and batten siding produce an organic and well proportioned composition that reflects a natural asymmetry and unforced balance often see in nature. To that end, synthetic materials such as cultured stone, vinyl siding, vinyl windows and other plastic materials should be avoided. In blending materials with fire wise considerations, it may be possible to use cementitious siding and sheathing products in combination with wood products to create additional and appropriate interest in the building elevations with enhanced fire resistance.

Design work for the Forest Service has evolved over the last several years with a focus on promoting the organizational image to the general public. In doing so, the facilities promote the outreach and extension components of the operation. The following pages illustrate, through the use of diagrammatic sketches, organizational elements that may form a coherent “kit of parts” in developing future facilities.

Exhibit 1 illustrates pergola elements with the following characteristics that may help inform future development:

- Demonstrate forest product use.
- Demonstrate traditional and non-traditional detailing of post and beam connections.
- Use in articulating building entrances.
- Use to delineate program areas such as tree sales combined with public place making through landscape architecture.
- Can be combined with appropriate plantings.
- Can help shade surrounding site with positive microclimate effects during summer months.
- Should be carefully coordinated with the overall complex design. For example, the pergolas can be developed with unembellished log columns as indicated in Exhibit 1a with square or rectilinear stone veneer over the columns as indicated in Exhibit 1b or with the author’s preference for splayed stone veneer columns indicated in Exhibit 1c.
Exhibit 2 illustrates cross gable form entry articulation where the log posts and beams are expressed from the outside in. This exhibit illustrates more cost effective window and door systems developed as “punched openings” in the wall plane. The following characteristics may be considered for future development:

- Express the building structure from outside in.
- Exaggerate the eave and rake overhangs. With that, one might consider a concrete mow strip around the building to allow for exposed rafter tails without gutters and downspouts.
- Aluminum clad wood windows or aluminum windows are preferable. Avoid vinyl windows.
- Consider window groupings in lieu of single windows for better proportions. Use operable windows to the extent possible.
- At the entry element, the sketch indicates a framed “cold roof” made up of dimensional 2x10’s over 2x12’s to establish the correct proportions with the log elements.
- Major logs for columns and beams should be indicated with a 12”-16” diameter. There may be occasion where even larger diameter logs are preferable, 18”-24”. The log diameter should be carefully considered in establishing the appropriate material scale in the project and articulating the function of the facility.
- For eastern plains offices, the log elements may not be as appropriate. Similar well crafted details and lasting materials should however be considered. In comparing the La Junta office to the western site offices we see similar scale, giving elements an appropriate response to the building site and surrounding buildings.

Boulder  
Durango
major logs
12”-16” diameter (possibly 18”-24” diameter)

window groupings

splayed or battened columns
Exhibit 3 has many of the same characteristics as Exhibit 2 but additional transparency has been introduced at the main entry.

- The use of aluminum storefront at the main entrance should be repeated at the other windows in the facility for continuity.
- The additional glass and use of aluminum will result in a more refined and commercial appearance and somewhat higher costs in developing the facility over Exhibit 2.
- The additional glass would work well with surrounding wall planes of stone veneer and integrated board and batten siding.
- The added transparency would lend itself well to an interior stone feature wall on axis with the entry lobby. Lit from below at night and on the short and sometimes dark days that come with the winter season, the building entrance would then have lantern-like qualities.
aluminum storefront additional transparency

framing elements expressed from outside - in
Exhibit 4 illustrates the potential for combining the cross-gable forms and pergola elements at the front façade of the building.

- May be applicable on sites with limited area where the resulting and well-defined space adjacent the main entry could be used for outdoor meetings, outreach material display/distribution and further demonstrate the use of forest products and connection details.
- Elements should be balanced yet asymmetrical relating directly to the origin of the material.
- Smaller 8” diameter logs should be used as the top members of the pergolas.
Exhibit 5 Indicates the use of parallel gable forms in entry articulation.

- Works well as a strategy to differentiate buildings in a campus or complex.
- Allows for the use of a single exaggerated diameter log beam with a wide span.
- May lend itself to site development and building approach from the side rather than straight on.
- Roof Plane can be expressed from outside in with high volume space that lends itself to an open and uplifting work environment with open office workstations.
parallel gable forms

single exaggerated diameter log beam

window grouping
landscape architecture

The landscape palette for the CSFS offices located in the foothills and mountains is one that echoes the surrounding environment. The same contextual cogitations are true for the plains offices where the tree and plantings specifications will be in keeping with the natural surroundings.

In the foothills and mountains, soils will typically require amendment after construction to support a native grass seed mix which will grow with vigor once established. Large boulders can be thoughtfully placed to define parking areas and outdoor gathering spaces as well as retain earth where grade challenges exist. In keeping with water conservation efforts in alignment with sustainable initiatives at Colorado State University, the palette should be drought tolerant and require minimal irrigation and maintenance. Conifer trees are well suited to many locations and educational outreach opportunities may exist to utilize trees grown and distributed through the Forest Service as massings or groves on sites.

Site planning and landscape architecture, regardless of location, should exhibit place making and way finding. Using the land, trees and vegetation to form and delineate paths and gathering places can make otherwise utilitarian site into something memorable.

leased vs. owned sites & facilities

The focus of this document is largely based on the owned facilities and sites across the state. With that however, there are a number of leased facilities as well as the owned facilities that could benefit from the following guidelines for signage, tenant finish or interior design work as well as building graphics.

Leased facilities should better announce the office locations with additional road signage and building signage. A unified building sign with the CSFS logo that is easily identifiable should be developed of a scale that announces the location.
interior improvements

Consider the establishment of a tenant finish (TF) or Tenant Improvement (TI) line in the operations budget and solicit professional interior design services in developing color schemes, material and finish selections. Often, the outcome of these conversations results in greatly enhanced space and minimal cost. Feature walls can be developed with natural materials or simply with accent paint colors that cost little more than standard monotone applications. Furniture in the space, when carefully selected, can also begin to speak to the mission of the organization with little or no additional expenditure over more traditional selections. The organization could begin to establish a library of stock images from outreach and fire management activities as well as forest environments. Creative scaling and manipulation of these images can produce very compelling graphics and wall art.

fire wise construction

While the district offices are largely in semi urban areas, fire wise construction is certainly advocated in outreach operations and will serve as a demonstration opportunity for future proposed Forest Service buildings and additions.

Some of the more critical characteristics of fire wise construction are associated with building location on the site, while others specifically address recommended materials. These include: class A Asphalt shingles, metal roofing, masonry or stucco exterior finish and cementitous siding systems, fine screening at soffit vents and ridge vents to prohibit sparks from entering the building, adequate driveway widths to allow for fire truck access, and installing firebreaks between site elements and the main building.

In considering fire wise design and construction, a balance between the cogitations of cedar siding and demonstrating a more fire wise material could be accomplished through the use of cementitous siding. Additional heavy timber or log elements might replace the need for the cedar siding in future projects where cementitous siding is employed.
The majority of development in the CSFS has been buildings of less than 5,000 sqft and challenges exist in using the USGBC LEED checklist for these facilities because of the limited scope weighed against the inherent costs of some of the prescribed initiatives to gain points towards LEED certification. The underlying goal in developing all buildings within the CSU system is to take advantage of sustainable opportunities wherever possible, regardless of the limited scale of the building. Long term, this additional expenditure will yield dividends in the form of increased occupant comfort and productivity, improved life cycle costs and ultimately reduced operational costs due to energy savings.

The recently completed fire management building at the Fort Collins Foothills campus was designed to and secured a LEED certification. In addition, the facility utilizes a biomass-fed forced-air heating system. The fuel for this furnace is readily available forest by-product in the form of wood pellets. The use of this system did not come without design and installations challenges, but over time, these challenges have been overcome. The system is now operational and efficient and should be highly considered for use in future facilities.

Passive daylighting to reduce energy loads associated with artificial lighting should always be considered in developing buildings of any scale. Light, views and operable windows also improve occupant comfort and often productivity. Along with adequate fenestration, relatively inexpensive daylight sensors should be used to automatically adjust artificial lighting levels to daylight conditions. At minimum, occupancy sensors to turn off lights when the facility is not in use should always be employed. To date, the use of clerestory windows has not been utilized in the new facilities. This is probably due to initial budget constraints but this should continue to be
opportunities for the CSFS.

The use of local materials is not only in keeping with the environmental stewardship goals of the CSFS but also reduces the environmental impacts associated with transportation. Onsite treatment of storm water, and in some cases, onsite septic treatment is inherently sustainable. Encouraging the use of alternative transportation has a great impact at little cost. Bicycle commuting can be encouraged through flexible scheduling, incorporation of the already needed shower facility and bike racks. All of these fundamental sustainable initiatives have proven to be largely cost neutral.

Solar panels and wind turbines still have a high first cost when weighed against overall efficiency in limited scale installations, but with the opportunities for federal grants and cost sharing with the local utility providers, these renewable energy sources become more attractive. Even when considering the associated first costs of such installations, the use of onsite renewables is well aligned with the university goals towards environment stewardship and may serve as an application example in outreach.

universal accessibility opportunities for the CSFS.

Colorado State University, through the development of new facilities over the last several years, has worked closely with the Resources for Disabled Students to ensure that the new CSFS facilities were not only accessible to ADA guidelines but also begin to integrate Universal Design initiatives into the projects.

Universal Design is a cost neutral change in the way we design and construct buildings that doesn’t segregate persons with disabilities from others. For example, if ramps are required for ADA access, the opportunity is considered at a more global level where the change in elevation is incorporated over the site through gentle grade modifications over a greater distance that everyone uses to access the building. Universal design opportunities should always be considered in the development of
security & technology
future CSFS facilities.

Security has not been a critical issue at the district office locations. Standard lock set office door hardware installations have been sufficient with no reported problems. Generally, Forest Service buildings are not equipped with security monitoring and alarm systems. The introduction of complex security systems in future buildings should be considered based on location and be site specific if problems develop or are anticipated.

The IT and GIS hub for the CSFS is located at the Fort Collins district office with additional capacity at a Denver contract office. Some additional capacity for GIS mapping, viewing and plotting was noted at the Boulder District Office.

IT interface wiring has and continues to be critical in the operations of all facilities, especially as one considers fire management activities. Upgrading of existing systems is ongoing and often a challenge in more remote locations. Data security and physical server protection are items that should be included in future upgrade considerations.

All existing offices should be upgraded to include an AED (Automated External Defibrillator). All offices should also consider purchase of a fire safe for important documents.
Projects are initiated through the CSU Facilities Management Department. Here they are assigned a project manager (PM). The PM handles the project from program plan (if required) through design, construction, and occupancy. University policy states that projects over $150,000 require Cabinet approval, and State rules require Board of Governors and Capital Development Committee (State level) approval for projects above $2,000,000. When necessary approvals are in place, a plant fund account can be set up. This is the account that is used for all contracts required for the project, and it must be funded prior to project initiation. CSU policy also embraces LEED building practices, with LEED Gold as the target. Design firms will be procured according to rules developed by the Office of the State Architect, with similar rules related to bidding the project for construction.
Program plans are documents created at the initiation of a Capital Construction project. The program plan provides justification for the project based on existing vs. projected program/space needs, with an analysis of facility alternatives. The program plan should also establish spatial relationships, room specifications, and special design requirements. This will allow for an accurate scope with a realistic cost estimate to be developed. An initial code analysis is also included to help inform the schematic design and cost estimating for the proposed facility or revitalization.

Capital Construction projects over $2,000,000 that will be bonded require a Program Plan that is reviewed by the Department of Higher Education. Projects over $2,000,000 that will be funded through other means do not require program plans for State approval. However, CSU policy supports the development of graphically intensive program plans that can transition to schematic design documents once funding has been secured. The further we can get towards schematic design in our program plans the more accurate the cost estimates and proposed schedules.

Concept papers are highly recommended for projects less than $2,000,000. Concept papers are loose in format but generally establish project goals, document decisions that have been made in regards to the schedule and budget for the project and include initial concept sketches that illustrate the initial programming for the facility to help inform the total project budgets. On these limited scope projects, adequate project contingencies should be carried to accommodate potential and/or expected scope changes as the project evolves. If the project schedule is accelerated, schematic design can be initiated without a concept paper. In this
case, the programming for the facility becomes part of the schematic design effort and at the conclusion of schematic design, a report should be generated for review and approval of the effort.

**Establishing project budgets and methods to develop total project budgets:**
It is important to acknowledge in developing cost estimates for proposed new facilities or revitalizations of existing buildings that the construction cost (hard cost) is but one line in developing the budget. Other considerations (soft costs) must include the required expenditures associated with professional services, equipment and furnishings, relocation costs, land acquisition costs, contingencies and the potential for construction inflation. (Inflation compounding in the construction market can drastically change initial cost estimates over time.) Several months or even years are often required to get through an approval process and secure project funding. Traditional estimating often falls short when not accommodating inflation changes in the construction market as affected by time. It is important on an annual basis to reevaluate initial budgets and make necessary adjustments.

Based on our recent experience, developing high performance buildings to USGBC standards is not without a cost. The increased upfront cost is readily recovered in energy savings and reduced operational costs for most buildings in as little as eight years. Studies show that construction budgets should be adjusted upward by 4% to accommodate the process and submittal requirements. The limited scale of many proposed projects also affects the cost per square feet (sqft). In general, the smaller the building the greater the total project cost per sqft. ($/sqft)

Included in the appendix is a total project budget worksheet often used in initial planning that illustrates the hard and soft costs often associated with a project. While the land acquisition costs are not included, other often overlooked lines are, including a long term maintenance endowment.
In general the controlled maintenance program for all facilities under the CSFS umbrella needs attention. A comprehensive maintenance program is needed that includes scheduled and routine maintenance of owned facilities to help eliminate the inherent requirement for major revitalizations or rebuilding with an ongoing lack of maintenance. It appears that current minor maintenance of the facilities is taken on in large part by the District Office staff. Major maintenance is typically done on an emergency, reactive, rather than proactive basis. Inadequate funding for controlled maintenance is not a problem seen only at the CSFS; the State of Colorado has in recent years all but eliminated funding for maintenance of state buildings. This has put the responsibility directly on the institutions except in emergency infrastructure or life safety projects. It is the hope of this office that the inherent need to maintain our state buildings is eventually realized by state government, and as economic conditions improve; funding will return and further, be identified for CSFS facilities as well. In the meantime it makes good sense to set aside a maintenance endowment with new construction dollars for each facility. Perhaps in 15 years after occupancy, there would be funding available on a case by case basis to accommodate the major maintenance and system replacement required by these years of operation.

With recent budget recisions at Facilities Management, the comprehensive controlled maintenance and building audit program at CSU has been put on hold due to lack of personnel to run the program and the fact that funding for the requests is not currently available from the State of Colorado. We are currently seeing funding for emergency requests only and these are prioritized in such a way that the larger institutions, CSU included, have been left to their own resources even in the event of an emergency. Today, the long established list of priorities, when weighed against anticipated funding, appears to be at minimum, twenty years out.
A sample of the FY 11 base cost table (used at CSU Fort Collins) to estimate O&M costs for various types of buildings is included below:

<table>
<thead>
<tr>
<th>SPACE TYPE</th>
<th>FY11 BASE ($/G SF)</th>
<th>MAINT.</th>
<th>CTR</th>
<th>UTIL</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLASSROOM (110)</td>
<td>$ 1.69</td>
<td>$ 1.67</td>
<td>$ 1.18</td>
<td>$ 4.53</td>
<td></td>
</tr>
<tr>
<td>RESEARCH LAB (250)</td>
<td>$ 2.95</td>
<td>$ 1.81</td>
<td>$ 4.63</td>
<td>$ 9.39</td>
<td></td>
</tr>
<tr>
<td>BSL3</td>
<td>$ 10.63</td>
<td>$ 1.81</td>
<td>$ 6.62</td>
<td>$ 19.06</td>
<td></td>
</tr>
<tr>
<td>INST. LAB (210, 220)</td>
<td>$ 1.69</td>
<td>$ 1.67</td>
<td>$ 2.13</td>
<td>$ 5.49</td>
<td></td>
</tr>
<tr>
<td>GREENHOUSE (580)</td>
<td>$ 1.58</td>
<td>$ 0.05</td>
<td>$ 2.95</td>
<td>$ 4.58</td>
<td></td>
</tr>
<tr>
<td>OFFICE (310, 350)</td>
<td>$ 2.25</td>
<td>$ 1.39</td>
<td>$ 2.05</td>
<td>$ 5.69</td>
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<tr>
<td>PHYS ED/ATHL (520, 523, 670)</td>
<td>$ 1.69</td>
<td>$ 2.21</td>
<td>$ 2.63</td>
<td>$ 6.53</td>
<td></td>
</tr>
<tr>
<td>LIBRARY/STUDY (410-430)</td>
<td>$ 2.25</td>
<td>$ 1.22</td>
<td>$ 1.26</td>
<td>$ 4.74</td>
<td></td>
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<tr>
<td>SHOP/STG (710-760)</td>
<td>$ 0.48</td>
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<td>$ 0.49</td>
<td>$ 1.16</td>
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<tr>
<td>MEDICAL/VET (840-560)</td>
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<td>$ 1.81</td>
<td>$ 4.09</td>
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<tr>
<td>AVERAGE</td>
<td>$ 2.82</td>
<td>$ 1.38</td>
<td>$ 2.80</td>
<td>$ 7.00</td>
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</tbody>
</table>
conclusion

It seems, regardless of the economic outlook, that justifiable needs at institutions for higher education in the state of Colorado historically exceed resources. The Colorado State Forest Service is no exception. In completing the abbreviated building audits, the need for maintenance at the existing facilities is apparent. Over the last several years, the thoughtful and efficient expenditure of available resources has greatly enhanced the organizational aesthetic and public perception. This document, as much as anything, reflects on that good work and sets the stage for future development. A master plan should quite intentionally be described as fluid, and organized in such a way to encourage annual developmental and departmental visioning that promotes the ongoing success of the Colorado State Forest Service over time.
appendix

• Site and Building Abbreviated Audits
  Boulder
  Canon City
  Durango
  Foothills Campus, Fort Collins
  Fort Morgan
  Franktown
  Golden
  Granby
  Gunnison
  La Junta
  La Veta
  Woodland Park
• Abbreviated Program Plan Guidelines
• Web Site Addresses for resources that informed this plan
• Life Cycle Cost Analysis Form
• Graphic Diagram of Owned VS. Leased Facilities
• USGBC LEED Scorecard
• Total Project Budget Worksheet
Ownership: Owned with Shop and Type 6 engine

Occupancy: Code Classification is a B Occupancy. 9 occupants between the shop and office building

Code Compliance: No apparent life safety issues. Other issues: hardware modification at the mechanical room. A shower has been added to the mens restroom and it is no longer code compliant for accessibility. To resolve this, both restrooms should be designated as unisex and the existing womens labeled as accessible.

Spaces and Rooms: Generally in good repair it is however time for interior painting and there are some hairline cracks in the floor time which appear to be telegraphed from the floor expansion/ control joints. This can be remedied if the tile is replaced at some point in the future by adding an expansion joint in the floor at this location. With the added shower in the men’s restroom finished in this area (not originally intended for this use) are showing wear and don’t present well to the general public. The remainder of the interior of the building is in good shape. Furnishings also appear to be in good condition.

Foundation: Concrete footings with stem walls. Floor is a slab on grade that has a drain tile system under it. Site has high water table and slab drains to outlet on the south side of the building. This appears to be functioning well. Concrete footings and stem walls often experience some movement over time and certainly more than the often-cost-prohibitive drilled pier and grade beam foundation systems. The office building has seen some movement, but not beyond that expected for this type of foundation system on a similar site. The shop building does not exhibit any noticeable heave or settlement.

Roof: The raised profile architectural asphalt shingle roof is in good condition and shows minimal wear in keeping with the age of the facility. It appears to be properly ventilated and exhibits no curl in the shingles. Gutters need to be cleaned and downspouts flushed. This should occur at least twice a year to prevent the potential for ice daming and eventual roof leaks at the eaves and valleys.

Siding: Stained cedar siding is in relatively good condition although it needs to be restained and sealed to prevent future and further deterioration. Accessible ramp at the parking lot appears to have a parging coat of stucco installed that is failing. Recommend removal of the stucco and leaving the knee walls as exposed concrete. It’s time for a fresh coat of paint on the exposed handrails adjacent the stair and ramp.
**HVAC:** Functional. The original system was design build, not engineered in an attempt to keep the first costs low. Inherently, the system will not have the required specifications for optimal control, energy efficiency and the life expectancy will be less than that of systems specified by a mechanical engineer. There are problems with the existing system and based on information provided by the owner the anticipated useful life of this system may be as little as 15 years. **The facility is 10 years old so for planning purposes, replacement may be required in as little as 5 years.**

**Electrical:** Good condition, no problems observed or reported.

**Plumbing:** Good condition, no problems observed or reported.

**Septic:** It appears the facility was designed with an above grade leach field bermed which would require the tank be pumped to the field. Owner reports pumping the tank by truck once a year which indicates the pump system may not be operational. **Suggest a qualified plumber be contacted to investigate the pump system and ensure it is operational.**

**Fire Protection:** The facility was developed and is code compliant with out a fire sprinkler system. A smoke detection/ fire alarm system is in place and operational.

**Security:** No system.
Ownership: Owned

Occupancy: Code Classification is a B Occupancy.

Code Compliance: No apparent life safety issues. Other issues: Office building is not accessible. The front entrance needs a ramp 30’ or longer due to its elevation. Other accessibility upgrades would be needed throughout the office.

Spaces and Rooms: The office consists of two mobile modular classrooms joined into a single building. General building condition is good considering its age and provenance. The shell was purchased 30 years ago used from the Florence School District. The Forest Service built partitions and finished the interiors. The building is not energy efficient, with minimal insulation and outdated mechanical and lighting systems.

Drainage: The service yard is well gravelled and drains toward a small wooded hollow between the east end of the office building and the road. The road is higher than the site and also drains into the hollow, although the county has super-elevated the road to direct as much drainage as possible to the far shoulder. Two small culverts running under the entrance to the front parking lot drain the hollow. These culverts fill up with conifer needles and sediment and require frequent attention.

Roof: The office roof is in fair condition. Staff routinely reinstall shingles blown from the roof into the parking lot, so it seems likely replacement is due.

Siding: Siding is in relatively good condition. The windows are leaky with single pane glazing.

HVAC: Functioning near end of service life. Not energy efficient.

Electrical: Good condition, no problems observed or reported. Lighting is inefficient. The phone wiring is obsolete and unreliable for current digital communications.

Plumbing: Fair condition, no problems observed or reported.

Septic: Good condition, no problems observed or reported.

Fire Protection: No fire sprinkler system. Smoke detectors in place.

Security: No system.
Storage / Service Building: The storage / service building is new and in excellent condition. It has three well-lit service bays, a training mezzanine, walk-in cooler, flammable liquid storage room and a welding room with snorkel ventilation. Staff have added OSB panels to the lower part of interior walls for wall attachments and to protect the insulation vapor barrier. The east end of the building has offices and a kitchen with lunchroom. Walls and doors are appropriately fire-rated between occupancies and uses. Staff originally conceived the kitchen / office area as a commons and meeting area for their partnering agencies and are somewhat disappointed with its functional double-loaded corridor design.

Future Development: Renovating and upgrading the thirty year old modular office building to current standards may not be worthwhile. The office blocks access from the front parking lot to the service yard. The building divides the site and occupies valuable space suitable for parking and staging. Staff would prefer the office to be reoriented parallel to the road instead of its current position across the site drainage. This would open the yard and service building to direct access from the road and unify district operations. It would create an outdoor room and establish a more wholistic presence. Ideally, the offices would be attached to the service building by an intermediate commons. If development in the vicinity allows, cooperative participation in extension of the city sewer line would be an improvement.
Ownership: The land is leased from Fort Lewis College. The building is owned by CSFS.

Occupancy: Office building Code Classification is a B Occupancy (office)

Code Compliance: There are no apparent life safety issues. The building is fully accessible.

Spaces and Rooms: The office building is a total of 8,475 gross square feet. The building consists of a reception and waiting area, four offices, two restrooms, shower, conference room, library/copy room, and mechanical room. The interior is in excellent condition.

Foundation: The concrete slab on grade is in good condition.

Roof: The metal standing seam roof is in good condition. Gutters and downspouts should be added to direct water away from the building. Snow drifting at the mechanical room entry is a problem and could be mitigated with the addition of a shed roof overhang addition.

Siding: The siding is a sheet T-111 type of product and is in good condition. Care should be taken to redirect rain water and irrigation water away from the building. There are signs of water damage at the lower edge of the exterior walls. The damaged areas should be scraped clean and spot primed and painted.

HVAC: The gas forced air/ac system is in good repair.

Electrical: Like new condition,

Plumbing: Like new condition

Fire Protection: The facility was developed and is code compliant without a fire sprinkler system. Smoke detection and carbon monoxide detectors are in place.

Security: No system. Patrolled by Fort Lewis Police Department

Road/access: The driveway and parking lot are asphalt paved. The areaway at the storage building is gravel.

Walks: The office building is serviced by an accessible concrete sidewalk.

Landscaping: The tree planting on the south side of the office building offers good solar control. There are additional tree and shrub plantings on the remaining sides.
Ownership: The land is leased from Fort Lewis College. The building is owned by CSFS.

Occupancy: Storage building Code Classification is a U Occupancy (utility)

Code Compliance: There are no apparent life safety issues.

Spaces and Rooms: The storage building is a total of 1,240 gross square feet. The building is a typical open bay utility building used for storage. The building is in good condition.

Foundation: The concrete slab on grade is in good condition.

Roof: The metal standing seam roof is in good condition. Gutters and downspouts should be added to direct water away from the building.

Siding: The siding is a metal rib panel in good condition.

HVAC: The gas fired unit heater.

Electrical: Good condition

Plumbing: Good condition

Fire Protection: The facility was developed and is code compliant without a fire sprinkler system.

Security: No system. Patrolled by Fort Lewis Police Department

Road/access: The areaway at the storage building is gravel. New gravel should be added, or the area way should be repaved with compacted recycled asphalt.

Walks: The storage building is serviced by an accessible concrete sidewalk.
Ownership: Owned

Occupancy: 10

Code Compliance: No apparent life safety issues.

Spaces and Rooms: Building completed in 2009, great condition

Foundation: Concrete footings with stem walls. Floor is a slab on grade

Roof: The roof is predominantly standing seam metal, with 1 flat roof of EPDM. Great condition.

Siding: Split face CMU block and Board and Batton Cedar. All in great condition.

HVAC: Gas supply forced air, wood pellet. Issue with pellet container design and functionality.

Electrical: No issues reported or observed.

Plumbing: No issues reported or apparent. Future expansion of irrigation system to exterior would be desirable.

Septic: No issues reported or observed.

Fire Protection: None/Alarm system installed on CSU central alarm.

Security: Yes, on CSU central alarm

Site: Landscape of front slope in process, future plantings needed. Perimeter gravel mulch around building and riprap from all downspouts to drainage swales should be installed to minimize erosion. Further site seeding to minimize erosion and weeds should be installed.
Ownership: Owned

Occupancy: Office – 7

Code Compliance: No apparent life safety issues.

Spaces and Rooms: Offices are starting to show their age, outdated paneling, fixtures, ceiling tiles needing replaced. General cleaning and painting would improve facility throughout. Bathrooms are functional but outdated and fairly rudimentary. Nursery office has so many brochures and flyers but no apparent organization, might consider a display rack to better organize and de-clutter.

Foundation: Concrete footings with stem walls. Floor is a slab on grade. Several perimeter leak issues reported in office on West, south and east walls.

Roof: The roof is predominantly standing seam metal. Small vestibule on east side of office also has reported leak. Interior ceiling insulation of open bay on work areas is in terrible condition, bird nests as well as damage by wildlife. Suggest removal or repair.

Siding: Predominantly standing seam. All in great condition, minimal patching or dents. Greenhouses have new glazing that was installed in 2009-2010, great condition.

HVAC: Gas supply forced air unit in shop area that supplies offices is a very old Lennox unit, appears that it has been kept running for years but would recommend replacement for a more efficient unit. Newer rooftop unit over nursery office provides heat and central air, no reported issues. Shop areas have overhead gas heaters, older units, no issues reported.

Electrical: Reported that power surges are common in Nursery office causing problems for equipment. No other issues reported or observed.

Plumbing: No issues reported or apparent.

Septic: No issues reported or observed.

Fire Protection: None/ Alarm system installed.

Security: Yes, on CSU central alarm
Ownership: Owned

Occupancy: Office Area – 8, Shop - varies

Code Compliance: No apparent life safety issues.

Other issues:
Office/Parts Shop - Perimeter Foundation leakage as well as under garage door on rain events in multiple locations. Exhaust fume issue from attached garage - it appears that Cold air return from garage ties into the same return as the office and thus gets redispersed throughout the building. Separation of these systems should be explored.

Garage – Cracked concrete slab needs replaced at garage entrances, electric supply is maxed out, future expansion limited. fluorescent lighting is outdated, consider change or all fixtures. Perimeter foundation leaks on rain events.

Welding Shop – Roof leaks, electrical supply is maxed out, future expansion is limited.

Paint/Storage Shop – waterline connects between buildings in uninsulated condition, must be drained down everytime it is used in Winter months to avoid freezing.

Spaces and Rooms: Generally in good repair for their age.

Foundation: Concrete footings with stem walls. Floor is a slab on grade. Many perimeter leak issues as stated above. Slabs in all areas are cracked. Combination of heavy equipment and expansive soils on foothills campus are the suspected cause.

Roof: The roofs are predominantly standing seam metal and are in ok condition for age. Welding shop has roof leak as well as garage. Garage roof appears to be oldest with several visible patches, believed to be 1958.

Siding: Office area has stucco siding that is in very good condition. Other attached buildings are standing seam metal. Several patched areas and dented panels from various vehicle accidents. All have been repaired as well as possible.

HVAC: Functional. See Office/ Garage ventilation issue stated above. Furnaces for these buildings appear to be relatively new and in good working order. Furnaces for welding shop and paint/storage were installed in 2008. All are gas supply, forced air.
**Electrical:** See issues stated above, all work areas are maxed out, expansion limited or not possible. Fluorescent light fixtures are outdated and should be updated, improving energy efficiency.

**Plumbing:** Good condition, only problem reported is with water supply to paint/storage building that has to route through uninsulated space causing issues in winter months.

**Septic:** No issues reported or observed.

**Fire Protection:** No overhead sprinkler system/ smoke detectors installed

**Security:** Yes, motion detected alarms and additional key pad on parts room – connected to CSU Central system.
Open Sheds and Lean-to Structures:

Shed #1056 - Standing Seam Metal roof and siding, timber pole structure and trusses. Minor dents in metal roofs and walls. Gravel floor.

Shed #1058 - Standing Seam Metal roof and siding, timber pole structure and trusses. North end siding heavily damaged and needing repair, no observed issues with roof. South portion of structure securely enclosed with metal fencing and locked gates. Gravel floor.

Shed #1062 - Standing Seam Metal roof, wood batton siding, timber pole structure and trusses. Wood siding has many damaged slats, West end of structure has many warped siding boards. Gravel floor.

Shed #1069 - Metal panel roof, wood framed with reverse siding. Wood siding is weathered and missing in some locations. Gravel floor. Although weathered the shed is still serviceable.

Shed #1070 - Corrugated metal roof, wood pole structure. Wood siding is weathered and warped. Gravel floor. Although weathered the shed is still serviceable.

Enclosed Storage Structures:

Storage building #1059 - Standing seam metal roof and siding. Roof leaks reported, roof appears to be in poor condition. Pole structure with trusses and concrete slab. Steel retaining wall to south failing, grade could be smoothed out to eliminate need for wall. Siding paint in poor condition and would be more aesthetic if painted to match attached building 1064.

Storage building #1064 - Standing seam metal roof and siding. Roof leaks at southern vent, vent appears to be inoperable. Roof patched above garage door, no report of leak associated with patch. Pole structure with trusses and concrete slab. 3'-0 Person door in terrible condition, needs replaced.

Record Storage building #1048 - Membrane roofing with ribbed metal siding. Small porch/connector element on front. Concrete thickened edge slab floor foundation. Building has electrical service. No HVAC. The building is in excellent condition with no reported problems.
Ownership: The building is owned by the Colorado State Forest Service.

Occupancy: Office building #465; Code Classification is a B Occupancy (office) and S1 (storage) no area separation is required.

Code Compliance: No apparent life safety issues. Restroom doors are not 36” wide. There is not adequate maneuvering room in the restrooms to meet ADA requirements.

Spaces and Rooms: The office/storage building is approximately 3,150 gross square feet. The building consists of two offices, reception area, two restrooms, kitchen, and storage rooms and garage storage. The interior is in good condition and well maintained. The floor carpet is approximately six years old but in good condition.

Foundation: The foundation is in very good condition with no signs of settlement. The foundation floor system was engineered as a freight depot and therefore will withstand a great deal of loading without failure.

Roof: The roof was replaced around 2004 and is in good condition.

Siding: The side walls are pre-cast concrete and are in good condition. Three of the four overhead door openings have been closed with plywood infill. These panels are in need of paint.

HVAC: A packaged roof top unit serves the office space and is in good condition. A unit heater was installed in the garage area approximately six years ago and is in good working order.

Electrical: Good condition, no problems observed or reported. Building service is limited to 110 volts.

Plumbing: Good condition.

Fire Protection: The facility was developed and is code compliant without a fire sprinkler system. There are no smoke detectors or carbon monoxide detectors. Fire protection is by City of Fort Morgan.

Security: No system.

Road/access: Road base surfacing is used for driveway access to the garage and for the parking area. The driveway and parking are in good condition.

Landscaping: The shrubs at the perimeter of the building are well maintained. Trees are planted as a windbreak and typify trees available through the Forest Service.
Ownership: Owned

Occupancy: Code Classification is a B Occupancy.

Code Compliance: Interior access between office and garage is accomplished by a narrow spiral metal stair with insufficient head clearance requiring several warning signs and makeshift padding. This stair should be replaced with a straight or return stairway.

Safety: Staff members have trouble opening the tall garage doors. Mechanical openers, either manual chain-lift or electrical motor should be provided for safe operation. Exterior access is by a narrow north-facing unit masonry stair set into the retaining wall. It gets little sun in winter and requires frequent sprinkling with salt and sand for safety.

Spaces and Rooms: Overall building condition is fair, with some deferred exterior maintenance. In addition to the retaining walls, upgrades in 2008 expanded the parking lot and added accessibility improvements for ADA compliance.

Foundation: The hillside behind the building has been cut back from the back wall of the garage and is retained by two terraced locking modular masonry unit walls. Another retaining wall separates the office parking lot from the garage apron. For unknown reasons, this 8’ wall has a continuous vertical joint. The retaining walls are about three years old and show no overt signs of movement.

Roof: The roof is in good condition for its age.

Siding: Windows are leaky and the sills are showing signs of rot.

HVAC: New HVAC was installed in 2012. The service bays are served by a gas space heater. Staff reports there is no shutoff valve between the meter and the building.

Electrical: Good condition, no power or lighting problems observed or reported. Building phone wiring is obsolete and insufficient for current digital communications; users experience cross-talk and general poor transmission quality. This may be related, in part, to proximity of the electrical utility station.

Plumbing: Good condition, no problems observed or reported.

Septic: Septic tanks and a lift station are located in the narrow space between the building and terraced walls retaining the hillside behind the building. The leach field is located slightly above the office level, in the remaining property between the office and the cemetery to the east.
Fire Protection: The facility does not have a fire sprinkler system.

Security: No system.

Traffic Safety: Traffic safety is a serious problem in this location. The garage apron opens directly to a multilane high-speed highway. The office driveway is steep and narrow; the bottom of the slope exits directly into oncoming traffic. Arrival and departure from the site is challenging. In winter, the highway department plows routinely fill both entrances with ice and snow. Clearing the entrances requires staff to operate an ATV-mounted plow in the traffic lane.
Ownership: The site was originally owned by the Department of Military Affairs (Camp George). Currently the property is owned by Colorado Department of Personnel and Administration, Denver, Colorado. CSFS is working toward ownership of the property. A recent survey has been completed but there is some question about its accuracy. The building is owned by the Colorado State Forest Service.

Occupancy: Office building #4651; Code Classification is a B Occupancy (office)

Code Compliance: Exterior ramp is too steep to meet ADA standards. The building restrooms are not fully accessible. To resolve this, both restrooms should be equipped with grab bars. Interior ramping to the classroom is too steep to meet ADA standards. Additionally changes in ramp directions need landings. At this time it is not feasible to rebuild ramp. The existing building will be modified and remodeled as part of a larger phased plan and at that time the noncompliant ramps should be addressed.

Spaces and Rooms: The office building is a total of 2,655 gross square feet. The building consists of three offices, reception area, two restrooms, kitchen, map room, utility room, classroom, and mechanical room. The interior is well worn but serviceable. All interior paint is old and in need of new paint. The ceiling throughout is old and should be replaced. The kitchen area is somewhat newer. The floor was replaced in 2001 because of settlement. Floor joists and sub-floor was added at the work room area and restrooms. The building continues to exhibit signs of foundation settlement. The floor has in many locations pulled away from the walls leaving significant gaps.

Foundation: Settlement continues to be a problem at the southwest corner and at the entry area. Up to three quarters of an inch of movement can be seen at the baseboards. Water runoff from the grade to the north most likely is contributing to the instability of the foundation. The existing building will be modified and remodeled as part of a larger phased plan and at that time an improved perimeter drain system should be considered.

Roof: The gabled roof is twenty years old but is serviceable. New gutters and downspouts have been added recently by CSU facilities. The flat roof was repaired when the Quonset work was done. Downspout extensions should be added to all locations to direct water away from the foundation. Gutters need to be cleaned and downspouts flushed. This should occur at least twice a year to prevent the potential for ice damming and eventual roof leaks at the eaves and valleys. Heat tape powered by extension cords was observed in a few locations. If the heat tape is effective a qualified electrician should be retained to bring work into code compliance.

Siding: The wood siding shows signs of wear. Flicker holes have been repaired by
CSU facilities. A bird deterrent call device has been installed and seems to be working. The building has been painted approximately two years ago (2008) and is weathering well. Siding in some areas is too close to grade and is deteriorating due to moisture.

**HVAC:** The system is in good repair and has been maintained on an annual basis or as required.

**Electrical:** Good condition, no problems observed or reported. Serviced as required. Service provided by Xcel.

**Plumbing:** Good condition. Water supply to kitchen freezes. There is little or no insulation in the exterior wall to protect the supply lines from freezing. The hot water heater is a five gallon tank and is not adequate in size for the facility. These issues are easily repaired and should be undertaken now rather than to wait for the larger phased project to repair the problems. Water is supplied by Consolidated water district.

**Septic:** The facility is serviced by Pleasant View Sewer district.

**Fire Protection:** The facility was developed and is code compliant without a fire sprinkler system. Smoke detection and carbon monoxide detectors are in place. A fire hydrant is located at the south west corner of the property. Fire protection is by Pleasant View volunteer fire department and West Metro fire protection.

**Security:** No system.

**Road/Acess:** The paved road is serviceable. The road was repaved in 2009. Cracks have reappeared since new paving was done. Gravel drive areas are renewed annually.

**Walks:** Walks are in good condition.

**Landscaping:** Trees are well maintained.
Ownership: refer to district office building narrative

Occupancy: Quonset garage Code Classification is an S-1 motor vehicle repair garage (minimal hazardous material), B (office). No separation required.

Code Compliance: The building contains minimal flammable materials that are contained in two UL approved fire cabinets. Stairs to the upper storage platform are non compliant. Stair treads and risers are not of uniform dimension. The stair in question should be rebuilt to conform to code.

Spaces and Rooms: The Quonset building is a total of 4,000 gross square feet. The building consists of two large workshop areas, one at 1,720 gross square feet and the other at 1,820 gross square feet. In addition to the workshop areas there is an enclosed 460 gross square foot summer crew office area with storage. The interior finishes are utilitarian and in good serviceable condition.

Foundation: The concrete foundation is in good condition.

Roof: The entire structure is covered in a spray applied polyurethane roof system that is in good condition.

Siding: The end walls are covered with a spray applied urethane foam. Damage due to birds has been mitigated by the installation of a bird call deterrent system. The building is in good serviceable condition.

HVAC: The East half of the building is served by a ducted gas forced air system. The west half of the building is served by an overhead unit heater that is in new condition.

Electrical: Good condition, no problems observed or reported. The system is serviced as required. Service provided by Xcel.

Plumbing: No plumbing

Fire Protection: The facility was developed and is code compliant without a fire sprinkler system. Smoke detection and carbon monoxide detectors are in place.

Security: No system.

Road/Access: The drive and area way are well maintained.

Drainage: Drainage is a problem. A perforated drain has been installed on the south side of the building that aids in the redirection of water into the drive areas.
**SITE, BUILDING ABBREVIATED AUDIT**

district office: GOLDEN

TRAILER 4653

immediate need items in orange

**Ownership:** Refer to district office building narrative

**Occupancy:** The trailer Code Classification is B (office)

**Code Compliance:** There is no accessible route to the trailer.

**Spaces and Rooms:** The trailer is a total of 1,440 gross square feet. The trailer is comprised of four enclosed offices, two at 190 gross square feet each and two at 144 gross square feet each. There are two open office areas at 430 and 335 gross square feet. Although worn, the interior is in serviceable condition with no major damage.

**Foundation:** Unit is set on trailer stands with T-111 skirting. The unit needs to be re-leveled.

**Roof:** The roof is twenty year old composition shingle in fair condition with no apparent leaks

**Siding:** The exterior metal siding has some minor damage. The trailer has been repainted recently. The window screens are in poor condition.

**HVAC:** The trailer is equipped with two LP gas fired furnaces. There are two air conditioning units. One unit is new and the other is approximately six years old. All equipment receives annual maintenance and are in good working order.

**Electrical:** Good condition, no problems observed or reported. The system is serviced as required.

**Plumbing:** No plumbing

**Fire Protection:** Smoke detection and carbon monoxide detectors are in place.

**Security:** No system.

**Road/Access:** The drive and area way are well maintained.

**Drainage:** There are concerns about adequate drainage. A perforated drain system has been recently installed between the trailer and the adjacent Quonset garage. This work has improved the drainage conditions.
Ownership: Owned

Occupancy: Office Area - 4, + Seasonal Varies

Code Compliance: No apparent life safety issues.

Spaces and Rooms: Generally in good repair, Other issues:

Windows: Main building - single pane, steel frame, many don't operate and leak in all weather conditions. District funds were going to be used for repair to be bid in September 2010 for replacement.

Floors: Main building - carpeted throughout, worn in places. Linoleum-type tile floor in kitchenette and bathroom areas needs to be replaced it is cracked and damaged in many places. Possible floor rot under shower in apartment bathroom.

Users expressed desire to reconfigure floor plan to move business center and create mudroom space with lockers and benches (see diagrams this report.

Garage - desire to add flammable storage with exterior venting, permanent stair to upper loft, move publication and record storage into Main building.

Site - New city sidewalk on Jasper Avenue, ADA Ramp to main entry presents a winter liability due to icing issues with roof overhang. No handrails present at exterior steps. City sidewalk work created some grade challenges that would be resolved with some small retaining walls. It additionally damaged the irrigation system which needs repair.

Foundation: Main building - Poured concrete with crawl space and full basement under portion, slab on grade under later addition.

Garage - slab on grade

Roof: Asphalt rolled roofing over main portion of building, flat roof with single pitch, good condition, vent boot appeared to need repair.
False storefront cedar shakes in poor condition, need to be replaced or re-detailed with different finish material.
Garage roof - metal standing seam, great condition

Siding: Main building - block masonry with brick veneer, interior drywall and paneling, good condition. Garage - stick frame with vinyl siding, drywall finish interior, good
condition

**HVAC:** Functional. N/A on A/C
Electrical Baseboard heat on slab portion of building, Gas, forced air in portion with crawl space and basement.

**Electrical:** Electrical system is a mess: multiple panels throughout building, outlets missing covers, lack of GFI in bathrooms.

**Plumbing:** New hot water tank installed in 2008, Municipal water supply. All in good working order.
**Septic:** Municipal Connection. No issues reported or observed.

**Fire Protection:** Extinguishers present, smoke detectors in apartment only, not in office space, no sprinkler system.

**Security:** N/A, just exterior motion detected lighting.
Ownership: Owned, Main building - constructed 1968-1969

Occupancy: Full time forester at time of visit, 2nd full time forester was expected to be hired 2010 + 1 Admin.

Office space is leased to other vendors
1. Gunnison County Weed Commission - 1 user
2. State of CO. mosquito control - 1 user
3. DNR - Inactive mine research - 1 use

Code Compliance: No apparent life safety issues.

Spaces and Rooms: Generally in good repair, floors - linoleum tile throughout in good condition.

Main Building - Large Lab, Conference Room, 10 offices, Maintenance Room, Men and Women’s restrooms, 1 shower room, Mechanical Room, Storage space, Cold Storage
1 green house
1 maintenance shop and garage
1 lattice shadehouse
1 leanto
1 shed
2 RV Trailers are kept on site for seasonal employee housing

HVAC: Functional. N/A on A/C
Gas boiler system to wall mounted radiators throughout. Radiator to large lab area not functioning correctly and too old to repair. Heating system maintained by Western State College Facilities. Boiler inspected by State Inspector August 2009. Compressor in mechanical room used to run air in lab and thermostats throughout, weekly condensate draining and oiling of unit completed by Administrative assistant.

Electrical: Electrical system appears to be in good working order, multiple panels in building. Telecom runs off of Western State College network. Issues with current system, Western State ran fiber to within +/-500 feet of building but failed to make connection. Telecom and IT run off of outdated circuit branch of Western State system. Internet slow and connections drop continuously. Connection to College fiber is a future issue for the facility. Negotiation to get connected to Western State system is recommended.
**Plumbing:** Gas hotwater tank installed in 1995, Plumbing in good working order. Exterior propane tank on site for backup and heating of greenhouse heaters. Obsolete, last use unknown.

** Septic:** Connected to Western State’s Municipal grade system, no issues. Fire Protection: Extinguishers present, no sprinkler system or alarm.

** Security:** N/A

** Site:** Campus road and parking lot paved asphalt, access to other buildings gravel. Gravel areas in OK condition but learned that these get muddy and less desirable in wet and winter months, mud season. Recommend a new topping layer of aggregate and a little bit of grading to correct. (see diagrams this report)
Ownership: Owned - Main building constructed in 2010

Occupancy: Code Classification is B occupancy (Office)

Code Compliance: No issues

Spaces and Rooms: New construction HVAC; New; gas fired furnace

Electrical: New

Plumbing: New, electric water heater

Septic: Otero Junior College sanitary sewer system

Site: Located on the campus of Otero Junior College, through land lease agreement
Ownership: Land Lease

Occupancy: Code Classification is a B Occupancy. 3 occupants between the shop and office building

Code Compliance: Egress is partially obstructed by stored materials and equipment – station needs a major purge of surplus and additional dedicated storage. Fuel depot needs spill containment. Office is not accessible and cannot be readily made accessible. Exterior stairs lack adequate railings. Mechanical equipment is at end of service life. Restrooms are not accessible.

Storage Building #6542 - Wood-frame structure with metal siding and roof in generally good condition. The paint on the metal roof is beginning to wear off. The building is used for equipment service and storage. It consists of two large spaces. The west half is an unheated, two-bay service garage with a dirt floor. The south side is completely open – there are no overhead doors. The east half is heated by a gas overhead space heater and a wood-burning stove from original construction. It has one service bay with an overhead door and concrete floor. An attic fan provides exhaust ventilation needed during vehicle and equipment service. Hazardous chemicals, pesticides and herbicides are stored in a metal cabinet constructed and listed for flammable materials. The cabinet is unventilated, but it is set in the open bay portion of the building. All available space of this building is occupied by stored equipment, materials, tools, protective clothing, cardboard boxes and other caches. Storage is organized on portable shelving, built-up shelves, plywood mezzanine, wall hooks and work benches, but the collection overflows everywhere into the service space and overhead truss framing. This building serves firefighting and forestry programs, vehicle and equipment maintenance and general storage with insufficient space for all functions. Future plans for the district center should include dedicated program space, and service storage, separate from this building.

Office 6541 - Administrative functions are housed in a mobile modular building that is at least 35 years old and may have been used when purchased. Despite staff efforts to keep it going, the building is in poor condition. Exterior siding, roof, doors, interior finishes, mechanical and plumbing equipment are at or beyond the end of service life. Windows appear to have been replaced once. Communications wiring is marginal for current digital technology. The building is not accessible, and would require a lengthy, convoluted ramp simply to gain entrance. The interior has narrow halls and doors, two threshold level changes and insufficient space for restroom modification. File cabinet, record and technical equipment storage encroach into accessible pathways. Access steps to the building are of unequale height with inadequate handrail protection. Staff has made alterations and additions to this building to cope with inappropriate floor plan, lack of storage,
inadequate heating, marginal lighting and other problems. The interior fills with dust from Moore Avenue and the service yard during the summer. The staff would like air conditioning simply for the benefit of keeping the windows closed to reduce dust problems. They would like new floor covering because the existing vinyl has worn completely through to the subfloor. Other deficiencies identified in a 1995 facility audit have yet to be corrected.

**Drainage:** Terrain in general slopes to the east. The site is lower than Moore Avenue. Road drainage and surface water from the property to the west and southwest drain into the site. The entrance and central yard are unpaved with minimal (if any) gravel base. Conditions are either muddy or dusty, depending on recent weather.

**Foundation:** No problems observed or reported.

**Roof:** Fair condition. Not leaking at this time.

**Siding:** Fair condition.

**HVAC:** Functioning, but at end of service life.

**Electrical:** Fair condition, no problems observed or reported.

**Plumbing:** Functioning, but at end of service life.

**Septic:** No problems reported.

**Fire Protection:** Fire extinguishers present

**Security:** No system.

**Storage:** The Service / Storage Building and Office Building are stuffed to capacity, and various vehicles, trailers and campers about the site are similarly packed with stored materials. The site has equipment stashed everywhere outdoors, along with water and fuel tanks, piles of firewood, building materials and other collections. Even with a thorough purge of surplus equipment, materials and obsolete records, there is not enough storage on site and in the existing buildings to accommodate the district office program.

Fuel is stored in two elevated tanks on the west side of the service yard. Staff have placed sand over polyethylene sheeting under the tanks to absorb minor spills, but the fuel depot does not have adequate spill containment to meet environmental regulations. Flammable liquids are stored in an old shed or trailer next to the fuel depot, about 40 feet from the service building. This shed lacks spill containment and was not built for flammable liquid storage.
Visibility: Unless one knows of the location, the district office has no public presence. The site is set back from Moore Avenue and screened by trees and a junkyard nuisance visual barrier fence on the private property to the southwest. There is no sign perpendicular to the road at the right of way, and only a small parallel sign on the fence by the entrance. The buildings located beyond the trees, fence, vehicles and equipment are ordinary utility structures with no distinguishing features. The office is tucked into the corner furthest from the entry and is not visible from the street.

Future Development: Future plans for the site should consider lease or purchase of the privately-held land between the current parcel and Moore Avenue. This would provide needed space to relocate administrative and public functions to the front of the site in a visible and accessible office building that avoids conflict between administrative traffic, service operations and outdoor storage.

The entrance should be graded to control drainage and direct it away from the service yard. The entrance and service yard should be paved or sufficiently gravelled to provide a firm, well-drained vehicle surface free of ruts and potholes. Parking signage and wheel stops should be provided to encourage orderly use of designated parking at the entrance. Signage at and perpendicular to the Moore Avenue right of way would increase visibility and provide wayfinding.

A row of mobile containers and covered outdoor storage should be provided along the service yard to help organize operations and relieve crowding in the service building. Spill containment should be built around the fuel depot, and a metal container or masonry building provided for flammable liquid storage.

The west bay of the Service / Storage Building needs a concrete floor. The yard needs a concrete or asphalt paved area for servicing the larger vehicles outdoors.

Currently, the tree planting program stores seedlings outdoors. A walk-in cooler would extend the season by keeping the seedlings fresh and protected from deer.
Ownership: Owned

Occupancy: Code Classification is a B Occupancy. Building is at capacity with current staff, some doubling up in offices. An addition would be required to accommodate any staff growth.

Code Compliance: No apparent life safety issues or modifications.

Spaces and Rooms: The office building is generally in good repair. It is however time for interior painting and the carpet is due for replacement in the public areas. Restrooms are well maintained. The shop building has owner-added offices to accommodate three additional staff. The shop appears to be well utilized and programs could benefit from additional high bay space to accommodate type 4 engines. The site would appear to have adequate area to support a proposed addition or a stand alone building.

Foundation: Concrete footings with stem walls. Floor is a framed over crawl space with a center post and beam system where the posts are supported by concrete pads. Little or no movement is observed.

Roof: The asphalt shingle roof system is nearing the end of its useful life and this is in keeping with the age of the facility. It appears to be properly ventilated and exhibits no curl in the shingles. Gutters appear to have been cleaned and the downspouts flushed. This should occur at least twice a year to prevent the potential for ice damming and eventual roof leaks at the eaves and valleys. It appears to be time to start planning for a roof replacement. There are no apparent leaks in the facility but to avoid more costly potential damage and repairs, the roof should be considered for replacement before potential leaks materialize.

Siding: The painted T-111 siding with window and sill plate trim is in good condition and has been well maintained. Building soffits and eave and rake trim are also in good condition. The Shop building is also in good repair and has been well maintained. A site built pergola is in need of attention and should be evaluated if it continues to deteriorate for structural stability.

HVAC: Functional. The original system was design build, not engineered in an attempt to keep the first costs low. Inherently, the system will not have the required specifications for optimal control, energy efficiency and the life expectancy will be less than that of systems specified by a mechanical engineer. In this facility however, problems with the HVAC system were not reported. It appears to be functioning well.

Electrical: Good condition, no problems observed or reported.
**Plumbing:** Good condition, no problems observed or reported.

**Septic:** Tied into City. Good Condition no problems observed or reported.

**Fire Protection:** The facility was developed and is code compliant without a fire sprinkler system. A smoke detection/ fire alarm system is in place and operational.

**Security:** No system.
abbreviated program plan guidelines

1) Executive summary
   i. Project name/ Location of proposed project
   ii. Remodel/new construction with # floors and gsf
   iii. Cost and proposed financing
   iv. Description of program benefiting from project
   v. Description of project benefits
   vi. Discussion of alignment with current Master and Strategic Plans

2) Justification
   a. Existing conditions
      i. Current enrollment
      ii. Physical condition of space (location, total sf, FCI)
      iii. Safety/code issues
      iv. Functionality of space
   b. Change/Projections
      i. Enrollment projections
      ii. New programs/instructional methodology/research
      iii. Class size changes
      iv. Accreditation requirements
      v. Other
   c. Total new space requirements
      i. Room/area sf by function
      ii. Student stations required (if applicable)
      iii. Total asf and gsf (efficiency calculation)
      iv. Equipment list or allowance
   d. Alternative analysis
      i. Lease/rent
      ii. Purchase existing
      iii. Construct new
      iv. Relocate
      v. Alternative scheduling

3) Implementation and design criteria
   a. Spatial Relationships
      i. Diagrammatic or bubble-diagrams illustrating the interaction and
         working relationships between and among spaces
   b. Site improvements and requirements
      i. Flood plain discussion and drainage issues
      ii. Pedestrian and vehicular access
c. Design requirements
   i. New utilities
   ii. Building systems (HVAC, electrical, plumbing, telecom/data, fire alarm)
   iii. LEED Goal
   iv. Fort Collins (or Excel Energy) Utility Rebate Program description
   v. Technology requirements
   vi. Unique/special features
   vii. Architectural design requirements (structural system, floor height, exterior material)
      1. Reference CSU Design Standards
      2. List of applicable codes required for new construction
      3. Complete code analysis required for existing building renovation

4) Project Schedule, cost estimates, financing
   i. Project schedule and phasing
   ii. Cost estimate with description of methodology employed

5) Proposed financing plan

6) Appendices
   a. Site map, floor plans
   b. Flood Plain map
   c. CC-C budget
   d. LEED checklist
   e. Operation and Maintenance Costs
   f. Third party review
resources that informed this plan

http://cfs.colostate.edu/pages/csfs-history.html
for history of CSFS

http://cfs.colostate.edu/pages/statewide-forest-assessment.html
for statewide forest assessment document

www.sascho.com
for exterior maintenance products for Forestry Buildings

http://www.facilities.colostate.edu/
for construction standards, planning and general information

http://www.facilities.colostate.edu/index.asp?url=buildings/home
for aesthetic guidelines

http://www.fs.fed.us/cgi-bin/texis/searchallsites/search.allsites/
for Forest Service Life Cycle Cost Analysis report

http://www.colostate.edu/
for Colorado State University home page

http://www.purchasing.colostate.edu/index.asp
for CSU purchasing information

http://www.colorado.gov/cs/Satellite/DPA-EO/DEO/1247524014223
for Colorado Office of the State Architect

http://csusystem.edu/
Colorado State University System Board of Governors

http://highered.colorado.gov/cche.html
Colorado Commission on Higher Education (CCHE)

http://www.fm.colostate.edu/character/
for CSU Campus Character Website
TABLE 1.7 LIFE CYCLE COST ANALYSIS

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Total Present Value for Owning and Operating Costs over the Study Period: $2,890,511

Life cycle cost analysis form- Colorado State Forest Service Fire Management Building
graphic diagram of owned vs. leased facilities
### Sustainable Sites

| Yes? | No? | Prereq 1 | Construction Activity Pollution Prevention | Required
|------|------|----------|--------------------------------------------|-----------
| Y    |      | Credit 1 | Site Selection                             | 1         |
| Y    |      | Credit 2 | Development Density & Community Connectivity| 5         |
| Y    |      | Credit 3 | Brownfield Redevelopment                   | 1         |
| Y    |      | Credit 4.1| Alternative Transportation, Public Transportation Access | 6         |
| Y    |      | Credit 4.2| Alternative Transportation, Bicycle Storage & Changing Rooms | 1         |
| Y    |      | Credit 4.3| Alternative Transportation, Low-Emitting & Fuel-Efficient Vehicles | 3         |
| Y    |      | Credit 4.4| Alternative Transportation, Parking Capacity | 2         |
| Y    |      | Credit 5.1| Site Development, Protect or Restore Habitat | 1         |
| Y    |      | Credit 5.2| Site Development, Maximize Open Space       | 1         |
| Y    |      | Credit 6.1| Stormwater Design, Quantity Control         | 1         |
| Y    |      | Credit 6.2| Stormwater Design, Quality Control          | 1         |
| Y    |      | Credit 7.1| Heat Island Effect, Non-Roof                | 1         |
| Y    |      | Credit 7.2| Heat Island Effect, Roof                    | 1         |
| Y    |      | Credit 8 | Light Pollution Reduction                  | 1         |

### Water Efficiency

| Yes? | No? | Prereq 1 | Water Use Reduction, 20% Reduction | Required
|------|------|----------|-----------------------------------|-----------
| Y    |      | Credit 1.1| Water Efficient Landscaping, Reduce by 50% | 2         |
| Y    |      | Credit 1.2| Water Efficient Landscaping, No Potable Use or No Irrigation | 2         |
| Y    |      | Credit 2 | Innovative Wastewater Technologies    | 2         |
| Y    |      | Credit 3.1| Water Use Reduction, 30% Reduction    | 2         |
| Y    |      | Credit 3.2| Water Use Reduction, 40% Reduction    | 2         |

### Energy & Atmosphere

| Yes? | No? | Prereq 1 | Fundamental Commissioning of the Building Energy Systems | Required
<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td></td>
<td>Prereq 2</td>
<td>Minimum Energy Performance: 10% New Bldgs or 5% Existing Bldg Renovations</td>
<td>Required</td>
</tr>
<tr>
<td>Y</td>
<td></td>
<td>Prereq 3</td>
<td>Fundamental Refrigerant Management</td>
<td>Required</td>
</tr>
<tr>
<td>Y</td>
<td></td>
<td>Credit 1</td>
<td>Optimize Energy Performance</td>
<td>1 to 19</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>12% New Buildings or 8% Existing Building Renovations</td>
<td>1</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>16% New Buildings or 12% Existing Building Renovations</td>
<td>3</td>
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<tr>
<td></td>
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<td></td>
<td>20% New Buildings or 16% Existing Building Renovations</td>
<td>5</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>24% New Buildings or 20% Existing Building Renovations</td>
<td>7</td>
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<td></td>
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<td>28% New Buildings or 24% Existing Building Renovations</td>
<td>9</td>
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<td></td>
<td>32% New Buildings or 28% Existing Building Renovations</td>
<td>11</td>
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<td>36% New Buildings or 32% Existing Building Renovations</td>
<td>13</td>
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<td>40% New Buildings or 36% Existing Building Renovations</td>
<td>15</td>
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<td>44% New Buildings or 40% Existing Building Renovations</td>
<td>17</td>
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<tr>
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<td></td>
<td></td>
<td>48% New Buildings or 44% Existing Building Renovations</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Credit 2</td>
<td>On-Site Renewable Energy</td>
<td>1</td>
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<tr>
<td></td>
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<td></td>
<td>1% Renewable Energy</td>
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<tr>
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<td></td>
<td></td>
<td>5% Renewable Energy</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>9% Renewable Energy</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>13% Renewable Energy</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Credit 3</td>
<td>Enhanced Commissioning</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Credit 4</td>
<td>Enhanced Refrigerant Management</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Credit 5</td>
<td>Measurement &amp; Verification</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Credit 6</td>
<td>Green Power</td>
<td>2</td>
</tr>
</tbody>
</table>
### Materials & Resources 14 Points

<table>
<thead>
<tr>
<th>Prereq 1</th>
<th>Credit 1.1</th>
<th>Storage &amp; Collection of Recyclables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prereq 2</td>
<td>Credit 1.2</td>
<td>Building Reuse, Maintain 75% of Existing Walls, Floors &amp; Roof</td>
</tr>
<tr>
<td></td>
<td>Credit 1.3</td>
<td>Building Reuse, Maintain 95% of Existing Walls, Floors &amp; Roof</td>
</tr>
<tr>
<td></td>
<td>Credit 2.1</td>
<td>Building Reuse, Maintain 50% of Interior Non-Structural Elements</td>
</tr>
<tr>
<td></td>
<td>Credit 2.2</td>
<td>Construction Waste Management, Divert 50% from Disposal</td>
</tr>
<tr>
<td></td>
<td>Credit 2.3</td>
<td>Construction Waste Management, Divert 75% from Disposal</td>
</tr>
<tr>
<td></td>
<td>Credit 3.1</td>
<td>Materials Reuse, 5%</td>
</tr>
<tr>
<td></td>
<td>Credit 3.2</td>
<td>Materials Reuse, 10%</td>
</tr>
<tr>
<td></td>
<td>Credit 4.1</td>
<td>Recycled Content, 10% (post-consumer + ½ pre-consumer)</td>
</tr>
<tr>
<td></td>
<td>Credit 4.2</td>
<td>Recycled Content, 20% (post-consumer + ½ pre-consumer)</td>
</tr>
<tr>
<td></td>
<td>Credit 5.1</td>
<td>Regional Materials, 10% Extracted, Processed &amp; Manufactured Regionally</td>
</tr>
<tr>
<td></td>
<td>Credit 5.2</td>
<td>Regional Materials, 20% Extracted, Processed &amp; Manufactured Regionally</td>
</tr>
<tr>
<td></td>
<td>Credit 6</td>
<td>Rapidly Renewable Materials</td>
</tr>
<tr>
<td></td>
<td>Credit 7</td>
<td>Certified Wood</td>
</tr>
</tbody>
</table>

### Indoor Environmental Quality 15 Points

| Prereq 1 | Credit 1  | Minimum IAQ Performance |
| Prereq 2 | Credit 2  | Outdoor Air Delivery Monitoring |
|          | Credit 3.1| Construction IAQ Management Plan, During Construction |
|          | Credit 3.2| Construction IAQ Management Plan, Before Occupancy |
|          | Credit 4.1| Low-Emitting Materials, Adhesives & Sealants |
|          | Credit 4.2| Low-Emitting Materials, Paints & Coatings |
|          | Credit 4.3| Low-Emitting Materials, Flooring Systems |
|          | Credit 4.4| Low-Emitting Materials, Composite Wood & Agrifiber Products |
|          | Credit 5  | Indoor Chemical & Pollutant Source Control |
|          | Credit 6.1| Controllability of Systems, Lighting |
|          | Credit 6.2| Controllability of Systems, Thermal Comfort |
|          | Credit 7.1| Thermal Comfort, Design |
|          | Credit 7.2| Thermal Comfort, Verification |
|          | Credit 8.1| Daylight & Views, Daylight 75% of Spaces |
|          | Credit 8.2| Daylight & Views, Views for 90% of Spaces |

### Innovation & Design Process 6 Points

| Credit 1.1 | Innovation in Design: Provide Specific Title |
| Credit 1.2 | Innovation in Design: Provide Specific Title |
| Credit 1.3 | Innovation in Design: Provide Specific Title |
| Credit 1.4 | Innovation in Design: Provide Specific Title |
| Credit 1.5 | Innovation in Design: Provide Specific Title |
| Credit 2   | LEED® Accredited Professional |

### Regional Bonus Credits 4 Points

| Credit 1.1 | Region Specific Environmental Priority: Region Defined |
| Credit 1.2 | Region Specific Environmental Priority: Region Defined |
| Credit 1.3 | Region Specific Environmental Priority: Region Defined |
| Credit 1.4 | Region Specific Environmental Priority: Region Defined |

### Project Totals (Certification Estimates) 110 Points

- **Not Certified**: 40-49 points
- **Certified**: 50-59 points
- **Silver**: 60-79 points
- **Gold**: 80+ points
# Project Title: Future CSFS Facility

## Total Project or Total Development Cost Estimate

<table>
<thead>
<tr>
<th>Project Budget</th>
<th>Estimated Costs</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Professional Services</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site Survey, Geotechnical</td>
<td>$8,000</td>
<td></td>
</tr>
<tr>
<td>Consultants - Architects, Engineers,</td>
<td>$105,000</td>
<td></td>
</tr>
<tr>
<td>Commissioning and Advertisements</td>
<td>$1,000</td>
<td></td>
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<tr>
<td>CSU Facilities Project Management</td>
<td>$34,100</td>
<td></td>
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<tr>
<td>3rd party code review and Inspections</td>
<td>$6,500</td>
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</tr>
<tr>
<td><strong>Total Professional Services</strong></td>
<td>$154,600</td>
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<tr>
<td><strong>Construction</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Space - 5000@$200 sqft</td>
<td>$1,000,000</td>
<td>Reference also space Analysis</td>
</tr>
<tr>
<td>Renovation Space - <strong><strong>@$</strong></strong>/sqft</td>
<td></td>
<td>Research construction cost /sqft</td>
</tr>
<tr>
<td>Site Work Service/Utilities</td>
<td>$40,000</td>
<td>at time of development</td>
</tr>
<tr>
<td>Site Improvements/Landscaping</td>
<td>$25,000</td>
<td></td>
</tr>
<tr>
<td>High Performance Building - 4%</td>
<td>$40,000</td>
<td>USGBC LEED Criteria</td>
</tr>
<tr>
<td><strong>Subtotal Construction Costs</strong></td>
<td>$1,105,000</td>
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</tr>
<tr>
<td><strong>Equipment &amp; Furnishings</strong></td>
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</tr>
<tr>
<td>Fixed Equipment - Signage and graphics</td>
<td>$12,500</td>
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<tr>
<td>Moveable Equipment - Furniture</td>
<td>$60,000</td>
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<tr>
<td>CSU Communications</td>
<td>$45,000</td>
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<tr>
<td><strong>Total Equipment and Furnishings Costs</strong></td>
<td>$117,500</td>
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<tr>
<td><strong>Miscellaneous</strong></td>
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<tr>
<td>Relocation Costs- Custodial Equipment</td>
<td>$5,000</td>
<td></td>
</tr>
<tr>
<td>Central Plant Upgrade</td>
<td>$40,000</td>
<td>subject to work description on project may not be applicable</td>
</tr>
<tr>
<td><strong>Total Miscellaneous Costs</strong></td>
<td>$45,000</td>
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<tr>
<td><strong>Subtotal Project Cost</strong></td>
<td>$1,422,100</td>
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<tr>
<td><strong>Project Contingency</strong></td>
<td></td>
<td></td>
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<tr>
<td>Project Contingency 5% for New</td>
<td>$71,105</td>
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</tr>
<tr>
<td>Project Contingency 10% for Renovation</td>
<td>-</td>
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<tr>
<td><strong>Total Contingency</strong></td>
<td>$71,105</td>
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<tr>
<td><strong>Subtotal Budget- anticipated construction start date</strong></td>
<td>$1,493,205</td>
<td></td>
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<tr>
<td>1 year of potential inflation 5%</td>
<td>$74,660</td>
<td>compound for each out year</td>
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<tr>
<td><strong>Total Estimated Project Budget</strong></td>
<td>$1,567,865</td>
<td>Does not include land purchase.</td>
</tr>
<tr>
<td><strong>Total Project Cost / sqft</strong></td>
<td>$487</td>
<td>Does not include land purchase.</td>
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</tbody>
</table>