



**Boulder Wild Land Fire Station  
Site Review Written Statement  
May 20, 2013**

**I. Background**

**a. Need**

*The City of Boulder Fire Department funds a full-time and seasonal Wildland fire crew who are an initial attack group for wildland fires occurring on or near city-owned land, including Open Space and Mountain Parks. When not involved in fire fighting, the crews perform mitigation work on city land, thinning forests and conducting prescribed burns to reduce the intensity of wild fires. The crew currently works out of several locations. Offices, vehicle storage, and tool repair and storage are each in separate buildings. The proposed Wildland Fire Station will consolidate all of the crews and their support functions into one location.*

**b. History**

*In 2009, construction was completed on the Boulder County Regional Fire Training Center (FTC) project, which contains an approximate 23,000sf Administration Building, Training Tower, Bum Building, and ancillary Training Props. The FTC received a number of regional design awards and achieved a LEED Gold certification. The project included extensive site development to provide water, sewer and natural gas utility services, as well as vehicular circulation and site drainage. The FTC site was developed to allow for an expansion of uses, to include a Wildland Fire Station to house the independent operations of firefighters who respond to a variety of undeveloped property fires.*

**c. Proposal**

*The Boulder Wild Land Fire Station will occupy approximately 2.46 acres of the existing Regional Fire Training Center (FTC). This proposed Boulder Wild Land Fire Station is a fulfillment of the future phasing discussed briefly in the Site Review Application for the Regional Fire Training Center on October 6, 2008 as a part of the FTC construction phasing. (Written Statement - page 2, 6th paragraph) The Boulder Wild Land Fire Station will be located in the east quadrant of the already approved FTC site of 10 acres. It will be 10,700 square feet*

**d. Site Plan**

- i. This site is proposed for the east quadrant of the 10 acre FTC site with access via the existing FTC perimeter road.*
- ii. The site is specifically designed to house 4 to 8 full time fire fighters with four to five bunk rooms and five offices, decontamination equipment, extractors, day room, dining room, kitchen, on site and storage for a variety of wild land fire apparatus trucks and trailers, special firefighting equipment. It is also designed to temporarily handle an influx of personnel and equipment to fight local wild land fires for short periods of time for the duration of a wild land fire event. These may typically occur during peak fire hazard seasons however, these events are not common.*
- iii. The specific location was chosen because of particular site constraints. The most important factor was to keep the north quadrant as large as possible in order to construct a Driving Course and Evaporation Area in the future. (See Written Statement for FTC October 6, 2008 - page 2, 6th paragraph*
- iv. Traffic will enter the FTC site via the existing main access road. It will then continue counter clock wise around the existing perimeter road until it turns into the station at the apron and then either turns into the parking lot for vehicle parking or backs into the apparatus bays through a two point turn.*

- v. *Because funding is limited, an additional alternate construction phase will price the north apparatus drive access apron. If this phase is within the budget, it will be built during the construction of the building. Then apparatus vehicles will continue on the perimeter road and enter the building from the north apron in lieu of backing into the building from the south.*
  - vi. *During the initial scramble of fire fighters, to fight a wild land fire event, various trucks will back into the trailer storage yard on the east side of the building and hook up a trailer carrying all terrain vehicles, equipment, and necessary supplies.*
  - vii. *The existing retention ponds hold two to three feet of water most of the time due to the heavy training exercises at the FTC. These ponds will be re-graded per this design to both serve this new facility and to become an attractive water and landscape amenity. This amenity will be shared with both the wild land fire station occupants and the existing FTC occupants.*
- e. Description of Architecture
- viii. History of the master plan design concept:
    - 1. *The master plan FTC site was designed based upon a need to observe training from one advantage point as well as agrarian geometries and themes, structures, compact land use, and simple, functional forms.*
  - ix. *Boulder Wild Land Fire Design*
    - 1. *A simple functional and rational approach to the design of the Wild Land Fire Station itself was influenced by a need to minimize wasted corridor space, create observation like places at the exterior (such as bunk rooms, offices, dayrooms etc) with mountain views that wrap around interior spaces (such as restrooms, showers, decontamination rooms, laundry, apparatus bays, pantry and storage). The most efficient geometry that reduces wasted circulation space can be the circle. When translated to 3 dimensions - it becomes the cylinder. The program initially called for 14,000 square feet of space to fit in a budget that would only support 10, 500 square feet. This required the need to minimize corridor space. The cylinder is also an agrarian form commonly utilized in the case of a silo. This simple form works well next to the FTC shed. It also stands strongly on its own. The entrance to the Boulder Wild Land Fire Station is in line with the axis of the FTC's circular site because the observation spaces need to face the front range. Two sidewalks provide access to the training administration building and the training pads. In order to conserve space, the second floor exit stair was placed outside the main building. This created an opportunity to bridge over the detention ponds, and create an exterior training devise with climbing wall etc.*
    - 2. *Because this facility faces west and contains glass for views and natural day lighting, vertical masses were added to the edge of the windows to block low angled summer sun. An orthogonal grid to organize interior spaces and maintain construction efficiencies was overlaid on top of the concentric perimeter circles. These vertical fins are aligned with the orthogonal grids. Their color is to match the FTC masonry. The metal cylinder is carved away with orthogonal cut outs to respond to the program. The metal is agrarian feeling and the grayish brown color reflects the color of a mountain look out fire tower.*
    - 3. *The sloped roof covers the second floor at the high end and drops down over the apparatus bays and saw maintenance rooms. The slope subtly ties the FTC administration building together with this building to create a campus feel. The form also suggests a direction of looking towards the mountains.*
- f. Schedule
- x. *The Boulder Wild Land Fire Station is expected to break ground the late fall of 2013*
- g. Requested Variations from Code or Approved Criteria of Existing FTC
- xi. *There are none.*
2. Compliance with General Review Criteria
- a. Boulder Comprehensive Plan
    - i. How is the proposed site plan consistent with the purposes and policies of the Boulder Valley Comprehensive Plan?

*The Wildland Fire Station will provide enhanced emergency services for wildfire events throughout Boulder County, with particular emphasis on the non-urban areas. Protection of unincorporated areas, or areas not provided with permanent services are integral requirements of good land stewardship. Locating the Wildland Station at the Fire Training Center site takes the best advantage of cross-training opportunities and will provide support for the County-wide fire districts through sharing of training and response equipment. The site contains sufficient infrastructure to support the new station with minimal impacts to the natural landscape*

ii. Housing Density:

*Not Applicable*

b. Site Design

i. Open space, including without limitation, parks, recreation areas, and playgrounds:

1. How is useable open space arranged to be accessible and functional?

*This facility will not decrease the existing surrounding open space. This facility will have visible and physical access to existing trails and fields no different than the FTC.*

2. How is private open space provided for each detached residential unit?

*Not Applicable*

3. How does the project provide for the preservation of natural features, including, without limitation, healthy long-lived trees, terrain, significant plant communities, threatened and endangered species and habitat, ground and surface water, wetlands, riparian areas, and drainage areas?

*The natural character of the Boulder Wild Land Fire site and the surrounding area will primarily be preserved through a series of detention /water quality ponds surrounding the building. This system of ponds and drainage swales will filter runoff from the Wild Land Fire site and other nearby buildings before it is released to the northeast. The ponds and swales will also encourage growth of riparian vegetation along their margins and flow-lines, further enhancing the natural character of the site as the landscape matures.*

4. How does the open space provide a relief to the density, both within the project and from surrounding development?

*The fire station is a use approved in the FTC development. The surrounding open space maintains the visual and physical sense of a wild prairie through the encouragement of natural vegetation and retention ponds around the building. It also maintains the visual association to "wild land" mountainous areas of Boulder County by preserving view corridors to the front range. The surrounding development continues to be buffered visually and physically by the same open space as it has done for the FTC.*

5. How does the open space provide a buffer to protect sensitive environmental features and natural areas?

*See answer to number 3 above.*

6. If possible, how is open space linked to an area- or a city-wide system?

*The overall site is secured and access is limited to Fire personnel. There is no immediate connection to an existing or proposed open space system.*

ii. Open Space in Mixed Use Developments: Developments that contain a mix of residential and non-residential uses:

1. How does the open space provide for a balance of private and shared areas for the residential uses and common open space that is available for use by both the residential and non-residential uses that will meet the needs of the anticipated residents, occupants, tenants, and visitors of the property?

*The staff present at the building can utilize the existing off site trail system and reservoir for exercise and rescue training of the offsite open space. They also, along with visitors will be able to walk around the retention ponds and sit down on sandstone landscape boulders that are a part of the internal open landscaped areas adjacent to the pond and building. This fire stations requires an outdoor dining facility. The outdoor dining patio is adjacent to the landscaped retention pond area. In addition, the dayroom and offices look out over this pond amenity.*

2. How does the open space provide active areas and passive areas that will meet the needs of the anticipated residents, occupants, tenants, and visitors of the property and how is the open space compatible with the surrounding area or an adopted plan for the area?

*See answer to number i-3 and ii -1 above.*

iii. Landscaping:

1. How does the project provide for aesthetic enhancement and a variety of plant and hard surface materials'-and how does the selection of materials provide for a variety of colors and contrast and how does it incorporate the preservation or use of local native vegetation where appropriate?

*Xeric trees, shrubs, and perennials make up the majority of plants selected for the Wild Land Fire site. The plant material is a mix of native and adapted plants that fit well within the native grass landscape of the site's context. Plants have been selected for distinctive textures and leaf colors, year-round color with spring and summer flowers and fall color where possible. No turf grasses are proposed for the site only shrub beds mulched with wood chips and a low-grow native grass mix. The pond edges are enhanced with landscape boulders, many of which will be set at seating height. A variety of pavement textures and colors are used for the public spaces of the building including crushed granite, scored concrete, pervious pavers.*

2. How does the landscape and design attempt to avoid, minimize, or mitigate impacts to important native species, plant communities of special concern, threatened and endangered species and habitat by integrating the existing natural environment into the project?

*The landscape design is integrated into the existing natural environment through the avoidance of high-water use landscapes such as Bluegrass turf, the use of xeric plant material, mulched shrub beds, and seeded native grass stands. Because the Wild Land Fire site was disturbed during the first phase of construction, this project will not impact important native species, plant communities, or threatened and endangered species.*

3. How does the project provide significant amounts of plant material sized in excess of the landscaping requirements of Sections 9-9-12 and 9-9-13, "Landscaping and Screening Requirements," and "Streetscape Design Standards," B.R.C. 1981; and

*The landscape area in the immediate vicinity of the building will feature a higher percentage of adapted species in a more formalized planting pattern. This area makes up a very small percentage (+/- 10%) of the site's landscape. The remainder of the landscape will be wood chip mulched shrub beds with low-water use plants and native grasses. No areas of high-water use shrubs or turf grasses are proposed. Storage areas screened with walls and upright evergreens. All landscape areas will be irrigated with an automated, below ground irrigation system that is zoned by plant water-usage. Minimum plant sizes shall be as follows: Shade trees 2" caliper, evergreen trees 5' height, shrubs and large ornamental grasses 5 gallon containers, perennials and small ornamental grasses 1 gallon containers.*

*Section 9-9-13 does not apply to the Wild Land Fire site as it is served by an internal service drive. None-the-less, evergreen trees have been provided at 35' to 40' spacing along the circular service drive located along the east side of the site to help screen the site from off-site views.*

*Since the parking lot for this site is not adjacent to a public ROW or property line, the screening standards do not apply. However, 30" to 40" tall shrubs will screen the front grills/hoods of the cars in the parking lot. Because the parking lot exceeds 15 spaces, interior landscaping with shrubs and a shade tree is provided. The parking lot screening and interior landscaping will achieve +/- 85% - 90% coverage at maturity.*

4. How are the setbacks, yards, and useable open space along public rights-of-way landscaped to provide attractive streetscapes, to enhance architectural features, and to contribute to the development of an attractive site plan?

*There are no required setbacks or sideyards for the Wild Land Fire site. The site is screened by a significant landscape berm along its east frontage which was constructed in an earlier phase. This screening provided by the berm will be strengthened by a row of pine trees which will enhance the screening from Highway 119, which 475' to the east. There is a public trail along the east edge of the Boulder Reservoir, but because it is over 950' to the west the landscaping shown along the west side of the structure will provide adequate screening.*

- iv. Circulation, including, without limitation, the transportation system that serves the property, whether public or private and whether constructed by the developer or not:
  1. How are high speeds discouraged or a physical separation between streets and the project provided?

*Currently speed limits and calming devices discourage high speeds along the Reservoir Road. Speed limits are posted internally on the FTC site. Vehicles traveling to and from the Wild Land Fire Station will be staff vehicles or apparatus equipment. There will be no through traffic within the fire station drive aprons or parking lots.*

2. How are potential conflicts with vehicles minimized?

*Circulation to and from the Wild Land Station will occur along the circular perimeter road. This road does not conflict with the FTC training exercises or burn building training. While access to the FTC administration parking lot and the FTC Apparatus apron share this perimeter road, vision triangles and open terrain will minimize conflicts. Visitors who are not familiar with the use of the training area will be directed by signage to continue along the perimeter drive and will thus avoid any conflict. In the event that the Reservoir Road is blocked to through traffic, there is an approved emergency access onto HWY 119*

3. How are safe and convenient connections accessible to the public within the project and between the project and existing and proposed transportation systems provided, including without limitation streets, bikeways, pedestrian ways and trails?

*Within the site: sidewalks are provided along the public parking area, to the adjacent FTC administration building and to the FTC burn building training site.  
Off site: The FTC has provided a wider 51st to include a bike lane.*

4. How are alternatives to the automobile promoted by incorporating site design techniques, land use patterns, and supporting infrastructure that supports. encourages walking, biking, and other alternatives to the single occupant vehicle?  
*This facility is being designed to achieve LEED silver designation. As part of the requirements for LEED design, we are working to achieve the following:*
  - a. *Parking for hybrid automobiles, carpool trips and bikes.*
  - b. *Providing locker rooms and shower facilities for staff who bike, walk, or run to work.*

- c. *Two public bus stops are within a 1/4 mile of this facility adjacent to HWY 119. Pedestrian access to these stops is available along the emergency access road to the highway.*

5. Where practical and beneficial, how is a significant shift away from single- occupant vehicle use to alternate modes promoted through the use of travel demand management techniques?

*Because work related vehicles will be stored on site, Staff will be encouraged to make use of car pooling and alternative means of transportation via bike or public transit.*

6. What on-site facilities for external linkage with other modes of transportation are provided, where applicable?

*Other than parking for hybrid automobiles, carpool trips and bikes, there will be no on-site shuttles, or bus provided.*

7. How is the amount of land devoted to the street system minimized?

*The land devoted to vehicle access is minimized by utilizing the existing FTC road infrastructure for both staff, visitor, and apparatus vehicular traffic. The parking for visitor and staff utilizes the drive apron to the apparatus bays.*

8. How is the project designed for the types of traffic expected, including, without limitation, automobiles, bicycles, and pedestrians, and how does it provide safety, separation from living areas, and control of noise and exhaust?; and

*Traffic to the Wildland Fire Station will primarily be firefighters arriving and leaving the station for their assigned shifts. The site is not publically accessible and the uses are not adjacent to residential areas.*

9. How will city construction standards be met, and how will emergency vehicle use be facilitated?

*Paving of all roads will meet or exceed city street standards. Drive aprons will exceed these standards. The parking lot aisle and parking stalls will meet or exceed city standards. Emergency vehicles will be stored inside the facility and will utilize the drive aprons on the north and south of the building. They will also utilize the perimeter road to hook up trails from the trailer storage yard.*

v. Parking

1. How does the project incorporate into the design of parking areas, measures to provide safety, convenience, and separation of pedestrian movements from vehicular movements?

*Pedestrian side walk*

2. How does the design of parking areas make efficient use of the land and use the minimum amount of land necessary to meet the parking needs of the project?

*Instead of providing a drive through parking lot, this lot has a hammer head turn around. This reduces the need for additional access drives. The curve of the parking lot is concentric to the building. This is the most efficient use of land. Additional parking spots are available along the perimeter road way. This is an efficient use of paving.*

3. How are parking areas and lighting designed to reduce the visual impact on the project, adjacent properties, and adjacent streets?; and

*The parking lot is located on the opposite side of the FTC entrance and is thus screened from the entrance of the facility. The lighting for the parking lot is designed to provide the minimal amount of lighting for staff and visitors at night.*

4. How do parking areas utilize landscaping materials to provide shade in excess of the requirements in Section 9-9-14, "Parking Lot Landscaping Standards," B.R.C. 1981

*Since the parking lot for this site is not adjacent to a public ROW or property line, the screening standards do not apply. However, 30" to 40" tall shrubs will screen the front grills/hoods of the cars in the parking lot. Because the parking lot exceeds 15 spaces, interior landscaping with shrubs and a shade tree is provided. The parking lot screening and interior landscaping will achieve +/- 85% - 90% coverage at maturity. Multiple shade trees on the south side of the parking lot will create shade after reaching maturity.*

vi. Building Design, Livability, and Relationship to the Existing or Proposed Surrounding Area:

1. How are the building height, mass, scale, orientation, and configuration compatible with the existing character of the area or the character established by an adopted plan for the area?

*See Description of Architecture under I-e above.*

2. How is the height of buildings in general proportion to the height of existing buildings and the proposed or projected heights of approved buildings or approved plans for the immediate area?

*See Description of Architecture under I-e above.*

3. How does the orientation of buildings minimize shadows on and blocking of views from adjacent properties?

*Significant views are to the west and south. The building does not block any of these views from the FTC or buildings across HWY 119. Shadows from this building do not affect any adjacent building. See shadow study.*

4. If the character of the area is identifiable, how is the project made compatible by the appropriate use of color, materials, landscaping, signs, and lighting?

*See Description of Architecture under I-e above.*

*Native grasses, low water-use landscape material and an avoidance of high-water use plants and turf grasses will help blend the structure into the surrounding prairie-like landscape.*

5. How do buildings present an attractive streetscape, incorporate architectural and site design elements appropriate to a pedestrian scale, and provide for the safety and convenience of pedestrians?

*See Description of Architecture under I-e above.*

*Pedestrian traffic for visitors is to the west side of the building away from the apparatus equipment and vehicle area. The entrance is adjacent to the parking lot. The Wild Land Station only anticipates a few visitors each day on site. It will only be open to the public upon appointment*

6. To the extent practical, how does the project provide public amenities and planned public facilities?

*See answer above. The Wildland Station is not a publically accessible facility, however, visitors with appointment may be given tours of the facility by staff. They may walk around the landscaped retention ponds under supervision. This is the only anticipated amenity available to the public.*

7. For residential projects, how does the project assist the community in producing a variety of housing types, such as multifamily, townhouses, and detached single family units as well as mixed lot sizes, number of bedrooms, and sizes of units?

*Not Applicable*

8. For residential projects, how is noise minimized between units, between buildings, and from either on-site or off-site external sources through spacing, landscaping, and building materials?

*Not Applicable*

9. If a lighting plan is provided, how does it augment security, energy conservation, safety, and aesthetics?

- *Type A -Light Standards. These light standards are the same standard used at the FTC. There spacing is similar. They are night sky compliant and energy efficient*
- *Type B - Sconces The lights sconces over the apparatus bay doors are night sky compliant, energy efficient and distribute light properly in front of the bay doors. They will be mounted at 16' above the apron floor. Therefore these fixtures will not be visible from HWY 119, from the FTC administration building or from the top of the Reservoir Levy because the curved flying wall will obscure them.*
- *Type C - Sconces. The light sconces at the trailer storage yard will be on a motion sensor for providing utilitarian lighting in the yard. These will be below the 10' high yard wall and will not be visible except through the opening in the trailer yard.*
- *Type D - Sconces. The light sconces at the masonry fin walls will be decorative and provide general lighting outside the building to architecturally identify the masonry fins at night. They will be relatively low in wattage.*

10. How does the project incorporate the natural environment into the design and avoid, minimize, or mitigate impacts to natural systems?

*The architecture design is integrated into the existing natural environment through form, color, texture and simplicity.*

*Form: The form is simple and agrarian in shape - "the silo". It also slopes to relate to the FTC building and the surround terrain which is not all flat. The cylinder is pure in its form and is a pure organic form. This can create a higher awareness of the surrounding wild land forms and grass.*

*Color: The gray - brown is an earth tone. The dark color causes the shape to recede. The contrast between the dark brown and the golden grass is striking. The concrete masonry unit wall is a golden tan earth tone and relates well to grass color around it. It also is the same color of masonry on the FTC building*

*Texture: The split face block is rough in character and relates to natural stone. The corrugated metal siding relates to agrarian textures. The waves simulate the wave in prairie grass in the wind.*

*The landscape design is integrated into the existing natural environment through the avoidance of high-water use landscapes such as Bluegrass turf, the use of xeric plant material, mulched shrub beds, and seeded native grass stands. Because the Wild Land Fire site was disturbed during the first phase of construction, this project will not impact important native species, plant communities, or threatened and endangered species.*

11. How are cut and fill minimized on the site, and how does the design of buildings conform to the natural contours of the land, and how does the site design minimize erosion, slope instability, landslide, mudflow or subsidence, and minimize the potential threat to properly caused by geological hazards?

*The building and site design have been accomplished by following the contours of the existing land, thereby minimizing excessive earthwork. The project will minimize erosion through the use of temporary and permanent storm water and erosion control measures. The site is not be affected by any geologic hazards such as subsidence, mudflow or landslides*

- vii. Solar Siting and Construction: For the purpose of insuring the maximum potential for utilization of solar energy in the city, all applicants for residential site reviews shall place streets, lots, open spaces, and buildings so as to maximize the potential for the use of solar energy in accordance with the following solar siting criteria:

1. Placement of Open Space and Streets. Open space areas are located wherever practical to protect buildings from shading by other buildings within the development or from buildings on adjacent properties. Topography and other natural features and constraints may justify deviations from this criterion. How is this criterion met?

*The open space areas are placed between the existing FTC and this facility to provide more separation and to avoid the shading from the FTC administration building. The open space coincides with the "central location of detention ponds.*

2. Lot Layout and Building Siting. Lots are oriented and buildings are sited in a way which maximizes the solar potential of each principal building. Lots are designed to facilitate siting a structure which is un-shaded by other nearby structures. Wherever practical, buildings are sited close to the north lot line to increase yard space to the south for better owner control of shading. How is this criterion met?

*See Answer to vii-1 above.*

3. Building Form. The shapes of buildings are designed to maximize utilization of solar energy. Buildings shall meet the solar access protection and solar siting requirements of Chapter 9-917, "Solar Access," B.R.C. 1981. How is this criterion met?

*The roof form compliments the solar voltaic array. The vertical masonry fins help block west facing sunlight from interior spaces. But they allow winter low angle sun to enter interior spaces. The sunshades reduce the glare and direct sun into the interior on summer days and allow the low angle sun to enter on winter days.*

4. Landscaping. The shading effects of proposed landscaping on adjacent buildings are minimized. How is this criterion met?

*There are no shading issues.*