**5.0 Owner’s Project Requirements**

The following OPR template has been created as a tool for project teams to set goals and expectations aligned with the High Performance Building Standard. The template follows the High Performance Building Standard and should serve as a guide for the project team, as they develop the project requirements. It is not required that this exact template is used to create the OPR, but an OPR is a DFCM requirement. Where the team determines the standard and project goals do not align, a statement on why the project team has determined to vary from the standard should be included in the OPR in the appropriate section.

**5.2 Community-Oriented Design**

The narratives for the planning document review shall be identified in the basis of design, and submitted with all design submissions. The site plan shall show and note the primary pedestrian and bicycle pathways and ADA paths of travel.

**5.3 Transportation Management**

5.3.2(3) Projects shall implement three or more of the following strategies to reduce single occupant vehicles ridership to and from the project site:

The three strategies shall be identified in the basis of design, and submitted with all design submissions. It should also be included in the Education and Outreach program for the building users and visitors.

**5.4 Site Design**

5.4.1 Summary / Intent:

Enhance access within the site, improve flow and overall project functionality, and reduce the environmental impacts of the project site design.

Provide a narrative outlining the building location and orientation considerations and best practices as a part of the basis of design, and submit with all design submissions.

Provide a narrative presenting the access and site circulation considerations and best practices as a part of the basis of design, and submit with all design submissions.

Provide a narrative presenting the open space design approach as a part of the basis of design, and submit with all design submissions.

5.4.2(4) Storm water Management

Design, construct, and maintain storm water BMPs that manage rainfall on site and prevent the off-site discharge of precipitation from the first one inch of rainfall from a 24 hour storm preceded by 48-hours of no measureable precipitation.

Implement at least two BMPs from the Best Management Practices for Storm Water

* Provide two BMP Information Sheets from the Guidance Document and a description of how the specific BMPs are implemented in the project.
* Implement one additional site performance standard as identified in items 2 through 5 on page 7-4 of the Storm Water Management Guidance Document.
* Provide landscaped medians in all parking lots for stormwater management and heat island reduction. There should be 20 sf of planted median for each parking stall provided in the parking lot

OR

Maintain all storm water on site

Provide a summary of best management practices implemented within the project basis of design, and submit with all design submissions.

5.4.2(5) Heat-Island Effect

Plan exterior hardscape materials to reduce the urban heat island effect. Use materials with an SRI of 35 or greater for all pedestrian oriented paved surfaces, and reduce the overall use of asphalt as feasible.

* Plant deciduous trees to shade 15% of the surface of any asphalt parking lot within 10 years of planting.
* Use concrete or light-colored pavers with a SRI Value of 29 equal to or greater in lieu of asphalt for 25% of the parking surface.
* Use shade structures or solar panels to shade a minimum of 15% of the surface of any asphalt parking lot.
* Provide structured parking, covering a minimum of 50% of the parking surface.

Use reflective roofing to reduce the urban heat-island effect at the building.

* Install a reflective roof with an SRI of 78 or greater over 75% of the low slope roof areas (slopes below or equal to 2:12) for all buildings in Climate Zones 3 and 5.
* Install roofing with an SRI of 29 or greater at steep-sloped areas (slopes above 2:12)
* Consider a tan colored, planted or ballasted roof at roofs that are visible from inside the building to reduce glare and increase occupant comfort.
* Darker roofs shall be considered in climate zone 6, where heat absorption may be beneficial to the overall energy use of the building.

Provide a summary of SRI values and other urban heat-island effect reducing strategies implemented within the project basis of design, and submit with all design submissions.

5.4.2 (6) Light Pollution Reduction

* Use fixtures that as low in height as feasible, to ensure light is at the appropriate location for pedestrian safety and functionality.
* All exterior lamps shall be LED.
* Exterior lighting shall be controlled by a photocell sensor.
* All interior lighting systems shall be designed and controlled to shield interior light from the exterior of the building, or include a 50% reduction in lighting output between the hours of 11:00 pm and 5:00 am.

Provide a summary of light pollution reduction strategies implemented within the project in the basis of design, and submit with all design submissions.

5.4.3 Additional Resources:

Stormwater best management practices - <https://www.epa.gov/greeningepa/stormwater-management-practices-epa-facilities>

**5.5A Energy Modeling**

**5.5B Water Use Reduction**

5.5B.1 Summary / Intent

Reduce ongoing water utilization through thoughtful and efficient system design.

5.5B.2 Compliance:

5.5B.2 (1) Landscape Water Use

Design the project landscape and irrigation systems per Chapter 4 of the DFCM Design and Construction Standards.

Turf grass and sprinklers shall only be used at active landscape areas that are a minimum of fifteen feet in any direction and a minimum of 200 square feet. Exceptions to this shall be justified by local landscape and/or zoning standards. Any alternate use must be reviewed and approved by the DFCM Energy Program Director.

The Landscape Architect shall provide an estimated maintenance schedule for the landscaped areas, with an emphasis on the reduced maintenance and reduced water consumption of the native and adapted landscaped areas. This maintenance schedule shall be included in the Operation and Maintenance Manuals for the project.

Generate a Landscape Water Budget using the WaterSense Water Budget Tool. Demonstrate a 50% reduction in landscape water use.

Provide a summary of landscape water use reducing strategies implemented within the project basis of design, and submit with all design submissions.

5.5B.2 (2) Plumbing Fixture Water Use

Specify WaterSense qualified fixtures for all interior plumbing fixtures.

5.5B.2 (3) Process Water Use

Once-through process water systems are not permitted.

5.5B.3 Additional Resources:

<https://www.epa.gov/watersense/water-budget-tool>

**5.5C Building Enclosure Performance / Commissioning**

**5.5D Building System Performance / Commissioning**

**5.5E Metering**

5.**5F Fault Detection and Diagnostics Software**

**5.5G Energy Star Purchasing**

5.5G.1 Summary / Intent

Purchase appliances and equipment that enhance ongoing energy reduction efforts through efficient energy utilization.

5.5G.2 Compliance

All applicable appliances, equipment, products, and/or furnishings shall meet one or more of the following criteria

* ENERGY STAR Qualified.
* EPACT Registered
* Products that meet or exceed the US Department of Energy's FEMP Energy Efficiency Recommendations
* Rocky Mountain Power incentive, Questar Gas rebate program, or local utility company incentive/rebate approved equipment.

Provide a summary of appliances, fixtures and equipment that meet one or more of the above standards within the project basis of design, and submit with all design submissions. Identify any that do not have an applicable efficiency standard, and are exempt from this requirement.

5.5G.3 Additional Resources

Energy Star product resource page - <https://www.energystar.gov/products?s=mega>

**5.6 Material Impact Reduction**

5.6.1 Summary / Intent

To reduce the amount of waste taken to the landfill over the life of the building.

To reduce the negative environmental impacts associated with building material extraction, manufacturing, transportation, and landfilling.

5.6.2 Compliance

5.6.2(1) Recycling

All State facilities shall have material recycling infrastructure. This includes, but is not limited to:

* Provide designated areas in public spaces, break rooms and dining areas for waste and recycling bins.
* Provide appropriate dumpsters or waste bins within the exterior enclosure for recycling materials.
* Offices, classrooms, workrooms, and print rooms shall all have designed areas for mixed paper recycling.

Mixed paper, plastic, and mixed metals recycling shall be provided. If one or more of these materials is not recycled in the community, a variance request shall be provided to the DFCM Energy Program Director.

Provide a summary of the planned recycling program, identifying designated recycling areas and materials to be recycled within the project basis of design, and submit with all design submissions.

5.6.2(2) Water bottle filling stations shall be provided at all drinking fountains.

Specify water bottle filling stations with the drinking fountains in the project specifications.

5.6.2(3) Construction Waste Management

Recycle 75% of the construction waste, by weight or volume.

Include a waste management section in the project specifications, outlining the recycling standard and waste management plan requirements, including the on-site recycling communication strategies required.

Contractor to track construction waste recycling and provides a compliance letter to DFCM with project close-out documentation.

5.6.2(4) Air Quality Impact Reduction (regional / recycled)

Identify and specify building materials that are both extracted and manufactured within 500 miles of the project site. Only the value associated with the regional content, by percentage, shall contribute to the sustainable value of the product.

* Key materials include concrete, concrete masonry, brick, stone, gypsum board, steel joists, and regionally manufactured misc. metals.

Identify and specify building materials that contain recycled materials. Only the value associated with the recycled, by percentage, shall contribute to the sustainable value of the product.

* Recycled content shall be tracked as both pre-consumer and post-consumer recycled content. Only 50% of the value of the pre-consumer recycled content shall contribute toward the sustainable value of the product.
* Only the value associated with the recycled content shall contribute to the sustainable value of the product.
* Key materials containing recycled content include concrete, all metal containing materials, plastic containing materials, carpet, and suspended ceiling systems.

35% of building materials, by value, shall meet one or more of the above sustainable materials strategies.

Provide a summary of the anticipated regional and recycled materials within the project basis of design, and submit with all design submissions.

Include language in the project specifications, outlining the materials to include regional and/or recycled content.

Contractor to track regional and recycled content in construction materials using the DFCM HPBS Tracking Spreadsheet, and provide a compliance letter to DFCM with project close-out documentation.

5.6.2(5) Material Durability / Maintainability

The project shall be designed to meet the owner’s expectations for building life span. The majority of buildings constructed, operated and owned by the State of Utah are anticipated to have a minimum of a 40-year life. Within these buildings, the building systems are anticipated to achieve the following life spans prior to replacement:

Building structure – Lifespan of the building, designed to meet the seismic requirements set forth in section X.X of the DFCM Design Requirements.

* Exterior Building Cladding – 40 - 50 Years
* Aluminum Window System – 25 Years
* Membrane Roof – 20 Years
* Metal Roof – 40 Years
* Mechanical Systems – 20 Years
* Plumbing Systems – 30 Years
* Electrical Accessories, Lighting and Controls – 10-30 Years

5.6.2(6) End of Life

Materials with a useful lifespan of less ten years or less shall be 100% recyclable, at the end of their life. These materials may include, but are not limited to carpet, appliances and equipment, and furniture systems. Any material that is on a replacement cycle of less than ten years, based on DFCM facility maintenance standards falls under this requirement.

Provide specific recycling instructions in the Operations and Management documentation for these materials.

5.6.3 Additional Resources:

DFCM HPBS Tracking Spreadsheet

**5.7 Occupant Wellness**

5.7.1 Summary / Intent:

Work environments that prioritize occupant health and wellbeing enhance productivity, reduce absenteeism and turnover, and improve overall employee satisfaction.

5.7.2 Compliance:

5.7.2 (1) Indoor Air Quality – Building Design

All janitor's closets, print and copy rooms, and chemical storage spaces shall be directly exhausted to the exterior and constructed with a hard ceiling or walls sealed to deck. These spaces shall also have doors with closers.

Provide permanently installed entryway systems, regularly maintained walk-off mats, or a combination of the two systems. All entry carpets shall be at least 10' in length at primary entryways.

Provide a summary of the planned indoor air quality design strategies to be implemented within the project in the basis of design, and submit with all design submissions.

5.7.2 (2) Indoor Air Quality – Construction Materials

All interior paints and coatings shall meet the low emitting materials standards set forth by the State of Utah Administrative Rule **R307-361. Architectural Coatings.**

All adhesives and sealants shall meet the low emitting materials standards set forth by the State of Utah Administrative Rule **R307-342. Adhesives and Sealants.**

All flooring systems shall be low emitting, demonstrating compliance by meeting the Green Label Plus program, FloorScore, Greenguard, or the Greenguard low emitting requirements, as applicable, based on the flooring type.

Contractor to track VOC content and low-emitting testing standards using the HPBS Tracking Spreadsheet and provide a compliance letter to DFCM with project close-out documentation.

5.7.2 (3) Indoor Air Quality – Construction Management

Implement an indoor air quality management plan that meets the SMACNA IAQ Guidelines for Occupied Buildings Under Construction, 2nd edition ANSI/SMACNA 008–2008 requirements.

The Contractor shall submit an Indoor Air Quality Plan during the submittal phase, outlining the implementation strategies to achieve the SMACNA requirements. Implementation of this plan shall also be tracked on the weekly Construction Meeting Minutes.

Implement a pre-occupancy air quality plan.

At the end of construction, prior to occupancy, conduct a building flush-out or an air quality test per USGBC LEED v4.1 Construction Indoor Air Quality Assessment requirements. The contractor shall submit an pre-occupancy air quality plan at the submittal phase, and provide a compliance letter to DFCM with project close-out documentation.

5.7.2 (4) Indoor Air Quality – Building Operations

Hazardous Waste

Minimize hazardous waste on-site. The project users should conduct an assessment of cleaning materials, maintenance materials and any chemicals used within the building to determine opportunities to replace hazardous materials with water-based or less hazardous materials. If hazardous materials will continue to be used within the building, a hazardous material storage plan shall be created during the early design phase, and space defined to safely house the hazardous materials before use, as well as after use, prior to pick up. The need for hazardous materials shall be included in the OPR, and the design team shall provide a summary of hazardous material response design strategies within the project basis of design, and submit with all design submissions.

Green Cleaning Program – all cleaning materials must comply with the Utah Administrative Rule R307-304. Solvent Cleaning. Additionally, a green cleaning programs should be developed and maintained by the owner. This cleaning program shall comply with the requirements set forth in XXX

5.7.2 (5) Daylight and Views

65% of all regularly occupied spaces shall either have direct access to daylight and views or indirect access through shared glazing systems at interior partitions. Regularly occupied spaces are all spaces that are occupied for more than one hour at a time. These include, but are not limited to offices, open offices, conference rooms, classrooms, laboratories (unless specifically needed to be darkened), meeting rooms, etc. A complete list of spaces considered regularly occupied can be found at: <https://www.usgbc.org/resources/examples-regularly-occupied-spaces-include-following>.

A summary of spaces with access to daylight and views and daylight enhancing design strategies within the project basis of design, and submit with all design submissions.

5.7.2 (6) Environmental Controls

Lighting Control

Provide task lighting, or the ability to add task lighting at all individual workstations.

Provide lighting controls in all conference rooms, classrooms, meeting rooms and other group collaboration spaces to enable both discussions and presentations to occur. This may be dimmable lighting, or preset scenes, as appropriate for the space.

Thermal comfort

Provide a minimum of one thermostat for every X individual office, and one thermostat in all conference rooms, classrooms and meeting rooms that have a capacity for more than 10 people.

Internal shades

Provide an internal roller shade at all exterior windows within regularly occupied spaces.

Lighting quality

Use LED lamps with a CRI of 80 or greater and direct/indirect lighting within all regularly occupied spaces.

Provide a summary of spaces that include thermal comfort design strategies within the project basis of design, and submit with all design submissions.

5.7.2 (7) Health and Productivity

To promote the health and wellbeing of staff, the project team shall define a minimum of four strategies that improve employee health and productivity. These strategies may include, but are not limited to:

* Provide ergonomic workstations with adjustable seating and height adjustable desks for all full-time staff.
* Provide enhanced break room spaces with access to daylight and views, filtered water, and a place for respite while eating.
* Integrate one more open, beautiful, central stairs to encourage the use of stairs in lieu of elevators for vertical circulation within the building.
* Provide a staff fitness area with a minimum of three cardio options (such as treadmills, elliptical, or stair machines), weight training equipment and an area for stretching. Locate this area near showers and change rooms.
* Provide a personal health room on each level of the building. These spaces should include a sink and under-cabinet fridge as well as a comfortable chair for lactation.
* Provide outdoor spaces for physical fitness such as a walking path and/or outdoor fitness equipment.
* Integrate indoor plants in common spaces as a biophilic design strategy. Provide an ongoing maintenance plan for these interior plants.

Provide a summary of health and productivity design strategies within the project basis of design, and submit with all design submissions.

5.7.3 Additional Resources:

Architectural Coatings VOC limits: <https://rules.utah.gov/publicat/code/r307/r307-361.htm>

Adhesives and Sealants VOC limits: <https://rules.utah.gov/publicat/code/r307/r307-342.htm>

Solvent Cleaning VOC limits: <https://rules.utah.gov/publicat/code/r307/r307-304.htm>

Additional Health and Productivity strategies can be found in the Well Building Standard. <https://v2.wellcertified.com/v/en/overview>

**5.8 Education and Outreach**

5.8.1 Summary / Intent:

To educate building users and visitors on the sustainable design and construction strategies incorporated into the project, and to enhance awareness of the impact occupant behaviors have on building performance over time.

5.8.2 Compliance:

User Education and Outreach

Using the provided Building Education Template, create a minimum of three digital signs outlining the key sustainable design and construction goals and strategies. At a minimum, these signs shall address:

* Building energy utilization
* System performance and durability
* Occupant health and comfort

Provide a minimum of one sign providing ongoing behaviors and strategies for building staff and occupants to improve building performance and reduce the ongoing environmental impacts of the building. This sign may address electronics and appliance use, thermal and lighting controls, wellness opportunities, ongoing waste management, etc...

These digital signs shall be displayed on a flat panel display near the public building entry. If the facility is not accessible to the public, locate these digital displays on the website of the associated State Agency.

Facilities Management Education

The contractor and sub-contractors shall provide building system and operational training to the facilities management team and provide digital operations and maintenance manuals for all energy using and warranted systems. This training shall begin with monthly walk-throughs during construction to enable the facilities team to understand the system design, configuration and installation prior to the installation of ceilings and other finishes

A video of the mechanical and electrical system installation prior to finishes shall be provided as a component of the project close-out documentation.

Training shall continue on a monthly basis through testing, balancing and commissioning to ensure optimal understanding of the building system operations and control system operations and set points.

5.8.3 Additional Resources:

Building Education Template