The Colorado Department of Higher Education (CDHE) guidelines for long-range facilities master planning requires that institutions prepare a new plan or update a plan every ten years. It has the authority to prescribe uniform policies, procedures, and standards of space utilization and to review master plans and program plans for all higher education capital construction projects in Colorado. The ability to review master plans for state institutions of higher education allows CDHE and state-elected officials to attain a better understanding of educational facilities’ needs and priorities.

The Colorado School of Mines president and the Board of Trustees must review and approve facility master plans. Plans should be consistent with CDHE guidelines. The Mines Board of Trustees is charged constitutionally with the general supervision of the Mines campus and the exclusive control and direction of all funds of and appropriations to the university unless otherwise provided by law. The Mines Board of Trustees must approve the Mines 2018 Facilities Master Plan.

This plan outlines the facilities that Mines will need to remain a leading environmental resource-focused research institution. The framework of land uses, building forms, and open spaces described in this plan are intended to be flexible and adaptable.

The 2018 Facilities Master Plan will not only guide the planning and design of campus facilities, but it will also influence academic programming, existing and future space scheduling, and appropriate building and open space uses. The 2018 Facilities Master Plan should serve as a guide, not as a set of binding prescriptive actions, and the specific recommendations should be modified as additional requirements and needs arise. However, such revisions should follow and support the plan’s guiding principles.

This Facilities Master Plan is a living document that will be periodically re-examined and updated as the campus continues to evolve.
The planning process included three sequential phases – Discovery & Analysis, Idea Generation, and Documentation. This rigorous process identified pressing campus and urban issues, analyzed facility assets, and conducted campus-wide qualitative and quantitative analyses.

- During the Discovery & Analysis phase, the project team met with the Master Plan Steering Committee tasked with assisting the plan’s development and conducted interviews with key stakeholders, and through these efforts the team became familiar with Mines, established planning objectives and identified key issues for the plan. The master planning team reviewed previous planning efforts, including the existing campus master plan, a space analysis and utilization study, a space needs study, and student enrollment targets. They investigated campus conditions and patterns, determined future research space needs, and evaluated the educational adequacy of classrooms and teaching labs. The information generated during this phase was used to identify the opportunities and constraints to guide the campus’ change.

- During the Idea Generation phase, the master planning team developed and refined a set of ‘alternative future scenarios’ to guide the campus’ change and growth. Through an extensive and wide ranging meetings with campus leaders, faculty, staff, students, and Golden residents, the master planning team tested a wide variety of potential campus development patterns.

- Finally, inspired by these scenarios, the project team drafted a consensus Facilities Master Plan during the Documentation phase. Through an iterative process, the plan was revised after coordination with the Master Plan Steering Committee and the Mines and Golden communities. The resulting plan presents this integrated vision and includes project sequencing, a capital plan, and design guidelines.
1.3 COMMITTEE GUIDANCE

The Master Plan Steering Committee oversaw development of the entire Campus Master Plan and was responsible for overall project direction and approval. It also provided administrative guidance, coordination of internal and external input, and final planning recommendations.

- Kirsten Volpi, Executive Vice President and Chief Operating Officer, Chief Financial Officer, Administration and Operations
- Chris Cocallas, Assistant Vice President, Capital Planning and Design, University Architect
- Tom Boyd, Interim Provost, Academic Affairs
- Dan Fox, Vice President of Student Life
- Severn Swift, Undergraduate Student, Student Trustee
- Steve Glueck, Community & Economic Development Director, City of Golden
- Derek Morgan, Dean of Students
- Sara Schwarz, Computing, Communications, and Information Technology
- Nicole Horton, Controller’s Office
- Tzahi Cath, Faculty Senate President, Professor Civil and Environmental Engineering
- John Spear, Professor Civil and Environmental Engineering
The master planning process was consensus-based throughout all three phases of its development. This effort included interviews with campus leaders and staff. In workshop format, faculty, staff, and students indicated master plan concerns and opportunities in cognitive mapping exercises and brainstorming sessions. Participants confirmed campus analysis assumptions and critiqued the master plan alternatives during presentations and discussions. Workshops and presentations aimed at faculty, staff, and students occurred during the academic workday in the centrally located Student Center.

Additionally, the master planning team engaged the Golden community multiple times and in different formats. A City of Golden staff member served on the Master Plan Steering Committee. At each stage, whenever the master planning team reached out to faculty, staff, and students, they also scheduled evening workshops to maximize the local resident participation opportunities. The university coordinated with the neighborhood association leaders to publicize the evening workshops. Local Golden newspapers covered the master planning process.
The master planning team actively listened to university and community stakeholders, incorporating their suggestions and recommendations where possible. On some issues there was consensus among stakeholders, such as the importance of the 19th Street gateway and corridor and the need to respect the environment and mountain views. On other topics there were widely conflicting opinions – such as the appropriate campus development scale and the campus boundary – and the master plan seeks to balance the short and long-term needs of both the university and the community.

Because of this collaborative process, the 2018 Facilities Master Plan has the support of the Colorado School of Mines community of students, faculty, administration and staff, and the support of the City of Golden.
Golden’s growing pains with university

Residents voice opinion on growth while School of Mines goes through process for rezone to build residence hall.

A group of Golden residents work together on identifying areas that should be preserved and areas where the Colorado School of Mines can grow at a community meeting on March 18 at the St. Vrain Welcome Center on the Mines campus in Golden.

CHRISTY STEADMAN

Placed Tuesday, March 13, 2018 2:27 pm
The campus master plan describes a physical form that will support the establishment of elite institution envisioned in MINES@150, the strategic plan for the Colorado School of Mines.

Guiding Principles, Goals, and Objectives provide a foundation for campus physical development. Each sets a fundamental philosophy towards the design and implementation of the campus’ programmatic needs. Guiding Principles are the overlying strategies that give direction to the Goals and Objectives, which indicate “how” the campus will achieve its principles.

GUIDING PRINCIPLES

Maintain Framework
Create and preserve a campus urban design framework for the physical development.

Interconnected Learning Community
Create a physical environment that is conducive to supporting a learning community without boundaries.

Natural Environment
Be a good steward to the earth. Be sensitive to, and work with, the regional context of the natural environment.

Efficient Resources
Use all physical resources, in and out of buildings, amongst the site and the infrastructure, in an efficient manner.

Students
The campus should be safe, secure, student friendly, and conducive to higher learning.
GOALS & OBJECTIVES

Improve inter-relationships between campus land use zones. Establish mixed-use vehicular and pedestrian strategies without urban sprawl.

Provide appropriate technology for teaching, learning, and communication.

Create spaces (indoor & outdoor) that foster interaction among students, faculty, staff, and community.

Relate to the historic context of the campus and the community. Honor and preserve historic buildings and campus spaces.

Maintain and operate the existing physical plant.

- Keep up with functional obsolescence of space.
- Reduce deferred maintenance.
- Improve utilization of current space.
- Plan for additional building space to support growth
- Maintain safe and secure surroundings

Relate to the regional context of the environment through:

- Better water conservation.
- Recognition of the scale and plantings of the environmental context.
- Maintain Vistas
- Plant materials sensitivity to indigenous landscape character.

Establish a strong sense of physical identity.

- Create prominent sense of arrival to campus
- Establish easily identifiable entry points.
- Establish a strong character edge to campus.
- Establish strategic sequencing of spaces from the outside to the inside of campus.
- Establish design criteria for building architecture, plant materials, and exterior furnishings.

Establish a plan to develop and maintain a strong human scale within the physical environment.

- Establish an appropriate building scale by planning building densities, heights, and their relationship to open spaces.
- Create a sense of place through the strategic use of
  - Wayfinding Techniques
  - Building Architecture
  - Strong regional site lines and vistas.
  - Site and Building Lighting
  - Site Furniture
  - Plant Materials
  - Ground Plane Design
  - Maintain a strong landscape over-story
  - Strategic use of building masses to create outdoor spaces.
Improve all campus circulation.
- Express identity at vehicular scale.
- Promote bicycles over motor vehicles whenever possible.
- Embrace community bike system.
- Reduce dependency on the motor vehicle.
- Improve parking density and adjacencies to program use.

Improve pedestrian orientation.
- Create a pedestrian core surrounded by vehicular circulation.
- Make walking comfortable in the campus core.
- Reduce the distance people need to travel.

BEDROCK ASSUMPTIONS
The master plan incorporates recognized best practices. In particular, it optimizes the available sites within the existing campus boundary. The existing campus boundary provides sufficient space to meet all of the university’s facility needs for the next decade.
- Our urban context and our urban grid are valuable.
- The remaining available on-campus sites should be optimized.
- Open spaces are key to campus identity and community building.
- Important edges and gateways should be created or reinforced.
- We should strategically invest in our facilities, and disinvest in those that can no longer serve the university long-term.
PROPOSED MASTER PLAN

1.6

OPTIMIZE OUR LAND

The Mines campus is compact and comfortable campus.

COMPACT AND WALKABLE

Perhaps the best attribute of the Mines campus is its small scale and walkability. It’s an easy walk between all destinations and it has a very compact feel. The master plan recommends that campus land in the core of campus be optimized so that, rather than spreading out, campus can remain compact. By limiting surface parking and creating structured parking, land can better be used for buildings and open spaces. Parking on the edges limit vehicular conflicts and makes a comfortable walking environment.

SCALE

As development continues on campus, continuing the human-scaled environment of buildings and open spaces will be vitally important. Mines has a characteristic scale of buildings that should generally be maintained. While it may be necessary for some limited buildings to be taller due to site constraints or use, the current scale of campus fits well with its community and natural context.

HIERARCHY OF OPEN SPACES

Learning does not only happen in the classroom or within buildings. Outdoor open spaces create places for casual or chance interaction and social engagement on campus. Kafadar Commons is the central and historic green space on campus and as development of campus has spread, great care has been taken to create a series of smaller multi-use open spaces across campus. The master plan recommends and encourages a hierarchy of interconnected open spaces that create places for students, faculty, and staff to interact.

SUSTAINABLE

The Mines campus is situated in a unique context at the foot of the Front Range of the Rocky Mountains. Campus must carefully coexist with the natural environment and be stewards for the land, energy, and water resources.
INTERCONNECTED NEIGHBORHOODS

The Mines campus is a series of interconnected neighborhoods that together create a unique, student-centered, learning environment. The master plan has identified the characteristics and recommendations for each.

The Central Campus Neighborhood is anchored by Guggenheim Hall and Kafadar Commons, is the historic center of the campus, and home to most of the academics and administration. The compact scale and walkability of this part of campus sets the framework for the rest of campus. The master plan calls for strengthening this historic context and renovating many of the older buildings for new uses that support student success and transform the teaching and learning environment.

The West Campus Neighborhood is the center of student life on campus. Most of the lower division student housing and dining is located in this area as well as indoor and outdoor recreation, Student Center, and Wellness Center. The master plan reinforces the uses in this district by locating new first and second year housing and additional dining to support the proposed 2-year live-on requirement. Freshmen and sophomores will have the greatest opportunity to make critical personal connections and will be more likely to take advantage of the student life amenities while living near the center of campus.
The **Innovation Hub Neighborhood** will be transformed from an area few students currently use to one of the most important learning environments on campus. Campus Facilities and maintenance shops will be replaced with maker spaces and collaborative labs where hands-on experimentation will occur with students, faculty, and industry partners working side by side. It will become the center of project-based learning, both cornerstone and capstone programs. This newly renovated area of campus is envisioned to be a lively, 24-hour student hub of activity that will enhance student success.

The **Research Neighborhood** builds on the partnership with USGS and optimizes land at the edge of campus. The university’s long-term goal of $100m in funded research will be accommodated in series of buildings with research labs, classrooms and offices stepping down the slope to Washington Ave. The buildings will be at a scale appropriate for both campus and the adjacent neighborhood, and will frame a series of pedestrian oriented open spaces.

The **Athletics Neighborhood** is an important part of the student experience. Student athletes practice and perform in first-rate facilities and student spectators create lasting campus memories while watching one of the 18 Division II sports. Athletics also becomes a gateway to the University for many guests. Most of the facilities have been recently updated and are in very good condition. Recommendations for this area of campus build on that recent success and add further improvements.
The **South Campus Neighborhood** is a currently underutilized area south of 19th Street that has the potential to be an important asset for campus because of its location adjacent to the center. This area of campus is an important gateway to both campus as well as the City of Golden. As such, the possibilities for partnership in this neighborhood are important and should be carefully considered. Mines has several options for meeting pressing needs in the South Campus Neighborhood. Both options include a parking structure, a new shipping/receiving office, and some student housing. One option (top right) places many new sophomore residence halls and a rooftop intramural field on South Campus. A second option proposes a conference and arts center and hotel at this gateway to the City Golden.

Because of the relative unknown program possibilities for partnership development in this area, further study should be done to determine the market viability of conference/arts center or other market-driven uses on this property if it is not used for housing. There may even be opportunities to accommodate all the above proposed uses based on the specific program requirements that further study would define.
The **Mines Park Neighborhood** is the upper division housing neighborhood. The master plan envisions a complete residential village for upperclassmen and graduate students with additional housing as well as dining, recreation and other amenities necessary to make it a lively community.

The **Survey Fields** are a valuable outdoor classroom and recreational resource. This area is disconnected from the campus core but is available for future campus expansion. However, since Mines Park can accommodate all academic, research, and student life needs on more central sites, this master plan recommends the Survey Fields be preserved as academic and recreational open space.

**Edgar Experimental Mine** is an incredible resource for training, research, teaching, outreach, demonstration, and industry partnerships that is unique to Mines. The master plan calls for improvements to the facilities and infrastructure so that it can become an even more valuable resource to everyone on campus.
PARTNERS WITH OUR HOST COMMUNITY OF GOLDEN

The Mines campus and the City of Golden are intertwined and interconnected in many ways. Mines needs a strong City in order to recruit the brightest students, faculty, and staff and the City needs a strong Mines as a major employer and resource to the community. Decisions made by each effect the other in many ways, so a strong cooperative relationship is important. The master plan process solicited input from community neighbors in an unprecedented way and Mines desires to continue to be a strong partner with the City of Golden.
MAJOR INITIATIVES

ACADEMICS AND RESEARCH
1. SUBSURFACE FRONTIERS BUILDING
2. RESEARCH BUILDINGS 1, 2, AND 3
3. CHAUVENET HALL STUDENT SUCCESS
4. LAKES LIBRARY RENOVATION AND EXPANSION
5. MINES INNOVATION HUB BUILDING AND RENOVATION, EARTH INNOVATION HUB
6. ENVIRONMENTAL CENTER

RESIDENTIAL, STUDENT LIFE, RECREATION
7. RESIDENCE HALL VI
8. SOUTH CAMPUS RESIDENCE HALL
9. SOUTH IM FIELD RESIDENCE HALL & DINING
10. GREEK VILLAGE EXPANSION
11. JACKSON HALL
12. MINES PARK APARTMENTS
13. MINES PARK CHILD CARE CENTER
14. MINES PARK CENTER EXPANSION
15. INDOOR RECREATIONAL FACILITY
16. PARKER STUDENT CENTER EXPANSION
17. ILLINOIS/19TH STREET OFFICE BUILDING

ATHLETICS
18. ATHLETICS OFFICE BUILDING
19. BASEBALL/SOFTBALL CONCESSIONS BLDG

HOSPITALITY
20. CONFERENCE AND ARTS CENTER
21. MIXED USE BUILDING

FACILITIES
22. SHIPPING & RECEIVING
23. FACILITY OPERATIONS NORTH BUILDING
24. FACILITY OPERATIONS SOUTH BUILDING

PARKING, MULTI-MODAL CIRCULATION
25. MINES PARKING STRUCTURE #1 (MAPLE/14TH)
26. WASHINGTON/18TH PARKING STRUCTURE
27. SOUTH CAMPUS PARKING STRUCTURE
28. STREET RECONSTRUCTION - PEDESTRIAN MALLS
29. STREET RECONSTRUCTION - SHARED STREETS
30. ENVIRONMENTAL CENTER BRIDGE

SITE, OPEN SPACE
31. LOT Q RECREATION FIELD
32. MINES PARK RECREATION FIELD
33. OREDIGGER PARK

UTILITIES
34. 18TH STREET CHILLED WATER PLANT
35. SOUTH CAMPUS CHILLED WATER PLANT

SOUTH CAMPUS RESIDENTIAL VILLAGE
36. ROOFTOP RECREATION
37. CONFERENCE PARKING STRUCTURE

SOUTH CAMPUS GATEWAY CENTER
38. HOTEL
LEGEND

EXISTING UNIVERSITY BUILDINGS
PROPOSED RENOVATIONS
PROPOSED NEW BUILDINGS
OFF-CAMPUS BUILDINGS

SOUTH CAMPUS GATEWAY CENTER

SUMMARY

19th Street
6th Avenue
Washington Ave
EXISTING CONDITIONS

LEGEND

EXISTING UNIVERSITY BUILDINGS

OFF-CAMPUS BUILDINGS
PHASE 1: 2019-2021

1. MINES PARKING STRUCTURE #1 (MAPLE/14TH)
2. FACILITY OPERATIONS NORTH BUILDING
3. FACILITY OPERATIONS SOUTH BUILDING
4. LAKES LIBRARY RENOVATION
5. MINES PARK RECREATION FIELD
6. RESIDENCE HALL VI
7. SUBSURFACE FRONTIERS RESEARCH BUILDING
8. WASHINGTON/18TH PARKING STRUCTURE
9. JACKSON HALL
10. SOUTH IM FIELD RESIDENCE HALL & DINING
11. INDOOR RECREATIONAL FACILITY
12. LOT Q RECREATION FIELD
13. MINES INNOVATION HUB - RENOVATION AND NEW BUILDING
14. CONFERENCE AND ARTS CENTER
15. CONFERENCE PARKING STRUCTURE
16. MINES PARK APARTMENTS
17. MINES PARK CENTER EXPANSION
18. MINES PARK CHILD CARE CENTER
19. HOTEL
20. MIXED USE BUILDING
21. SHIPPING & RECEIVING

LEGEND
- EXISTING UNIVERSITY BUILDINGS
- PROPOSED PH 1 RENOVATIONS
- PROPOSED PH 1 NEW BUILDINGS
- OFF-CAMPUS BUILDINGS
PHASE 2: 2022-2024

1. Edgar Mine Upper Site Building
2. Baseball/Softball Concessions Bldg
3. Research Building 1
4. South Campus Chilled Water Facility
5. South Campus Residence Hall
6. Parker Student Center Expansion
7. Shipping/Receiving/Parking/Recreation
8. Mixed Use Building
9. Lakes Library Expansion
10. Student Wellness Center Expansion

LEGEND
- Existing and Phase 1
- Proposed PH 2 Renovations
- Proposed PH 2 New Buildings
- Off-Campus Buildings
PHASE 3: 2025-2029

1. EDGAR MINE LOWER SITE BUILDING
2. CHAUVENET HALL STUDENT SUCCESS
3. ATHLETICS OFFICE BUILDING
4. OREDIGGER PARK
5. RESEARCH BUILDING 2
6. EARTH INNOVATION HUB

LEGEND

- Existing and Phases 1 and 2
- Proposed PH 3 Renovations
- Proposed PH 3 New Buildings
- Off-Campus Buildings
PHASE 4: 2030+

1 ENVIRONMENTAL CENTER
2 ENVIRONMENTAL CENTER BRIDGE
3 RESEARCH BUILDING 3
4 GREEK VILLAGE EXPANSION
5 ILLINOIS/19TH STREET OFFICE BUILDING
6 ELM/19TH STREET STUDENT LIFE (FUTURE)
7 ILLINOIS/18TH STREET ACADEMIC BUILDING (FUTURE)

LEGEND

EXISTING AND PHASES 1, 2, AND 3
PROPOSED PH 4 RENOVATIONS
PROPOSED PH 4 NEW BUILDINGS
OFF-CAMPUS BUILDINGS
At its essence, the campus master plan is a collection of powerful ideas to facilitate decision-making for the next ten years.

These ideas serve to establish a framework for coordinating physical change. This framework establishes simple patterns and foundational elements to maintain Mines’ unique spatial characteristics, while at the same time identifying opportunities for responsible growth.

Philosophically, the campus master plan is an opportunity-based tool, not a rigid list of mandated implementation projects. The campus master plan needs to remain flexible in the midst of changing enrollment, curricular, fiscal, and external challenges.