Department of Commerce Boulder Laboratories
Draft Master Plan
Boulder City Council Briefing
October 18, 2016

United States Department of Commerce
DoC Boulder Laboratories: Draft Master Plan

- Delineates a 20-year vision and framework for future development
- Maintains all Protected Areas and trails
- Fully adheres to the Memorandum of Agreement:
  - All proposed construction and site improvements within Development Zone
  - Complies with square footage, parking and height limits, and views to the Mesa
- Incorporates public input
- Funding not anticipated before 2020 with exception of current improvements to two lab buildings
Goals & Purpose of the Master Plan

- Comprehensive and coordinated framework for future development (20 years)
- Appropriate facilities and infrastructure for advanced research
- Respects its location, historic context, and agreements with community and tribes
- Facilities that encourage collaboration, welcome outside colleagues
- Attractive campus that advances sustainable design goals
- A plan for gradual change, complete at each step
- Compliance with NEPA through development of Environmental Assessment
Quick Facts

- **Campus Established in 1950**
  
  Purchased & donated by Boulder Chamber of Commerce & citizens

- **Department of Commerce (DOC) Agencies on the Boulder Campus:**
  
  National Institute of Standards and Technology (NIST)
  National Telecommunications and Information Administration (NTIA)
  National Oceanographic and Atmospheric Administration (NOAA)

- **Boulder Campus:**
  
  206 Acre site
  34 Buildings & Structures; 1,254,000 GSF
  Approximately 1,760 personnel

- **Mission for Advancing Science & Technology:**
  
  Requires flexible, integrative, collaborative space
  Requires highly controlled research environments
Previous Planning Efforts

• 1992 Master Site Development Plan and 1995 Environmental Impact Statement
  New NOAA facility – David Skaggs Research Center
  Improvements to NIST facilities:
    New research facility - Katharine Blodgett Gebbie Laboratory
    New Central Utility Plant & Site Utility Distribution System
  Renovations to older laboratory buildings

• 1995 Agreement with Native American Tribes
  Protected area: Approximately 50 acres
  Easement for use, management and maintenance

• 1995 Memorandum of Agreement (MOA) with City of Boulder, with 1998 Update
  Defines research, development and protected zones
  Sets limits on development, parking, building heights
  Protects approximately 54 acres for public use; Preserves view of Long Mesa
Total Site Area: 206 acres approx.
Protected Area: 104 acres approx.
Development Zone: 83 acres approx.
GSA Controlled: 15 acres approx.

Existing
Buildings: 1,254,000 GSF
Parking: 1,430 Spaces

MOA Permitted
Buildings: 1,418,923 GSF
Parking: 1,802 Spaces
Phase I
• Data Collection
• Contextual Analysis
• Historic Assessment
• Program Development
• Alternatives Development
• NEPA Scoping/Public Participation

Phase II:
• Draft Master Plan document
• Draft Environmental Assessment
• Public Comment Period

Phase III:
• Final Master Plan
• Final Environmental Assessment
• Aging and obsolete buildings
• Lack of environmental control for many labs
• Inefficiency of small and modular buildings
• No campus organizing principle; limited connectivity
• Challenges associated with hosting public conferences
• Scattered administration & support functions
• Limited collaboration opportunities
• Circulation and screening conflicts
## Master Plan Program

### Personnel

<table>
<thead>
<tr>
<th>Personnel</th>
<th>Existing</th>
<th>Added</th>
<th>Removed</th>
<th>Total</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>NIST</td>
<td>743</td>
<td>112</td>
<td></td>
<td>855</td>
<td>112</td>
</tr>
<tr>
<td>NTIA</td>
<td>70</td>
<td>40</td>
<td></td>
<td>110</td>
<td>40</td>
</tr>
<tr>
<td>NOAA</td>
<td>939</td>
<td>60</td>
<td></td>
<td>999</td>
<td>60</td>
</tr>
<tr>
<td>GSA</td>
<td>9</td>
<td>0</td>
<td></td>
<td>9</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>1,761</td>
<td>212</td>
<td></td>
<td>1,973</td>
<td>212</td>
</tr>
</tbody>
</table>

### Space, GSF

<table>
<thead>
<tr>
<th>Space, GSF</th>
<th>Existing</th>
<th>Master Plan</th>
<th>Master Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>NIST/NTIA</td>
<td>882,174</td>
<td>259,500</td>
<td>(145,672)</td>
</tr>
<tr>
<td>NOAA/GSA</td>
<td>372,000</td>
<td>32,600</td>
<td>0</td>
</tr>
<tr>
<td>Shared</td>
<td>incl. above</td>
<td>26,800</td>
<td>(7,776)*</td>
</tr>
<tr>
<td>Total</td>
<td>1,254,174</td>
<td>318,900</td>
<td>(153,448)</td>
</tr>
</tbody>
</table>

* Additional shared space is removed from existing buildings, allowing renovation for other functions.

Note: MOA permitted additional space is 198,241 GSF (Mechanical structures are excluded)
Campus Center
A new central campus service building consolidates administration, services and amenities, to encourage collaboration and link the research buildings. Replacement research buildings organized around a quad.

Discrete Research Centers
A second research zone organizes the research buildings and Campus center opens up for services and recreation.

Pedestrian Linkages
A new entrance pavilion supports public and conference center space. Management resources offices located adjacent. This focal point anchors a pedestrian link to new and existing buildings.
Draft Master Plan: 3D Aerial View
• Welcoming Entry
• Cohesive Campus
• Modest Growth
• Advanced Research Facilities
• Conference Center Enhancement
• Consolidated Support Facilities
• Campus Center

• Connected Laboratories
• Historic Preservation
• Natural and Sustainable Campus
• Energy Conservation Emphasis
• Structured Parking
• Open Space Preservation
• Flexible, Incremental Change
Landscape Plan

- Campus green linking the buildings
- Native & adaptive species plantings
- Sustainable design emphasis

1. Central Promenade
2. Central Lawn
3. Terrace with bosque of trees, water feature
4. Entry Court
5. Shared street
6. Building terraces
7. Vegetated Arroyo (stormwater management)
8. Decking over arroyo
Sustainable Design Features

NO DEVELOPMENT IN FLOOD PLAIN

IMPROVED BUILDING ENVELOPE & SYSTEMS

PARKING DECK WITH SOLAR COVER
REDUCED IMPERVIOUS SURFACES

ENERGY CONSERVATION:
- ALL RESEARCH BUILDINGS CONNECTED TO CUP
- 10 INEFFICIENT BUILDINGS DEMOLISHED

POTENTIAL NET-ZERO BUILDING

NEW STORMWATER MANAGEMENT FEATURE

ADAPTIVE REUSE OF LAB BUILDING

REDUCTION OF MOWED AREA

POTENTIAL FOR SOLAR PANEL COVER AND / OR DECKING

PLANNED SOLAR PANEL FIELD

PROTECTED AREA
Campus Entry & Circulation

- Create new walkways for visitors
- Use existing curb cut for vehicles rejected and exit from parking lot
- Reconfigure parking for staff/visitor shared use
- Reconfigure visitor/delivery vehicle screening
- Reconfigure bike path for safe crossing (typ.)
- Modify intersection geometrics to minimize confusion
- Consider decked parking to reduce impervious surface
- Eliminate impervious surface and create solar field

Additional Notes:
- Convert existing roadway to pedestrian pathway (can support emergency vehicles)
- Convert roadway segment to limit vehicular traffic
- Relocate loop road to articulate the campus green
**NEPA:**

- Serves as the basic national charter for protection of the environment

- Ensures that environmental information is available to public officials and citizens **before** decisions are made

- Helps public officials:
  - Make **informed decisions** that are based on understanding of environmental consequences
  - Take actions that protect, restore, and enhance the environment

- Applies to actions of all Federal agencies
Three Tiers of NEPA Review

**Categorical Exclusion (CE)**
- Actions with no significant effect on human environment, individually or cumulatively
- Predefined categories of action

**Environmental Assessment (EA)**
- Actions that do not qualify for a CE
- EA determines if action would have significant impacts
  - If yes/maybe ➔ Environmental Impact Statement
  - If no ➔ Finding of No Significant Impact (FONSI)

**Environmental Impact Statement (EIS)**
- Actions with significant and/or highly controversial impacts
- Most detailed environmental review
- Most extensive public involvement, including comment response
Summary of Draft Environmental Assessment

• Summarizes alternatives considered
• Reviews environmental consequences of:
  • Proposed Action Alternative (i.e. the Master Plan)
  • No Action Alternative
• Identifies effects (if any) on various resource areas such as:

<table>
<thead>
<tr>
<th>Land use</th>
<th>Utilities</th>
<th>Air Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Socioeconomics</td>
<td>Waste Generation</td>
<td>Climate Change</td>
</tr>
<tr>
<td>Biological Resources</td>
<td>Transportation</td>
<td>Sustainability</td>
</tr>
<tr>
<td>Land /Water</td>
<td>Noise Levels</td>
<td>Cultural Resources</td>
</tr>
</tbody>
</table>

• Summarizes cumulative effects and finds that:
  • For most resource areas, impacts are positive overall, with some minor temporary adverse effects during construction
  • For others, impacts are generally minor and can be managed and/or mitigated
• Projected increase: 12% in staffing; 13% in facility space - over 20 years
• Moderate changes in heating /cooling and electric load (1-3%)
• Improved viewscapes - no obstruction in the visibility of the top 1/3rd of the Mesa from Broadway and 27th Street
• Slight decrease in impervious surfaces (4.8%); targeted improvement in stormwater management through BMPs
• Landscape includes native vegetation, additional tree cover and shade
• No direct impact on wetlands; removal of building from 100 year flood plain;
• Minor economic benefits from staff increase, construction, and increased productivity from campus improvements
• Improved campus connectivity; reduced in-campus trips; no impacts on trails and open spaces
• Improved energy efficiency through removal or modernization of obsolete or inefficient buildings & systems
• Net-zero energy facilities, renewable energy
Draft Master Plan and Draft EA Comments

• Comment period ends December 5, 2016
• Submit written comments to:
  Dept. of Commerce Boulder Laboratories
  Master Plan Comments
  National Institute of Standards and Technology (NIST)
  325 Broadway, MS-194.00
  Boulder, CO 80305-3328
  Or
  BldrLabsMPcommentsPublic@nist.gov

The Draft Master Plan and Draft Environmental Assessment are available at:
https://www.nist.gov/ofpm/boulder-master-plan

Hard copies are available at the:
Boulder Main Library
1001 Arapahoe Ave, Boulder, CO 80302
Study of Boundary Delineation for Enhancing Security

NIST, working through the U. S. Army Corps of Engineers (USACE), will study various boundary delineations for enhancing security at the DoC Boulder Laboratories Campus. Target start date: late 2016/early 2017

- Will use processes within the National Environmental Policy Act (NEPA) to review and assess strategies for means, methods and locations for enhanced security
  - Will include evaluation of affected natural and human environment
  - Will solicit input from the community through public scoping meetings and opportunity for comments
- NIST is committed to exploring all options and an open process
- Separate study from Master Plan
Questions, Comments, Discussions

https://www.nist.gov/ofpm/boulder-master-plan

Send Comments to: BldrLabsMPcommentsPublic@nist.gov