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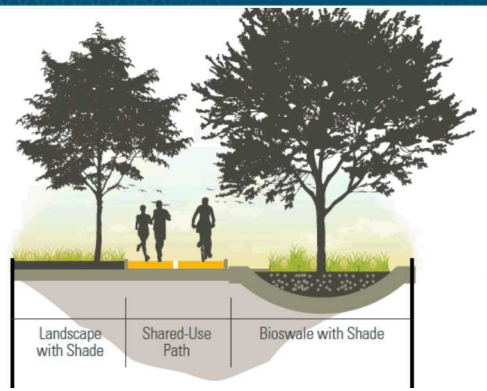

JOWOG 30 – Campus Planning

PRESENTED BY

Jill Reisz Westlund, AICP

September 4, 2019

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WHAT, WHY, HOW

SNL Long-Range Site Development Planning

WHAT

Planning is guided by mission direction and the need to maintain and provide safe and secure facilities and campuses. High-level direction that influences site development includes:

- NNSA Stockpile Stewardship & Management
- Nuclear Posture Review
- NNSA Master Asset Plan
- SNL Strategic Direction

WHY

Unplanned development results in:

- Inefficient development
- Unsustainable development
- Schedule delays
- Increased project costs
- Inefficient site organization

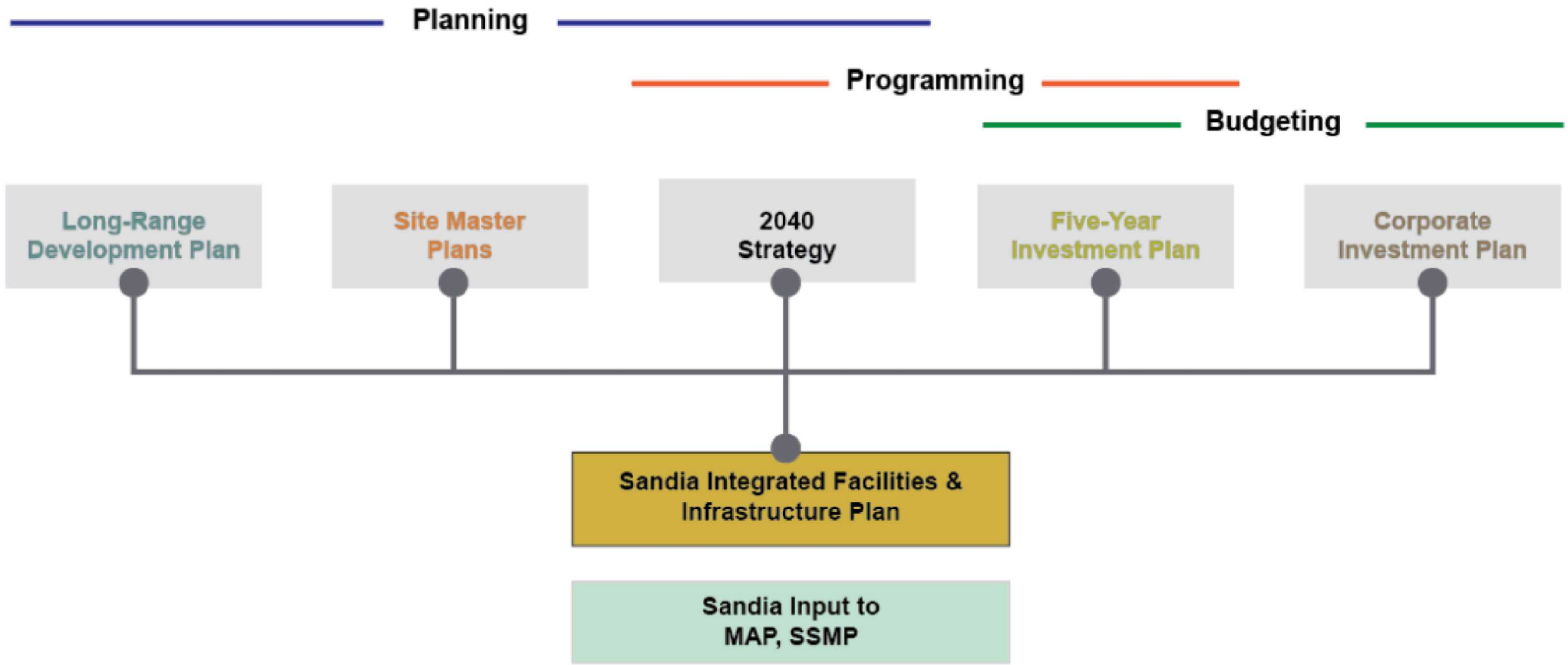
How

Sandia internal planning documents integrate mission need for facilities and infrastructure with physical site development.

- Long-range site development vision (10+ years)
- Sandia's Infrastructure Investment 2040 Strategy (SIIS 20+ years)
- Campus & Tech Area Master Plans (5-10 years)
- F&I Investment Plan (2-5 years)
- Corporate Investment Plan (1 year)

SITE DEVELOPMENT PLANNING

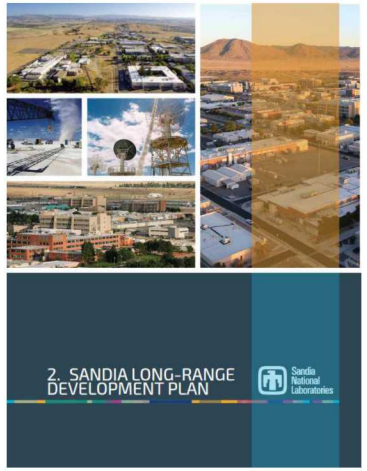
Internal Sandia plans move from highly conceptual in the planning phase to execution in the budgeting phase



LONG-RANGE DEVELOPMENT PLAN AND CAMPUS & TECH AREA MASTER PLANS

Long-Range Development Plan (LRDP)

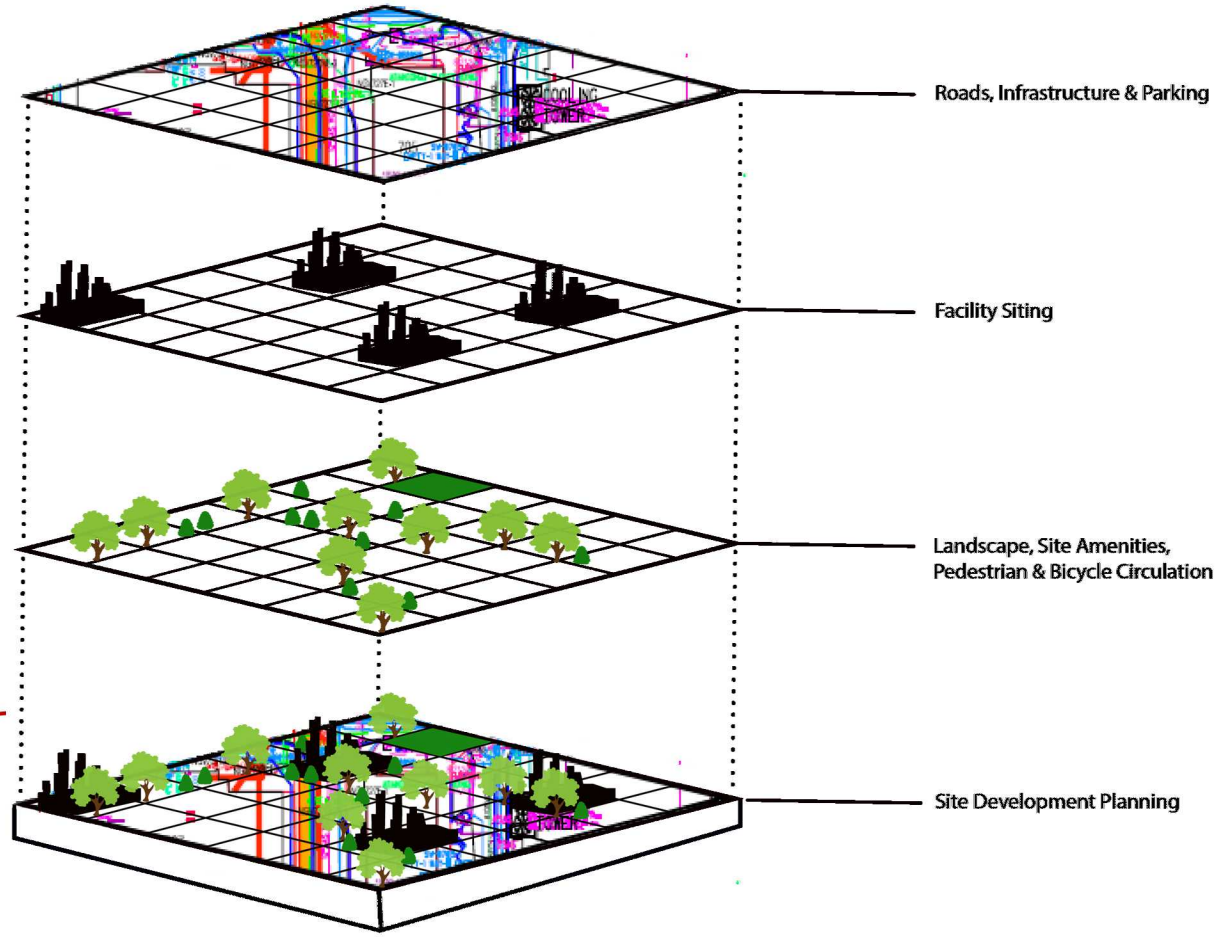
- Guides land and infrastructure development for all Sandia National Laboratories campuses
- Guides leadership discussion about site development
- 10+ Year Timeframe
- High-level/Conceptual



Campus & Tech Area Master Plans

- Provide greater detail about the implementation of the LRDP
- 5-10 Year Timeframe
- Specific opportunities for each Tech Area/Campus
- Master Plan Elements
  - Circulation/Transportation
  - Sustainability/Resiliency
  - Infrastructure
  - Safety & Security

Illustration of the Master Plan elements that together create comprehensive site planning



LONG-RANGE DEVELOPMENT PLAN

Development Principles, Goals & Objectives

	Support Mission Work – Coordinate with Laboratory/Division Leadership to ensure that facilities and infrastructure meet mission needs.
	Agility – Provide facilities and infrastructure that can respond to changing missions and environments in a timely and constructive way.
	Tech Transfer – Foster the transfer of technology between SNL and governmental institutions, universities, and the broader community (by creating a balance between high and low security areas and providing physical spaces for external collaboration).
	Recruitment and Retention – Provide physical spaces, site amenities, facilities, and infrastructure that create a healthy, pleasant, and walkable environment to support recruitment and retention objectives (landscape, shade, health clinic, fitness facility, cafeteria, trails, etc.).
	Internal Collaboration – Provide physical spaces and flexible facilities that provide on-site locations for internal collaboration (outdoor work areas and workrooms that can be scheduled by project teams, etc.).

Development Principles align development with the SNL Strategic Focus

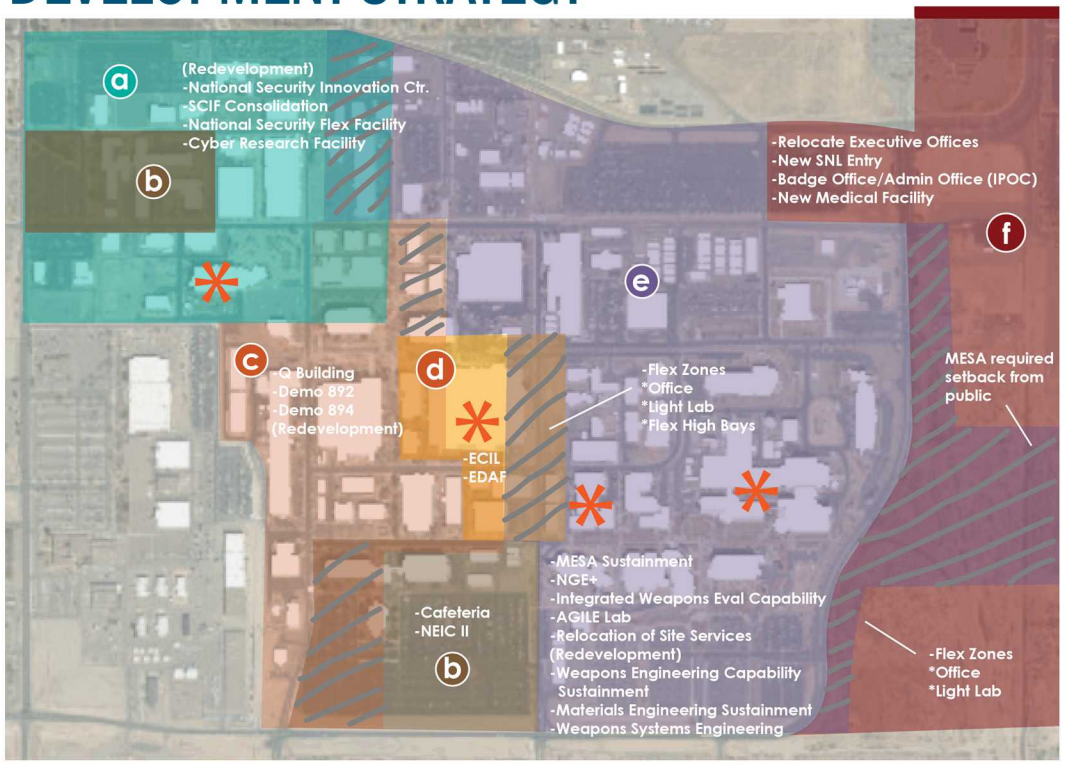
TABLE 2. SNL CAMPUS WIDE GOALS & OBJECTIVES

Support Mission Work, Agility, Tech Transfer, Recruitment and Retention, Internal Collaboration

		SITE ORGANIZATION & DESIGN	
1	**Goal**	**Develop a site organizational framework and common visual language for each SNL campus and corresponding tech areas.**	**Urban/ Remote**
	Related Development Principles		
1.1	Objective	Create a development framework that organizes compatible activities and centralizes related programs into "Districts" to create functional relationships	Urban/ Remote
1.2	Objective	Establish a common visual language through consistent application of site development standards appropriate for each campus and Tech Area	Urban
1.3	Objective	Develop a wayfinding system that allows workforce and visitors to orient themselves and find their destinations with ease	Urban
1.4	Objective	Create strong visual borders	Urban
2	**Goal**	**Establish gateways with a distinct identity.**	**Urban / Remote**
	Related Development Principles		
2.1	Objective	Define major campus gateways/entries and approaches through consistent edge landscape treatments and signage	Urban/ Remote
3	**Goal**	**Organize site development based on functional adjacencies.**	**Urban/ Remote**
	Related Development Principles		
3.1	Objective	Co-locate missions within the appropriate District to the greatest extent feasible	Urban/ Remote
3.2	Objective	Identify development opportunity areas within SNL campuses and/or Tech Areas based on land availability and redevelopment opportunities	Urban/ Remote
3.3	Objective	Identify specific core uses vs. common activities for each Tech Area and group support services around core uses as appropriate	Urban/ Remote
3.4	Objective	Locate test sites a consideration of	
3.5	Objective	Continue to use a for mission-relate	

Goals & Objectives – define actions needed to achieve the development vision and alignment with the corporate strategic focus

DEVELOPMENT STRATEGY



- Organize site development based on functional adjacencies
- Co-locate missions within appropriate districts
- Identify specific core facilities vs. common activities for each Tech Area
- Group support services around core facilities/uses

SITE ORGANIZATION DISTRICTS

- **NATIONAL SECURITY** — National Security
- **CAMPUS CENTER** — Enabling Operations, Employee Services, Campus Amenities *Future planned location
- **MULTI-PROGRAM FACILITIES** — Engineering Environments, Material Sciences
- **COMPUTING** — Mission Computing
- **NUCLEAR WEAPONS & MANUFACTURING** — Weapons Engineering & Design, Material Science, Production, Micro-Electronics
- **OPEN CAMPUS** — Enabling Operations, Collaboration & Outreach
- **CORE FACILITIES**
- **FLEXIBLE ZONES** — Areas intended for flexible tenants/institutional support such as light lab, high bay, and office

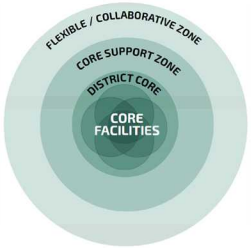
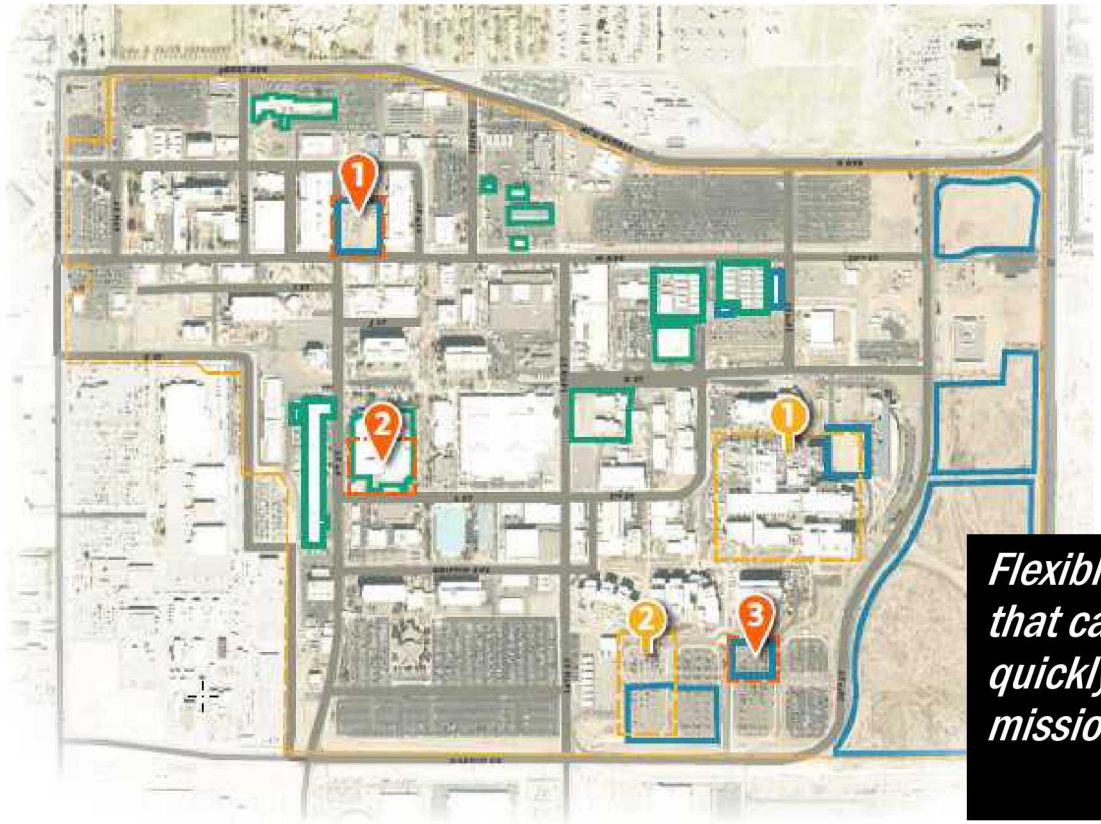


TABLE 4. SNL/NM TA-I SITE ORGANIZATION DISTRICTS

	District Name	Capabilities
a	National Security	Material Science, National Security
b	Central Campus	Enabling Operations, Employee Services, Campus Amenities
c	Multi-Program Facilities	Engineering Environments, Material Sciences
d	Computing	Mission Computing
e	Nuclear Weapons & Manufacturing	Weapons Engineering & Design, Material Science, Production, Micro-Electronics
f	Open Campus	Enabling Operations, Collaboration & Outreach

DEVELOPMENT STRATEGY



- Conceptually sited Line Items
- Conceptually sited Flexible Facilities

Flexible Facilities are office, lab, and/or high-bay facilities that can be easily reconfigured for different purposes to quickly accommodate short-term programs and changing missions

LINE ITEMS

1. MESA Sustainment: To meet weapon requirements in the 2020:2040 time frame and evolving and emerging threads that are not supportable by current facilities, the investment need supports the upgrade of fabrication facilities and supporting infrastructure, and evolution to more advanced technologies.

2. Neutron Generator Enterprise (NGE): The distribution of production work flow across eight buildings in Tech Area I and II causes many operations inefficiencies. Aging facilities and infrastructure will present major risks to mission work as they continue to deteriorate.

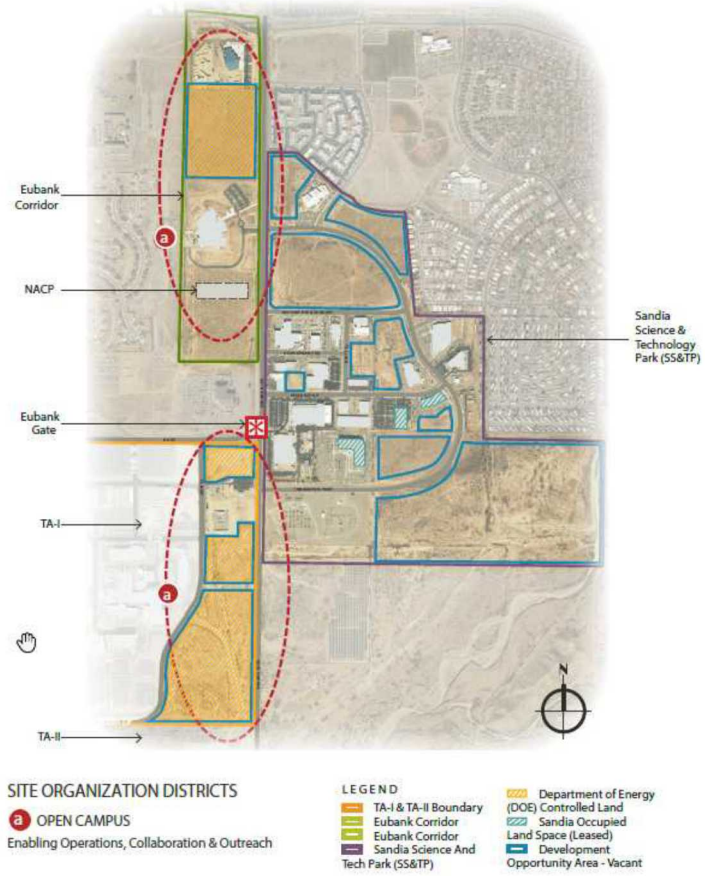
FLEXIBLE FACILITIES

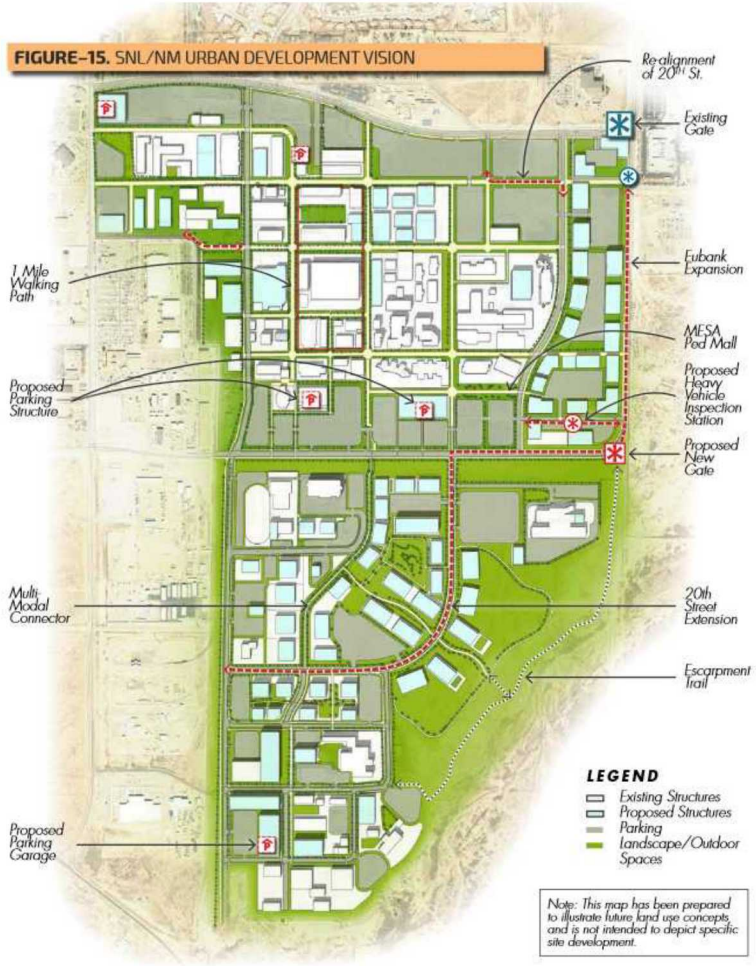
1. *National Security Flexible Facility*
2. *Computing & Multi-Program Flexible Facility*
3. *Nuclear Weapons & Manufacturing Flexible Facility*

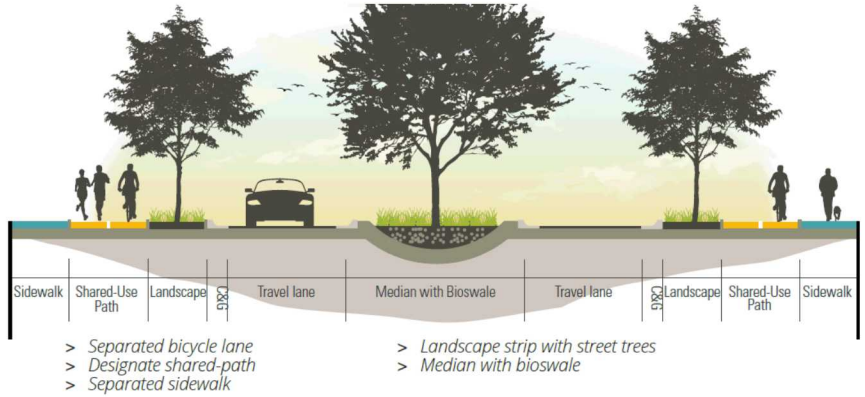
LEGEND

- *TA-I Boundary*
- *Development Opportunity Area - Vacant*
- *Development Opportunity Area - Demolish*
- *Line Items*

DEVELOPMENT STRATEGY







- Public Access (outside of KAFB fence)
- General Access Area
- External Collaboration
- Tech Transfer

- New SNL Entrance
- TA-II Roadway
- Parking
- Escarpment Trail

- Separated Bicycle Lanes
- Shared-Use Paths (Peds & Bikes)
- Shaded Sidewalks
- Green Infrastructure/Low Impact Development Techniques

PLAN FORMATS

Conventional Document (Printed & PDF)

Interactive GIS Web Maps

CONCEPTUAL LOCATION ANALYSIS

Geosciences Facility - Conceptual Location Analysis 2.20.19

This conceptual location analysis is for the construction of a new facility to house Geosciences, currently operating in Buildings 849, 851, MO293, and 823. This project will replace Buildings 849 and 851 which are in poor condition and not suitable for meeting the GeoSciences mission and will enable the consolidation of personnel and operations which are currently in various locations around Tech Area I.

Project Description: The conceptual design proposes a two-phased single-story plan that provides the desired consolidation of the Geosciences Research & Applications organizations.

Building 1 provides replacement facilities for buildings 849 and 851, (8864 Geomechanics and 8866 Geothermal Research) and co-locates them with their co-workers currently located in building 823. The conceptual plan for Building 1 is approximately 26,000 GSF.

Building 2 accommodates the remaining Geosciences Research & Applications organizations (8860, 61 62, 63 and 65). The conceptual plan for Building 2 is approximately 18,000 GSF.

Parking will be provided on site in addition to an area of 43, 475 SF of yard and outdoor storage facilities.

Project Just

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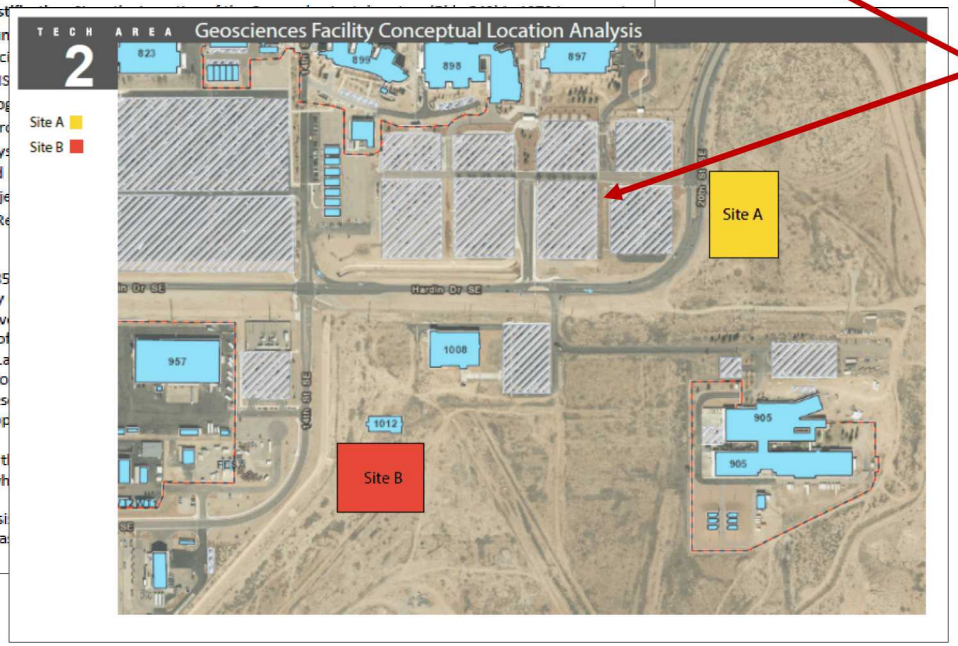
TECH AREA 2 Geosciences Facility Conceptual Location Analysis



The Conceptual Location Analysis is a streamlined siting process that identifies a preferred location based on long-range planning objectives, and availability of land and infrastructure

1. *Sites are identified*
2. *Environmental and Infrastructure SME's provide comments*
3. *Sites are scored by the Project Team based on siting criteria*

Geosciences Facility CONCEPTUAL LOCATION ANALYSIS SCORING MATRIX		
Criteria	**Site A**	**Site B**
C1= Customer Needs/Program Drivers/Mission Need	4	5
C2= Safety/Emergency Response	5	5
C3= Gas (propane)		
C4= Electricity	5	5
C5= Water	3	5
C6= Sanitary Sewer	1	4
C7= Storm Water	5	5
C8= Communications	2	4
C9= Traffic		
C10= Pedestrian Connectivity	2	3
C11= Bicycle Connectivity	2	3
C12= Site Organization (co-location of like and mutually beneficial activities, programs, and employees)	3	4
C13= Compatible Land Uses (consideration of noise, dust, etc.)	5	3
C14= Access to Site Amenities (health clinic, fitness, cafeteria, etc.)	2	2
C=15 Distance of site to usable open space	2	2
C16= Parking	5	3
C17= Infill Development	0	3
C18= Environmental Permitting	5	5
C19= Environmental Sensitivity/Conservation Area (NEPA & Ecology)	1	5
C20= Cultural Resource Sensitivity	5	4
C21= Historic District	0	0
C22=Aligns with Long-Range Planning Objectives	3	5
C23= Aligns with LEEDV4 for Campus & Sustainable Design Principles	3	3
C24= Aligns with Planned Investments (Indirect & Direct)	5	5
C=25 Project Cost	3	4
C=26 Project Schedule	1	4
C27= No Demolition Required	5	3
TOTAL	77	94

LEED FOR CAMPUS

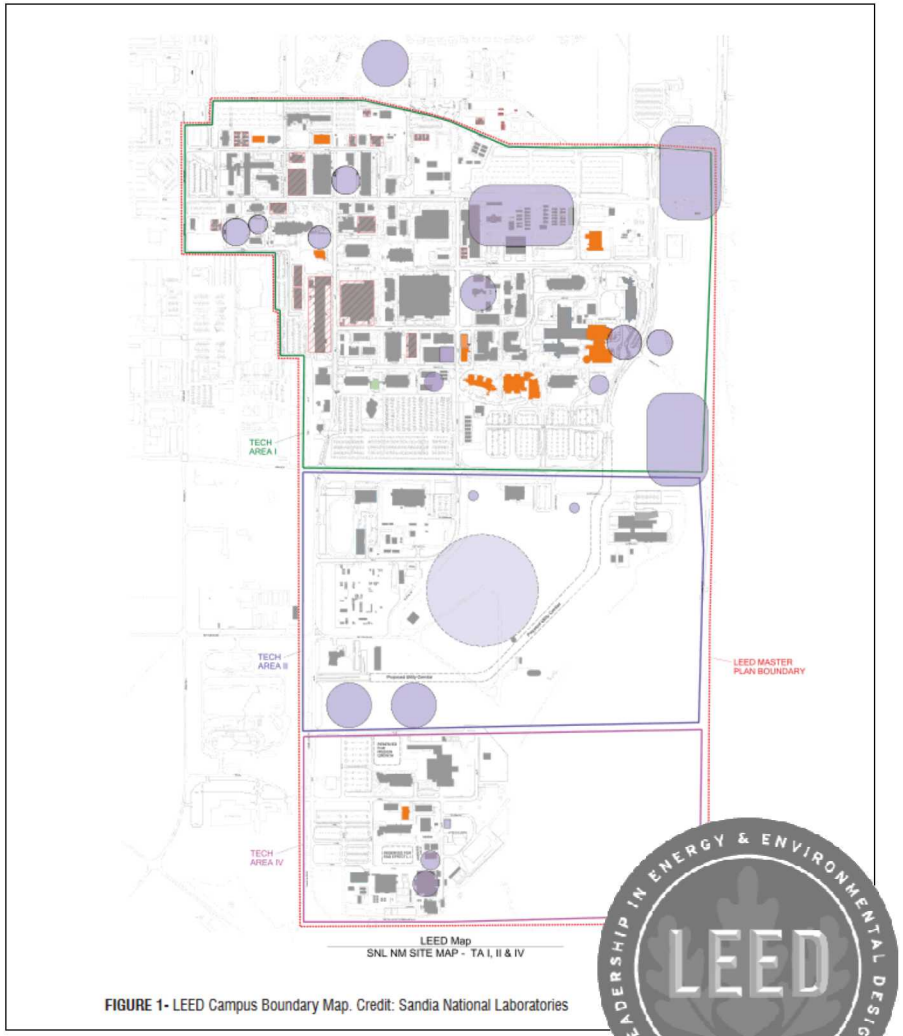
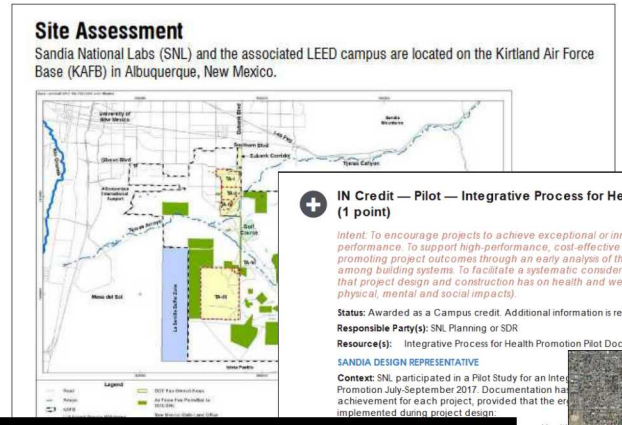
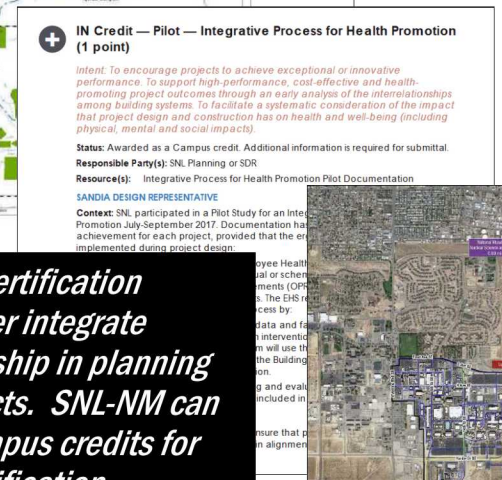


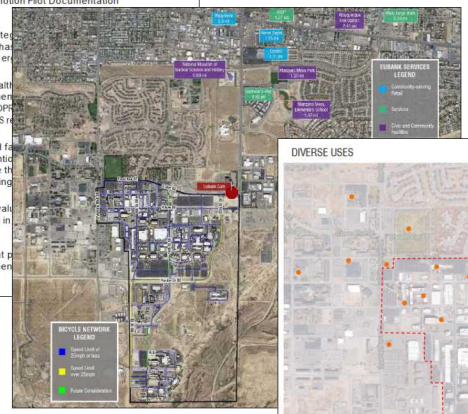
FIGURE 1- LEED Campus Boundary Map. Credit: Sandia National Laboratories

SNL LEED v4 for Campus Boundary





The LEED for Campus certification enables Sandia to better integrate environmental stewardship in planning and construction projects. SNL-NM can utilize pre-certified campus credits for individual building certification

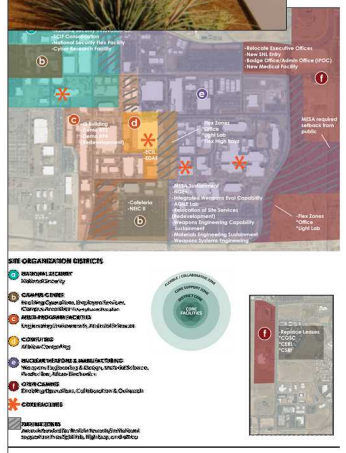


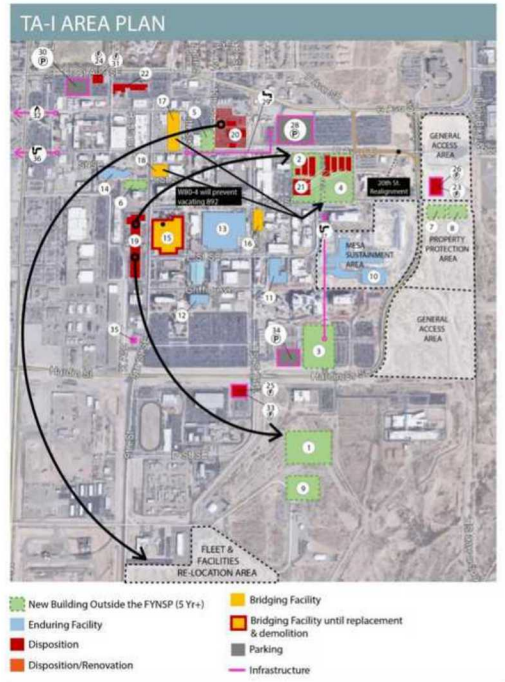
Sandia received awards from USGBC and NM AIA for LEED for Campus Certification

NEXT STEPS…

- *Detail Tech Area Master Plans to include IGPP and GPP strategies*
- *Increase coordination with mission partners to better integrate planning for mission work with planning for site development*

Create a simple graphic to communicate the SNL site development vision to NNSA, SFO, and laboratory leadership





Work with NA-50 on developing Area & Capability Plans that are consistent with Tech Area Master Plans and that effectively communicate a site development strategy

QUESTIONS?