

## J. Rio Grande Corridor Planning Area

### 1. General Description

The Rio Grande Corridor Planning Area occupies almost 7.7 square miles. It covers a large area in the southeast corner of the Laboratory. The northern boundary is just north of the alignment of NM State Hwy. 4 and incorporates narrow strips of undeveloped land in the southeastern limits of TA-36, -39, and -68. The White Rock residential community forms the eastern boundary, and the southern and western boundaries are the Rio Grande River and Bandelier National Monument. Fenton Hill is located about 28 miles (45 km) west of Los Alamos and serves as an environmental buffer for the Dynamic Testing Planning Area. The Rio Grande Planning Area encompasses:

- TA-33: High-pressure tritium handling facility and Very Large Baseline Array Telescope
- TA -70: Undeveloped
- TA-71: Undeveloped
- Fenton Hill: Gamma Ray Observatory and the Hot Dry Rock Geothermal Project (Decommissioned)

Map IV-J1: Rio Grande Corridor Key Map

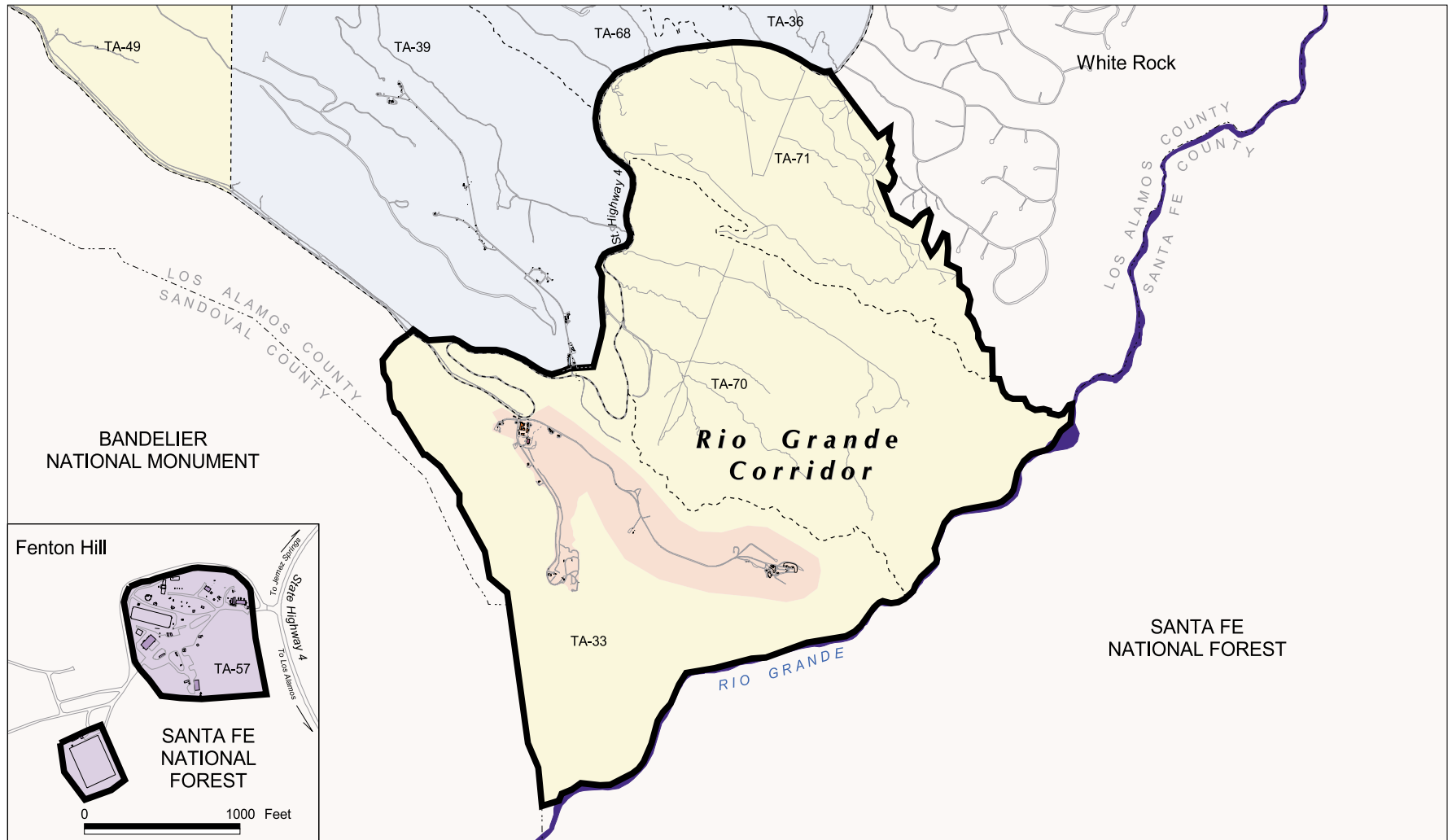


## 2. *Specific Planning Assumptions*

Planning assumptions to guide physical planning at the Rio Grande Corridor Planning Area for the next ten years include:

- Although TA-70 and -71 are not currently developed, they serve future important programmatic needs. Both areas function as safety buffers for experiments conducted in the Experimental Engineering and Dynamic Testing Planning Areas as well as TA-33. TA-70 and -71 are also major utility corridors, with additional electrical lines proposed for the future.

Map IV-J2: Rio Grande Corridor Programmatic Associations



AREA / STRUCTURE	PROGRAM
	Defense Program / Stockpile Stewardship
	Defense Program / Stockpile Weapons Management
	Defense Program / Landlord or Institutional
	Office of Science
	Laboratory Directed Research & Development

AREA / STRUCTURE	PROGRAM
	Multiple Programs
	Nonproliferation & National Security
	Non DOE Programs
	Environmental Restoration & Waste Management
	County or Private within DOE Boundary



### 3. *Land Use*

In July 1999, Secretary of Energy Bill Richardson tasked the Albuquerque Field Office to determine if there were lands suitable for designation and use as a wildlife preserve area. Of the several potential sites identified by biologists, the White Rock Canyon in Los Alamos seemed the best. The White Rock Canyon areas in TA-33, -70, and -71 are host to a variety of plant and animal life, including rare, threatened, and endangered species, and the site is essentially undisturbed, natural, and pristine.

The wildlife preserve site contains over 1,300 acres along the Rio Grande frontage and canyon escarpment. The site follows the mesa rim for the most part on the western side, with a sizable area of one river tributary canyon included, and borders the waters of the Rio Grande on the east.

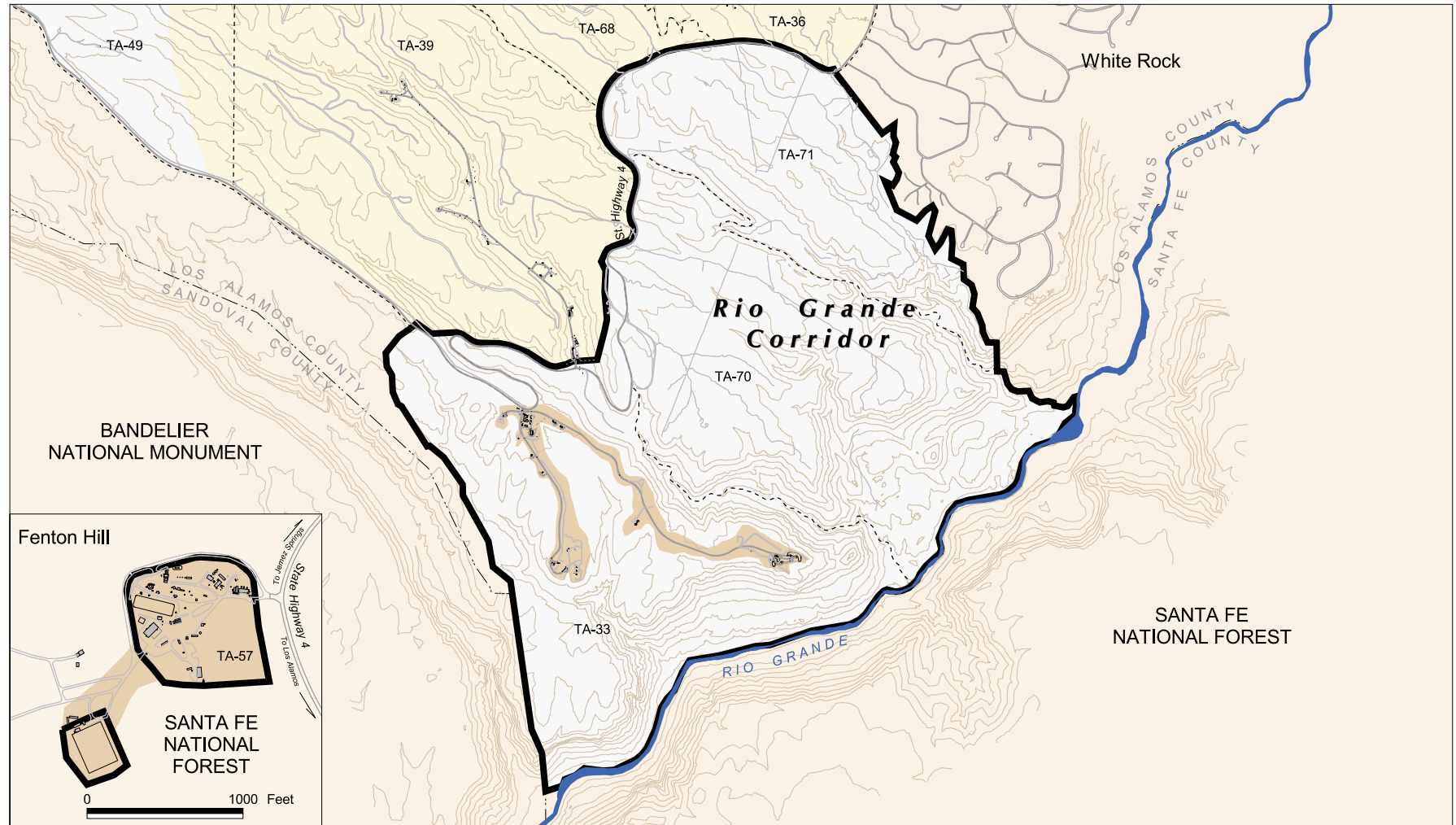
Much of the work that currently exists at TA-33 is expected to continue in the future. The wildlife preserve will not impact these ongoing Laboratory activities or the current use of TA-70 and -71 as a safety and security buffer.

#### *a. Existing Land Use*

The predominant land use is Reserve.

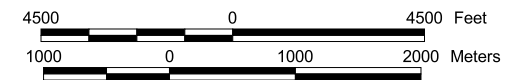
TA-33 also contains Experimental Science land use.

Map IV-J 4: Rio Grande Corridor Existing Land Use



LEGEND

- |                              |                            |                                   |
|------------------------------|----------------------------|-----------------------------------|
| LANL Buildings               | Experimental Science       | Reserve                           |
| Non Dept. of Energy Property | High Explosive R&D         | Theoretical/Computational Science |
| Planning Area                | High Explosive Testing     | Waste Management                  |
| Research Park                | Nuclear Materials R&D      |                                   |
| Administration               | Physical/Technical Support |                                   |
| Airfield                     | Public/Corporate Interface |                                   |



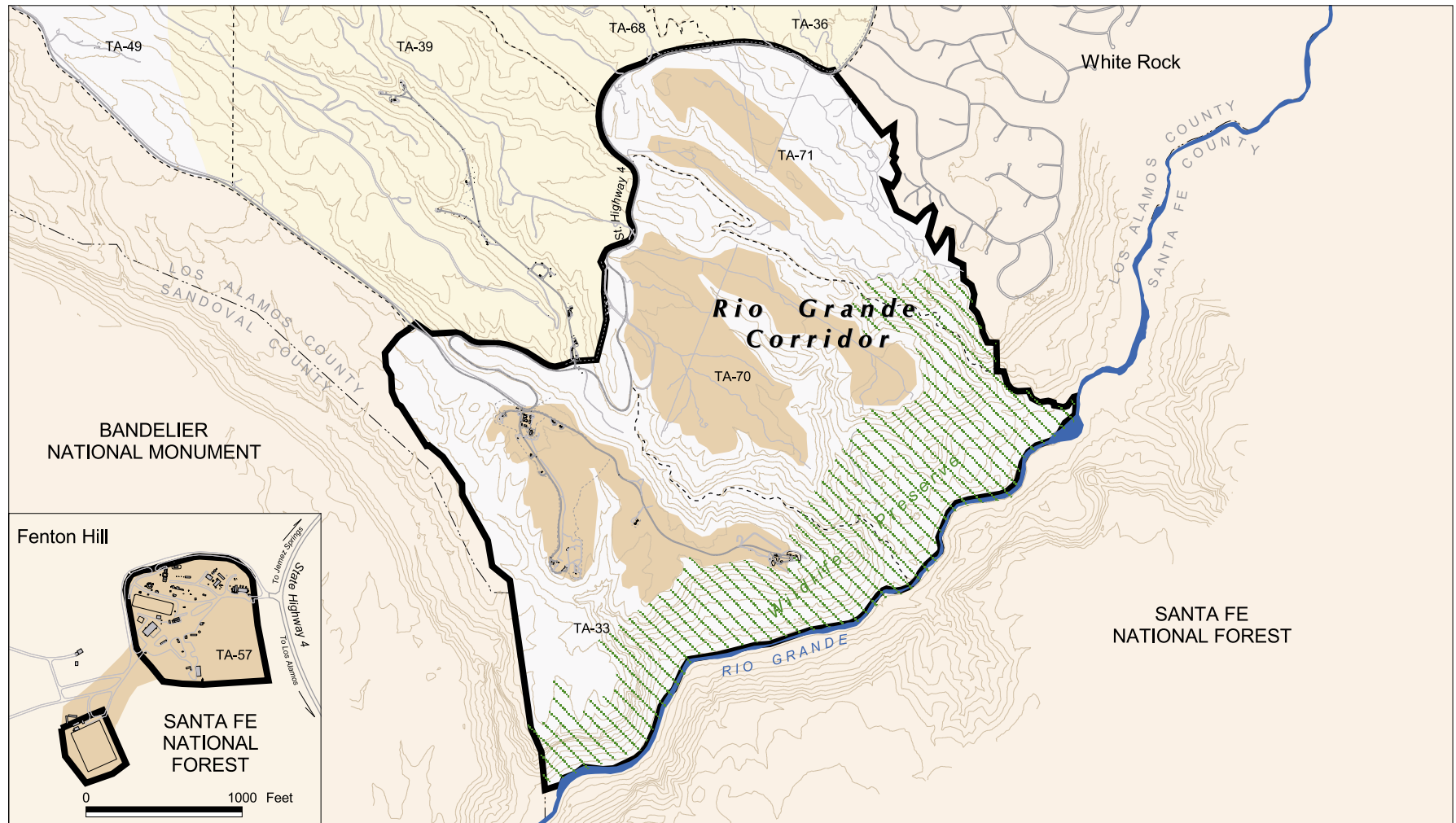
**b. Future Land Use**

There are no plans to change existing land uses.

Table IV.J1: Rio Grande Corridor Land Use

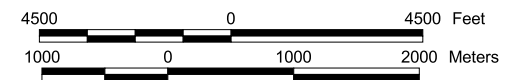
<b>Existing Land Use</b>		<b>Future Land Use</b>	
<u>Land Use Category</u>	<u>Acreage</u>	<u>Land Use Category</u>	<u>Acreage</u>
Experimental Science Reserve (Capable of development: 750 acres)	202	Experimental Science Reserve (Capable of development: 750 acres)	1,248
	<u>4,701</u>		<u>3,655</u>
<b>Total</b>	<b>4,903</b>	<b>Total</b>	<b>4,903</b>

Map IV-J5: Rio Grande Corridor Future Land Use



LEGEND

- |                              |                            |                                   |
|------------------------------|----------------------------|-----------------------------------|
| LANL Buildings               | Experimental Science       | Reserve                           |
| Non Dept. of Energy Property | High Explosive R&D         | Theoretical/Computational Science |
| Planning Area                | High Explosive Testing     | Waste Management                  |
| Research Park                | Nuclear Materials R&D      | Wildlife Preserve                 |
| Administration               | Physical/Technical Support |                                   |
| Airfield                     | Public/Corporate Interface |                                   |



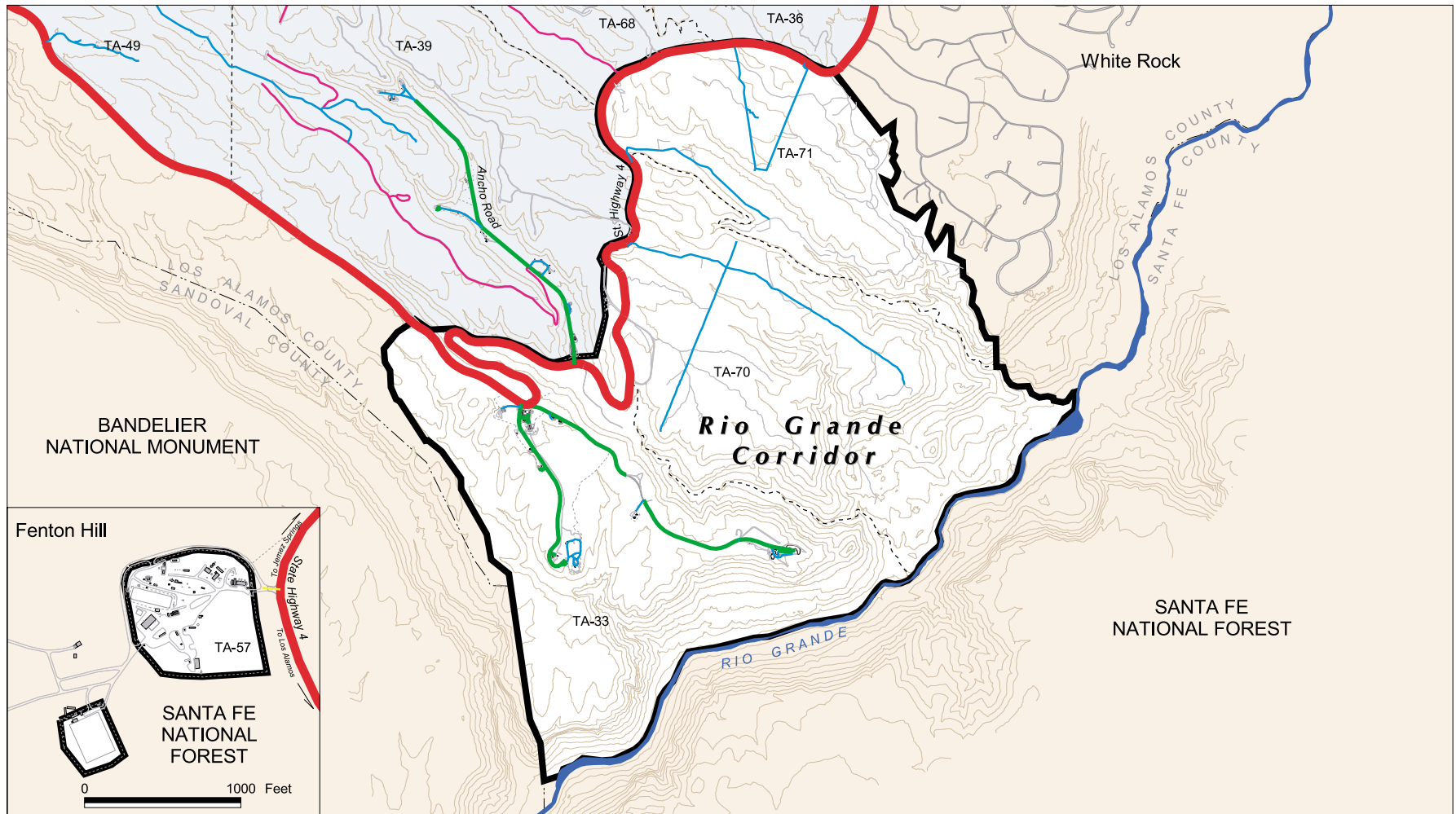
#### ***4. Transportation/Circulation/Parking***

##### ***a. Existing Transportation/Circulation/Parking***










The Rio Grande Corridor Planning Area is served primarily by unpaved roads. Two paved roads are located in TA-33. No transportation problems are reported.

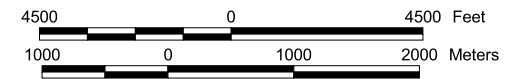


Map IV-J6: Rio Grande Corridor Existing Transportation



LEGEND

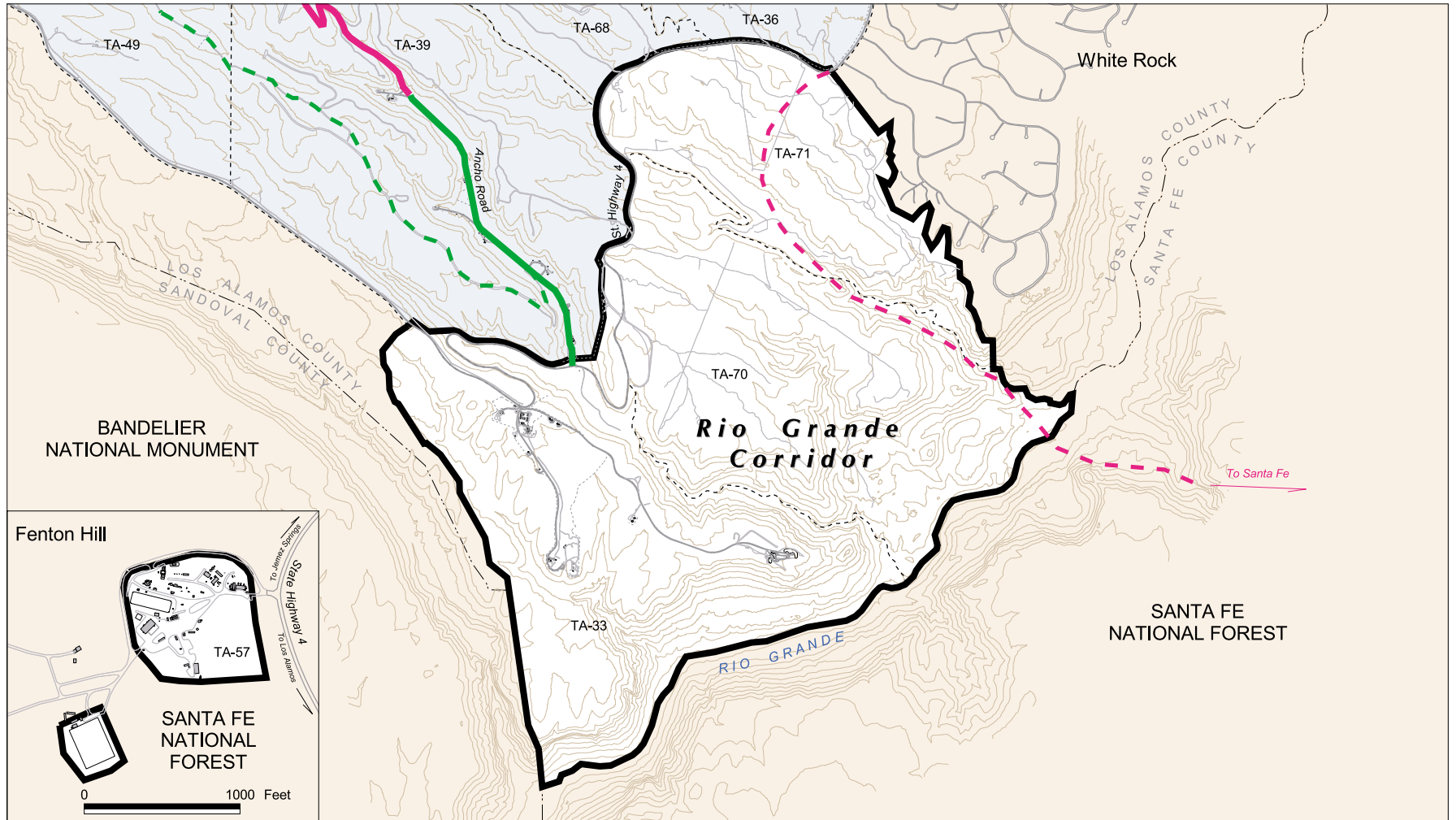
- |  |  |
|--|--|
|  Arterial         |  Dept. of Energy Property     |
|  Collector        |  LANL Buildings               |
|  Local            |  Non Dept. of Energy Property |
|  Access / Service |  Planning Area                |
|  Emergency Lanes  |  |



***b. Future Transportation/Circulation/Parking***

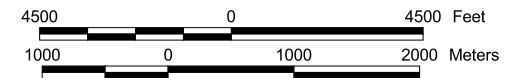
Long term consideration has been given to a road that would intersect NM State Hwy. 4 just below White Rock and proceed through TA-70, continue across the Rio Grande, and ultimately connect into Santa Fe. However, the established wildlife preserve may impact any future transportation plans.

Map IV-J7: Rio Grande Future Transportation



LEGEND

- |  |                                      |  |                              |
|--|--------------------------------------|--|------------------------------|
|  | New Construction                     |  | Dept. of Energy Property     |
|  | Long Range Proposed New Construction |  | LANL Buildings               |
|  | Road Improvements                    |  | Non Dept. of Energy Property |
|  | Long Range Proposed Improved Roads   |  | Planning Area                |
|  | Road Elimination                     |  |                              |



## 5. Security

The undeveloped areas at TA-70 and -71 are reserved for future large-scale experimental science. Future security requirements are planned to remain similar to existing requirements. TA-33 will continue to need limited security and a guard station, and the mesa top will remain a property protection area.

### ***Recommendation***

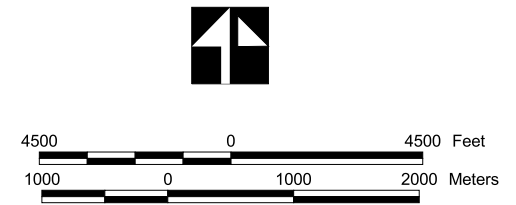
- Maintain TA-33 security requirements to support controlled activities.

Map IV-J8: Rio Grande Corridor Existing and Future Security Areas



LEGEND

- |                              |                         |                                   |
|------------------------------|-------------------------|-----------------------------------|
| Industrial Fences            | Proposed Guard Stations | Secured Building                  |
| Security Fences              | Active Guard Station    | Existing Limited Security Area    |
| Proposed/Improve Roads       | Closed Guard Station    | Existing Property Protection Area |
| Roads                        | Planning Area           | Existing Protected Area           |
| Technical Area Boundaries    | Research Park           | Future Limited Security Area      |
| Non Dept. of Energy Property |                         | Future Protected Area             |
|                              |                         | Security Buffer                   |



## 6. Utilities

### a. *Water System*

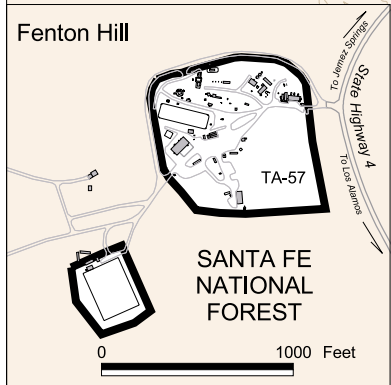
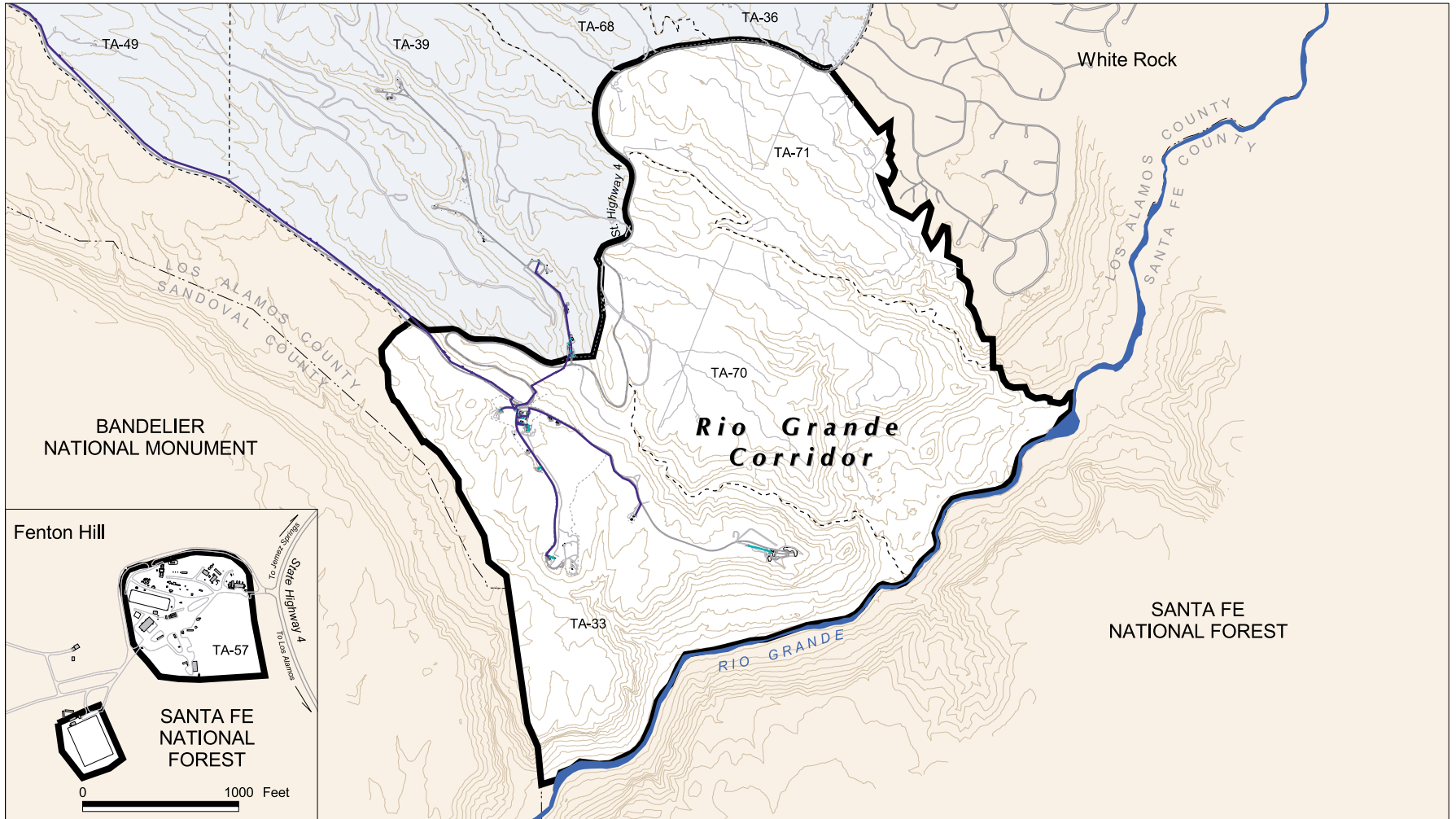
**Condition of System:** The water distribution system is in good condition throughout the planning area. No projects are required to improve any water system conditions.

**System Materials:** Pipe materials used in the water distribution system include cast iron, steel, asbestos cement, reinforced concrete, copper, ductile iron, and plastic. Cast iron has been replaced by ductile iron for distribution sized pipe. Steel and reinforced concrete are not common in today's systems of the Laboratory's size (greater than 24 inches diameter). Plastics and ductile iron dominate the water supply market for these sizes and fittings. Concerns regarding materials include:

- Replacement of asbestos cement pipe, particularly in areas where pipe may be disturbed for repair or replacement.
- Replace aged cast iron or steel pipe.

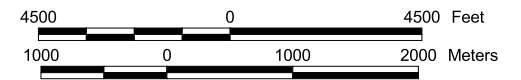
**System Capacities:** Fire hydrants are typically connected to 6-inch-diameter pipe. Water service lines, less than 6 inches should be upsized to 6 inches if they provide fire protection services.

Map IV-J 9: Rio Grande Corridor Existing Water System



LEGEND

- Water Distribution Lines
- Water Service Lines
- Water Transmission Lines
- Planning Area
- Dept. of Energy Property
- LANL Buildings
- Non Dept. of Energy Property



**b. Sanitary Sewer System**

**Condition of System:** The sewer system is generally in good operating condition.

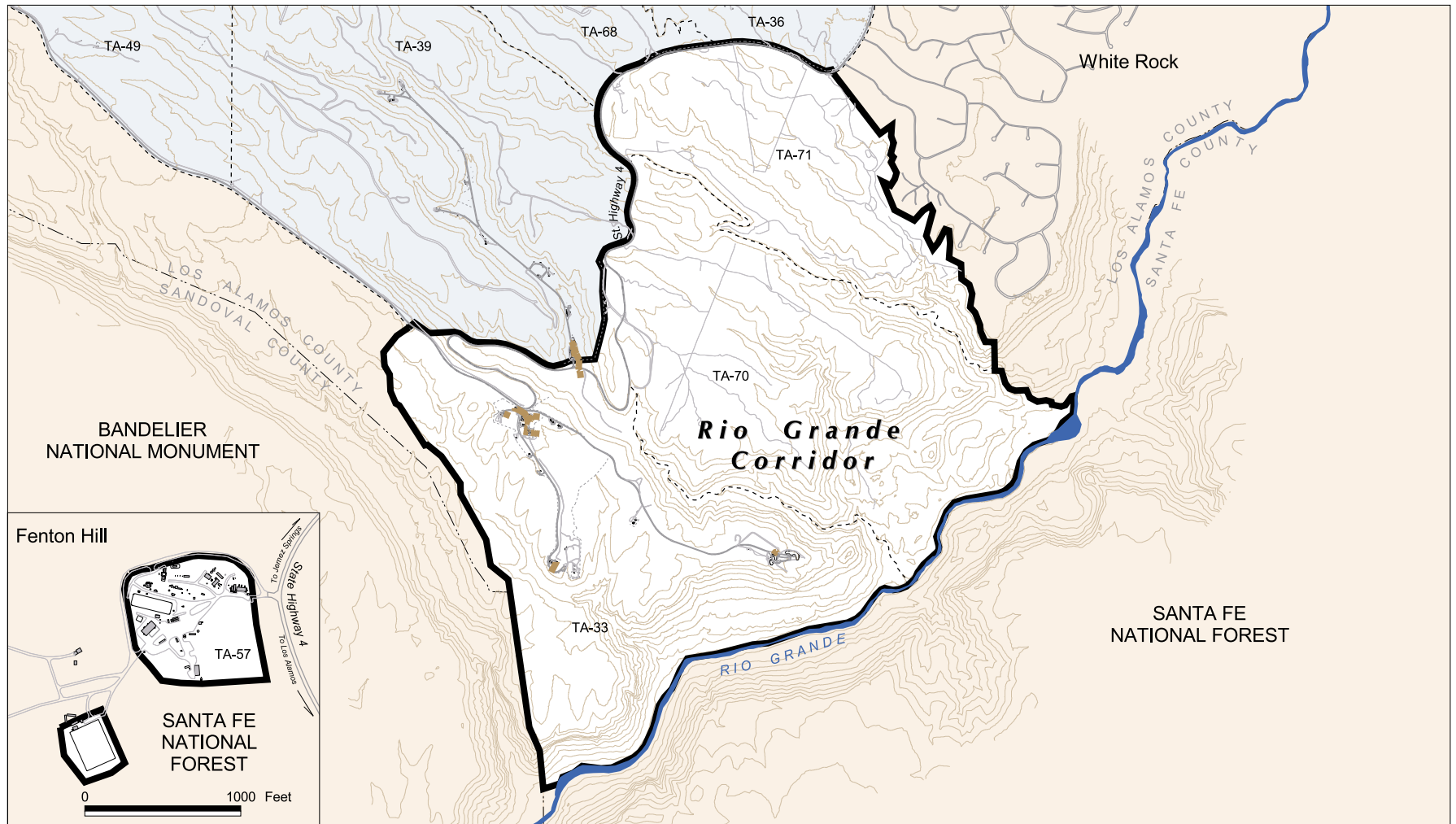
**System Materials:** Pipe materials used in the sewer system include cast iron, vitrified clay, steel, asbestos cement, reinforced concrete, copper, ductile iron, and plastic. Material concerns are:

- Replacement of concrete pipe that has shown evidence of interior deterioration from exposure to sewer gases.
- Replacement of asbestos cement pipe, especially where it could be disturbed by maintenance operations.
- General condition of aged vitrified clay pipe.










**System Capacities:** The sewer system has no capacity issues, with the exception of limitations set by lift station pumps. There is currently a strategy in place to abandon lift stations where economically feasible and replace them with gravity flow. The gravity systems will accommodate increased demands and require considerably less maintenance.

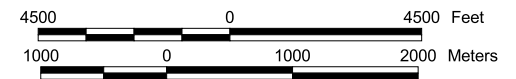


Map IV-J10: Rio Grande Corridor Existing Sanitary Sewer System



LEGEND

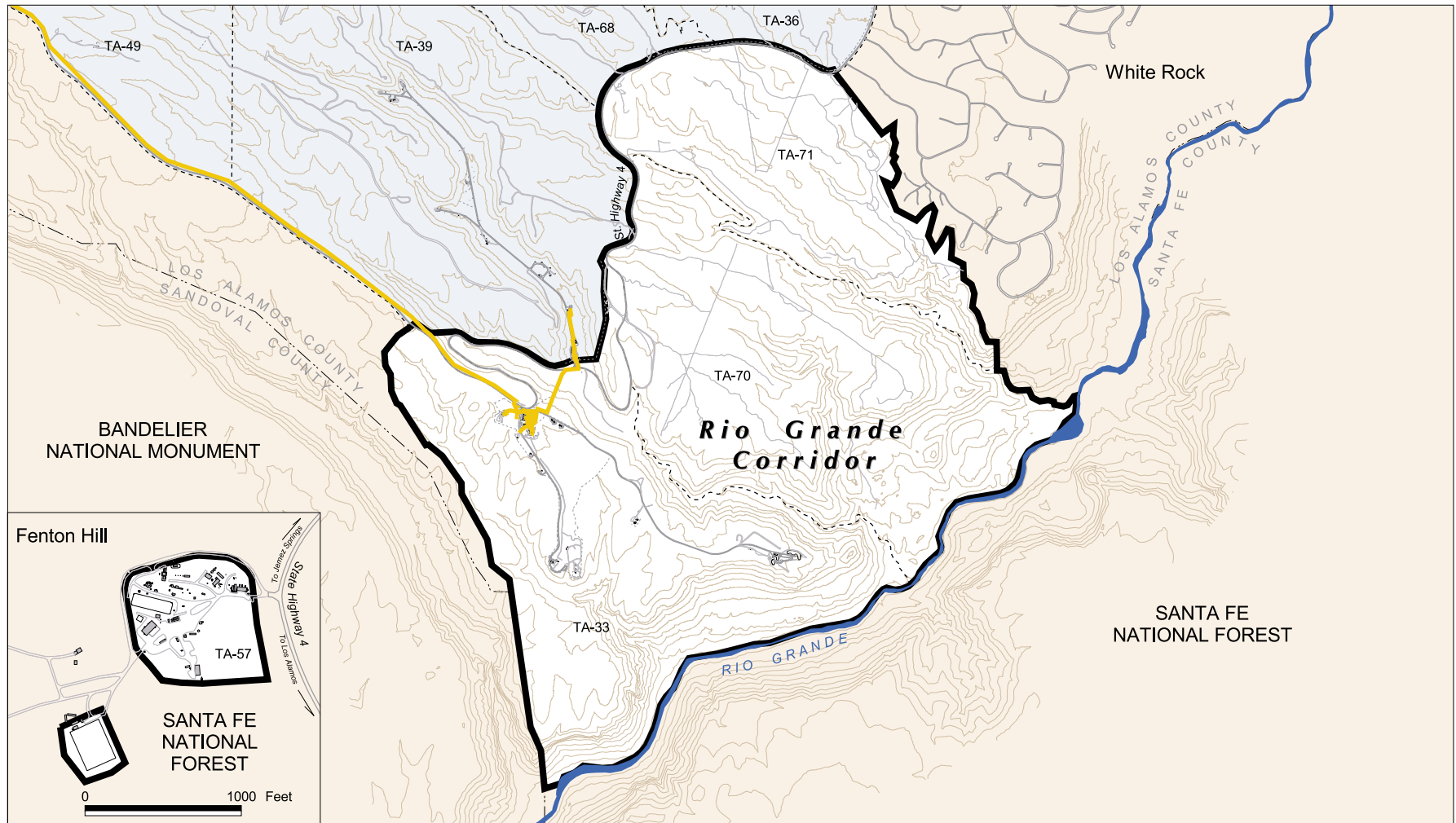
-  Gravity Lines
-  Effluent Lines
-  Force Main Lines
-  Drain Lines
-  Service Lines
-  Dept. of Energy Property
-  LANL Buildings
-  Non Dept. of Energy Property
-  Planning Area



**c. Natural Gas System**

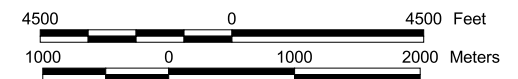
No issues have been identified.

Map IV-J11: Rio Grande Corridor Existing Natural Gas System



LEGEND

- Natural Gas Distribution
- Natural Gas Transmission
- Planning Area
- Dept. of Energy Property
- LANL Buildings
- Non Dept. of Energy Property

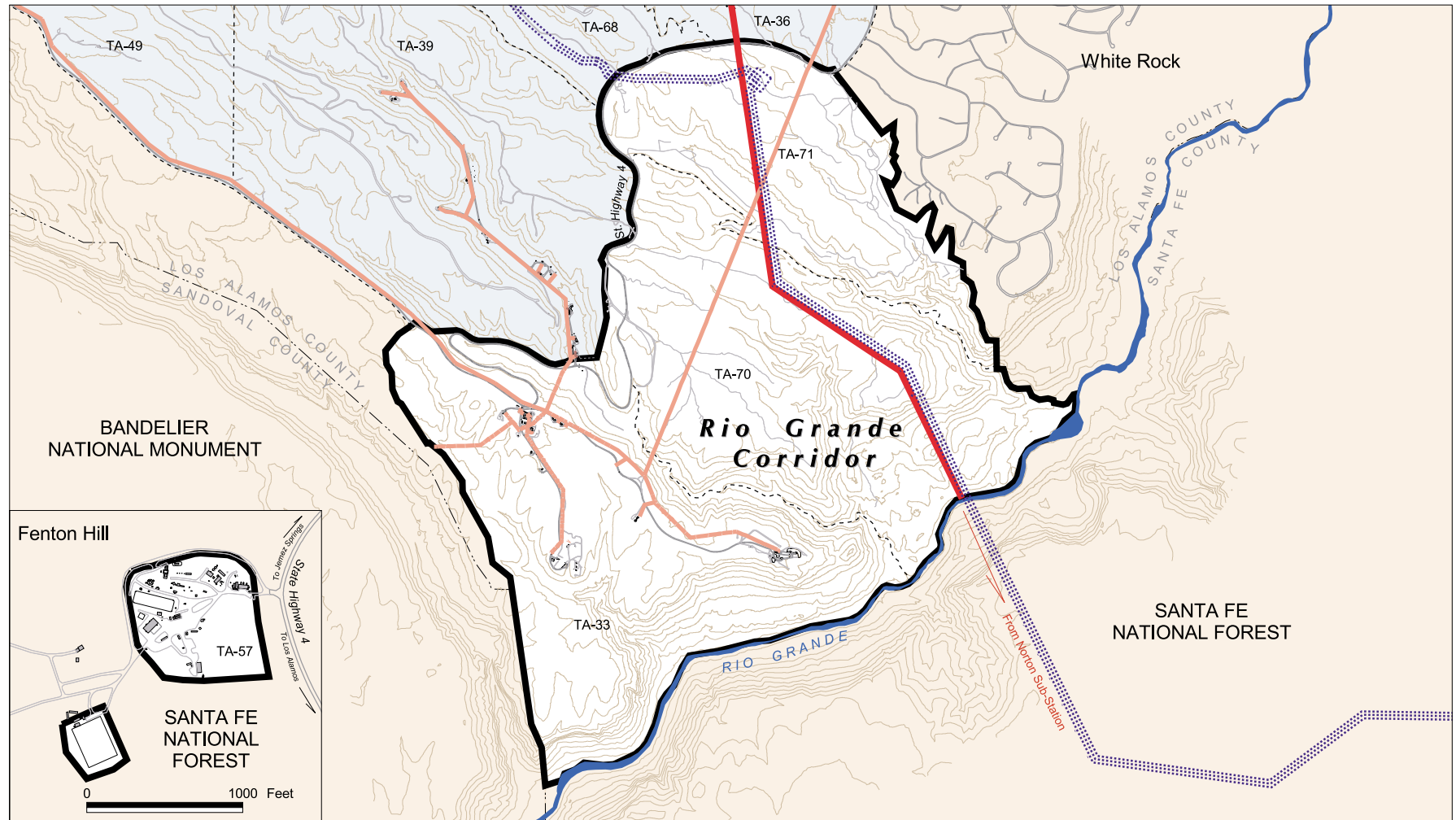


***d. Electric Transmission and Distribution System***









Two 115kV transmission lines presently carry all the bulk electric power for the Laboratory, the Los Alamos town site, and White Rock. Both lines terminate on a common bus. A third 115kV transmission line is planned to interconnect with the Laboratory power system at a new and physically separate location from the original two lines. This will provide for redundancy and provide increased reliability and security. The new transmission line is planned to cross through the planning area, and this project may be impacted by the established wildlife preserve.

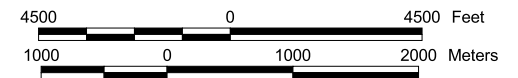
One-third of the lightning-caused interruptions occur on the single S-17 13.8kV distribution circuit. Improved insulation coordination on this circuit, the longest aerial circuit at the Laboratory, is a typical example of specific upgrades that can improve distribution system reliability for the entire site.

Map IV-J12: Rio Grande Corridor Existing Electrical System



LEGEND

-  Proposed 155 kv Transmission Line
-  Electrical Transmission
-  Electrical Distribution
-  Electrical Service
-  Dept. of Energy Property
-  LANL Buildings
-  Non Dept. of Energy Property
-  Planning Area



### 7. Facilities

The Rio Grande Corridor Planning Area is the smallest planning area in terms of population and facility space. There are under 10 employees, or less than 1% of the Laboratory's on-site population. The planning area's 57 buildings total about 63,000 GSF of space, or only 1% of the Laboratory's total GSF. A little over half of the facilities in this planning area are in poor condition, while only 15% are good or adequate. Laboratory is the largest use of space in the area.

Table IV-J2: Rio Grande Corridor Facilities Condition

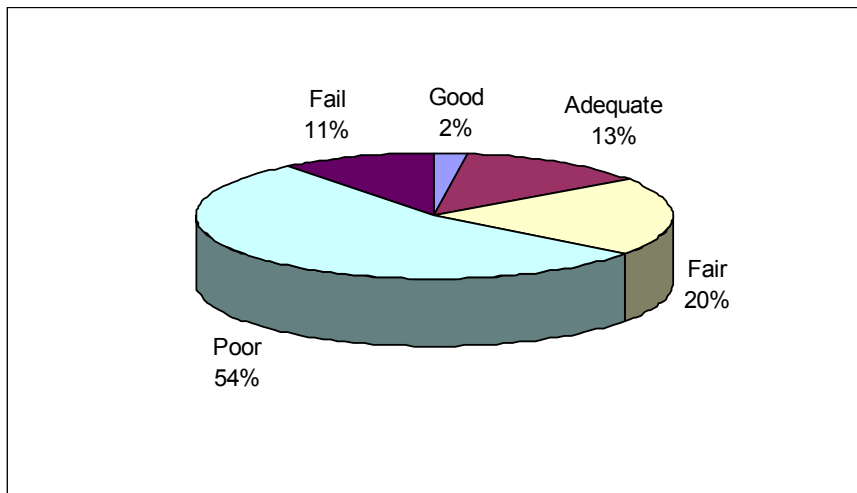


Table IV-J3: Rio Grande Corridor Employee Environment Condition

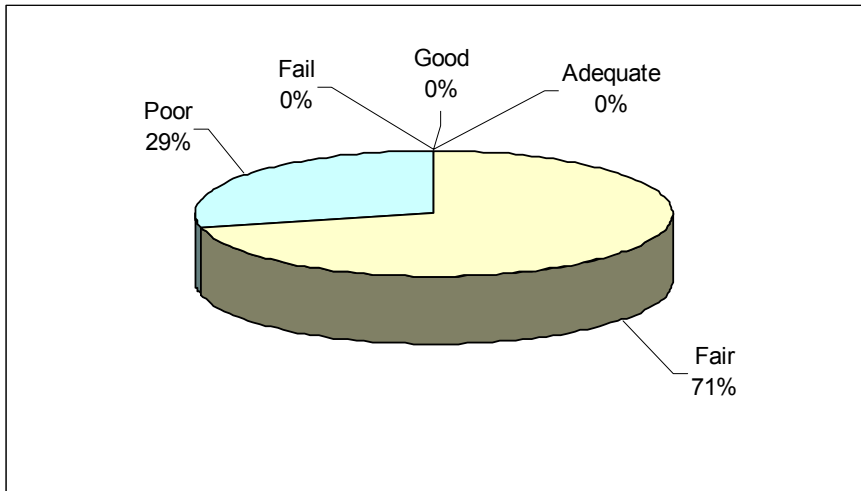
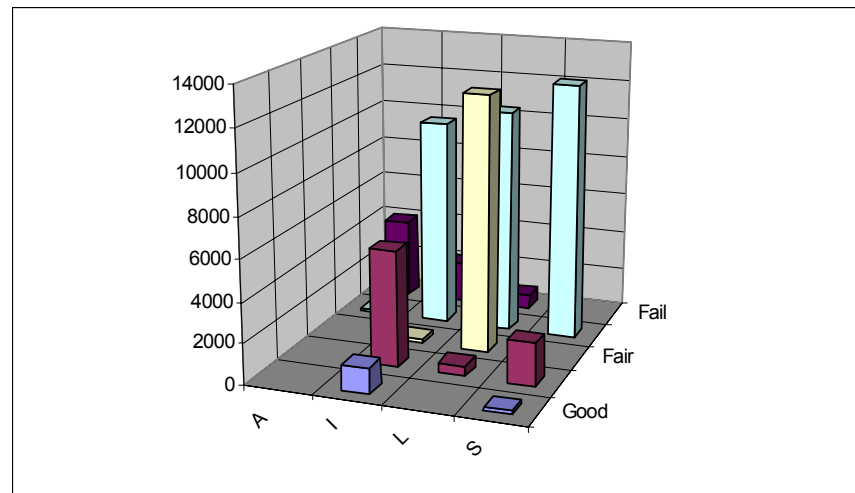


Table IV-J4: Rio Grande Corridor Facility Use & Condition



## **8. Environment, Safety, and Health**

With the exception of the cluster of buildings at TA-33, the Rio Grande Planning Area is undeveloped and rural in character. The facilities at TA-33 are isolated and surrounded by undeveloped open or forested land.

## **9. Quality Environment**

<b><i>Rio Grande Corridor Planning Area Assessment/Needs Summary</i></b>			
<b><i>Current Functions/Capability</i></b>	<b><i>Current Mission Activity</i></b>	<b><i>Forecasted Functions/Capabilities</i></b>	<b><i>Plan Discussion</i></b>
<b>Fenton Hill Facilities</b>			
Geologic heat source access	None	None	This area is Forest Service land under special use permit to DOE.
High atmosphere	Basic/Applied Research – Neutrino	Continue as current	Limited functions anticipated at the site.
<b>Very Large Array Facility</b>			
Radio Telescope	Basic/Applied Research – Space	Continue as current	Facility is owned/maintained by a non-DOE entity
<b>Bunker and Storage Facilities</b>			
Secure & Hazardous Storage	Threat Reduction	Continue as current	
<b>Old Tritium Facility - TA-33</b>			
Tritium Handling	None	None	Scheduled for D&D start in FY03.
<b>NIS Offices and Labs</b>			
General Offices & Research Labs	Threat Reduction	Continue as current	
<b>Infrastructure Facilities</b>			
Utility Supply & Site Access	All missions in the planning area	Continue as current	Long-term plan for a road from NM4 to Santa Fe & Albuquerque Access to Rio Grande water rights would be from this area Long-term plans may include new missions for the Laboratory. TA-70 and -71 reserved for future mission expansion and accesses Portion designated as White Rock Wildlife Preserve



<i>Needed Development</i>	<i>Proposed Projects</i>	<i>Land Use</i>	<i>Transp.</i>	<i>Security</i>	<i>Utilities</i>	<i>Facilities</i>	<i>Quality</i>	<i>ESH</i>
Many facilities are old and abandoned from previous experiments	D&D Geothermal Facilities	●	○	○	○	●	●	●
	None							
	None							
	None							
Facility usefulness expired	TA-33 Tritium Facility D&D	○	○	○	○	●	●	●
	None							
	Road Across White Rock Canyon to SF/ABQ (long-term plan)	●	●	○	○	○	●	●
	A third 115kV transmission line	○	○	●	●	●	●	●

