

C. Pajarito Corridor West Planning Area

1. General Description

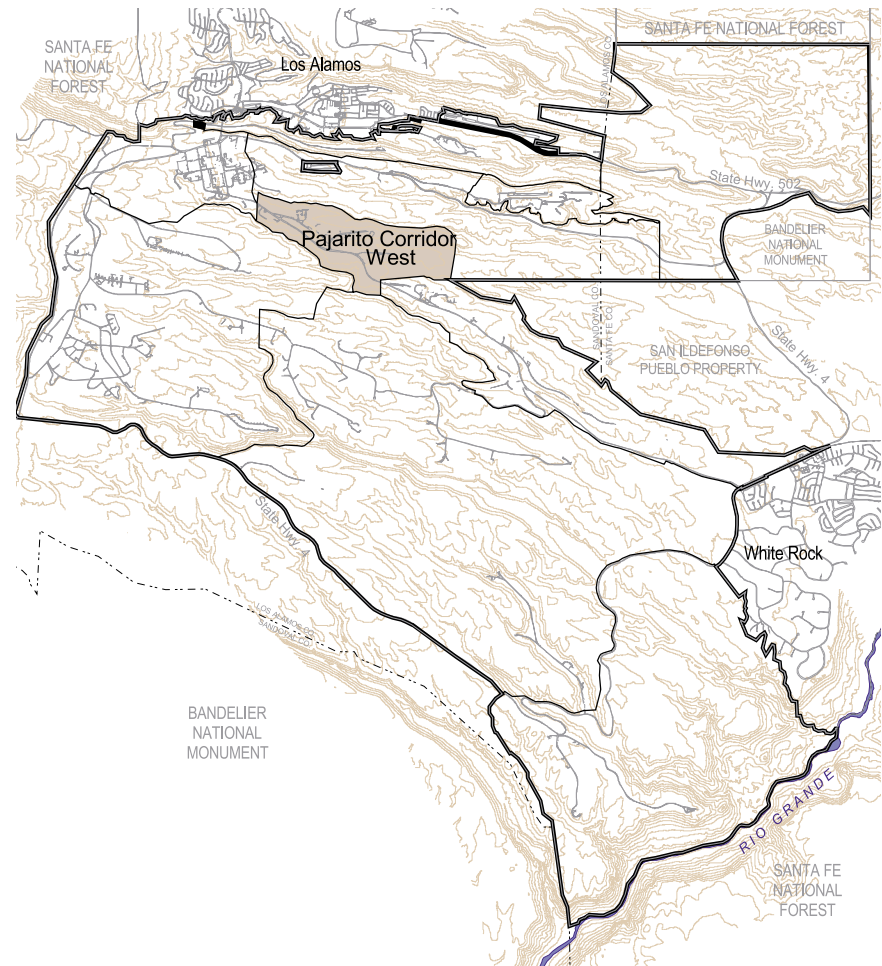
Pajarito Corridor West Planning Area lies between Mortandad Canyon on the north and Pajarito Canyon to the south. Pajarito Road extends through the planning area for 1.7 miles, bisecting the area. Pajarito Corridor West Planning Area encompasses:

- TA-35: Experimental science-lasers and fusion
- TA-48: Experimental science-nuclear material
- TA-50: Waste management area
- TA-52: Theoretical/computational science
- TA-55: Special nuclear materials
- TA-63: Satellite services area
- TA-64: Central Guard Facility and
- TA-66: Public and corporate interface functions

Also, small portions of TA-05, and -46 are included in the planning area.

Work within this planning area is heavily focused on nuclear materials research and development, such as plutonium processing, nuclear safeguards research and development, and radiochemistry. Other work includes theoretical and computational activities, waste management and treatment, and industrial partnership activities.

Map IV-C1: Key Map

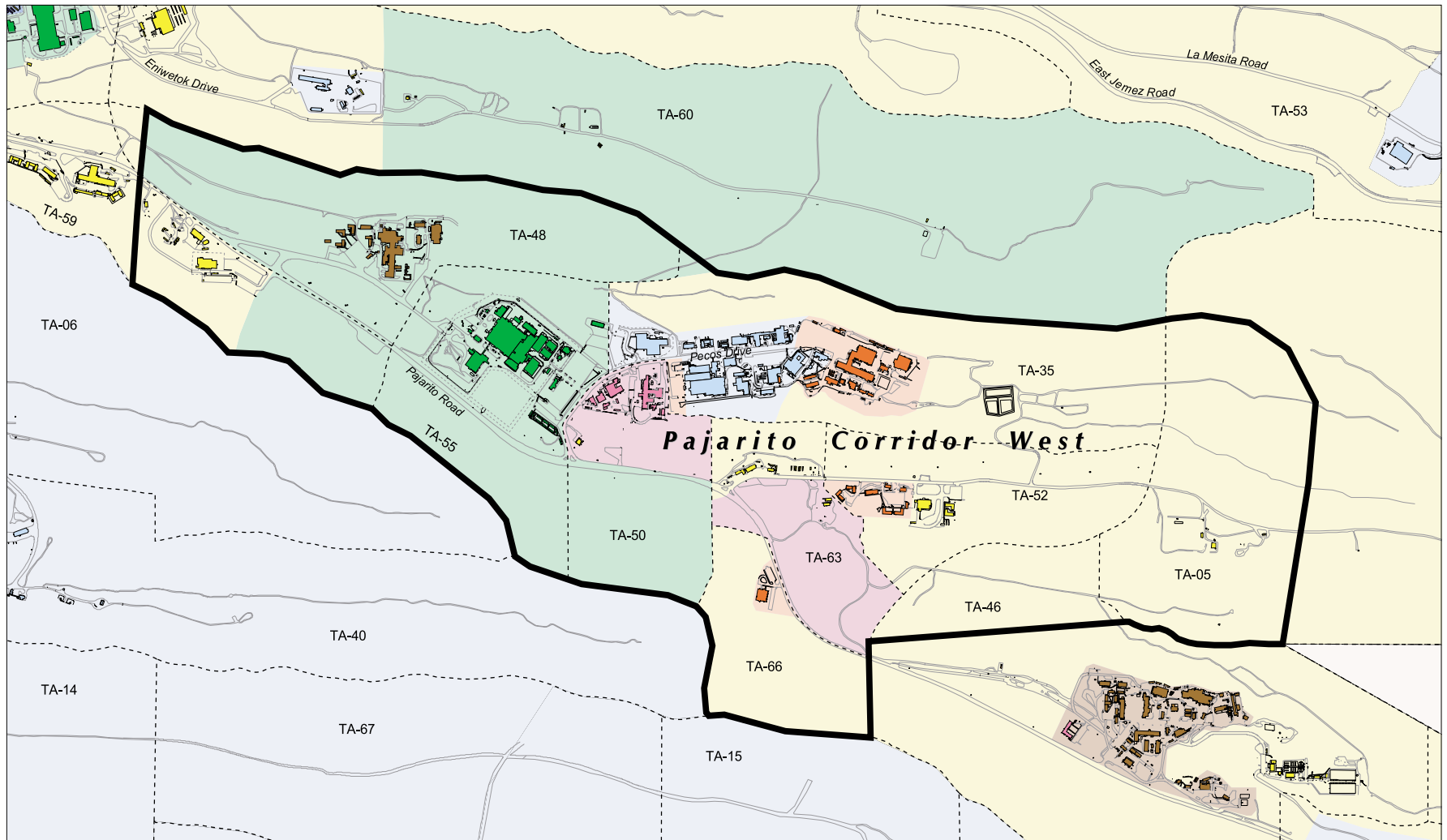


2. *Specific Planning Assumptions*

Planning assumptions to guide physical planning at the Pajarito Corridor West Planning Area for the next ten years are:

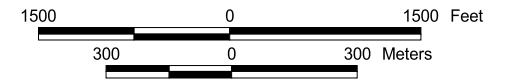
- The Pajarito Corridor West Planning Area is the proposed location of the “nuclear park” concept. The current land uses support this concept with TA-55 and TA-50 at the heart of this planning area.
- The Laboratory has committed to relocate Special Nuclear Materials out of the TA-03 CMR Building within ten years. In order to meet this objective a replacement facility for certain CMR capabilities is being developed as a Chemistry Material Research Replacement (CMRR) facility. This facility is planned to be located within the nuclear park, specifically within or adjacent to the TA-55 area.
- The nuclear park concept suggests all processing, storage and handling of SNM be within a single PIDAS protected area.
- Other activities directly related should be located within the nuclear park, such as, the radiographic liquid waste treatment facility at TA-50, the chemistry building at TA-48, the reuse of the Target Fabrication Facility at TA-35 and others. Although, some of these facilities may not be within the PIDAS protected area.

Map IV-C2: Pajarito West 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

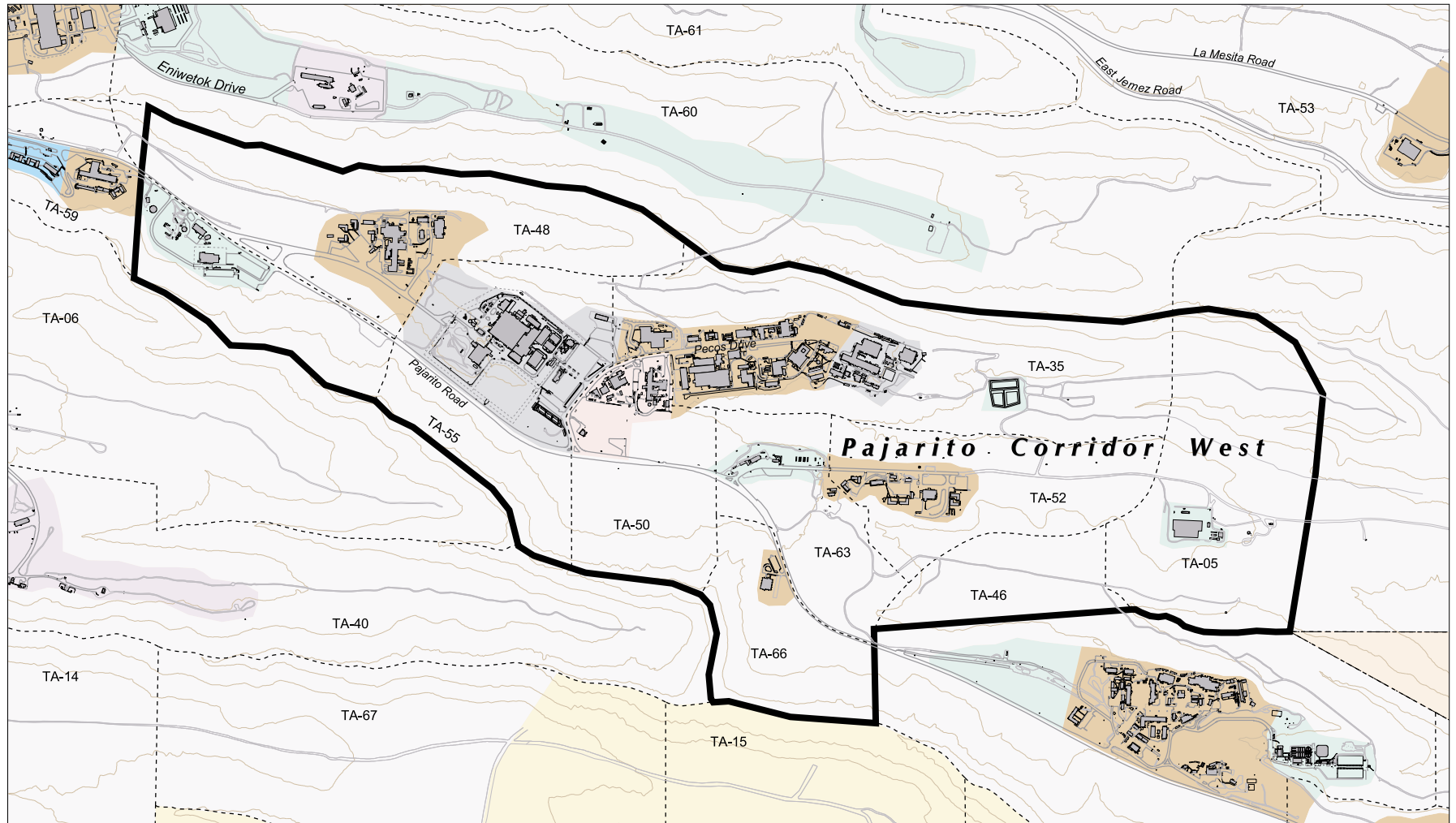


3. *Land Use*

a. *Existing Land Use*

The predominant land uses in the Pajarito Corridor West Planning Area are Nuclear Materials R&D and Experimental Science. There are other smaller areas of Administration, Waste Management, and Physical/Technical Support. The remainder of the area (and majority of the acreage) is Reserve.

Map IV-C4: Pajarito Corridor West 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 | |



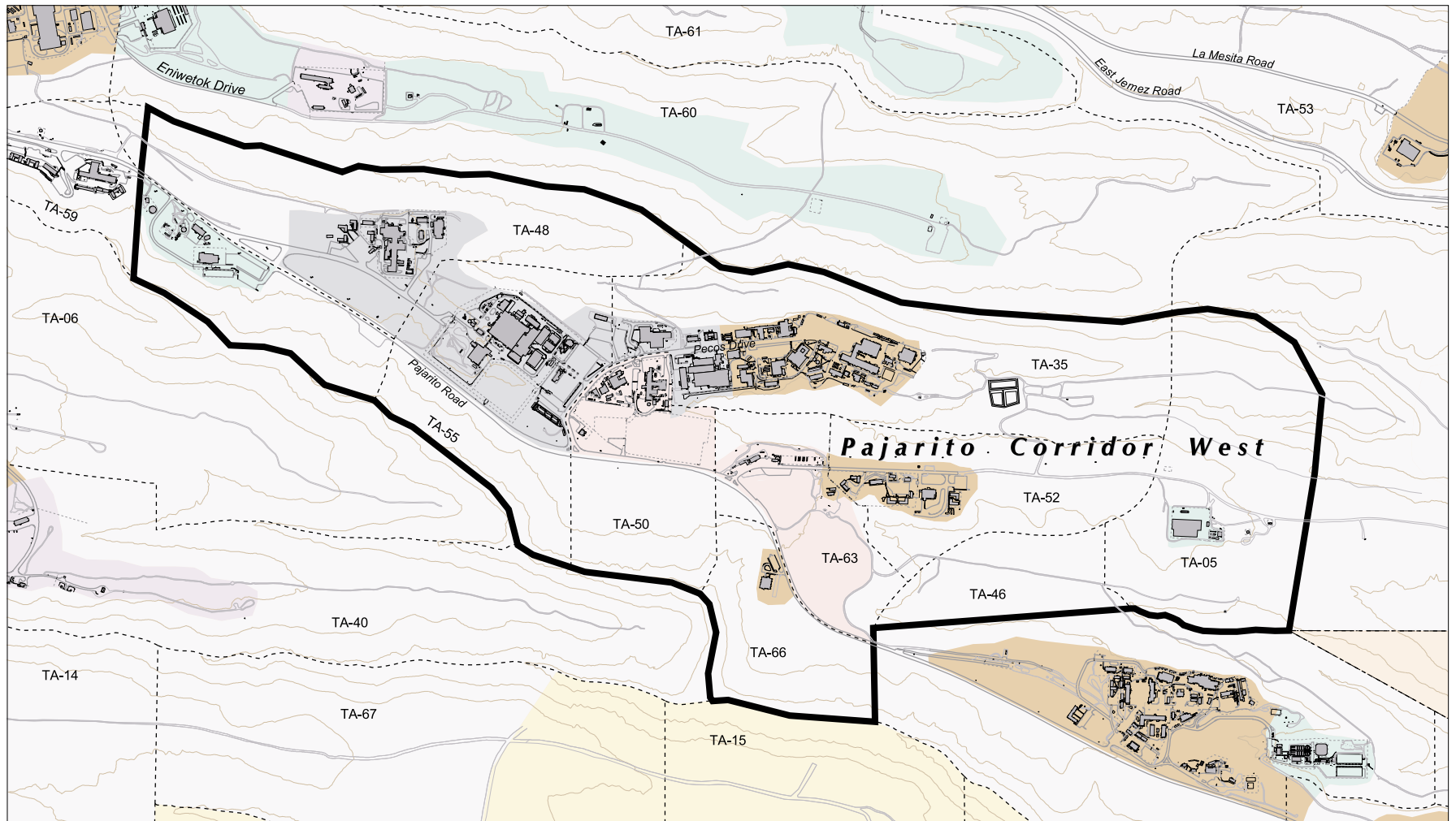
b. Future Land Use

Major sections of the Pajarito Corridor West Planning Area will become access restricted focusing on expanded Nuclear Materials R&D, Experimental Science, and Waster Management.

Table IV.C1: Pajarito Corridor West Planning Area Land Use

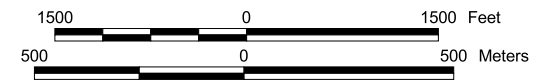
Existing Land Use		Future Land Use	
<u>Land Use Category</u>	<u>Acreage</u>	<u>Land Use Category</u>	<u>Acreage</u>
Physical/Technical Support	30	Physical/Technical Support	18
Experimental Science	73	Experimental Science	47
Waste Management	16	Waste Management	57
Nuclear Materials R&D	59	Nuclear Materials R&D	95
Reserve (Capable of development: 107 acres)	<u>592</u>	Reserve (Capable of development:68 acres)	<u>553</u>
Total	770	Total	770

Map IV-C5: Pajarito Corridor West Planning Area 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	
Administration	Physical/Technical Support	
Airfield	Public/Corporate Interface	



4. Transportation and Circulation

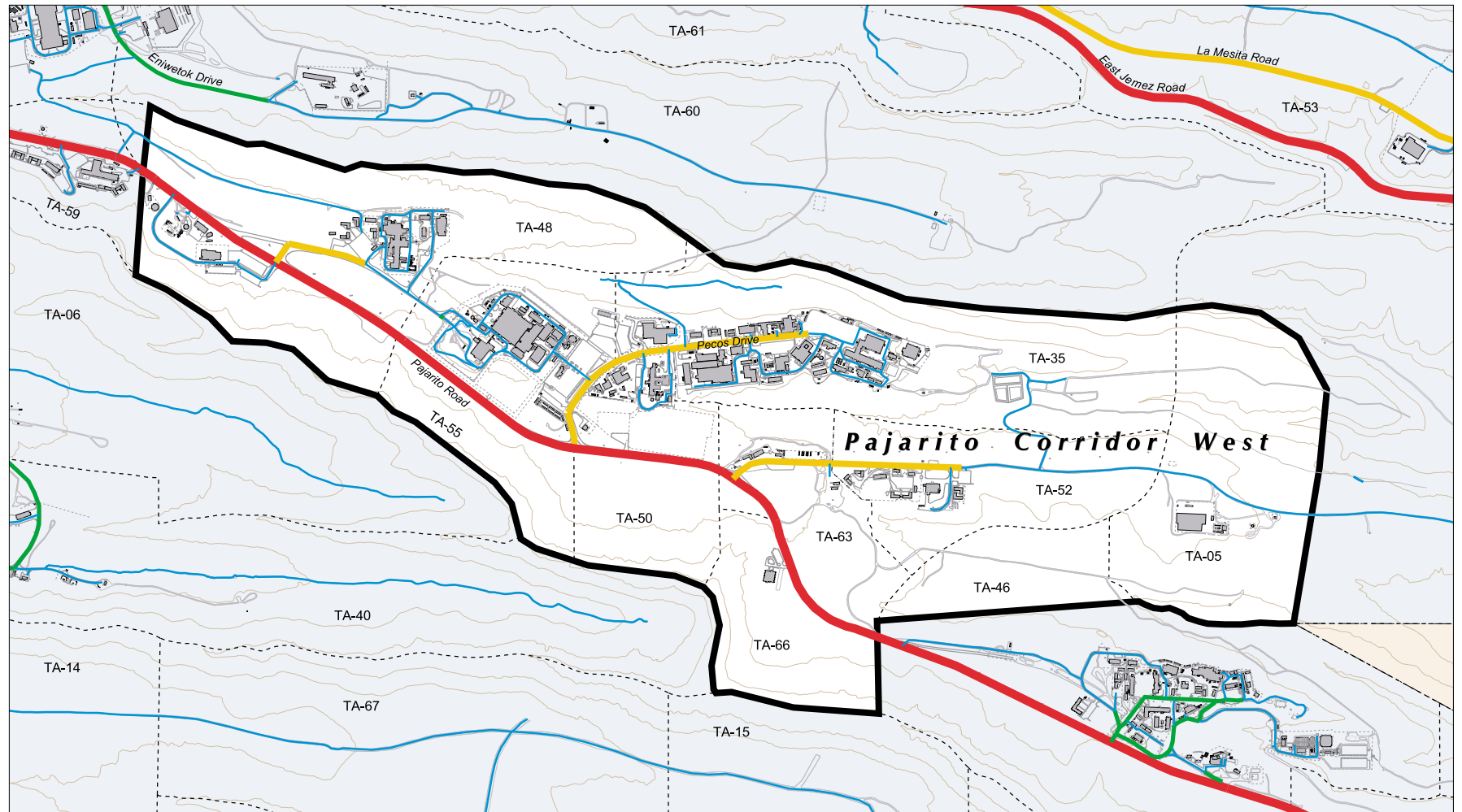
a. Existing Transportation/Circulation/Parking

The transportation system in the Pajarito Corridor West Planning Area is limited to Pajarito Road and the entrances to its TAs. The eastern portion of Pajarito Road in the Pajarito Corridor West Planning Area cuts through two parcels of developable land south of TA-50 and in TA-63. There is only one entrance to TAs -35, -50, and -55 and only one access to TA-35. These conditions, especially given the number of employees working here, create severe safety problems.

Parking is severely constrained in the Pajarito Corridor West Planning Area. With continued consolidation and growth in this area of Nuclear Materials R&D functions, adequate parking is an essential component to any future transportation network.

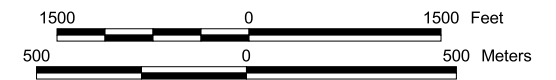
SNM is shipped to and from the Pajarito Corridor West Planning Area, requiring frequent Pajarito Road closure. All roads leading into TAs -15, -36, -39, -49, and -68 are inaccessible to public traffic.

Map IV-C6: Pajarito Corridor West Existing Transportation



LEGEND

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



b. Future Transportation/Circulation/Parking

Whether or not Pajarito Road remains an arterial road due to its planned restricted access, it will be realigned and upgraded for safety and development purposes. A new conceptual bypass road can reroute public traffic south of Pajarito Road through most of this planning area. This new road alignment would begin in TA-63 and proceed west, reconnecting with Pajarito Road at the western end of TA-64. The Pajarito Road bypass is planned in areas that are designated as threatened and endanger species habitat core and buffer zones. Therefore, environmentally sensitive construction techniques are needed and mitigation may be required.

As consolidation and growth continues, additional parking space within individual TAs should be a prime consideration in siting new facilities. A study should be conducted to locate a secondary entrance/exit route for the TA-35, -50, -52, -55 complex, perhaps tying into a proposed road proceeding east from the Sigma Mesa Planning Area.

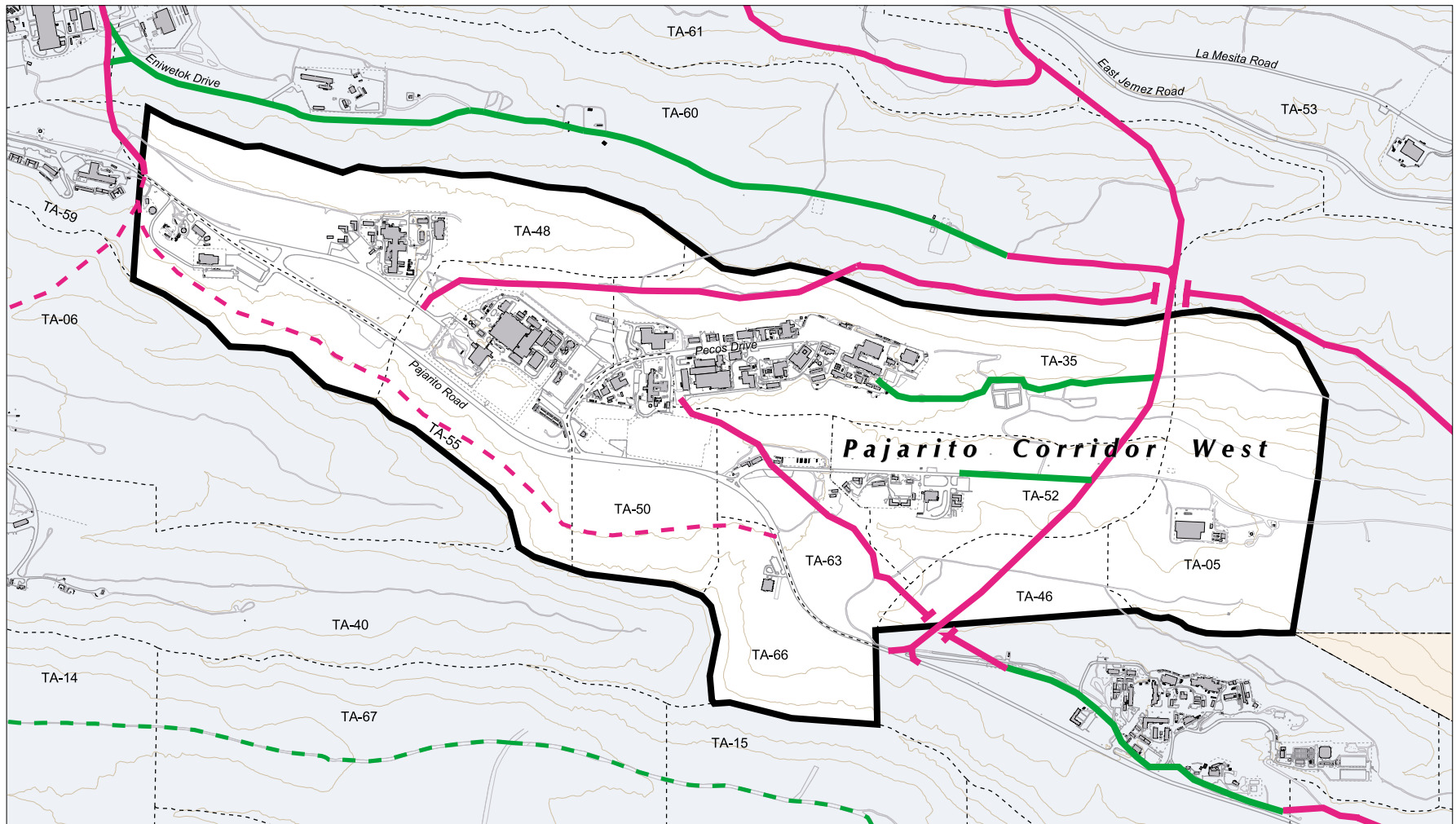
Restricting access to Pajarito Road for security reasons and construction of the proposed perimeter road around TA-03 will limit road closures caused by shipments of SNM. However, the restricted access will transfer traffic from White Rock onto East Jemez Road.

Additional new road construction is needed that will reduce this traffic volume and improve overall safety. A proposed new road will connect TA-55 to Sigma Mesa and continue through to East Jemez Road. Another proposed road will divert traffic from Pajarito Road at the eastern edge of TA-63 and travel north to connect to the new road from TA-55 at the end of Sigma Mesa.

These new roads will allow for SNM material shipments and general truck traffic to proceed, minimizing safety and security concerns or disrupting site wide circulation. Additionally, the roads from TAs-35 and -52 to this second new road will need to be improved, adding a second entrance/exit point to TA-35 and TA-52. Future engineering studies will determine the exact location of all new roads.

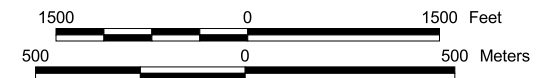
These new roads will travel through areas constrained by wetlands, streambeds, floodplains, and threatened and endangered species habitat core and buffer zones. Therefore, environmentally sensitive construction techniques will be required.

Map IV-C7: Pajarito Corridor West Future Transportation



LEGEND

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



5. Security

The majority of functions in Pajarito Corridor West Planning Area are classified basic and applied research requiring limited-security. These limited-security areas tend to be surrounded by controlled areas. One section of the development area (TA-55) requires Category I and II special nuclear materials (SNM) security protection.

The Central Guard Facility for the entire Laboratory is also located within this development area. It was placed here because of its close proximity to both TA-03 and the SNM complex at TA-55.

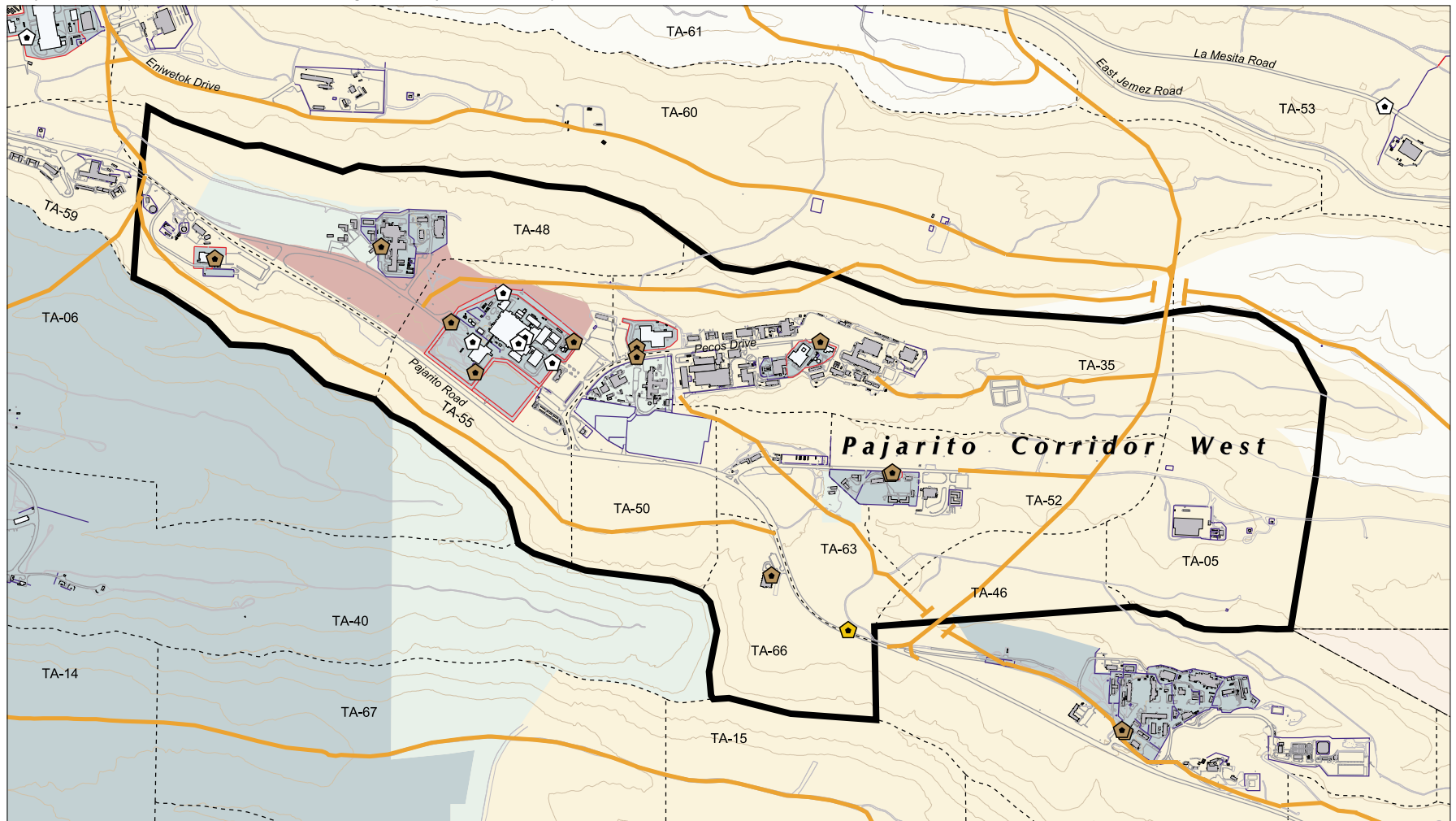
The Laboratory is currently developing strategies for expansion and consolidation of nuclear activities in the Pajarito Corridor West Planning Area. These strategies have significant impacts on security expansion needs and access control along transportation routes. Detailed plans are being developed to define security needs that reflect recent management strategies. Major projects to support relocation of activities from TA-03 are considered for location in the Pajarito Corridor West Planning Area. In addition, there may be new ties to projects at other technical areas, such as LANSCE (TA-53), that could increase security needs.

Areas in southern TA-50, TA-63, and TA-66 designated as future limited security in the 1990 Site Development Plan may be modified to reflect recently identified project and nuclear weapons program consolidation directions.

a. Recommendations

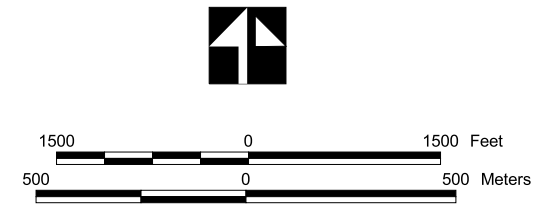
- Continued development of Pajarito Corridor West Planning Area development plans to reflect future security needs.
- Site new programs and all expansion of existing programs requiring limited-security in existing limited-security areas, or expand existing limited-security areas rather than creating new small, separate limited-security islands.
- Site additional programs containing materials access areas and requiring Category I and II SNM security within the SNM complex.

Map IV-C8: Pajarito Corridor West Existing and Proposed 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*

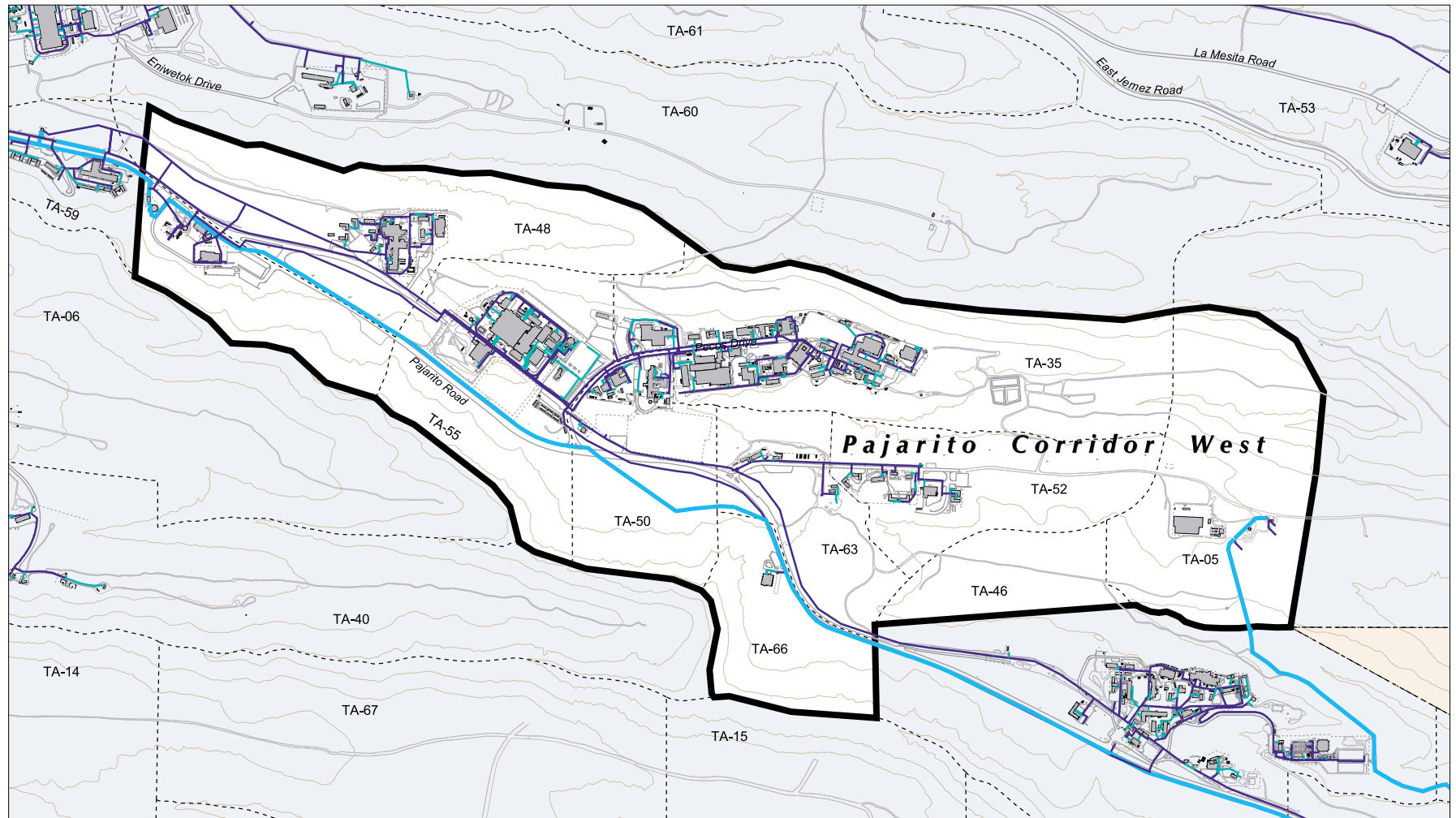
Condition of System: The water distribution system is in good condition throughout the planning area. No projects are required to improve any water system conditions.

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.

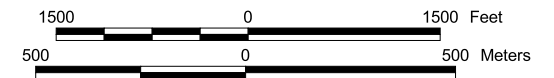
System Capacities: Fire hydrants are typically connected to 6-inch-diameter pipe. Laboratory water service lines that provide water for fire protection need to be replaced if they have diameters that are less than 6 inches.

Map IV-C9: Pajarito Corridor West 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

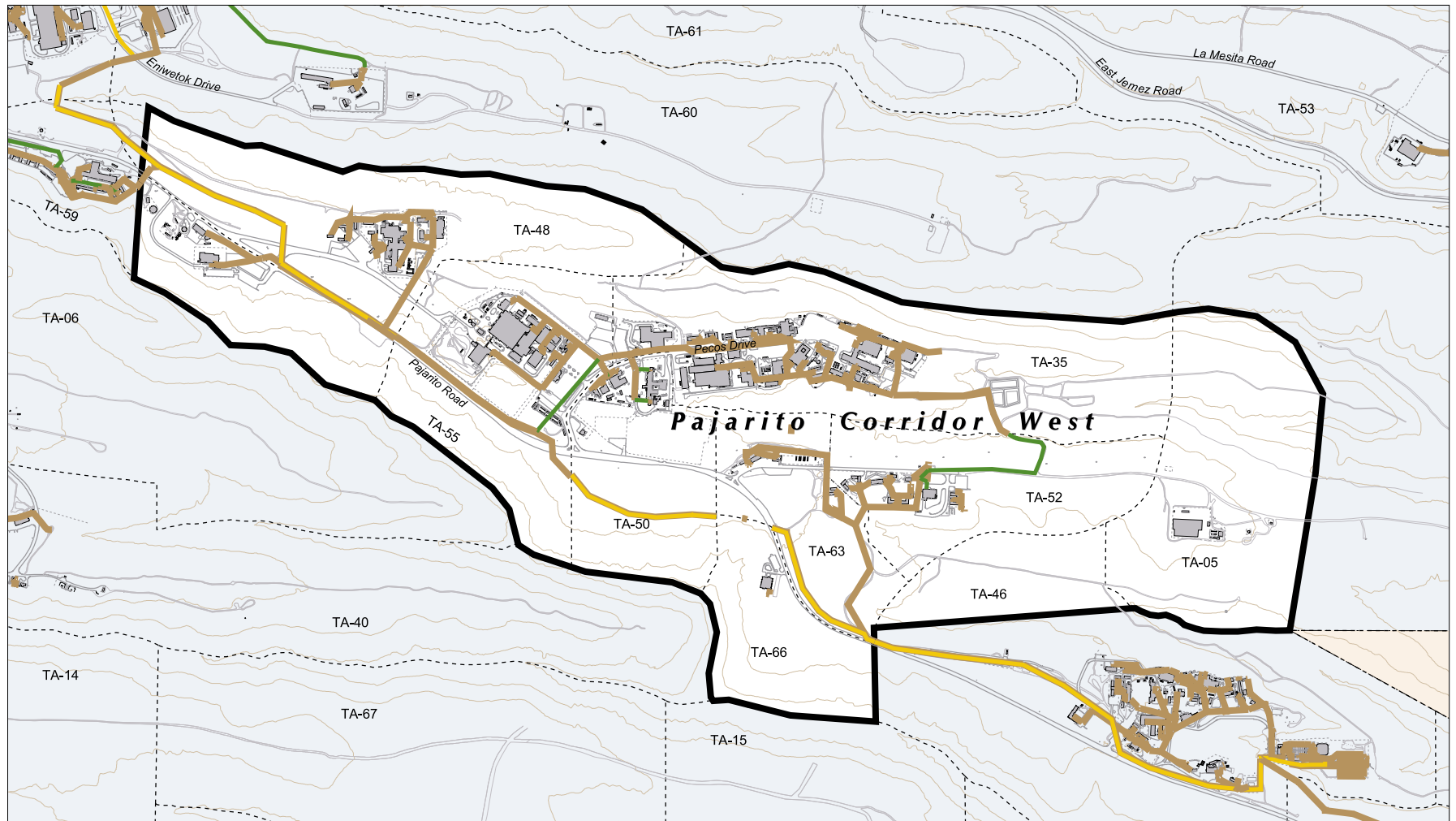
Condition of System: The sewer system is in adequate operating condition.

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 to abandon lift stations where economically feasible and replace them with gravity flow. Those gravity systems will accommodate increased demands and require considerably less maintenance.

Map IV-C10: Pajarito Corridor West Existing Sanitary Sewer System



LEGEND

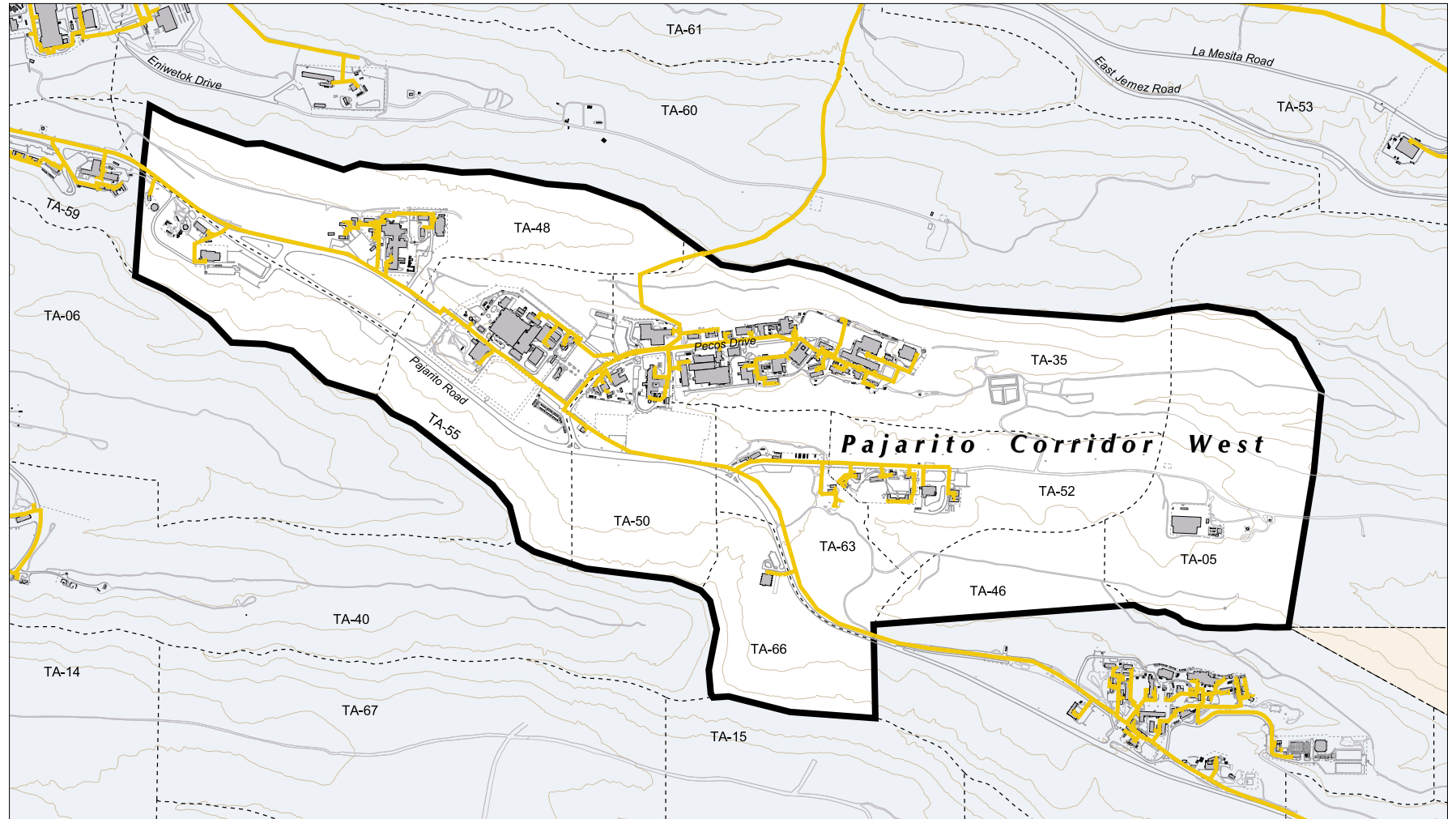
- | | |
|--|--|
|  Gravity Lines |  Dept. of Energy Property |
|  Effluent Lines |  LANL Buildings |
|  Force Main Lines |  Non Dept. of Energy Property |
|  Drain Lines |  Planning Area |
|  Service Lines | |



c. Natural Gas System

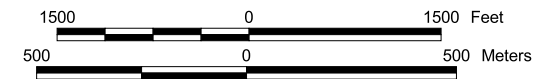
A 3-inch steel pipe in good condition serves this area. However, the pipe continues east into Pajarito Corridor East and is too small to satisfy total capacity demands.

Map IV-C11: Pajarito Corridor West 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

The 13.8kV switchgear at several locations is over 40 years old and is obsolete for the current system. Replacement parts are no longer available. A budget item must be placed in each fiscal year business plan to continually replace inadequate switchgear with the latest vacuum interrupter equipment basis until all have been replaced. Hazardous failures have already occurred and will continue unless corrective action is taken.

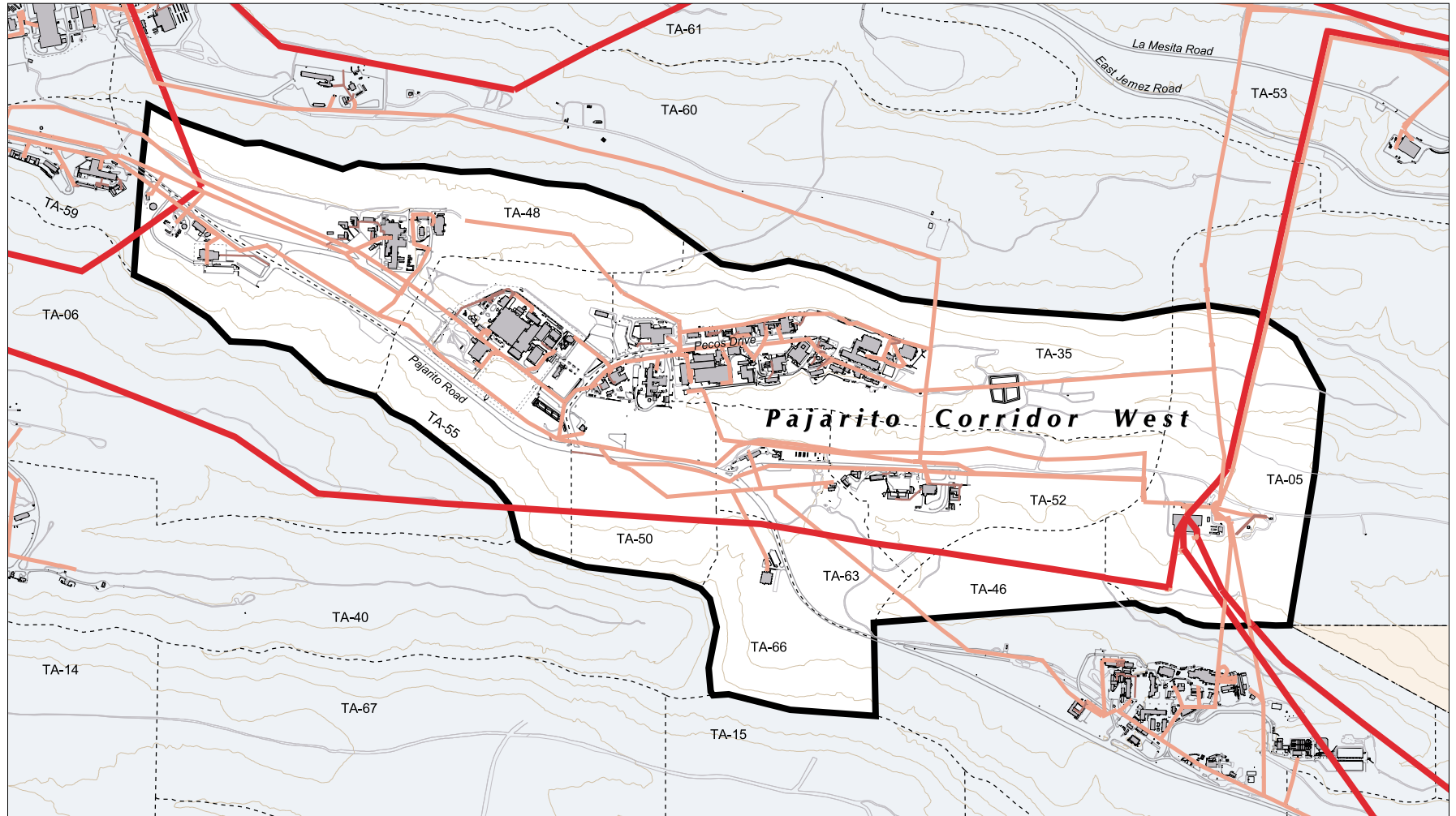
The oil circuit breakers (OCBs) at the 115kV substations are 30 years old and approaching need for replacement. In their present configuration, the OCBs may be inadequate for backup switching for the SF₆ power circuit breakers (PCBs) on the 115kV capacitor banks of for the Static Var Compensator (SVC).

One 115kV/13.8kV step-down transformer provides electric power delivered to the Laboratory and the Los Alamos town site. The transformer was installed in 1969 and should be on a program for replacement. Further, transformer capacity redundancy is presently inadequate. Consideration should therefore be given to adding additional units prior to replacing the older units so that shortfalls in redundancy are corrected as soon as practicable.









There are three remaining transformers that are PCB contaminated. These transformers should either be replaced or refilled with a suitable dielectric fluid to mitigate the PCB concerns.

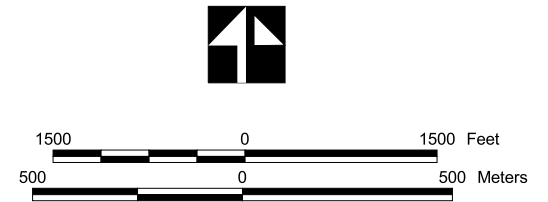
The 115kV Norton transmission line is limited to 120MVA in its present configuration. With the SVC exporting VARs to maintain system voltage, the Norton line is not adequate to carry electrical loads greater than 75MW if the TA-03 power plant and the PNM-Reeves line were out of service. The Norton line can be restructured to a capacity of over 200MVA, so that it can carry existing and future loads alone, but with reliability solely dependent upon its integrity.

Map IV-C12: Pajarito Corridor West 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 facilities within the Pajarito Corridor West Planning Area are newer and in better condition than the Laboratory average. A number of these buildings seem to have a continuing use or reuse. Nevertheless, as with the rest of the Laboratory, a high number of structures need to be replaced. The area has a high number of trailers and transportables that need to be replaced with appropriate permanent buildings.

The Pajarito West Corridor Planning Area is the second largest planning area in terms of facility space and population. It contains 1.2M GSF, or 16%, of the Laboratory’s facility space and 21% of the employee population. Less than 25% of the facility space is in poor or failing condition and about the same amount of space is rated good or excellent. Nearly one-third of employees in the Pajarito West Planning Area work in poor or failing facilities. Laboratory space occupies the largest amount of space, at about 63% of total gross square footage.

Table IV-C2: Pajarito West Facilities Condition

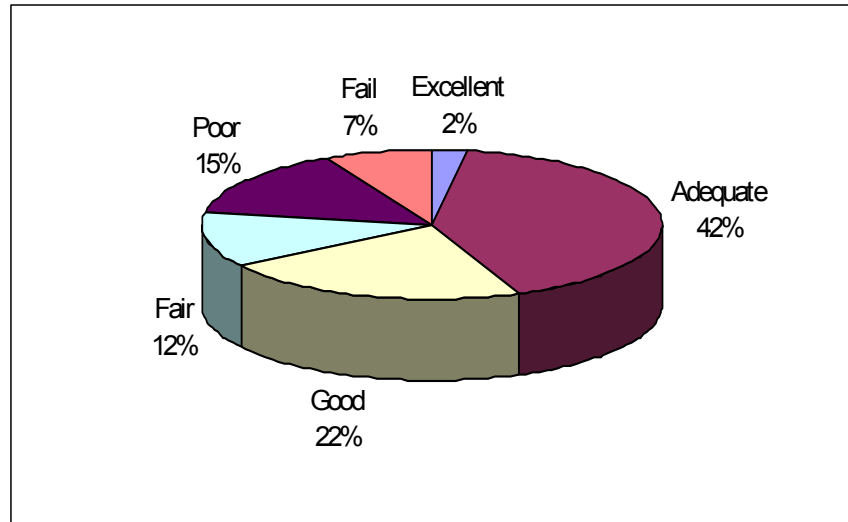


Table IV-C3: Pajarito West Employee Environment Condition

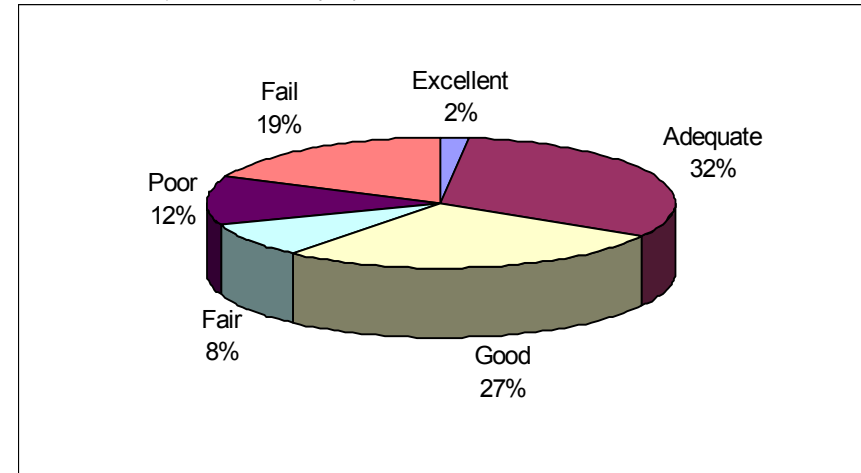
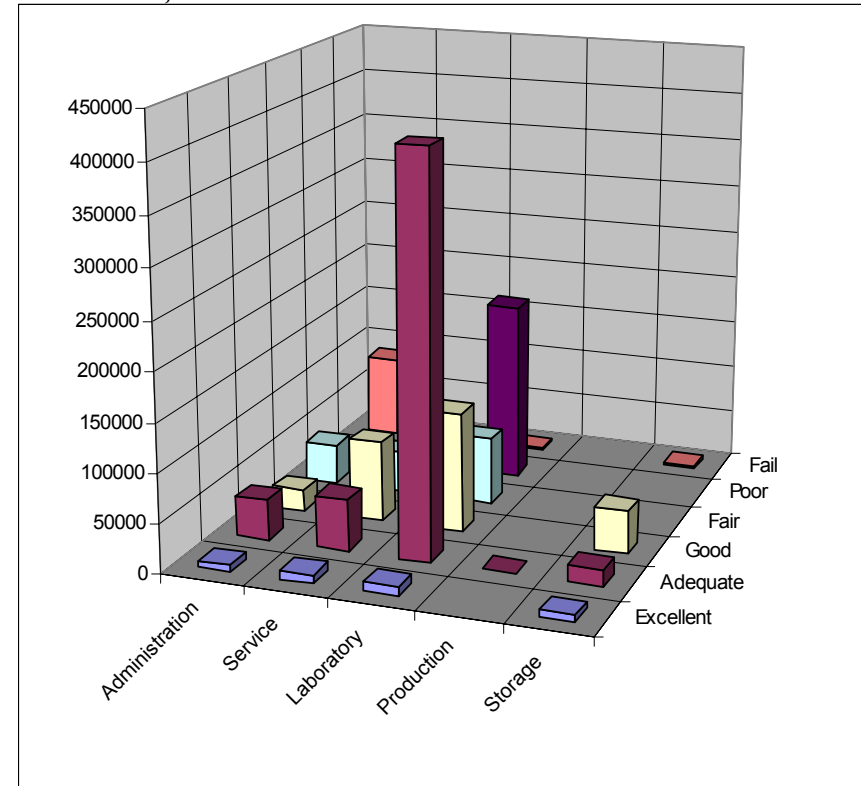


Table IV-C4: Pajarito West Facilities Use & Condition



8. *Environment, Safety, and Health*

The Pajarito Corridor West Planning Area houses PF-4, the Radioactive Liquid Waste Complex and numerous laboratories. These facilities contain hazardous materials of various types. Within TA-35 are several facilities containing various industrial hazards. This planning area has canyons to the north and south. Both canyons are environmentally sensitive, requiring careful review of all future proposed activities and development to ensure appropriate protection of these environments. All of these surrounding areas contain habitat that supports local wildlife and plant life. These habitats can be impacted by the activities within the facilities of the Pajarito Corridor West Planning Area.

9. *Quality Environment*

Within the urban area of the Pajarito Corridor West Planning Area very little land is undeveloped. Most of the area has buildings, parking, roads or urban landscape. The urban landscape is very industrial in character with few spaces reflecting a human-scale environment. It is impossible to walk from one area to another without crossing through non-pedestrian areas like roads, parking lots or loading areas. Where pedestrian paths/sidewalks exist they are substandard in size

The most notable natural areas are the canyon edges. The Laboratory is built within a forested mountain environment of mesas and canyons. However, the lack of trees within the developed areas is indicative of poor development of outdoor human spaces as the Laboratory was built over the years. Even though much of the work of the Laboratory is industrial, these technical areas have not been developed in harmony with our surrounding environment. It is common throughout the Pajarito Corridor West Planning Area to have outdoor storage creating a very industrial urban environment. Along with poor office units such as trailers and transportainers, the quality of environment for the workforce is not very attractive.

<i>Pajarito Corridor West Planning Area Assessment/Needs Summary</i>			
<i>Current Functions/Capability</i>	<i>Current Mission Activity</i>	<i>Forecasted Functions/Capabilities</i>	<i>Plan Discussion</i>
Plutonium Facilities - TA-55			
<i>Plutonium Processing</i>	<i>NWP Manufacturing NWP Surveillance NWP Certification</i>	<i>Continue as current</i>	<i>Missions are somewhat uncertain. Replacement of the CMR facility and possible expansion of the missions at this facility may affect TA-55.</i>
Radio Chemistry Facilities - TA-48			
<i>Radio Isotope Research Labs and Offices</i>	<i>Basic/Applied Research & Tech Development Strategic & Supporting Research & Technology</i>	<i>Continue as current</i>	<i>This area's mission is uncertain. Its proximity to TA-55 makes it a candidate for some of the future activities co-locating at TA-55. However, age and condition of the facilities at TA-48 are a concern.</i>
High Magnetic Field Research Lab Facility			
<i>High Field Magnet</i>	<i>High Magnet Field Research & Development</i>	<i>Continue as current</i>	<i>Facility is highly used and respected. Concern over its location/adjacency to TA-55 may exist.</i>
Atlas Facilities			
<i>Atlas Facility</i>		<i>Relocate to Nevada</i>	<i>Move is part of Integrated Laboratories Strategy.</i>

<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>
<p><i>CMR replacement to TA-55</i></p> <p><i>Create single limited security area (PIDAS)</i></p> <p><i>Locate other programs with Category I&II SNM security to nuclear campus</i></p>	<p><i>CMIP</i></p> <p><i>TMSE</i></p>	○	○	○	○	○	○	○
<p><i>Replace or upgrade facilities in poor or failing condition</i></p> <p><i>Replace or upgrade 33% of work space in planning area</i></p> <p><i>Remove and replace trailers, transportables</i></p>	<p><i>No project</i></p>							
<p><i>This user facility would be incompatible with proposed nuclear campus concepts.</i></p>	<p><i>No project</i></p>							
<p><i>Antares Laser Hall available for new use.</i></p>	<p><i>No project</i></p>							

<i>Pajarito Corridor West Planning Area Assessment/Needs Summary</i>			
<i>Current Functions/Capability</i>	<i>Current Mission Activity</i>	<i>Forecasted Functions/Capabilities</i>	<i>Plan Discussion</i>
NIS Labs and Offices - TA-35			
<i>Research Labs and Offices</i>	<i>Threat Reduction</i>	<i>Continue as current</i>	<i>Facilities need evaluation for refurbishment.</i>
Target Fabrication Facility			
<i>Weapon Fabrications</i>	<i>NWP Manufacturing</i>	<i>Continue as current</i>	<i>Current use may not be its best use. This facility was designed to handle tritium.</i>
Emergency Management Support Facilities - TA-64			
<i>Offices and Storage</i>	<i>Support</i>	<i>Continue as current</i>	
Trident Laser Facility			
<i>Laser Labs</i>	<i>NWP Basic/Applied R&T Development</i>	<i>Continue as current</i>	
Rad Liquid Waste Facilities - TA-50			
<i>Treatment of Liquid Rad Wastes</i>	<i>NWP Manufacturing NWP Surveillance NWP Certification</i>	<i>Continue as current</i>	<i>Facility is aged and processes need upgrading.</i>
High Energy Density Labs & Offices			
<i>Research Labs & Offices</i>	<i>Basic/Applied R&T Development Strategic & Supporting</i>	<i>Continue as current</i>	<i>Facilities are aged and may not be accomplishing current missions.</i>
JCN Craft Support Facilities - TA-63			
<i>Shops and Storage</i>	<i>SSS Craft Support</i>	<i>Function may continue as current but will be co-located with other SSS functions</i>	<i>SSS support functions are to be evaluated and appropriate functions consolidated in Sigma Mesa area.</i>

<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>
<i>Facilities are aged</i>	<i>None</i>							
	<i>Target Fabrication (series of small upgrades)</i>	○	○	○	○	○	○	○
	<i>None</i>							
	<i>None</i>							
	<i>TA-50 Salt Removal Evaporator</i>	○	○	○	○	○	○	○
	<i>None</i>							
	<i>None</i>							

<i>Pajarito Corridor West Planning Area Assessment/Needs Summary</i>			
<i>Current Functions/Capability</i>	<i>Current Mission Activity</i>	<i>Forecasted Functions/Capabilities</i>	<i>Plan Discussion</i>
General Labs & Offices - TA-52/63/66			
Program and Support Offices	-Support -NWP R&T Development	Continue as current	Replace transportables with permanent structures.
Infrastructure Facilities			
Utility Supply & Site Access	All missions in the planning area	Continue as current	<p>Road system: Alternatives need to be evaluated to create a plan to reduce transportation, security and safety conflicts related to nuclear campus.</p> <p>AHF development may need limited access road from TA-55 to possible target site in Mortandad Canyon</p> <p>Utilities: Some utilities may not provide adequate redundancy or second feeds for nuclear campus expansions.</p> <p>Ongoing utility improvements:</p> <ul style="list-style-type: none"> • upsize 3” gas pipe thru TA-55, TA-35 to TA-54 • replace aged piping • add transformer redundancy <p>Quality Environment: Increased staff needs include cafeteria facilities and pedestrian amenitie.</p>

<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>
Most facilities in this area are transportables	GPP/Other buildings Revitalization Program (series of GPP buildings)	○	○	○	○	●	●	●
Alternatives for Pajarito Road: <ul style="list-style-type: none"> • add entry access gates and close to public traffic • realign and upgrade Pajarito Road • bypass area with Pajarito/East Jemez connector road 	Entry Access Gate	●	●	●	○	○	●	●
	Realignment of Pajarito Road	○	○	●	○	○	○	●
TA-55 Road Connection to AHF in Mortandad Canyon	No project							
Add limited access road to connect TA-55 to TA-54	No project							
Add secondary road from TA-35 to proposed new north-south Pajarito/East Jemez connector	No project							
Add parking spaces or structures in area	No project							
Transit improvements	No project							
Utility upgrades	No project							
Relocate/improve cafeteria in area	No project							
Develop pathway system, outdoor interactive spaces	On-going Utility Upgrades	○	○	○	●	●	●	●
	No project							

