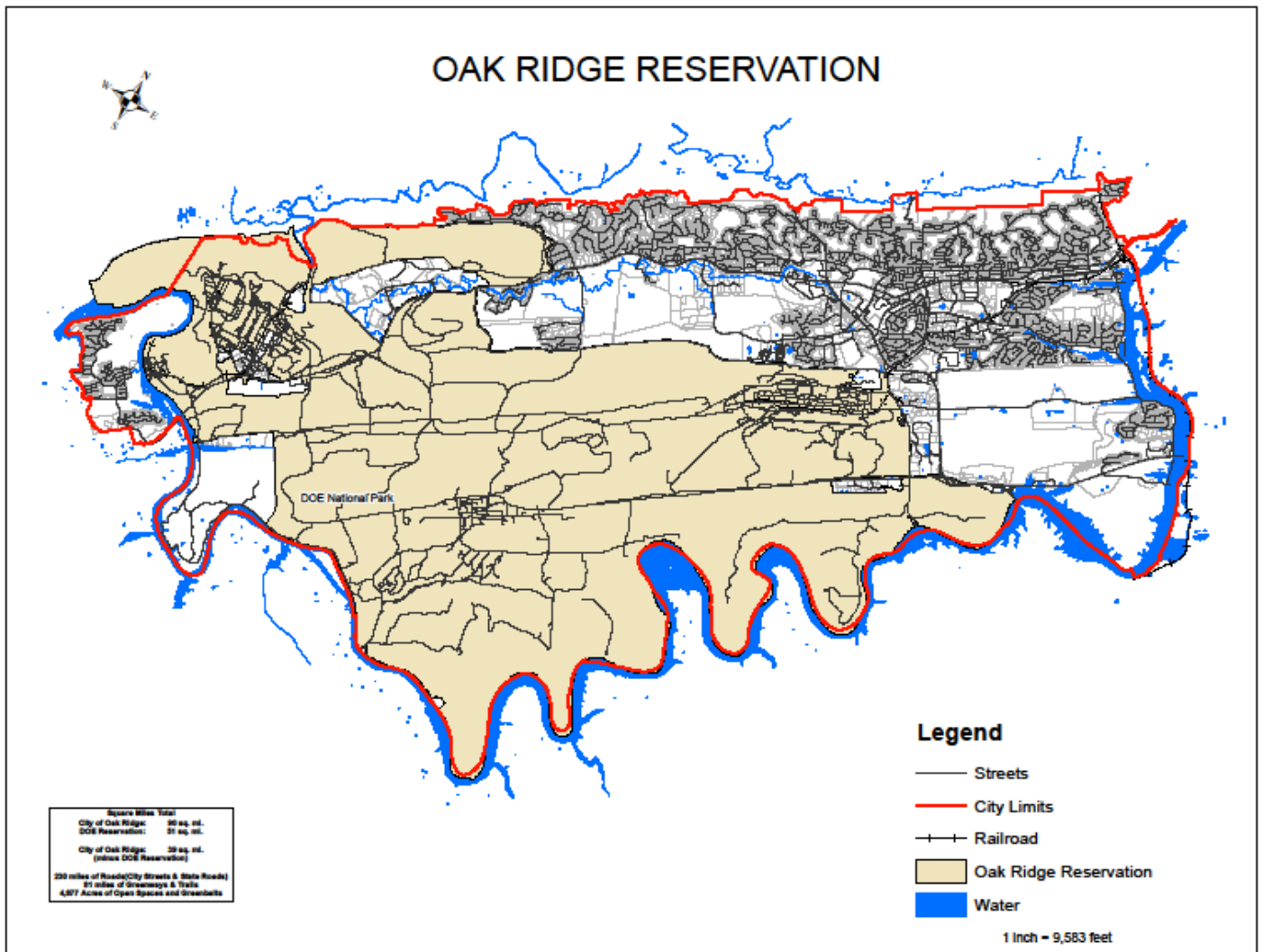


DEPARTMENT OF ENERGY RESERVATION SUBAREA



HISTORY¹

When the Manhattan Project was initiated in the early years of World War II the federal government acquired 58,575² acres of land in the area that would become the Clinton Engineering Works, later the DOE Reservation and Oak Ridge, TN. After the war the area made a transition from war materials manufacturing on a secure site to an open city, adjacent to and supportive of a national defense and peacekeeping facility. Some of the original site was returned to non-federal ownership, for the City of Oak Ridge and for other purposes. The remainder, the federal reservation within the City of Oak Ridge, is now approximately 33,500 acres. It is owned and managed by the U.S. Department of Energy. Much of the land is undeveloped open space. There are six important developed areas on the reservation: the Oak Ridge National Laboratory, the Y-12 National Security Complex, the K-25/East Tennessee Technology Park (described elsewhere in the Blueprint studies as Heritage Center), the Spallation Neutron Source research facility, a National Nuclear Security Administration Office of Secure Transportation facility, and the Oak Ridge Institute for Science and Education (South Campus). The DOE also occupies the Federal Building Complex and smaller buildings within the developed area of the city of Oak Ridge. It should be noted that these facilities are restricted and require some level of clearance for entry.

The City's Blueprint planning process which gives birth to this report continues a long tradition of planning in and around the City of Oak Ridge. After World War II, when the federal government was studying the possibility of allowing the city to transition from federal company town to the status of a public entity governed by its own citizens under state laws, the Atomic Energy Commission engaged Skidmore Owings & Merrill, Architects/Engineers to prepare a Master Plan for Oak Ridge, Tennessee. The firm was already familiar with the site, having been involved in the layout of its original neighborhoods. After the city was incorporated in 1959, a city planning commission was appointed, staff were employed and planning became an ongoing part of local government. Since then a series of plans have been adopted by the city.

A parallel planning process has been taking place on the federal land reservation. In 1975 the Energy Research and Development Administration, successor to the Atomic Energy Commission, published the first *Oak Ridge Reservation Land-Use Plan*. In 1979 Union Carbide published a *Master Plan for Site Development* for the gaseous diffusion plant. In 1980 the U.S. Department of Energy published a new *Oak Ridge Reservation Land-Use Plan* to "establish a basis for long-range land-use planning to accommodate both present and projected DOE program requirements in Oak Ridge." In 1995 Lockheed Martin Energy Systems, Inc. published *Common Ground: A Report to the U.S. Department of Energy on Recommended Future Uses of the Oak Ridge Reservation*. Lockheed Martin also produced *Comprehensive Integrated Planning: A Process for the Oak Ridge Reservation* in 1998. This planning continues today in the DOE, Oak Ridge office, division of Facilities, Information, and Reservation Management.

In this context, this subarea report in the Blueprint series is not a plan. Despite being almost totally located within the city limits, the City of Oak Ridge has no authority to plan for the use of the federal land. This report is intended to be a factual overview of those aspects of the DOE Oak Ridge Reservation that are of interest to decision makers and citizens of Oak Ridge. It has been prepared with the cooperation of the Facilities, Information, and Reservation Management Division of DOE. It is the intent of the City of Oak Ridge and the Division to maintain an ongoing dialogue that will support

¹ Most of the data in this report was pulled from a selection of DOE publications and web sites.

² Comprehensive Integrated Planning: A Process for the Oak Ridge Reservation (Oak Ridge, TN: Lockheed Martin Energy Research Corporation, 1998), ORNL/M 6545, p. 6.

cooperation in planning for the interests of the citizens of Oak Ridge and the mission of DOE. Both parties will benefit by keeping each other informed about the status and plans of their respective territories.

This report will provide a very brief description of each of the six developed areas within the Reservation followed by a general description of the character of the remainder. The report will conclude with comments about areas within the Reservation that might become available for transition from federal to municipal or private ownership. This report does not make recommendations regarding disposition of DOE property. Some of the information and ideas in the report may be part of an agenda for ongoing discussions between the city and DOE.

MAJOR DEVELOPED AREAS IN THE RESERVATION

The Oak Ridge National Laboratory

ORNL is the largest science and energy national laboratory in the DOE system. It is managed for DOE by UT-Battelle, a partnership of the University of Tennessee and Battelle Memorial Institute. It houses one of the world's largest supercomputers and is engaged in a broad array of neutron science, nuclear energy and related research. The main laboratory area covers almost 1,000 acres with an additional buffer area of approximately 3,500 acres. Much of the buffer is used for scientific research. The main laboratory area is a dense urban site with numerous buildings crowded into a small space. It includes some of the oldest buildings and infrastructure in the national laboratory system. Today there are about 4,400 workers at the site, formerly known as X-10. Given its location and linear development pattern in Bethel Valley, the natural place for expansion of the laboratory is west in Bethel Valley. It is reasonable to assume that area will not be available as a growth area of the city.

Y-12 National Security Complex

The original Y-12 complex began operations in 1943. Today it is the only source of the nation's enriched uranium weapons components. It supplies enriched uranium for the U.S. Navy. Its staff are world leaders in materials science and precision manufacturing. It is also a storage facility of enriched uranium. Extensive mercury remediation has taken place at Y-12 in the years since WWII. The inner industrial complex of Y-12 occupies approximately 850 acres in Bear Creek Valley. There is a buffer zone of another 2,570 acres around the plant. Given its linear configuration, it is reasonable to expect that any expansion of the facility would occur west and south in Bear Creek Valley and that the area will not be available for expansion by the city.

The East Tennessee Technology Park (Heritage Center)

This site was originally known as K-25, where the nation's first gaseous diffusion plant for enriching uranium was constructed. Gaseous diffusion operations ceased in 1985. The area was renamed the East Tennessee Technology Park in 1996, when an extensive cleanup and remediation program was initiated. Sites within the park also began to be transferred to private ownership for new industrial uses. Today the Community Reuse Organization of East Tennessee is taking over the effort to transfer land from federal to private use as DOE decides which sites to release. The area also includes an installation of the Manhattan Project National Historical Park to preserve and interpret the history of the location and its contributions to national defense.

The Spallation Neutron Source

The SNS is technically part of ORNL, but is described separately here because it occupies a somewhat separate physical location. SNS is a unique research facility that draws scientists from around the world. It "produces neutrons with an accelerator-based system that delivers short proton pulses to a target/moderator system, where neutrons are produced by a process called spallation."³ It attracts researchers from a broad range of scientific disciplines with applications ranging from basic research to manufacturing. The addition of this facility to the concentration of science in Oak Ridge demonstrates the importance of the reservation as a place where new DOE missions can be accommodated. The land inventory of the reservation provided a place to add a new DOE mission in a location that complemented existing research at ORNL and in the Oak Ridge scientific community.

The National Nuclear Security Administration Office of Secure Transportation

This agency is responsible for research and training of personnel who provide for secure movement of nuclear materials within the U.S. It has a facility on the Oak Ridge Turnpike at Blair Road, near the East Tennessee Technology Park. It also has use of more than 1,700 acres of land on the reservation for research and training purposes.

³ Spallation Neutron Source, <https://neutrons.ornl.gov/sns>

The Oak Ridge Institute for Science and Education (South Campus)

This agency is housed in a facility at the intersection of Bethel Valley Road and Pumphouse Road. It assesses and analyzes the environmental and health effects of specific hazardous materials and manages education programs to assure a good supply of scientists and technicians to meet future science and technology needs. The ORISE site occupies about 124 acres of land. It is not expected that any additional land will be necessary for this facility.



The DOE Administration Building

This building is located in east Oak Ridge, stretching between Administration Road and Laboratory Road. It is a block south of the Oak Ridge Turnpike. There is a generous supply of off-street parking. A sizeable lawn is in front of the building, separating it from the offices of the DOE Inspector General, Oak Ridge. The Joe L. Evans Administrative Building houses offices of DOE and related federal agencies in Oak Ridge.

THE DOE RESERVATION

The bulk of the Reservation consists of lands outside the specific sites described above. The DOE Reservation and the City of Oak Ridge lie in the great valley between the Cumberland Plateau and the Great Smoky Mountains. The typical landscape in this region consists of ridge and valley formations running generally southwest to northeast. Significant portions of the land inventory has development limitations imposed by the characteristics of the landscape. These limiting features include excessive slopes, flood plains, and geologic conditions. Excessive slopes can easily be identified on topographic maps. Areas subject to flooding have been identified along the Clinch River in the southwest and west sections of the Reservation, along East Fork Poplar Creek in the urbanized portion of Oak Ridge and near Horizon and Heritage Centers, and along Melton Branch and White Oak Lake near Jones Island. Limiting geologic features include the Knox and Chickamauga formations where the underground water table is subject to long distance transmission of pollutants and where sinkholes are common.

The remainder Reservation land is generally undeveloped woodlands. More than half of the soils in the area are considered not suitable for agriculture, crops or pasture, for reasons of soil composition, excessive slope, or institutional control. Managed forests is one of the best uses that can be made of much of this land until or unless the areas with moderate slopes that are outside floodplains are developed by DOE for its own purposes, or land is developed as expansion of the urbanized area of Oak

Ridge. Approximately 1,500 acres of land are being protected from activities that would alter the land's unique character. These special areas include archeological sites, antiquities, and about 30 cemeteries.

A detailed description of environmental conditions on the Reservation can be found in the Oak Ridge Reservation Annual Site Environmental Report which is summarized in the Introduction to the Oak Ridge Reservation published online by the DOE Information Center. The Reservation has a The National Environmental Research Park designation, one of the most intensively monitored and measured natural environments in the world. In this sense, land which looks to the average person like it is fallow and unused, is actually being used in a continuing process of environmental research.

Historic preservation plays an important role in the maintenance of the DOE inventory of property. There are several sites in the Reservation that are listed on the National Register of Historic Places.

- X-10 Graphite Reactor: A National Historic Landmark on the grounds of ORNL. This first continuously operated nuclear reactor went into service in 1943, as a pilot demonstration of the production of Plutonium. It ceased operations exactly twenty years later, in 1963. It is available for visits as part of a tour from the American Museum of Science and Energy. It will be an element in the Manhattan Project National Historical Park.
- Y-12 National Security Complex: A secure site within the Reservation. Its core mission is to provide a safe, secure, and reliable nuclear system deterrent. Parts for the U. S. nuclear weapons stockpile are manufactured, maintained and dismantled here. Y-12 plays roles in decommissioning weapons systems and providing secure storage of materials. Uranium from decommissioned weapons is converted for use in naval reactors.
- K-25 Building site (See separate report on the ETTP/Heritage Center): Now being converted into a Manhattan Project National Historical Park site.
- Freels Bend Cabin: The oldest structure in Oak Ridge, constructed in 1844. It is located near Melton Hill Lake on Freels Bend Road, off Bull Bluff Road.
- New Bethel Baptist Church and Cemetery: Founded in 1851, the building was constructed in 1924. The church is located on Bethel Valley Road near ORNL.
- George Jones Memorial Baptist Church and Cemetery: Founded in 1854, the building was built in 1901. It is located on Wheat Road, off of Blair Road near the ETTP/Heritage Center. It was closed by the Manhattan Project when the K-25 plant was started.
- Oak Ridge Turnpike Checking Station
- Bear Creek Road Checking Station
- Bethel Valley Road Checking Station: After Oak Ridge was opened to public access these three gatehouses were erected (1948-49) to control access to Atomic Energy Commission production and research facilities. They were placed on the National Register of Historic Places in 1992.



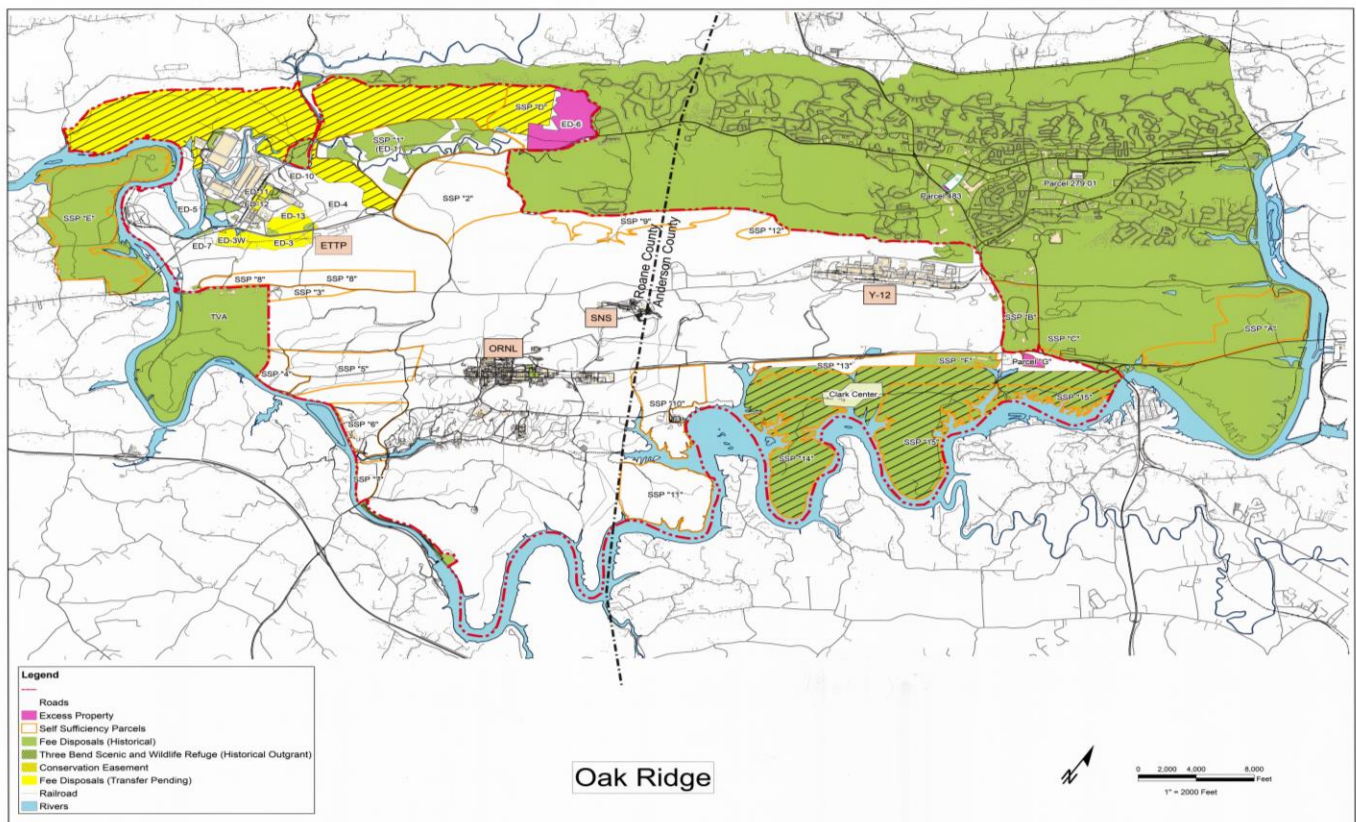
One of the historic checking stations

A major effort is underway to install facilities at the Heritage Center, the former K-25 site, to commemorate the role of the K-25 gaseous diffusion plant in WWII and later activities. It will include a viewing tower and a museum.

RESERVATION LOCATIONS OF SPECIAL INTEREST

The City of Oak Ridge and the DOE have mutual interests in those non-mission locations that could become available for transfer from Reservation status to private or public use. The fact that they have been identified as potentially available does not mean that a firm decision has been made to give them up. When a formal application is made to make such a transfer there is a review process within DOE to make sure no part of DOE or some other federal agency wants to claim the land for their own current or potential future missions. Land can be released to non-federal ownership only after that review. The locations where this is most likely to occur are known as Self Sufficiency Parcels.

Self-Sufficiency Parcels (SSP) were originally identified in the early years of the transition of the city from federal manufacturing site to independent city under the statutes of state government. Part of that process was an effort to wean the city from dependence on federal financial support. The full history of that process is beyond the scope of this report.⁴ It is relevant to understand that the process included the periodic transfer of select parcels of land from federal ownership to the ownership of the city, some other public entity, or private parties. The basic intent was to support development of the urban area of the city and in so doing to grow the population, job opportunities and tax base. The properties identified as SSP parcels on the map below were identified in that process. They date from 1995. DOE representatives have indicated that SSP "4" and SSP "8" and some others are unlikely to be released from DOE use anytime in the foreseeable future. SSP "2," SSP "9" and SSP "12" are described below because they may be open for negotiation between DOE and the city. SSP "14" and SSP "15" are also described because they could be of special interest to the city.



⁴ For details of the "Self Sufficiency Parcels" program see Application for Renewal of Annual Assistance Payments to the City of Oak Ridge, Tennessee Under the Atomic Energy Community Act of 1955 (Oak Ridge, TN: Oak Ridge City Council & Mayor David R. Bradshaw, 2003)

SSP "2"

This 850 acre site is located at the intersection of the Oak Ridge Turnpike, State Route 95 and State Route 58 immediately south of the Horizon Center. It is an undeveloped woodland and meadow lands site traversed by a major electrical transmission line. It lies at the end of East Pine Ridge where the steep slopes of the ridge moderate into broad areas of gently sloping land. It should be possible to extend city utilities into the area. Given its accessibility and location midway between Heritage Center and the concentrated area of urban development to the east, it appears to be a prime site for potential transfer. It would lend itself to residential or mixed-use residential/commercial development.

Questions about this site as a case of urban sprawl might be raised if it is looked at only in the context of current conditions. It is quite removed from the current center of activity in the city and there is much open space between them. The rationale for development of this site is the most reasonable in the context of further development of the western side of the city over time.

SSP "9" & SSP "12"

These are two linear sites in the valley between East Fork Ridge and Pine Ridge, extending west from the Tuskegee Drive area and skirting below Southwood. They would provide a way to link the Scarboro/Burnham Woods/Groves Park Commons communities with Southwood and new development further west at the SSP 2 location, with 345 plus 90 or more acres of developable land. The valley is relatively narrow but there are buildable sites in the valley and lower slopes of the ridges that could accommodate attractive residential development. For the city, it would provide a way to create a transportation and utility corridor, south of the Turnpike, linking the Main Street area with the western edge of the city.

SSP "14" & SSP "15": The Three Bends

The City of Oak Ridge is bounded by water on three sides; by the Clinch River on the west and south, and by the Clinch River, as Melton Hill Lake, on the south and east sides. In spite of this extensive waterfront, there is little residential waterfront development. Self Sufficiency parcels "14" and "15" are mentioned here because they are sometimes seen as a potential residential development sites. But they are already dedicated to other purposes. First, they are the scene of long term scientific research and environmental monitoring by DOE scientists. Second, the area has been designated by former Secretary of Energy Bill Richardson and officials of the Tennessee Wildlife Resources Agency as the Three Bend Scenic and Wildlife Management Refuge Area. It is dedicated to the preservation of endangered plant species and special habitats.⁵

Clark Center Park

This 80 acre park is located on the Melton Lake Reservoir (Clinch River) south of Bethel Valley Road, with access off Bull Bluff Road via Pump House Road. Operated by DOE, it was originally called Carbide Park. Facilities include two picnic areas, a playground, restrooms, two ballfields, a boat ramp and a swimming area in the river. The facilities need maintenance and improvement to comply with ADA regulations. The DOE made an offer to transfer the park to the city a few years ago. The offer was turned down because of the cost of bringing facilities up to date and the prospect of on-going operational costs. (DOE was spending approximately \$300,000 per year to operate the park at that time.)

⁵ U.S.D.O.E. press release, 6/23/99, <http://www.aforr.org/3bend.html>



Clark Center Park

BIG PICTURE CONSIDERATIONS

A decision by the City of Oak Ridge to seek ownership or development of any of the SSP sites will involve a consideration of pluses and minuses. Opening up new land for development of housing supports the goals of providing a broader range of housing choices to prospective residents. But, contrary to popular belief, residential properties seldom generate enough revenue in property taxes to pay their own way. Building collector streets and extending public utilities to the sites would be an investment in the future, but even with high end housing, it would not be cost neutral. If some high density housing, commercial or industrial/office were associated with these developments, and if they supported more industrial development in Horizon and Heritage Centers, the city's economic health would be improved.

The City of Oak Ridge has an interest in the decisions that will be made by DOE on release of additional Reservation land. Which lands, how much land, to whom, and for what purpose, are all important considerations. They can have important consequences; short term on city tax rates and other budget impacts; long term, on the development patterns and character of the city.

Long term, DOE has a commitment to return land that it does not need to private or non-DOE public use. But, it must also preserve any lands that may be needed to fulfill its mission. What that mission may be in the future cannot always be known. One of the reasons the Spallation Neutron Source is in Oak Ridge is because there was a place to locate it in the Reservation. In this context, DOE will proceed with caution.

Long term, Oak Ridge will need additional land for development; residential, commercial or industrial. There must also be a consideration of opportunity costs associated with lack of development. DOE does not pay normal property taxes to the city. But the City must be cautious about the short term costs associated with installing new infrastructure to extend services when older infrastructure in developed areas of the city require attention.

The City of Oak Ridge and DOE are both committed to an ongoing dialogue in which they try to keep each other informed to the extent possible about their plans and ambitions. This is the most productive context for decisions that will serve the interests of both parties.