5.11 LAND USE AND VISUAL RESOURCES

Land use and visual resources consider a ROI that includes the ORNL main site (Bethel Valley) and adjoining properties, such as ORNL facilities in Melton Valley, Chestnut Ridge, and the Y-12 National Security Complex. The potential effects to land use that could result from implementation of Alternatives 2, 3, or 4 are compared with existing land use patterns (Alternative 1 - No Action) below.

Visual resource analysis considers an ROI which includes only those lands from which ORNL facilities are visible (viewshed). Potential effects to these resources associated with changes in the existing landscape character that could result from any new facility construction or operation activities under the action alternatives are discussed below.

5.11.1 Alternative 1 – No Action

There would be no change in land use at ORNL or the surrounding area under Alternative 1. There would be no FRP construction or renovation activities under this alternative. Therefore, there would be no adverse additional effects to visual resources, and ORNL would continue to be classified as a VRM Class IV Site and the surrounding land as Class II and III.

5.11.2 Alternative 2 – Remodel

Under this alternative, ORNL land would continue to be used for R&D activities which would take place within current facilities located in Melton and Bethel Valleys, and at the Y-12 National Security Complex. There would be no FRP construction and a limited amount of remodeling, deactivation, and demolition activities would be performed within the developed area of ORNL. There would be no change to land use as a result of implementation of Alternative 2.

The demolition of Buildings 2000, 2001, 2024, and 2019 could affect visual resources in central ORNL. The potential effects from this would be handled through consultation and mitigation for the buildings' historic value and are discussed in Section 5.5. Most activities would be performed internally and would

not be noticed outside the ORNL fence-line. However, there could be minimal and short-term visual impacts from construction equipment and material lay down areas. All activities would be within the ORNL boundaries and would not change the site's VRM Class IV or surrounding area's II and III classifications. Continued management of ORNL land would focus on limiting construction and future research activities to within current site boundaries, preserving the character of the surrounding landscape in accordance with End Use Working Group and Common Ground Stakeholder recommendations.

5.11.3 Alternative 3 – Brownfield

If Alternative 3 were implemented, the effects discussed under Alternative 2 would be expanded as a result of remodeling, deactivating, and demolishing additional buildings. In addition, FRP facilities would be constructed in Bethel Valley on Brownfield Sites within the main ORNL area, in Melton Valley, and within the footprint of the SNS facility. This would include facilities funded by DOE, the state, and by the private sector.

Transferring up to 20 ha (50 acres) of land from DOE to the private sector or the State of Tennessee would change its use classification from DOE-designated categories to non-DOE municipal zoning, but would have little effect on how the land is actually used.

The proposed arrangement of new FRP buildings (Figures 3.3-4, 3.3.-2, and 3.3-3), and their proximity to existing ORNL facilities and resources within the site boundary, would minimize the area required for new development and would not change surrounding and existing on-site land use at ORNL. The plans for the new FRP facilities would be consistent with recommendations made by the End Use Working Group and Common Ground stakeholders (SSAB 1998 and LMES 1995).

Short-term effects to visual resources related to construction activities (i.e., dust, construction materials and equipment) would occur over the next 10 years. Negative effects of this type would be limited to on-site, adjoining properties and to passing traffic for FRP activities in both Bethel and Melton Valleys. Construction within the SNS footprint would occur concurrently with construction of the SNS facility and would not be distinguishable from the visual and land use effects resulting from SNS construction.

Long-term effects to visual resources would be limited to the view of the constructed facilities. The FRP facilities constructed on the floor of Bethel Valley would only be visible from land-based vantage points along Bethel Valley and Melton Valley Roads. Construction within the SNS footprint would not be visible to the public from land-based vantage points outside the ORR and from most points on the reservation, including points along Bethel Valley and Bear Creek Roads (DOE 1999a). The FRP facilities constructed near SNS (the JINS, the CLO, and the Center for Nanophase Materials Science) are not expected to come into view along the upper reaches of Chestnut Ridge Road and the SNS access road.

Architectural consistency would be provided within Bethel and Melton Valleys to ensure blending of FRP construction with the existing strategic structures while allowing state-of-the-art improvements in building sustainability designs. The proposed site layout calls for access security controls on a building-by-building basis which would result in the elimination of the current fence boundary around the proposed East and West Campuses. Efforts would be made to keep the natural areas on the hillsides overlooking ORNL to the north maintained in their current state, maintaining the site's VRM Class IV designation. The surrounding land's Class II and III classifications would remain intact. Consistent with the VRM IV classification described in Chapter 4, every attempt would be made to minimize the effects of construction through careful location, minimal disturbance, and repeating the basic elements during the design process for the facilities.

5.11.4 Alternative 4 – Greenfield

If Alternative 4 were implemented, FRP facilities would be constructed Bethel Valley on a "Greenfield Site," as well as in Melton Valley and within the SNS facility footprint. The potential effects from remodeling, deactivation, and demolition activities would be the same as those likely to result from implementation of Alternative 3. The Greenfield Site would be located across Bethel Valley Road to the north of the ORNL main site, and is currently undeveloped and well-vegetated. There are no permanent or temporary structures located on the site. Land surrounding the site is for the most part undeveloped except for a few ORNL administrative and support facilities.

As with Alternative 3, transferring up to 20 ha (50 acres) of land from DOE to the private sector or the state would change its use classification from DOE-designated categories to non-DOE, municipal zoning. Under Alternative 4 how some of the land is actually used would also be affected. It would change the land use designation for the Greenfield acreage [up to approximately 18 ha (45 acres)] from Mixed Research/Future Initiatives to Institutional/Research. Acreage within the SNS footprint is already classified as Institutional/Research.

The Greenfield Site (Figure 3.4-1) would be proximate to existing ORNL facilities and resources and is situated along an existing roadway, somewhat minimizing the need for additional infrastructure development for a Greenfield Site at ORNL and realizing most FRP goals. Constructing new FRP facilities on the Greenfield Site would not be consistent with recommendations that additional development be on previously disturbed sites in order to preserve undisturbed land (SSAB 1998). However, the Greenfield Site in Alternative 4 is not within a Conservation Area or within the buffer area for the Walker Branch watershed as identified by the Common Ground stakeholders (LMES 1995 and DOE 1999a).

Both short- and long-term effects to visual resources would occur over the next 10 years, just as described for Alternative 3. Short-term effects to visual resources would be related to construction activities (i.e., dust, construction materials and equipment). Long-term effects to visual resources could be mitigated by the architectural consistency and security measures as in Alternative 3. Efforts would be made to keep as much of the existing vegetation on the site intact during construction and any surrounding areas disturbed by FRP activities would be reseeded and allowed to return to its natural state. Development of the Greenfield Site would be consistent with the VRM IV classification for the overall ORNL site. However, it would downgrade its current VRM Class III designation.