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PHASE 1 EAST REGION CONSOLIDATION – NORRIS PROPERTIES
SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT

Anderson County, Tennessee

July 9, 2019

Background

In January 2019, the Tennessee Valley Authority (TVA) issued a Finding of No Significant Impact (FONSI) and finalized the *Phase 1 East Region Consolidation – Norris Properties Environmental Assessment* (Phase 1 Final EA) which evaluated Phase 1 of TVA's proposal to relocate portions of TVA operations into one location to improve space utilization and to reduce TVA cyclic operations and maintenance and capital project costs consistent with TVA's real estate strategy. The project would consolidate similar functions to achieve work process efficiencies while fostering greater synergies among employees. TVA is proposing to relocate the Inspection, Testing, Monitoring, and Analysis (ITMA) program from Summer Place Building, aquatic laboratory (lab) from Walnut Orchard, water quality lab from the Greenway Area Office building (Greenway), and associated equipment storage needs to the Norris Engineering Lab Complex (Engineering Lab).

The Phase 1 Final EA evaluates the potential impacts associated with interior renovations of structures at the Engineering Lab, and exterior work focused primarily in the southern and eastern portions of the property. Phase 1 exterior actions include the demolition of two small boat sheds and Building I, clearing of trees, installation of lights and cameras for security, construction of a stormwater detention pond, trenching and groundwork in the vicinity of Buildings B and I, repaving/reconfiguring of parking areas, and construction of a new boat shed(s) in the vicinity of Building I.

In February 2019, TVA identified the need for moderate renovations to the interior of Building C for remediation of water intrusion, mold, and asbestos, the need for grading and additional tree removal in the area north of Building I to accommodate the Phase 1 activities, and replanting of a vegetative barrier south of Building B. Therefore, TVA performed additional analysis of potential effects in the *Revised Phase 1 East Region Consolidation – Norris Properties Environmental Assessment* and issued a Revised FONSI in March 2019.

On May 9, 2019, TVA discovered that approximately 500 cubic yards of removed overburden from the Phase 1 site and currently located within spoil piles on the site contain contaminants at levels determined to be unsuitable for reuse as fill material and would need to be transported to an offsite waste landfill. For Phase 1 construction activities to continue, TVA requires an offsite disposal option for these soils.

An additional issue that has come to light concerns the stability of the basement of Building D at the Walnut Orchard site. In 2016, TVA removed Building D at Walnut Orchard (Categorical Exclusion Checklist [CEC] 35080). At the time of removal, retaining walls in the basement were left in place to provide long-term stability pending future disposition. In 2019, TVA completed CEC 39785 for removal of the remaining block wall and footers of the former Building D basement, to fill the basement with excess soil and to grade the site to the previous site contours. Since TVA has begun removing the block wall and footers, the basement cannot remain open because of long-term stability and safety concerns. A one-lane, dead-end driveway passes adjacent to the open area and only temporary barriers are in place as a safety measure. Filling the basement and achieving a final grade at the site would require approximately 1,800-2,000 cubic yards of fill material.

Figure 1. Engineering Lab Property (approximate property boundary in yellow) with Phase 1 construction and soil removal area highlighted in green (with red outline)

In preparation for offsite transport of soils, TVA collected soil samples from the top 8 to 12 inches of soil and completed the following analyses: 8082A - Standard PCB List 9 Aroclors; Safe and Environmentally Responsible Waste Management, TN EPH-TPH C12-C40 standard Range; and 6010B – TCLP RCRA Metals List. A total of 16 locations were sampled. The results

of the analysis indicated that in a few locations, polychlorinated biphenyls (PCBs) and extracted petroleum hydrocarbons (EPHs) are present in the soil at levels unsuitable for reuse as fill. The EPH and PCB contaminants were from an unknown source; all structures and materials had previously been cleared from the site prior to soil testing.

Prior to receiving the results of the soil samples, approximately 1-2 feet of overburden across the project site had been removed and placed into spoil piles within four quadrants on the site. TVA has determined that approximately 500 cubic yards of the removed overburden within these spoil piles contain contaminants at levels determined to be unsuitable for reuse as fill material and would need to be transported to an offsite waste landfill based upon the EPH and PCB results. TVA is in the process of conducting additional sampling at the Phase 1 project area, and, for the purposes of this analysis, conservatively estimates that up to an additional 250 cubic yards of overburden and/or soil could also need to be transported to the landfill because of elevated EPH levels.

This assessment considers the potential impact associated with the removal of 500-750 cubic yards of soil containing contaminants and/or not suitable for reuse as fill to an offsite waste landfill as well as the impact of transporting 1,800-2,000 cubic yards of soil suitable for reuse from the Engineering Lab site to the Walnut Orchard site.

Purpose and Need

TVA recently discovered that approximately 500 cubic yards of the removed overburden from the Phase 1 site and currently located within spoil piles on the site contain contaminants at levels determined to be unsuitable for reuse as fill material and would need to be transported to an offsite waste landfill. Additionally, TVA requires approximately 1,800-2,000 cubic yards of fill material to fill the former Building D basement area at Walnut Orchard to remediate long-term stability and safety concerns.

This assessment has been prepared to analyze the impacts associated with the transport of approximately 500-750 cubic yards of soil from the Engineering Labs to be disposed at an offsite waste landfill and approximately 1,800-2,000 cubic yards of soil to be placed as fill material in the former Walnut Orchard Building D basement. In conducting this assessment, TVA is supplementing its prior assessments of January 2019 and March 2019 for the Phase 1 East Region Consolidation-Norris Properties project.

Proposed Actions

TVA proposes to transport approximately 500-750 cubic yards of soil determined to be unsuitable for reuse as fill due to the presence of EPH and PCBs to an offsite waste landfill, the Chestnut Ridge Landfill in Heiskel, Tennessee or an equivalent landfill, and approximately 1,800-2,000 cubic yards of soil determined to be suitable for reuse as fill material from the Engineering Labs to Walnut Orchard to be placed in the former Building D basement. The total soil removal would be approximately 2,300-2,750 cubic yards (500-750 cubic yards of soil unsuitable for use as fill and 1,800-2,000 cubic yards of soil suitable for reuse as fill). TVA would utilize dump trucks capable of carrying approximately 10-14 cubic yards each to transport the

soil from the Engineering Labs to either the landfill or Walnut Orchard. TVA would require approximately 164-275 total truck loads to transport the approximately 2,300-2,750 cubic yards of soil to either Walnut Orchard and/or the landfill. In other respects, TVA's proposed actions are the same as those analyzed in the January 2019 EA and the revised March 2019 EA.

Prior to transport to Walnut Orchard, TVA would repeat the earlier soil sampling tests at various locations and varying depths based on the project's projected final grading plan to determine which soils would need to be managed as solid waste and which soils are suitable for reuse as fill material at Walnut Orchard or elsewhere. The following tests would be conducted to ensure the in-situ soil from the Engineering Labs is suitable for use as fill at Walnut Orchard: 8082A - Standard PCB List 9 Aroclors; Safe and Environmentally Responsible Waste Management, TN EPH-TPH C12-C40 standard Range; and 6010B – TCLP RCRA Metals List. Providing the sampling results indicate the soil is suitable for reuse, TVA would be able to use the soil as fill at Walnut Orchard. At Walnut Orchard, the soil would be deposited directly into the former Building D basement at Walnut Orchard upon arrival. Following deposition of the soil as fill at Walnut Orchard, the site would be graded and seeded with native or non-invasive vegetation.

No Action Alternative

The No Action Alternative would be the same as was evaluated in the Phase 1 EA. TVA would take no action with regard to the soils at the Engineering Labs.

Environmental Issues Considered

Potential effects to a variety of resources were considered in the Revised Phase 1 EA. These resources included land use, wildlife, vegetation, threatened and endangered species, surface water, historic and archaeological resources, aesthetics, air quality, noise, transportation, socioeconomics, environmental justice, and solid and hazardous wastes. TVA incorporates the analysis and findings of the Revised Phase 1 EA and FONSI by reference.

The analysis in this assessment focuses on the new information associated with the Proposed Action described above. Because the nature of onsite circumstances at the Engineering Labs has not changed, TVA anticipates no new impacts for the majority of the resource areas analyzed in the Revised Phase 1 EA including land use, wildlife, vegetation, threatened and endangered species, surface water, historic and archaeological resources, aesthetics, noise, socioeconomics, and environmental justice. TVA determined the removal of approximately 1,800-2,000 cubic yards of soil from the Engineering Labs and the transport of that soil to Walnut Orchard for the use as fill material at the former Building D site, and the removal of approximately 500-750 cubic yards of soil from the Engineering Labs and the transport of that soil to the Chestnut Ridge landfill would result in potential changes to impacts for solid and hazardous wastes, air quality, surface water runoff, and transportation resources. This Supplemental EA analyses these potential impacts to solid and hazardous wastes, air quality, and transportation associated with this Proposed Action.

Analysis of Potential Solid and Hazardous Waste Effects

As described above, TVA collected soil samples from the upper 1 foot of the soil covering the site and had them analyzed for 8082A - Standard PCB List 9 Aroclors; Safe and Environmentally Responsible Waste Management, TN EPH-TPH C12-C40 standard Range; and 6010B – TCLP RCRA Metals List. A total of 16 locations were sampled. The results of the analysis indicated that in a few locations, EPHs and PCBs are present in the soil at levels unsuitable for reuse as fill. The EPH and PCB contaminants were from an unknown source; all structures and materials had previously been cleared from the site prior to soil testing. These contaminants were from an unknown source; all structures and materials had previously been cleared from the site prior to soil testing. TVA has determined that approximately 500-750 cubic yards of the overburden and soil may contain some EPH contaminants and would need to be transported to the Chestnut Ridge Landfill or a similarly qualified landfill. TVA would coordinate with the landfill for all appropriate approvals or permits prior to transportation of the EPH contaminated soil. Therefore, there would be no anticipated impacts from solid and hazardous wastes associated with the transport and placement of the EPH contaminated soil to the landfill.

TVA has developed a sampling plan to further evaluate the in-situ soils at the Engineering Labs. TVA would repeat the earlier soil sampling tests at various locations and at varying depths up to 14 feet based on the project's projected final grading plan. Providing the sampling results indicate the in-situ soils do not contain elevated levels of contaminants, including but not limited to EPHs and PCBs, and TVA deems the soil is suitable for reuse as fill material at Walnut Orchard, there would be no impacts to solid and hazardous wastes in association with the transport and placement of the Engineering Lab soil at Walnut Orchard.

The Revised Phase 1 EA solid and hazardous waste analysis focused primarily on wastes generated by the Engineering Labs facility during construction and operational activities. The Revised Phase 1 EA did address impacts associated with mobilization of fugitive dust, potentially containing waste materials.

As a result of the additional analysis mentioned in this assessment, TVA concludes there would be no new impacts to solid and hazardous wastes associated with the Proposed Action. Specifically, soils with EPHs and PCBs at levels unsuitable for reuse as fill would be transported to the Chestnut Ridge Landfill or an equivalent facility and disposed in accordance with all local, state, and federal regulations. Soils not suitable for reuse as fill material would not be transported to or deposited at Walnut Orchard, therefore, there would be no new impacts to solid and hazardous wastes.

Analysis of Potential Air Quality Effects

The excavation of approximately 2,300-2,750 cubic yards of soil at the Engineering Labs would result in the mobilization of fugitive dust. While the excavation of this quantity of material was not specifically evaluated in the Revised Phase 1 EA with respect to dust mobilization, the Revised Phase 1 EA does include the assumption that all ground-disturbing activities would result in mobilization of fugitive dust. The Revised Phase 1 EA states that "As necessary, fugitive dust emissions from construction activities would be mitigated using BMPs including wet

suppression, as needed. Therefore, direct impacts to air quality associated with construction activities would be expected to be temporary and minor" (TVA 2019). TVA would continue to apply this best management practice (BMP) with respect to the excavation of soil at the Engineering Labs. TVA would also ensure truck loads of soils containing contaminants would be covered to prevent dust mobilization during transport. Additionally, an analysis of impacts associated with the emissions of construction vehicles was included in the Revised Phase 1 EA and that analysis is applicable to the types and numbers of construction vehicles which would be engaged in the excavation of the soil at the Engineering Labs. Therefore, with the continued application of BMPs to control fugitive dust mobilization and the lack of new impacts associated with excavation equipment, no new impacts to air quality would be anticipated as a result of the proposed soil excavation.

Analysis of Potential Transportation-related Effects

TVA would utilize dump trucks capable of carrying 10-14 cubic yards each to transport the approximately 2,300-2,750 cubic yards of soil; 500-750 cubic yards of soil unsuitable for use as fill would be hauled to the Chestnut Ridge or equivalent landfill and 1,800-2,000 cubic yards of soil suitable for reuse as fill would be hauled to Walnut Orchard. Therefore, it would require approximately 35-75 truckloads (one-way) to haul soil to the landfill and approximately 128-200 truckloads (one-way) to haul soil to Walnut Orchard.

The Chestnut Ridge landfill is open from 7:00 am to 3:00 pm on weekdays and 7:00 am to 10:30 am on Saturdays. At maximum capacity, TVA could load and route one truck in and out of the Engineering Labs every 5 minutes. This would result in a maximum of approximately 12 trucks per hour and up to 96 one-way (192 round trip) truck trips per weekday and 42 one-way (84 round trip) truck trips on Saturday. As TVA only needs to move 35-75 truckloads of soil to the landfill, operating at maximum capacity TVA could potentially complete the transfer of soil from the Engineering Labs to the landfill in one weekday.

It would require 128-200 one-way (256-400 round-trip) truck trips to move the soil suitable for fill from the Engineering Labs to Walnut Orchard. At maximum capacity, TVA could load and route one truck in and out of the Engineering Labs every 5 minutes from 6:30 am to 6:30 pm on a weekday and on Saturdays; approximately 12 trucks per hour and up to 144 truck trips per day one-way from the Engineering Labs to Walnut Orchard. Trucks would also unload at Walnut Orchard and return to the Engineering Labs approximately 5 minutes resulting in an additional approximately 144 truck trips per day. Therefore, at the upper limit, up to approximately 288 truck trips could be expected between the Engineering Labs and Walnut Orchard each day between 6:30 am and 6:30 pm Monday through Saturday. Operating at maximum capacity, TVA could potentially complete the transfer of soil from the Engineering Labs to Walnut Orchard in two days.

As described above, TVA could potentially complete the transfer of soil to the landfill in one day and to Walnut Orchard in two days. Depending on the project schedule and providing flexibility for weather or other complicating factors it is assumed TVA would be able to complete both

transfers within a few weeks total, though trucks only be moving soil at periodic times within that period.

The trucks would travel one of two haul routes from the Engineering Labs to the local highways and then to the landfill or Walnut Orchard. The two haul routes to Walnut Orchard are shown in Figures 2 and 3. The route to the Chestnut Ridge Landfill would parallel the routes shown in Figures 2 and 3 up to US-441/SR-71 at which point the trucks would travel major highways or interstates that are shown in Figure 4.

Route A from the Engineering Labs to Walnut Orchard is 2.0 miles one-way (4.0 miles round-trip). Approximately 1.16 miles of Route A would be along Pine, Orchard, and West Norris Roads, the remainder would be on US-441/SR-71 to the Walnut Orchard Road. Travel time between the facilities along Route A would be approximately 6 minutes. Route B from the Engineering Labs to Walnut Orchard is 3.4 miles one-way (6.8 miles round-trip respectively); approximately 1 mile of this route would be along Pine and East Norris Roads to US-61 Norris Expressway and US-441/SR-71 Norris Freeway and finally Walnut Orchard Road. Travel time between the facilities along Route B would be approximately 15 minutes. The distance between the Engineering Labs and the Chestnut Ridge Landfill is approximately 8 to 10 miles depending on the route.

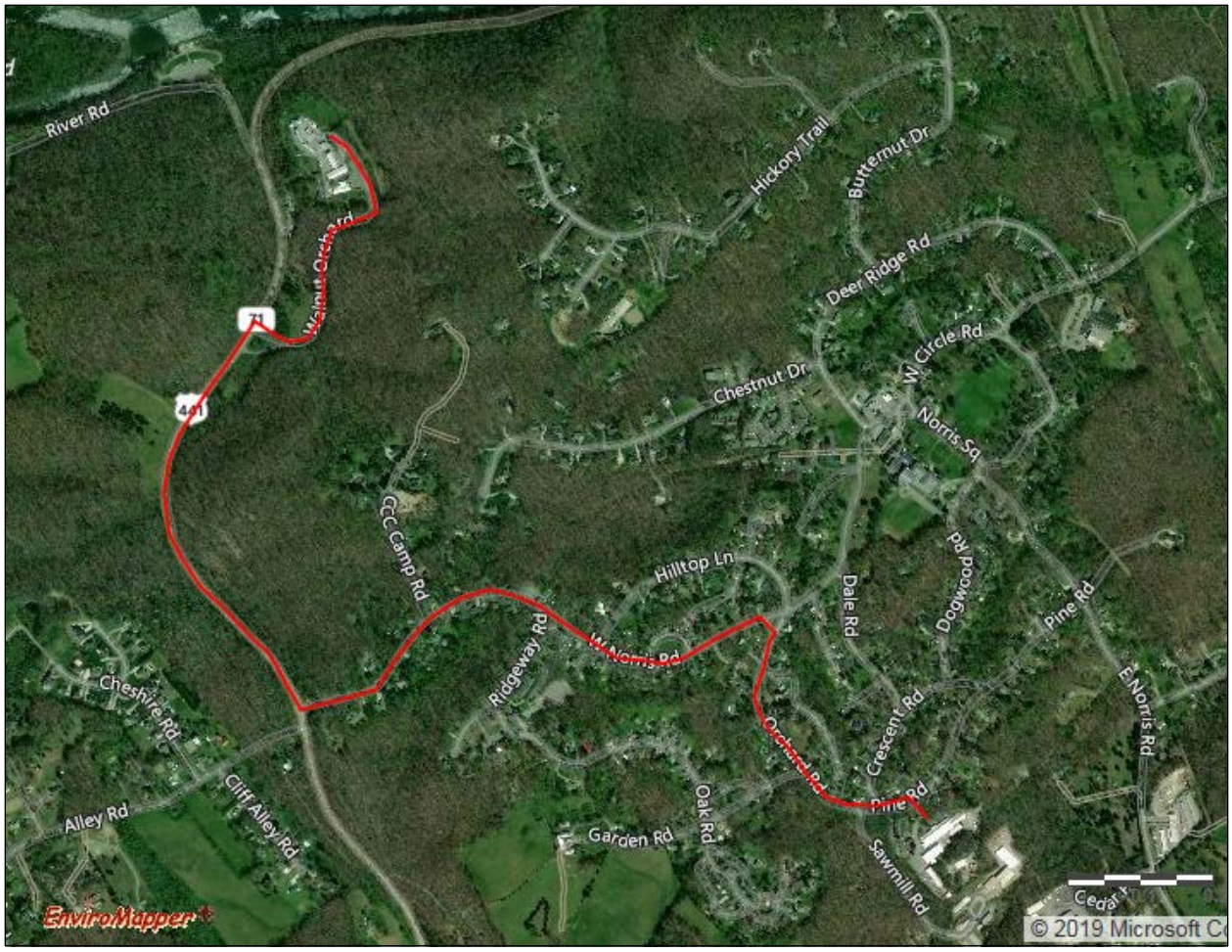


Figure 2. Engineering Labs / Walnut Orchard Route A (2.0 miles one-way).

Orchard and Pine Roads are local residential roads. West Norris Road and East Norris Road are two-lane collectors, primarily lined with residential properties but also include churches on west Norris Road and small commercial properties on East Norris Road. US-61 and US-441/SR-71 are arterial highways. Walnut Orchard Road is a TVA road providing access to the Walnut Orchard facility.

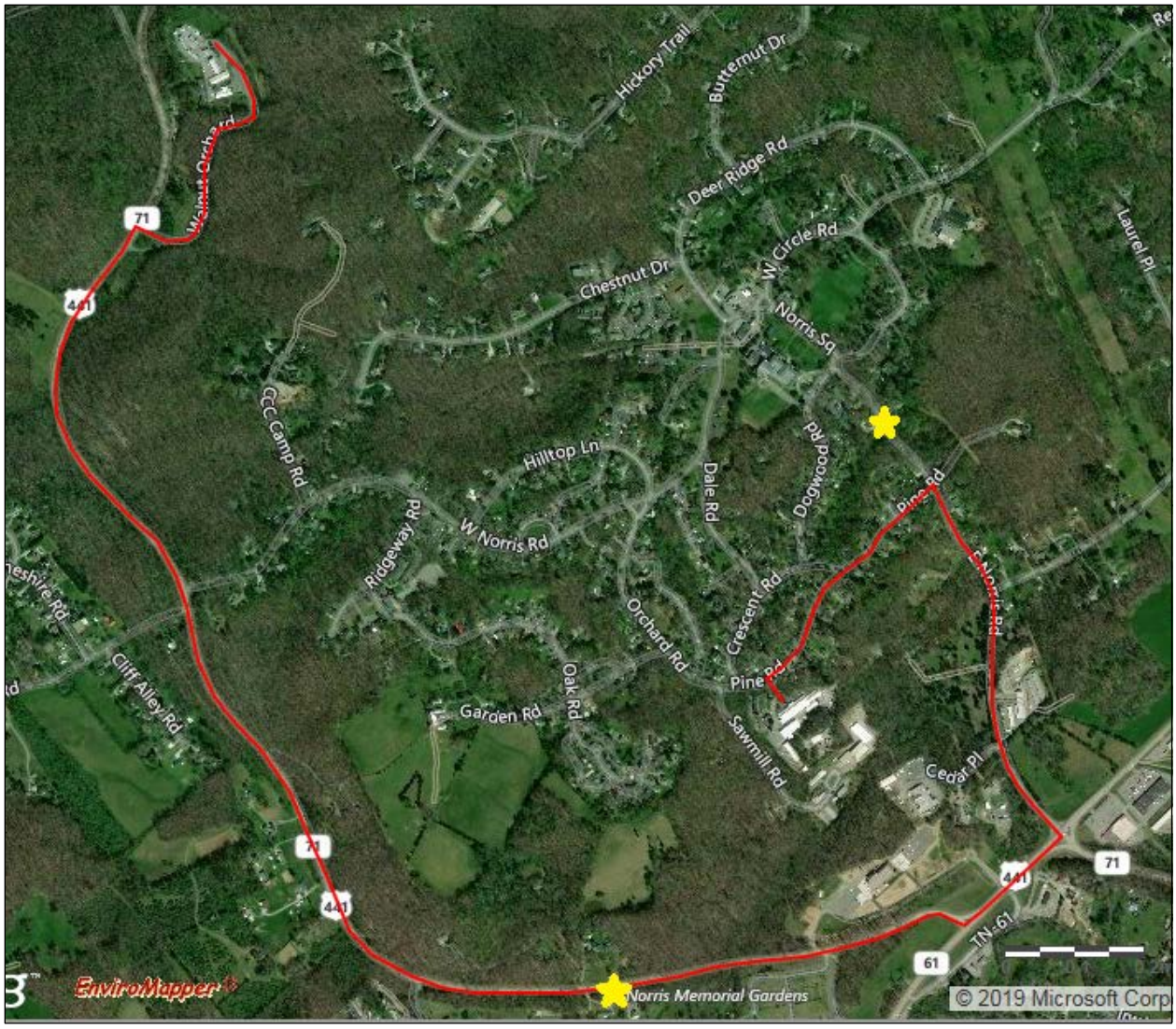


Figure 3. Engineering Labs / Walnut Orchard Route B (3.4 miles one-way). AADT stations are marked by the yellow stars.

The Tennessee Department of Transportation estimates the Average Annual Daily Traffic (AADT) at select locations along major roadways. The AADT estimates are based on a 24-hour, two directional vehicle count at a specific measurement location. The raw traffic volume data is mathematically adjusted for vehicle type based on an axle correction factor. The data is also statistically corrected for a seasonal variation factor that considers time of year and day of the week. AADT maps provide estimated traffic volumes at measurement station locations along major roadways for any given year for which data is available (Tennessee Department of Transportation 2019).

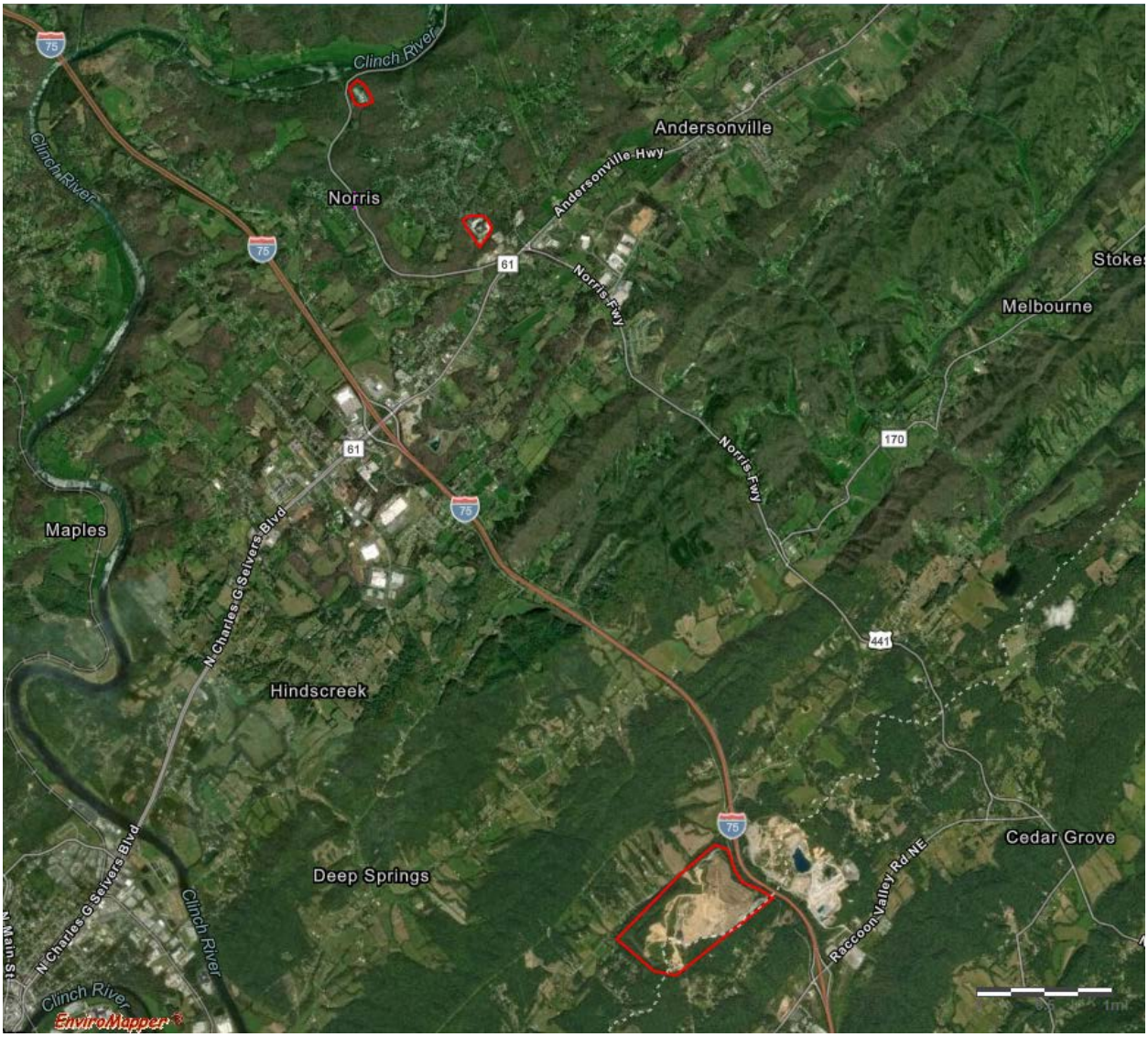


Figure 4. Walnut Orchard (on the north), Norris Engineering Labs (center), Chestnut Ridge Landfill (on the south) and major interstates and highways

AADT data is not available for Orchard, Pine, West Norris, or Walnut Orchard Roads. Thus, no AADT data is available along Route A. Two AADT station locations are located on Route B, specifically on US-441/SR-71 (south of the Engineering Labs) and on East Norris Road, north of the intersection with Pine Road as show in Figure 3. Table 1 presents the AADT data for 2013-2017 at each of these stations.

Table 1. AADT from 2012-2017 in the Engineering Labs Soil Excavation-Walnut Orchard Soil Disposal Project Area.

Year	US-441/SR-71	E. Norris Road
2017	1,727	3,314
2016	1,788	3,361
2015	1,737	3,298
2014	1,720	3,435
2013	1,718	3,464

Truck traffic between the Engineering Labs and Walnut Orchard or the landfill could cause impacts along the local residential roadways. Though AADT data is not available, it can be assumed these local roadways have less traffic than the US-441/SR-71 and East Norris Road. The maximum of approximately 288 truck trips per day would constitute an approximately 16.7 percent increase in traffic on US-441/SR-71 and an approximately 8.7 percent increase in traffic on E. Norris Road along Route B.

Though existing traffic volumes on the local roadways are unknown, it can be assumed that up to 24 extra vehicles per hour on the residential streets would be noticeable, though it would not be anticipated to result in increased congestion on the local roadways during most hours of the day. Residents should not be significantly impeded from reaching their homes or from being able to enter and exit the residential areas under normal traffic conditions. It is possible that traffic congestion or safety could be a concern during peak traffic hours. If this were to become an issue, TVA could restrict truck traffic during these peak hours (approximately 6:30 am – 9 am and 4:30 pm – 6:30 pm). Restricting truck traffic during these peak hours would reduce the number of daily truck trips by 42 one-way (84 round-trip) reducing the total number of truck trips per day to approximately 204 per route. Additionally, TVA could alternate the use of both potential haul routes to minimize potential traffic congestion. Therefore, congestion related impacts would be considered minor and temporary.

In addition to increased traffic volumes, residents in houses along Pine, Orchard, East Norris, and West Norris Roads would be subject to an increase in traffic noise from the truck traffic. Dump trucks produce road noise and can produce vibrations more discernible to surrounding receptors than smaller passenger vehicles and this could potentially be noticeable to residents in the homes along either Route A or Route B. The increased noise and potential vibrations would likely be more noticeable to residents during early morning hours on weekdays and particularly on Saturdays when more residents may sleep later in the mornings. Occasional truck noise would not constitute a significant impact to residents. To minimize potential impacts associated with elevated noise levels from the truck traffic, TVA could restrict the truck trips to occur within normal working hours (8 am to 5 pm) on week days and reduced hours (10 am to 4 pm) on Saturdays. Restricting truck traffic to these hours would reduce the number of daily truck trips 108 one-way (216 round-trip) per week day and 72 one-way (144 round-trip) per day on

Saturdays. Additionally, TVA could alternate sending trucks along both potential haul routes to minimize impacts along either route. As TVA would anticipate the transportation activities requiring only approximately three days of steady activity when operating at maximum capacity, these impacts would be temporary and minor.

The residential roadways are not designed for high levels of industrial traffic. There are utilities underlying these residential roadways that could potentially be impacted by high volumes of industrial traffic. To minimize potential impacts to these underlying utilities, TVA would work with the utility companies to identify locations of concern and place steel covers over these portions of the roadway during the transportation work. The steel covers would help distribute the weight of the trucks and minimize the potential for impacts to the underlying utilities. TVA would also work with the City or utilities as necessary to repair any damages deemed to result from the transportation of the soil. Therefore, impacts to roadways and utilities would be considered minor and temporary.

Overall, the transportation of approximately 2,300-2,750 cubic yards of soil to either Walnut Orchard and/or the landfill would require approximately 164-275 total truck loads (one-way). Operating one truck in and out of the Engineering Labs every 5 minutes from 6:30 am to 6:30 pm on a weekday would require approximately three days total to complete soil removal, one day for removal to the landfill and an additional two days for removal to Walnut Orchard. Depending on the project schedule and pending weather or other complicating factors, all of the removal would be anticipated to be completed within a few weeks of project initiation to completion. TVA has determined that with the opportunities described above for minimizing impacts if necessary, the additional truck traffic would not result in new impacts beyond those previous considered in the Revised Phase 1 EA and would not alter TVA's conclusion in the Revised Phase 1 EA that the proposal would not be a major Federal action significantly affecting the environment.

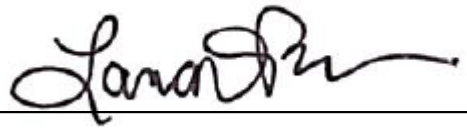
Conclusions

TVA concludes there would be no new impacts to solid and hazardous wastes and air quality associated with the Proposed Action. Specifically, soils with EPHs and PCBs unsuitable for reuse as fill would be transported to the Chestnut Ridge or an equivalent landfill and disposed in accordance with all local, state, and federal regulations. Soils not suitable for reuse as fill material would not be transported to or deposited at Walnut Orchard, therefore, there would be no new impacts to solid and hazardous wastes. With the continued application of BMPs to control fugitive dust mobilization and the lack of new impacts associated with excavation equipment, no new impacts to air quality would be anticipated as a result of the proposed soil excavation and transportation to either Chestnut Ridge or equivalent landfill or Walnut Orchard.

TVA concludes potential impacts to transportation associated with the proposed action can be mitigated resulting in no new impacts. The addition of up to 288 total truck trips per day for approximately three days would cause an increase in traffic on local roads that serve as parts of the proposed haul routes. The analysis indicates that this increase would not significantly contribute to traffic congestion, roadways, or traffic safety issues along either haul route. TVA

could potentially alternate or use both potential haul routes to minimize the number of trucks passing along either route, though the City of Norris has expressed a preference that TVA prioritize Route A when transporting soil to Walnut Orchard as it is the shortest route between these two facilities. To minimize potential impacts to utilities underlying the roadways, TVA would work with the utility companies to identify locations of concern and place steel covers over these areas to distribute the weight of the trucks. TVA would also work with the City or local utility as necessary to repair any damages deemed to result from the transportation of the soil. Therefore, this analysis indicates that there would not be a significant increase in impacts to roadways along either haul route.

Based on the findings contained in this Supplemental EA and in the Revised Phase I EA and FONSI, which are incorporated by reference, TVA concludes that the proposal to remove 500-750 cubic yards of soil containing contaminants and/or not suitable for reuse as fill to an offsite waste landfill as well as transporting 1,800-2,000 cubic yards of soil suitable for reuse from the Engineering Lab site to the Walnut Orchard site would not be a major Federal action significantly affecting the environment. Accordingly, an environmental impact statement is not required.



July 9, 2019

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Date Signed

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