

**Proposed Final Environmental Assessment for  
3700 Storage Area Improvements at Redstone Arsenal, AL**

**1. PURPOSE AND NEED FOR THE PROPOSED ACTION OR ACTIVITY**

The Missile Defense Agency proposes to add approximately eight acres of gravel surface to the outdoor 3700 Storage Area at Redstone Arsenal, AL; install three additional tents; add a fire hydrant; and use the area to temporarily store large equipment and vehicles. This Environmental Assessment analyzes potential environmental consequences that could result from implementing the Proposed Action or the No-action Alternative. It has been prepared in accordance with the National Environmental Policy Act of 1969, as amended, and the implementing regulations or instructions issued by the Council on Environmental Quality, Army and Missile Defense Agency.

**1.1 Purpose of and Need for the Proposed Action**

Increased outdoor storage capacity at the 3700 Storage Area is needed for Missile Defense Agency mission equipment and to temporarily store inert equipment and vehicles that are too large for indoor storage. Currently, the 3700 Storage Area (13.54 acres total) has 0.87 acres of gravel surface. The remaining acreage is dirt/grass covering. The Missile Defense Agency has four storage tents at the site. Adding storage capacity at the 3700 Storage Area is a cost effective storage option.

The Proposed Action would maximize use of the 3700 Storage Area. Installing three additional tents would increase covered storage space by 75 percent. Installing an aggregate surface over existing grassed surface parking areas would increase outdoor storage capacity, allow for storage of heavier equipment, and ease ingress/egress. Material handling and ground support equipment cannot be parked on the grass/dirt surface. The new fire hydrant is needed to meet current fire code regulations.

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**2. DESCRIPTION OF THE PROPOSED ACTION AND NO ACTION ALTERNATIVE**

The Missile Defense Agency has been storing material handling and ground support equipment at the 3700 Storage Area since 2013. Even though this type of storage has occurred at the site for the past two years, an Environmental Assessment was prepared to ensure the requisite environmental analyses of increasing the gravel hardstand to 8 acres to accommodate existing as well as future storage requirements.

**2.1 Proposed Action**

The Site Plan for the Proposed Action is provided in Figure 1.

Due to the requirement for more hardstand storage space than originally anticipated, the gravel hardstand area must be expanded an additional seven acres for a total of eight acres. To provide solid driving conditions for equipment, a gravel hardstand would be constructed at the 3700 Storage Area that encompasses approximately eight acres. The area of disturbance would be eight acres and excavation for the gravel hardstand would be to a depth of approximately one foot. Any excavated top soil that is not needed would be stockpiled for future use; but must remain within Redstone Arsenal due to potential for unexploded ordnance. Construction activities would consist of compacting and grading the existing surface to drain in a southerly manner, delivery and spreading of 265,000 cubic feet of aggregate material and 38,720 cubic feet of bank run gravel.

The outdoor storage would primarily be used to store equipment and vehicles that are too large for indoor storage. Examples include, but are not limited to, demountable containers, trailers, flatbeds, trucks, aircraft loaders, ground support vehicles, and other equipment. The duration of storage would fluctuate from days up to years.

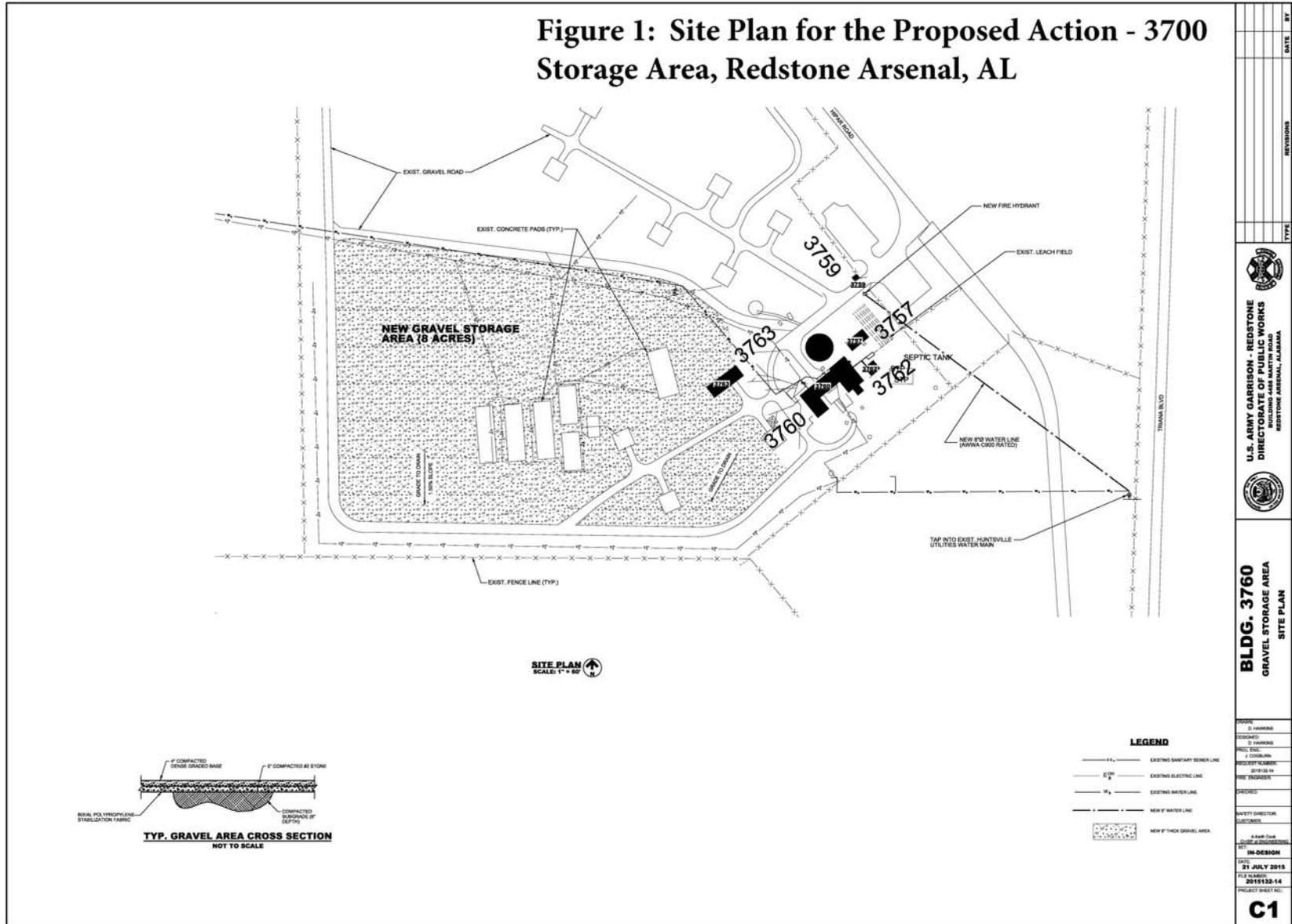
The Proposed Action would also include installing three vinyl shelters (tents) – each 75 feet wide x 100 feet long x 25 feet center height with 4 feet high side walls that terminate at the ground level on each side. The tents would be anchored to the earth. This covered storage would provide additional environmental protection for the Missile Defense Agency’s large ground support equipment.

Tented storage would typically include generators (not in use), vehicles and equipment, pallets, motor casings (inert/empty), and forklifts.

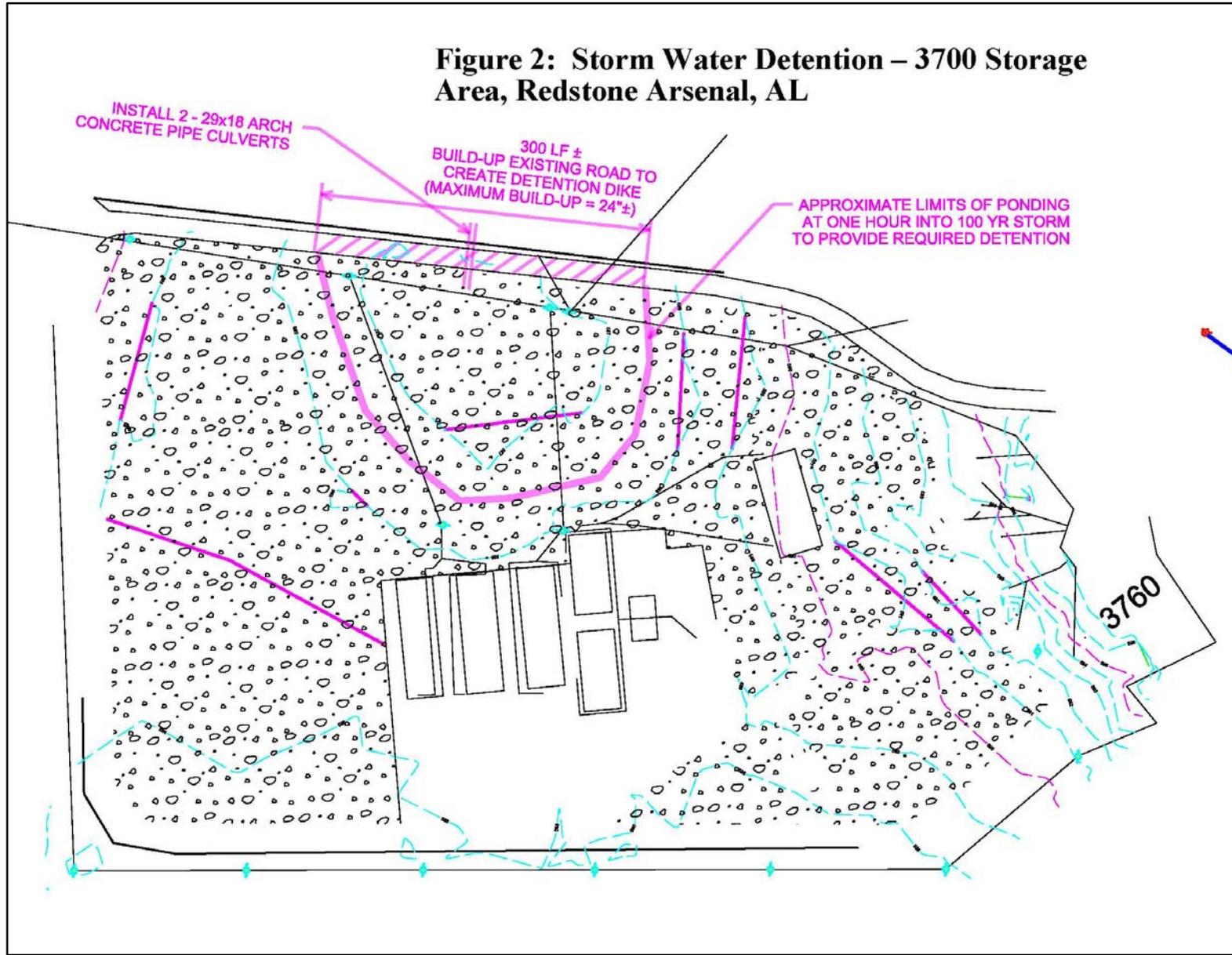
To accommodate a new fire hydrant, Redstone would install a new 8-inch water line to the 3700 Storage Area from the existing Huntsville Utilities water main located on Triana Boulevard to the west of the 3700 Storage Area, a distance of approximately 620 feet. The new water line would comply with American National Standards Institute/American Water Works Association Standards 600-606, which addresses issues for pipe installation procedures, as well as guidelines on inspection, trench construction, pipe installations, joint assembly, flushing, pressure and leakage testing. The new water line would be flushed and sanitized. Water quality analysis would be conducted to ensure the water is potable before putting the new water line into service.

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**Figure 1: Site Plan for the Proposed Action - 3700  
Storage Area, Redstone Arsenal, AL**



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1 In addition to covered and uncovered storage, the 3700 Storage Area would also serve as a  
2 staging area for outbound shipments and for equipment disposal preparation. The Missile  
3 Defense Agency would package, handle, and move assembled equipment. All assets would be  
4 moved, handled, or distributed in accordance with applicable regulations, such as Occupational  
5 Safety and Health Administration, Hazardous Materials Transportation Act, and Military Service  
6 regulations to meet a variety of stringent requirements designed to protect human health and the  
7 environment.

8  
9 There would be no Petroleum, Oils or Lubricants storage at the site, other than the fuel in  
10 vehicles. Vehicles would undergo maintenance checks only; there would be no oil changing or  
11 fueling activities. The Missile Defense Agency would follow Best Management Practices  
12 outlined in the Garrison Spill Prevention, Control, and Countermeasures plan.

13  
14 The Missile Defense Agency would be responsible for any movement of equipment and would  
15 use existing roads to access the storage area. Nighttime activities are not anticipated.  
16 Emergency generators would not be used. Garrison contractors would remove trash.

17  
18 The site design includes a small retention area that would maintain proper storm water run-off  
19 rates when there is a massive rain fall. The approximate limits of the detention area are shown  
20 on Figure 2.

### **2.2 No Action Alternative**

21  
22  
23  
24 The No-action Alternative would be a continuation of storage levels comparable to those in  
25 effect over the past two years at the 3700 Storage Area. The site is a 13.54 acre managed grass  
26 field with approximately one acre of gravel surface and four storage tents. Vehicles and  
27 equipment that are stored at the 3700 Storage Area would be the same as in the Proposed Action,  
28 but in less quantity. Equipment currently stored at different locations around the Arsenal would  
29 remain at those locations rather than being moved to the 3700 Storage Area.

### **2.3 Scope of Environmental Review**

30  
31  
32  
33 This Environmental Assessment addresses only those resources that may be affected by  
34 implementing the Proposed Action or the no-action alternative. Therefore, the environmental  
35 resources analyzed in Sections 3 and 4 are: 1) air quality, 2) geology/topography and soils, 3)  
36 land use, 4) ordnance, and 5) surface water resources. Section 4 also includes subsections on  
37 consistency with other laws/regulations; irreversible or irretrievable commitments of resources;  
38 relationship between short-term use of environment and long-term productivity; cumulative  
39 impacts; and a conclusion. Section 5 lists the preparers of this document; Section 6 lists agencies  
40 and individuals contacted. References are provided in Appendix A.

41  
42 All potentially relevant environmental resource areas were initially considered for analysis in this  
43 Environmental Assessment. In compliance with the National Environmental Policy Act and  
44 implementing regulations, the discussion of the affected environment (Sections 3 and 4) focuses  
45 only on those resource areas potentially subject to impacts. Additionally, the level of detail used

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1 in describing a resource is commensurate with the anticipated level of potential environmental  
2 impact.

3  
4 Initial analysis indicates expanding the storage capacity at the 3700 Storage Area would not  
5 result in either short or long-term impacts to airspace, biological resources, cultural resources,  
6 hazardous materials/waste management, Installation Restoration Program sites, radioactive  
7 materials, socioeconomic/environmental justice, storage tanks, transportation, or utilities.  
8 Therefore, these resources were not analyzed in detail in this environmental assessment. The  
9 reasons for not addressing these resources fully are briefly discussed.

10  
11 **Airspace:** There is no airborne equipment use being proposed for this site, therefore, no changes  
12 in the use of airspace would be associated with the Proposed Action.

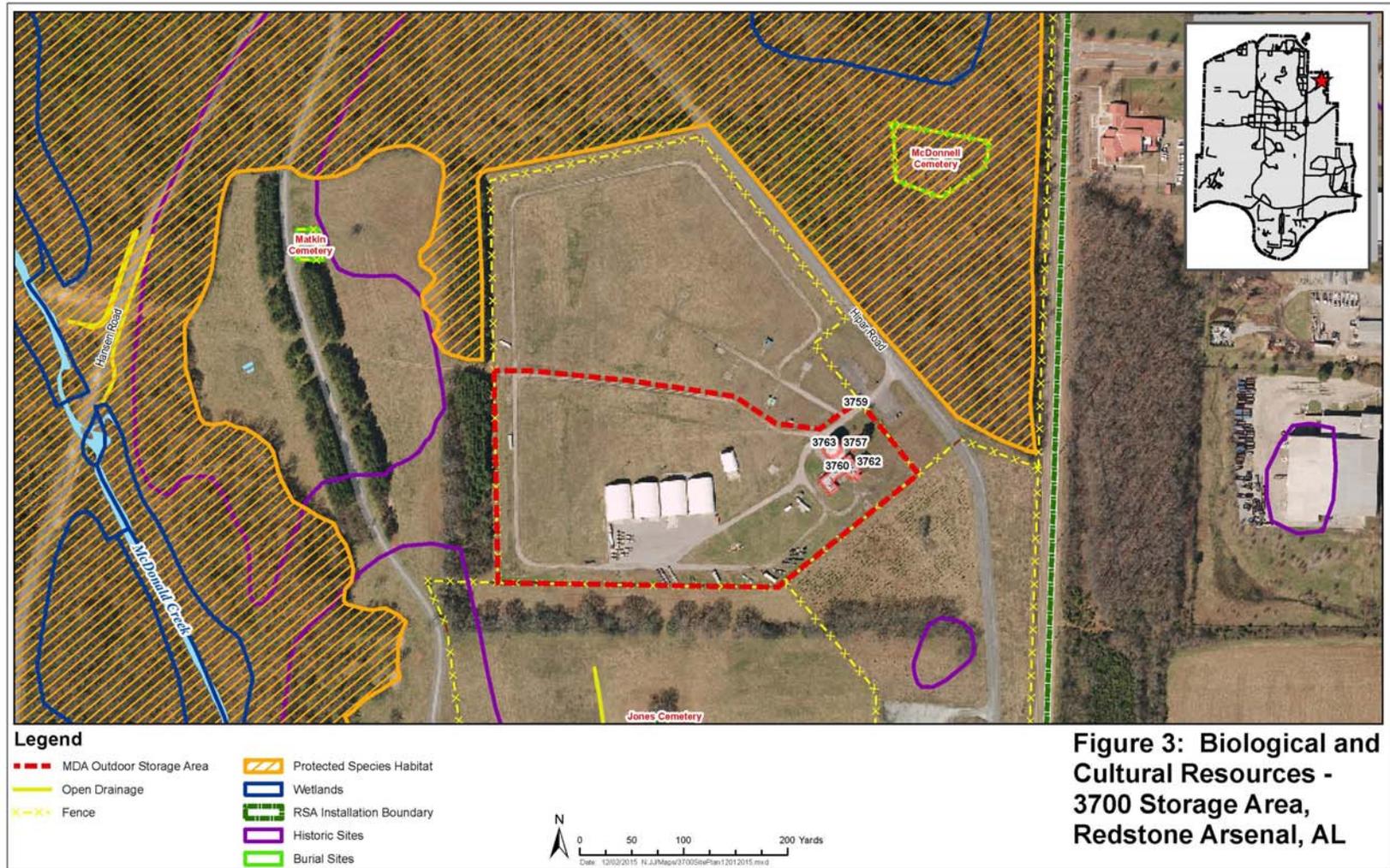
13  
14 **Biological Resources – wetlands and threatened and endangered species:** Planning level  
15 surveys of natural resources on Redstone Arsenal indicate the 3700 Storage Area is adjacent to,  
16 but does not contain, jurisdictional wetlands or habitat for protected species. Mapping of  
17 wetlands and protected species habitat is provided in Figure 3. The site is grasslands, with  
18 wetlands, forested areas, and developed areas outside the security fence line. The forested areas  
19 adjacent to the proposed action site are potential suitable habitat for the endangered gray and  
20 Indiana bats as well as the threatened northern long-eared bat.

21  
22 Existing vegetation is a homogeneous, grassed area. Wildlife diversity (insects and other  
23 invertebrates, herpetological species, birds, and mammals) that may be using the site would be  
24 modest since it is a homogeneous grassed landscape. Variation in the terrestrial vegetation would  
25 increase the likelihood that impacts may occur. In addition, the Proposed Action would involve  
26 the use of a previously disturbed area, having been used by MDA and Army for storage or  
27 training activity for the past 50 years. No croplands, wooded areas, or wetlands would be  
28 modified as a result of implementing the Proposed Action.

29  
30 **Cultural Resources - archeological sites and historic structures:** Planning level surveys of  
31 cultural resources on Redstone Arsenal indicate the 3700 Storage Area does not contain  
32 archeological sites. Mapping of archeological sites is provided in Figure 3, Appendix B. There  
33 are no historic structures within the 3700 Storage Area impacted by the Proposed Action.  
34 Structures inside the 3700 Storage Area footprint include: Building 3757 (1-Jul-64)-Lab/Radar  
35 Testing; Building 3760 (1-Jul-61)-Lab/shop; Building 3762 (1-Jul-61)-Bathroom; and Building  
36 3763 (1-Jul-61)-Radar Tower. The hardstand area would be to the west of the buildings and the  
37 new water main would be to the north). The Missile Defense Agency does not have future plans  
38 to use the empty buildings.

39  
40 **Hazardous Materials/Waste Management:** Hazardous materials used under the Proposed  
41 Action would consist of diesel fuel from vehicles or stored generators. The area would be  
42 covered under Redstone Arsenal's Spill Prevention, Control, and Countermeasures Plan, and in  
43 the unlikely event that a spill occurred, it would be cleaned up immediately using Best  
44 Management Practices. No hazardous waste would be generated or stored at the 3700 Storage  
45 Area.

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**Figure 3: Biological and Cultural Resources - 3700 Storage Area, Redstone Arsenal, AL**

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1 **Installation Restoration Program:** Planning level surveys of Installation Restoration Program  
2 sites on Redstone Arsenal indicate the Proposed Action would not impact any sites under the  
3 management and control of the Garrison Installation Restoration Program.

4 **Radioactive Materials:** No radioactive materials would be stored; therefore, no impacts are  
5 anticipated.

6  
7 **Socioeconomics/Environmental Justice:** The Proposed Action would not have a significant  
8 impact on the physical environment that would impact the local economy. There is no increase  
9 in employment expected.

10  
11 **Storage Tanks:** No permanent storage tanks would be required by the Proposed Action.

12  
13 **Transportation:** Additional vehicle trips to the site are not anticipated to significantly impact  
14 the level of service of the existing transportation network.

15  
16 **Utilities:** Huntsville Utilities, owned by the City of Huntsville, supplies water to the Installation.  
17 Huntsville Utilities supply system consists of three wells and two surface water treatment plants,  
18 providing a total maximum supply of 112 million gallons per day to the system (Huntsville  
19 Utilities, 2015). The percent increase to the daily average load for water consumption from 3700  
20 Storage Area operations is not substantial and would not result in significant impacts to the City  
21 of Huntsville water supply system. There is potential increased demand on water for firefighting  
22 only. All other utilities (electricity and natural gas) are not expected to change as a result of the  
23 Proposed Action.

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**3. AFFECTED ENVIRONMENT**

This section describes the current environmental conditions at the 3700 Storage Area. The five environmental conditions analyzed are: 1) air quality, 2) geology/topography and soils, 3) land use, 4) ordnance, and 5) surface water resources. This information serves as a baseline from which to analyze potential environmental impacts from expanding the gravel surface to eight acres, and adding a new water main and tent storage to the site. These impacts are discussed in Section 4.

The 3700 Storage Area is located on the north eastern edge of Redstone Arsenal. The Arsenal is adjacent to the City of Huntsville, in the southwestern portion of Madison County, north of the Tennessee River in northern Alabama.

**3.1 Air Quality**

The air quality in Madison County currently meets all the National Ambient Air Quality Standards established for seven criteria pollutants: carbon monoxide; lead; sulfur dioxide; nitrogen dioxide; ozone; and coarse and fine particulate matter. In addition, trend lines for all criteria pollutant concentrations slope downward from 2010-2014 in Madison County.

According to *Air Quality Report, Data Summaries, Trends, and Program Activities (2010-2014)*, traffic (on-road vehicles) accounts for more than 50 percent of the air pollution that Huntsville does have. The majority of the ozone precursor emissions (nitrogen dioxide and volatile organic compounds) in Madison County are emitted by mobile sources. Particulate matter from agricultural dust, construction dust, unpaved road dust, and industrial fuel combustion accounts for 95 percent of Madison County's particulate matter pollution. In addition, mobile sources are significant sources of Hazardous Air Pollutant emissions in Madison County - toluene, xylene, hexane, benzene, trimethylpentane and ethyl benzene (City of Huntsville, AL, 2015).

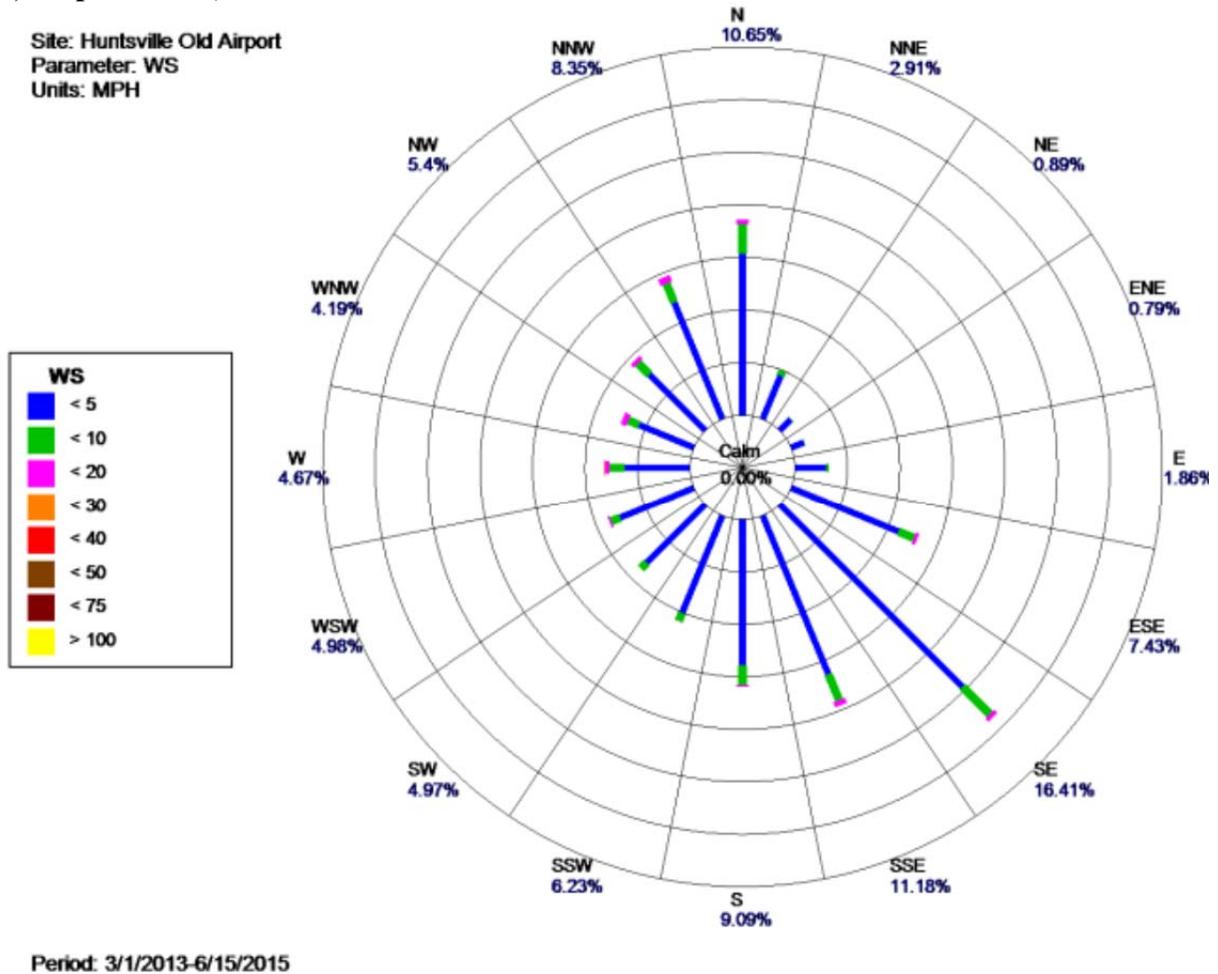
The six principal greenhouse gases, and those subject to federal regulation, are carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Of these, carbon dioxide, methane and nitrous oxide are the greenhouse gases typically included in local emissions inventories.

The City of Huntsville has developed greenhouse gas emissions inventories for Madison County for the years 2000, 2005 and 2010. In 2010, carbon dioxide emissions constituted roughly 97 % of total greenhouse gas emissions in Madison County, compared with roughly 84 % of the total in the U.S. inventory (City of Huntsville, AL, 2010).

Wind speed and wind direction affect the movement and dispersion of pollutants within an air shed. A 16- point wind rose summarizing wind speed and wind direction measurements for March 2013 – June 2015 at City of Huntsville's air quality monitoring station on Airport Road is shown in Figure 4 (City of Huntsville, 2015).

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1 **Figure 4: Wind Rose Showing Surface Wind Speed and Direction in Huntsville, AL (Site**  
2 **014, Airport Road) -- March 2013 – mid-June 2015**



3  
4  
5  
6

### 3.2 Geology/Topography and Soils

7 In general, Redstone Arsenal's topography is gently rolling with elevations primarily in the range  
8 of 600 to 650 feet above mean sea level. The terrain generally slopes southward towards the  
9 Tennessee River. Topographically high areas on the Arsenal are at elevations up to  
10 approximately 1,200 feet above mean sea level and topographically low areas are approximately  
11 560 feet above mean sea level (U.S. Army Corps of Engineers, Mobile District, 2006).

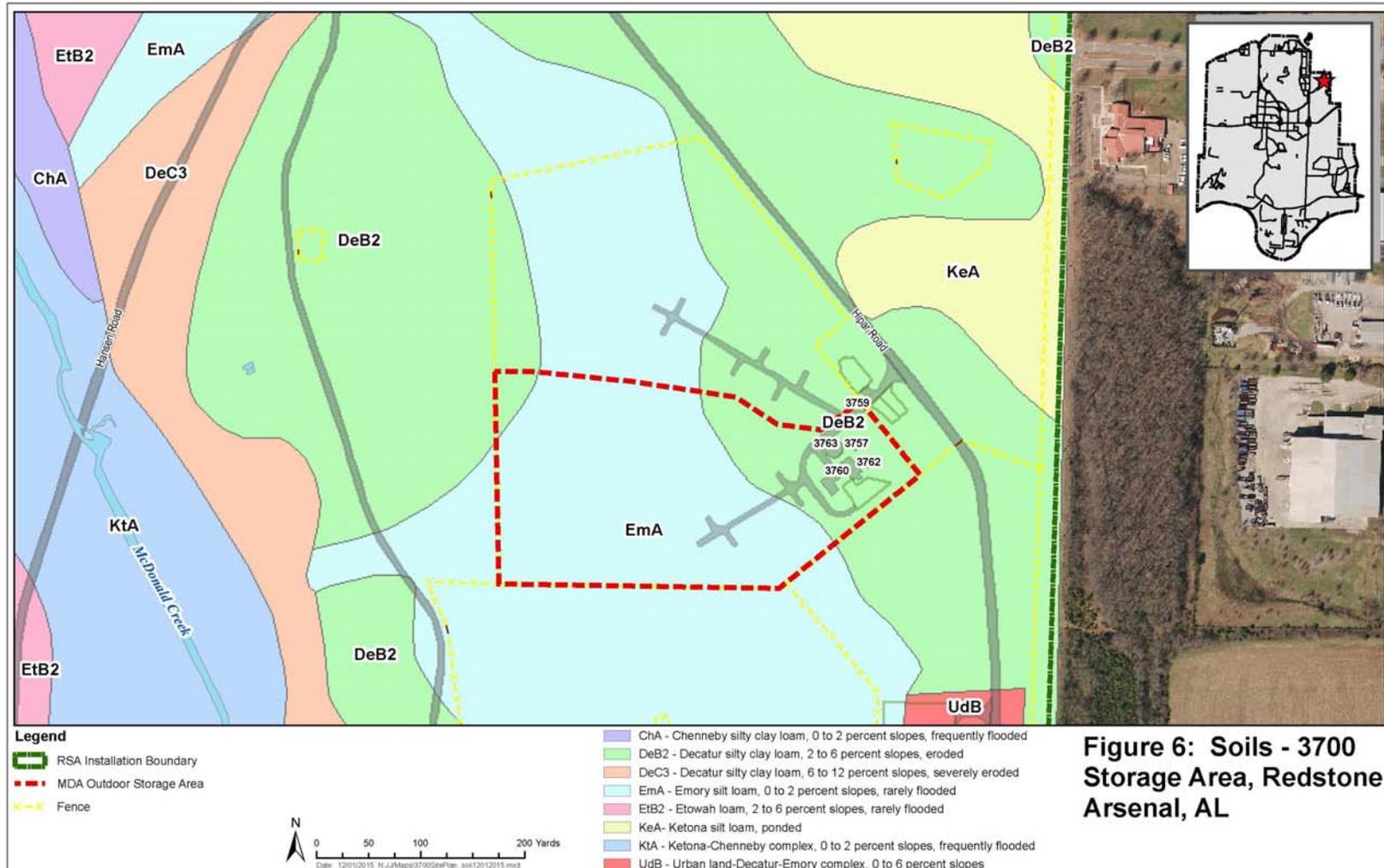
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13 The 3700 Storage Area is situated in northeastern portion of the arsenal, which is relatively flat.  
14 See Figure 5. The abandoned buildings inside the 3700 Storage Area footprint are located on the  
15 highest point of the site, with the lower elevations on the southern and northern edge of the site.  
16 Elevations range from 588 to 600 feet above mean sea level at the site. The proposed storm  
17 water detention pond is situated in a topographically low area, 588 feet above mean sea level in  
18 elevation.

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1 The underlying bedrock in Madison County is sedimentary in origin, consisting predominately of  
2 several varieties of limestone, sandstone, and a few acid shales. Most of Redstone Arsenal is  
3 underlain by Tuscomb Limestone, which is the uppermost formation (i.e., surface formation)  
4 for more than half of Madison County. This limestone has an average thickness of 150 feet;  
5 consists of gray, medium to coarse-grained, fossiliferous limestone, and contains chert nodules.  
6

7 The predominant soil type mapped for Redstone Arsenal consists of a deep, well-drained to  
8 moderately well drained, silt loam to silty clay loam. These soils typically possess a loamy  
9 surface horizon underlain by a loamy to clayey subsoil layer with lenses of silty and/or sandy  
10 clay. Rock fragments generally occur throughout the clayey material. The soil colors range  
11 from a brownish-red in the northern portion to a brownish-gray in the southern portion of the  
12 Arsenal. Darker gray soils are found in areas of topographic lows. Soil depths range from very  
13 shallow on the mountains, to much deeper along the larger tributaries of the Tennessee River.  
14 The predominate soil type mapped for the 3700 Storage Area site is Emory silt loam, 0 to 2  
15 percent slopes, rarely flooded. See Figure 6.  
16

17 **3.3 Land Use**  
18

19 The 3700 Storage Area is in the northeast section of the installation, off of Hipar Road. Triana  
20 Boulevard and the Redstone Arsenal boundary are to the east. The Bureau of Alcohol, Tobacco,  
21 and Firearms, National Center for Explosives Training and Research on Patton Road is south of  
22 the parcel. A six foot tall security fence with barbed wire surrounds a 27-acre area, of which  
23 Missile Defense Agency currently occupies 13.54 acres. The site includes the following vacant  
24 buildings: Buildings 3757 and 3760 once used for radar testing (Building 3760 has a septic  
25 tank/drain field); Building 3763, a vacant radar tower; and Building 3762, a functioning  
26 bathroom/shower (with a septic system). Adjacent to the buildings is a large field covered with  
27 grass and scrub vegetation and a gravel area approximately 0.87 acres. There are 11 concrete  
28 pads in the field, each with a power drop.  
29

30 In the 1980s, the buildings were used as Army training and radar test facilities. A 2004  
31 Installation Restoration Program map identifies the site as a Light Maneuver Area. The Potential  
32 Sources Assessment refers to the area as having field training exercise activities in the 1960s.  
33 Training aids would have included smoke grenades, blank ammunition, and flares. Before the  
34 Missile Defense Agency started leasing the property in 2013, Army Materiel Command used the  
35 parcel for outdoor storage area for trucks and tactical generators (Missile Defense Agency,  
36 2013).  
37

38 The Arsenal is divided into four land use zones in the Garrison Master Plan. The current and  
39 future land use classification for the 3700 Storage Area is Zone 3 - Professional Zone: Houses  
40 organizational headquarters, major office complexes/research laboratories and hosts the highest  
41 concentration of our workforce. The Master Plan further subdivides the installation's four zones  
42 into 15 districts; the 3700 Storage Area is in the Business District. (U.S. Army Garrison –  
43 Redstone, 2014).  
44

45 The Garrison Master Plan also divides the Arsenal into Developable Areas. The 3700 Storage  
46 Area parcel is in a category called Developable – Minor Restrictions, of which there is

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1 approximately 6,100 acres at the Arsenal. Land identified as Developable – Minor Restrictions  
2 may be developed upon mitigation of what are generally considered less cumbersome  
3 restrictions. This category is primarily made up flora and fauna sensitive areas, archaeological  
4 sites, wetlands, 100-year flood plain, TVA land (along the riverfront), and unexploded ordnance  
5 areas with a probability of seldom or occasional (U.S. Army Garrison – Redstone, 2014).  
6

7 **3.4 Unexploded Ordnance**

8  
9 The 3700 Storage Area parcel is not considered prime real estate for development because of the  
10 restrictions caused by unexploded ordnance, with a probability of seldom. The source of the  
11 unexploded ordnance is the prior use of the parcel as a U.S. Army training grounds. An  
12 unexploded ordnance probability of "Seldom" is equivalent to low rating utilized by the  
13 Department of Defense Explosive Safety Board. The "Seldom" designation carries requirements  
14 for unexploded ordnance support, protocols for managing unexploded ordnance, and restriction  
15 of soil leaving the installation.  
16

17 **3.5 Surface Water Resources**

18  
19 McDonald Creek traverses Redstone Arsenal approximately 300 yards west of the 3700 Storage  
20 Area and conveys storm drainage to the Tennessee River. McDonald Creek, traveling through  
21 the northeastern corner of the arsenal before entering Huntsville Spring Branch, drains  
22 approximately 14 square miles of land area; 40 percent of this area lies on the Redstone Arsenal.  
23 The upstream portion of the drainage basin is located off the installation and is relatively  
24 urbanized. The remaining portion of the basin within the installation is developed, except for  
25 some undeveloped land in the floodplain of the creek. The main channel is approximately eight  
26 and one half miles long, two miles of which have been channelized within the post.

27 Redstone Arsenal has a comprehensive Storm Water Management Program and the Alabama  
28 Department of Environmental Management has issued Redstone a National Pollutant Discharge  
29 Elimination System industrial storm water discharge permit. The permit covers 54 Discharges  
30 Monitoring Sites that the Garrison monitors on a monthly, quarterly, semi-annual and annual  
31 basis. The intent of this permit is to prevent or minimize the potential for the release of  
32 pollutants to the waters of the State from material storage areas, process and material handling  
33 areas, and fueling stations. Storm water from the 3700 Storage Area site runs off correctly along  
34 natural swales or seeps into the ground.

35 All construction projects disturbing one or more acres on Redstone Arsenal are required to have  
36 coverage under the Alabama Department of Environmental Management Construction Municipal  
37 Permit. The party or parties requiring the permit coverage must officially notify the Alabama  
38 Department of Environmental Management of the project by submitting a Notice of Intent for  
39 coverage under the Construction General Permit, along with the necessary fees required by the  
40 Alabama Department of Environmental Management to review the plan. The major provision of  
41 the Construction General Permit is to develop and implement a construction project's Best  
42 Management Plan that outlines the Best Management Practices and procedures that would be  
43 used to effectively prevent pollutants from leaving the project site and entering into the  
44 municipal run-off.

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**4. ENVIRONMENTAL CONSEQUENCES**

This section is an analysis of the potential impacts of the Proposed Action on the following resource areas: 1) air quality, 2) geology/topography and soils, 3) land use, 4) ordnance, and 5) surface water resources. The environmental impacts of implementing the Proposed Action and the No Action Alternative were evaluated relative to the existing environment, as described in Section 3. Anticipated direct and indirect effects were assessed, considering both the short- and long-term negative impacts. The cumulative impacts of improving the 3700 Storage Area combined with impacts from other projects are also examined.

**4.1 Air Quality**

**4.1.1 Proposed Action**

Excavation and movement of dirt and the application of gravel would create temporary construction dust emissions due to the movement of heavy equipment and the unloading, moving, and compaction of the fill within the area of expansion. These emissions could impact air quality, but the impact would be temporary, and with standard dust suppression techniques and vehicle maintenance programs used, not significant. Vehicular and construction equipment exhaust from construction activities and workers traveling to and from the site would last approximately two to three months. These increased emissions created from construction are not expected to create a significant impact on air quality.

Precautions would be taken to prevent fugitive dust emanating from roads, grounds, stockpiles, screens, dryers, hoppers, ductwork, etc. (Alabama Department of Environmental Management Rule 335-3-4-.02) Site and haul roads and grounds would be maintained in the following manner so that dust will not become airborne by: 1) the application of water any time the surface of the road is sufficiently dry to avoid the creation of dust emissions by the act of wind or vehicular traffic; 2) reducing the speed of vehicular traffic to a point below that at which dust emissions are created; 3) paving; 4) the application of binders to the road surface at any time the road surface is found to allow the creation of dust emissions; or 5) any combination of the above methods which results in the prevention of dust becoming airborne from the road surface.

Combustion engines in construction equipment and vehicles would emit carbon dioxide and other greenhouse gasses during construction activities. However, emissions would not approach the 25,000 metric ton per year threshold for further analysis identified in Council on Environmental Quality guidance (U.S. Environmental Protection Agency, 2011). The amount of carbon dioxide and other greenhouse gases released as a result of proposed activities is minor, and releases would be temporary; therefore, contribution to climate change would be negligible.

**4.1.2 No Action Alternative**

There would be no change to air quality.

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**4.2 Geology/Topography and Soils**

**4.2.1 Proposed Action**

The proposed construction site would require grading approximately 8 acres of land containing grass and shrubs. The proposed grading activity (gravel hardstand) is situated in a topographically low area, from 588 to 590 feet above mean sea level in elevation. Thus, impact on the site slope and the amount of excavation would be minimal. Best Management Practices for erosion control, topsoil management, and revegetation would be required and stated in the construction contract. The Proposed Action would result in the addition of approximately eight acres of gravel surfaces to Redstone Arsenal, which is an installation-wide increase in impervious surfaces of approximately 0.4 percent.

The additional acreage needed for the gravel hardstand would have an insignificant effect on the geology/topography and soils at Redstone Arsenal.

**4.2.2 No Action Alternative**

There would be no change to geology/topography and soils.

**4.3 Land Use**

**4.3.1 Proposed Action**

Converting approximately 8 acres of training area to outdoor storage usage would be less than 1 percent change in training lands at the Arsenal. The 2005 Base Realignment and Closure Congressional initiative has brought considerable change to the mission at Redstone Arsenal and the need for large areas to maneuver and train has greatly diminished. Installation of the proposed water line and expansion of the hardstand parking area would be consistent with the "Professional" land use classification. The storage mission of the Proposed Action is not compatible with the "Professional" land use classification; however, there is enough open space around the 3700 Storage Area to provide safety, visual buffers, and force protection benefits. The 3700 Storage Area falls within what the Arsenal's Master Plan calls "Developable – Minor Restrictions", of which there is approximately 6,100 acres at the Arsenal. There would not be a significant impact to these land uses.

**4.3.2 No Action Alternative**

There would be no change to land use.

**4.4 Ordnance**

**4.4.1 Proposed Action**

The Proposed Action does not involve ordnance storage. The only impacts from ordnance would be when construction crews dig trenches or clear vegetation growing in areas with potential unexploded ordnance. There are land restrictions in place at the site because of the low probability of unexploded ordnance. If unexploded ordnance is found during construction activity, all work must cease and the unexploded ordnance-qualified personnel must be on site

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1 within 24 hours from discovery of the item. According to Department of Defense Manual 6055-  
2 09 Volume 7, E3.4.2.2.1, “Low Probability” requires:

3  
4 “Explosive Ordnance Disposal personnel or Unexploded Ordnance - qualified personnel  
5 must be contacted to ensure their availability, advised about the project, and placed “on  
6 call” to assist if suspected Unexploded Ordnance are encountered during construction.  
7 Discoveries of Unexploded Ordnance or Discarded Military Munitions on such sites  
8 require reassessment of the level of support required.” (Department of Defense, 2010)

9 In addition, because of the possibility of soils containing unexploded ordnance, no off-site  
10 transport of excavated materials would occur.

11 With these Best Management Practices in place, there are no significant environmental impacts  
12 from unexploded ordnance.

13 **4.4.2 No Action Alternative**

14 There would be no change to ordnance management.

15 **4.5 Surface Water Resources**

16 **4.5.1 Proposed Action**

17  
18 As stated in the Garrison Municipal Storm Water Management, there are minimum control  
19 measures required for ensuring storm water quality at Redstone: 1) Illicit Discharge Detection  
20 and Elimination; 2) Construction Site Municipal Runoff Control; 3) Post-Construction  
21 Management in New Development and Redevelopment; and 4) Pollution Prevention and Good  
22 Housekeeping Plan (U.S. Army Garrison – Redstone, 2015).

23 There is no open material storage or container/drum storage proposed at the site that would cause  
24 potential spill situations; therefore, it is unlikely that an illicit discharge would occur. Run-off  
25 from the 3700 Storage Area is unlikely to contain contaminants such as sediment, nutrients, and  
26 petroleum hydrocarbons. Spill kits would be kept on site and fuel catch pans would be available  
27 for use underneath vehicles that are left standing for a long length of time.

28 Applicable storm water requirements would be followed during the construction phase.  
29 Redstone Arsenal Storm Water Policy requires the construction site to install erosion and  
30 sediment controls prior to land-disturbing activities and the performance of required inspections  
31 and/or monitoring, and the preparation and implementation of a Construction Best Management  
32 Plan.

33 The construction site plan (see Figures 1 and 2) maximizes use of the existing topography  
34 including slope and hydrology flow, and minimizes site clearing to 8 acres inside the perimeter  
35 road, and soil cut and fill activities. Storm water could infiltrate the gravel surface that is  
36 proposed, thus reducing runoff from the site compared to a pavement option.

37 The pre- and post- construction storm water calculations conducted for the site plan indicate that  
38 the compact soil and the reduced vegetation cover of the Proposed Action would increase run-off  
39 volume and velocity of storm water, and may alter drainage patterns in the vicinity of the

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1 construction site. Therefore, a storm water detention area, shown in Figure 2, has been included  
2 in the site design per the Redstone Arsenal Storm Water Policy. With the implementation of  
3 appropriate construction storm water Best Management Practices, and the installation of a storm  
4 water detention area, the impacts to surface water quality would be insignificant.

5 **4.5.2 No Action Alternative**

6  
7 There would be no change to surface water resources.

8 **4.6 Compatibility of the Proposed Action with Objectives of Federal, State, and Local**  
9 **Land Use Plans, Policies and Controls**

10 The Proposed Action would be compatible with the existing federal and state laws. The storage  
11 mission of the Proposed Action is not compatible with the Garrison Land Use Plans, which  
12 designate the site within a “Professional” land use classification. However, there is enough open  
13 space around the 3700 Storage Area to provide safety, visual buffers, and force protection  
14 benefits, all characteristics of Professional land use. In addition, the Proposed Action would not  
15 rule out the designated “Professional” land use in the future.

16 **4.7 Relationship Between Short-Term Uses of the Environment and Long-Term**  
17 **Productivity**

18 The Proposed Action would involve the use of a previously disturbed area. No croplands,  
19 wooded areas, or wetlands would be modified as a result of implementing the Proposed Action.

20 **4.8 Irreversible and Irretrievable Commitments of Resources**

21 The Proposed Action would not cause irreversible or commitments of resources, if appropriate  
22 Best Management Practices are followed.

23 **4.9 Cumulative Impact**

24 Cumulative effects are impacts on the environment resulting from the incremental impact of the  
25 Proposed Action when added to other past, present, and reasonably foreseeable future actions.  
26 Because the Proposed Action has no direct or indirect effects on the any aspect of the  
27 environment, there is no need to consider cumulative effects.

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1   **4.10 Conclusion**

2   Although there are no significant impacts expected to any resource areas, the following practices  
3   and mitigations would be implemented, as appropriate, to minimize potential short-term impacts  
4   from the proposed project:

5   Air Quality:

- 6       • Fugitive dust emissions reductions during construction activities.

7   Geology and Soil:

- 8       • Construction Best Management Practices.
- 9       • Rapid stabilization of disturbed areas.

10   Ordnance:

- 11       • Implementation of unexploded ordnance Site Support requirements.
- 12       • Use of 911 for inadvertent unexploded ordnance discoveries.
- 13       • No off-site transport of excavated materials.
- 14       • Unexploded ordnance awareness training (anomaly avoidance or unexploded ordnance  
15       construction support for all workers conducting any intrusive work).
- 16       • Adherence to all protocols dictated in the Department of Defense Manual 6055-09  
17       Volume 7.

18  
19   Surface Water Resources:

- 20       • Construction Best Management Practices.
- 21       • Spill Kits.
- 22       • Adherence to American National Standards Institute/American Water Works Association  
23       Standards 600-606 when installing new water main.

24   The Proposed Action would have no significant direct or indirect impacts on the quality of  
25   human health or the environment. Therefore, an Environmental Impact Statement is not  
26   required.

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1 **5. LIST OF PREPARERS**

2

3 Bettie McCaulley, LEED AP, Missile Defense Agency; M.S., Engineering

4

5 Barbara M. Young, Senior Environmental Analyst, Shearer & Associates; Inc., M.A.,  
6 Geography

7

8 Jeral Jones, Senior Geographic Information Systems Analyst, CCI Solutions, LLC; BS,  
9 Management Information Systems

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**6. AGENCIES AND PERSONS CONTACTED**

Allison Nail Guilliams  
National Environmental Policy Act (NEPA) Coordinator  
Cultural & Natural Resources  
Environmental Management Division  
U.S. Army Garrison - Redstone  
4488 Martin Road A-320  
Redstone Arsenal, AL 35898  
256-842-6948

Frank Vazquez  
Logistics Management Spec  
MDA/DPLO - SAIC  
Building 3302, Hercules Road  
Redstone Arsenal, AL 35898

John C. Cogburn  
Project Manager/Design Team Lead  
DPW Engineering, Design Branch  
IMRE-PWF-E  
Building 4488, Rm A-105  
Redstone Arsenal, AL 35898  
john.c.cogburn.civ@mail.mil

Craig Northridge  
Chief, Master Planning Division  
Directorate of Public Works  
U.S. Army Garrison-Redstone  
ATTN: IMRE-PWM (Northridge)  
4488 Martin Road  
Redstone Arsenal, Alabama 35898

US Environmental Protection Agency

Alabama Department of Environmental Management

US Fish and Wildlife Service

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**APPENDIX A. REFERENCES**

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