CHAPTER III: Land Use Compatibility Analysis

I. Introduction

This Chapter of the Camp Clark Joint Land Use Study analyzes and assesses the potential impacts created by the military training and operational missions currently occurring at Camp Clark Training Center (CCTC) to determine the degree of compatibility that exists with the land use patterns found in the areas surrounding the installation. Through this assessment, land use policies, development strategies and other tools can be implemented to ensure that future growth in the neighboring communities is as compatible as possible with the Training Center’s military mission. This assessment also serves as a tool for CCTC to better understand the nature and extent of the impacts that it creates in the neighboring communities so that it can better plan for changes in its mission, where such changes could create new impacts or expand the degree of current impacts.

In an attempt to narrow the spatial focus of the study to those areas that have the highest likelihood of experiencing a military related impact, the JLUS Policy Committee reviewed the known impact areas and established the Joint Land Use Study Focus Area. The JLUS Focus Area, shown in Figure 3-1, extends one mile from CCTC’s external boundary and covers a total area of 7,084 acres (11.1 square miles), including Camp Clark and land within the jurisdictions of the City of Nevada and Vernon County. A breakdown of the distribution of jurisdiction in the JLUS Focus Area is shown in Table 3-1 below. Excluding CCTC from the JLUS Focus Area, the total off-post area is approximately 9.1 square miles, the vast majority of which (91.7%) is within the jurisdiction of Vernon County (see Figure 3-2 for a map showing local government jurisdiction in the JLUS Focus Area). Additional statistics related to the distribution of jurisdiction in the off-post portion of the JLUS Focus area are shown in Tables 3-1 and 3-2 below.

<table>
<thead>
<tr>
<th>Jurisdiction</th>
<th>Acres</th>
<th>Square Miles</th>
<th>% of Focus Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>City of Nevada</td>
<td>486</td>
<td>0.8</td>
<td>6.9%</td>
</tr>
<tr>
<td>Vernon County</td>
<td>5,338</td>
<td>8.3</td>
<td>75.4%</td>
</tr>
<tr>
<td>Camp Clark</td>
<td>1,260</td>
<td>2</td>
<td>17.8%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>7,084</td>
<td>11.1</td>
<td>100%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Jurisdiction</th>
<th>Acres</th>
<th>Square Miles</th>
<th>% of Focus Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>City of Nevada</td>
<td>486</td>
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<td>8.3%</td>
</tr>
<tr>
<td>Vernon County</td>
<td>5,338</td>
<td>8.3</td>
<td>91.7%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>5,824</td>
<td>9.1</td>
<td>100%</td>
</tr>
</tbody>
</table>
Figure 3-1: Camp Clark Joint Land Use Study Focus Area
Figure 3-2: Local Government Jurisdiction in JLUS Focus Area
II. Existing Land Use Pattern

With the JLUS Focus Area established, the next step in the process of conducting the compatibility assessment was to develop a base of information regarding the existing land use pattern in the area covered by the study. This was completed primarily through the use of aerial photography and available spatial data sets to classify land according to its general use. The land use classification was conducted using a Geographic Information System (GIS) to create a spatial database of the JLUS Focus Area that divides the lands within the area into five general categories:

- **Residential** – lands used for single or multi-family residential purposes, including both site built and manufactured housing (mobile homes).
- **Commercial** – lands used for the retail sale of goods as well as personal and professional services and similar activities that do not fall into the Industrial or Public / Institutional categories.
- **Industrial** – lands used for manufacturing, processing or storing raw materials, resource extraction, warehousing, logistics and similar intensive uses of land.
- **Public / Institutional** – lands used for civic, social, educational, governmental and similar purposes, except those uses which fall into the Industrial category.
- **Agriculture / Undeveloped** – lands that are in active use for crop production, raising livestock and similar agricultural purposes, along with associated supporting building and facilities, as well as all other “undeveloped” lands which do not contain a use or structure in the other four classifications.

In addition to the classification of land use in the Focus Area in the communities around Camp Clark Training Center, the lands within CCTC’s installation boundary were also evaluated so that a general assessment could be made of their compatibility with external land uses. For the purposes of this study, the two following generalized land use categories were used for classifying lands at CCTC:

- **Cantonment Area** – the portion of CCTC that contains the administrative, educational, billeting and logistical support functions of the post, including classrooms and other low impact training sites.
- **Training Area** – areas of CCTC used for military field training purposes, including tactical field training, bivouac sites, military operations on urban terrain (MOUT) and weapons qualification ranges.

A. Off-Post Existing Land Use Pattern

The off-post land use pattern (see Figure 3-4) that was developed using the previously described classification method reveals an existing land use pattern around CCTC where only approximately 10% of the land in the JLUS Focus Area is in
use for one of the four “developed” land use classifications (residential, commercial, industrial, or public / institutional). The statistical distribution of the various land uses in the JLUS Focus Area is shown in Table 3-3 below. Following the table, a detailed discussion of the existing land use patterns in the off-post portion of the JLUS Focus Area is provided. This discussion divides the JLUS Focus Area into sub-areas, which are shown in Figure 3-4.

Table 3-3: Off-Post Land Use Distribution

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Acres</th>
<th>% of Focus Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>193</td>
<td>3.4%</td>
</tr>
<tr>
<td>Commercial</td>
<td>75</td>
<td>1.3%</td>
</tr>
<tr>
<td>Industrial</td>
<td>23</td>
<td>0.4%</td>
</tr>
<tr>
<td>Public / Institutional</td>
<td>270</td>
<td>4.8%</td>
</tr>
<tr>
<td>Agriculture / Undeveloped</td>
<td>5,094</td>
<td>90.1%</td>
</tr>
<tr>
<td>Total</td>
<td>5,655</td>
<td>100%</td>
</tr>
</tbody>
</table>

1. **Sub-Area I Exiting Land Use Pattern**

At just over 2 square miles in size (1,284 acres), Sub-Area I covers the area between CCTC’s northern boundary and Noah Road from Route K / County Road 1800 in the west to County Road 2000 in the east. Land that is used for agricultural purposes, or otherwise undeveloped, is the predominant feature in the sub-area. The most intensively developed portion of the sub-area is centered on Overland Road, which runs parallel to the installation boundary between County Road 1900 and County Road 2000. This area is home to a small concentration of single-family dwellings which have been developed on Overland Road, with some development extending northward along County Road 1900 from its intersection with Overland Road. The only non-residential “developed” use in the sub-area, a commercial building once used as a daycare center, is also located in this general area along County Road 1900. The only other development in the sub-area consists of several scattered single-family dwellings.

2. **Sub-Area II Exiting Land Use Pattern**

Extending eastward from CCTC’s eastern boundary, Sub-Area II covers approximately 1.75 square miles of land (1,126 acres) in an area bounded by the JLUS Focus area on the east, a line running parallel to CCTC’s southern boundary on the south, the eastern boundary of CCTC and County Road 2000 on the west and the JLUS Focus Area Boundary on the north/northeast. Like Sub-Area I, this
Figure 3-3: Off-Post Existing Land Use Pattern
Figure 3-4: Existing Land Use Sub-Areas

Data Source: Benchmark CMR, Inc. / MODOT / US Census / MOANG / ESRI
portion of the JLUS Focus Area is primarily rural in character, with the majority of the land in the area used for agricultural purposes or remaining otherwise undeveloped. Sparsely scattered rural residential development is the only type of “developed” property found in this remote portion of the JLUS Focus Area. Of note, three of the residentially developed properties in this sub-area are located in close proximity or immediately adjacent to CCTC’s eastern boundary, with two homes located on County Road 2000 near the northeastern corner of the installation and one home just east of the installation boundary on Panama Road.

3. **Sub-Area III Exiting Land Use Pattern**

   Lying generally south and southeast of CCTC, Sub-Area III is a rural, yet more accessible, portion of the JLUS Focus Area given its link to Nevada and the interstate via Route K, which bisects the sub-area. Covering just over 2.8 square miles of land (1,796 acres), Sub-Area III extends south and east from CCTC and the southern boundary of Sub-Area II to the southern and eastern boundary of the JLUS Focus area and to Route K (north-south portion of the road) in the west. Developed land uses in this area are limited exclusively to single-family dwellings, which are concentrated most heavily along Route K, which has home sites along its length through the sub-area, though there are no areas of particularly high density development. Outside of the Route K corridor, there are only a few sparsely scattered residences, all of which are a substantial distance from the boundary of CCTC, while the remainder of the land in the area is either used for agricultural purposes or is otherwise undeveloped.

4. **Sub-Area IV Exiting Land Use Pattern**

   Encompassing the majority of the land west of Interstate 49 in the JLUS Focus Area, Sub-Area IV covers approximately 1.7 square miles of land (1,104 acres). While land this area, like the three previously discussed sub-areas, is primarily in use for agricultural purposes or otherwise undeveloped, it does contain several larger “developed” uses as well. Major land uses in this area include two large recreation areas (designated as public/institutional). The first of these recreation uses is Twin Lakes Park, a public park and golf course located in the southern portion of the area, and the other is a privately held sports complex in the northeastern corner of the area, directly across Interstate 49 from the western boundary of CCTC. A commercially developed area, centered on the Nevada Speedway, is located in the northwestern corner of the sub-area along Overland Road. Sparse residential development, found primarily in the far western and northern portions of the sub-area, is the only other development in the area.

5. **Sub-Area V Exiting Land Use Pattern**

   The most intensively developed portion of the JLUS Focus area is Sub-Area V, which covers a relatively small area at 0.78 square miles (469 acres), but which
is densely developed in comparison to the remainder of the JLUS Focus Area. The developed portions of this sub-area are centered around the commercial corridor that has developed along Austin Boulevard and its interchange with Interstate 49. The portion of the sub-area located south and west of Interstate 49 is heavily developed for commercial use along Austin Boulevard, while suburban scale residential development, including a mid-sized multi-family development, has emerged in areas farther south of the commercial corridor. North and east of Interstate 49, developed properties are almost exclusively in nonresidential use. Route K, which begins on the east side of Interstate 49, is heavily developed on the north side of the road between the interstate and the point where it intersects County Road 1800. This area includes a mixture of commercial (movie theater, farm equipment dealership), industrial (beer distributor) and public / institutional uses (fraternal hall, public water district office). The intensity of development along Route K decreases past the curve where it turns south toward CCTC. This remaining portion of the corridor contains two smaller scale industrial uses on the west side of the corridor.

B. On-Post Land Use
The on-post land use pattern at CCTC (see Figure 3-5) is comprised of two general land use classifications, which were described in the introduction to this Section. At just under 2 square miles in area (1,260 acres), land at CCTC is divided between the cantonment area and training areas. The cantonment area refers to that portion of the installation where the administrative, logistics, education, billeting and similar functions are carried out, while the training areas are used for a wide variety of military field training activities in support of CCTC’s mission. Occupying a rather compact area in the southwestern corner of the installation, CCTC’s cantonment area consists of 218 acres of land. Training areas, which account for over 80% of the installation’s land area, or 1,042 acres, adjoin the cantonment area’s northern and eastern boundaries and extend east and north to cover the remainder of the post.

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Acres</th>
<th>% of CCTC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cantonment Area</td>
<td>218</td>
<td>17.3%</td>
</tr>
<tr>
<td>Training Area</td>
<td>1,042</td>
<td>82.7%</td>
</tr>
<tr>
<td>Total</td>
<td>1,260</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 3-4: CCTC On-Post Land Use Distribution

C. Combined JLUS Focus Area Land Use Pattern Assessment
The pattern that emerges from the assessment of land use in the JLUS Focus Area is one that appears to foster a significant amount of compatibility between CCTC and civilian land uses around the installation (see Figure 3-6). This degree of general compatibility has to do, in large part, with the rural and agricultural landscape that
Figure 3-5: Generalized On-Post Land Use Pattern
Figure 3-6: Combined JLUS Focus Area Existing Land Use Pattern
surrounds a majority of the installation. The lack of significant amounts or densities of residential development or noise sensitive nonresidential uses, such as churches or schools, anywhere in the vicinity of CCTC reinforces the generally compatible nature of land use in the JLUS Focus Area.

The general compatibility of the land use patterns found outside of CCTC and the general pattern of military land use on CCTC is reinforced by several key factors that help to maintain the rural character of the JLUS focus area around the installation. First, the lack of municipal wastewater service in the majority of the area around the post significantly limits both the density of residential development that could occur, as well as the type and intensity of other land uses that may be less compatible with CCTC. The road infrastructure, or lack thereof in certain instances, has limited growth by making large parts of the southern, eastern and northern portions of the JLUS Focus area difficult to access. Finally, the Interstate 49 corridor has effectively become a buffer along CCTC’s western boundary, preventing development from occurring adjacent to the Training Center in this area.

Combined, the growth limiting factors described above have helped to perpetuate the rural land use patterns found in the agricultural landscape around CCTC. This, in turn, has supported a generally compatible land use environment between CCTC and its neighbors. Moving beyond general compatibility, the following Sections of Chapter III will examine compatibility at a finer scale, including a more detailed assessment of compatibility based on CCTC’s known operational and training impacts.

III. Installation Boundary Status

In addition to identifying and classifying land uses on and off-post to assist in determining land use compatibility, it is also helpful to understand the development status of an installation’s external boundary. To accomplish this, the boundary of CCTC has been coded with one of three descriptive identifiers based on the use and ownership of the off-post lands that are located immediately adjacent to its external boundary. While a certain status does not correlate directly to the degree of compatibility that might exist in a particular area, it is helpful in identifying where the potential for future incompatibility may exist, due to the nature of the ownership or development status of the off-post lands. The three status identifiers used in this portion of the analysis are:

- **Undeveloped** – the boundary is adjacent to land that is used for agricultural purposes, is forested, or is otherwise undeveloped.

- **Developed** – the boundary is adjacent to land that has been developed for residential, commercial, industrial, or public / institutional uses.
- **Protected** – the boundary is adjacent to land that, by either its ownership, use or another factor, will most likely remain in an undeveloped state.

The analysis of the status of CCTC’s boundary, when coupled with the overall land use classification, provides a greater degree of insight into the future potential for immediately adjacent undeveloped property to transition to developed uses which may, or may not, be compatible with its military training mission. This also provides insight into the location of portions of the boundary, that, by their “protected” nature, may be more suited for the proximate location of military training activities that could otherwise negatively impact civilian communities off-post, though a careful analysis of the use and status of the adjacent “protected” lands is necessary prior to making this type of final land use compatibility determination.

The overall analysis of CCTC’s boundary, shown in Figure 3-7, revealed that the installation’s approximately 6 mile long external boundary is mostly undeveloped at the present time. The result of the statistical analysis of the boundary status is shown in the table below:

<table>
<thead>
<tr>
<th>Boundary Status</th>
<th>Feet</th>
<th>% of Boundary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undeveloped</td>
<td>24,000</td>
<td>76.2%</td>
</tr>
<tr>
<td>Developed</td>
<td>2,313</td>
<td>7.3%</td>
</tr>
<tr>
<td>Protected</td>
<td>5,165</td>
<td>16.4%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>31,478</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

The entire southern boundary of CCTC, as well as nearly all of its eastern boundary and over half of its northern boundary, are currently undeveloped, with agricultural uses occupying most of the land adjacent to the Training Center. The area along Overland Road on CCTC’s northern boundary contains a number of residences that are directly across the road from the installation, giving this area the largest concentration of developed property along the installation boundary. Only two other individual locations along CTC’s boundary are developed – one on the eastern boundary near the northeast corner of the installation, and one at the northwestern corner of the installation boundary. The western boundary of CCTC is classified over almost its entire length (excluding the northwest corner) as having a “protected” status. This classification was selected since the western boundary is adjacent to highway right-of-way that extends a significant distance westward from the installation boundary, essentially buffering the boundary from the potential for future development in any closer proximity than the west side of Interstate 49.
Figure 3-7: Installation Boundary Status
The result of the installation boundary status analysis, with its finding that the vast majority of the land immediately adjacent to CCTC’s external boundary remains either undeveloped or is in a “protected” status, indicates a high degree of potential compatibility. In this usage, compatibility is intended to mean the lack of a significant number of immediately developed properties. The large amount of undeveloped land also indicates a need for vigilance in these areas since the undeveloped status of so much property also translates into a significant amount of potential opportunity for future development. Future development along CCTC’s boundary would, of course, be predicated on market demand, as well as the availability of the necessary infrastructure to support growth, such as road improvements and municipal sewer service. Given the limited amount of development in areas adjacent to CCTC, it appears that past development was more opportunistic in nature rather than driven by any specific factors that led it to occur along the installation boundary. This reinforces the assumption that without significant changes in supporting infrastructure, there is little likelihood that significant additional development will occur along the installation boundary.

IV. Military Impact Compatibility Analysis
The following is an analysis of the known and measurable off-post impacts that are currently being generated at CCTC. This analysis builds on the more generalized assessment of existing land use patterns to examine the current degree of compatibility between military training and operations occurring at CCTC and off-post land uses that are potentially subject to the effects of those activities. The results and conclusions contained in this analysis are based upon the best and most current data available, and the findings are based upon generally accepted best practices that are propagated by the Department of Defense for use in such analyses. Local experience and anecdotal evidence may lead to conclusions that are different than the findings detailed below, and should be considered, along with all other evidence, during the formulation of land use and operational policies by CCTC, the potentially impacted property owners and local governments.

A. Small Arms Noise Zone Land Use Compatibility
The most extensive and readily identifiable impact created by training activities at CCTC is noise associated with small arms training at the installation’s weapons ranges. The potential for generating off-post noise impacts was identified in the 2013 Missouri Army National Guard Statewide Operational Noise Management Plan (ONMP), which details the location and extent of these impacts.

The noise generation potential of CCTC’s ranges has been spatially defined with noise contours, known as Noise Zones II and III. These noise zones correlate to areas of peak noise potential of between 87 dB and 104 dB (Noise Zone II) and greater than 104 dB (Noise Zone III). A map showing the defined extent of the established Noise Zones is shown in Figure 3-8.
Figure 3-8: Small Arms Noise Zones
The peak noise metric used in this study is the PK15(met) measurement, which attempts to define the noise level that will be exceeded by 15% of noise generating events, based on meteorological conditions and other factors. Since the peak noise contour represents intermittent occurrences of noise, based on activity, and is only intended to represent a small fraction of the total number of noise events, it is likely that the general nature of the impact experienced in the covered areas is typically less than what is depicted on the map. This more conservative (meaning a larger area) estimate of noise impacts is intended primarily to ensure that potential noise impacts, even those that will occur only sporadically, are fully understood and can be planned for accordingly.

As the map indicates, small portions of Noise Zone III and much larger portions of Noise Zone II extend past CCTC’s boundary into off-post areas around the installation. The approximate amount of off-post land covered by Noise Zone III is 28 acres, (including 3.5 acres of right-of-way), while approximately 900 acres of off-post land are within the Noise Zone II contour. The noise contours are based on measurements for weapons ranges located on the east and west sides of CCTC, and the following discussion examines land use compatibility in each area separately.

1. **Western Noise Impact Area Existing Land Use Compatibility**
   The western portion of the noise impact area, shown in Figure 3-9, includes a small amount of Noise Zone III that extends off of CCTC to the west, and a moderate amount of Noise Zone II area that extends to the west and north of the installation boundary. The Noise Zone III area only extends into highway right-of-way, and does not impact any private property. Noise Zone II extends a greater distance, affecting land that is primarily used for agricultural purposes or otherwise undeveloped. It does, however, also extend over all, or a portion, of several developed parcels. Noise Zone II is generally compatible with the public / institutional use (sports complex) located across Interstate 49 from CCTC, and is fully compatible with the industrial uses on Route K that fall within the noise zone. The single-family dwelling on Route K, located just north of CCTC, which falls within Noise Zone II, is the only land use of potential concern in this area since residential development is not generally deemed to be compatible with Noise Zone II areas. The limited extent of the potentially incompatible land use (only one dwelling) and anecdotal evidence from CCTC in the form of a lack of noise complaints appears to indicate, however, that no significant compatibility concerns exist at the current time due to the presence of this use in the area.

2. **Eastern Noise Impact Area Existing Land Use Compatibility**
   The eastern portion of the noise impact area, shown in Figure 3-10, includes off-post areas that fall within both noise zones. Noise Zone III extends east from the installation boundary for a short distance, while Noise Zone II covers off-post lands to the north, south and east of CCTC on this side of the post. The Noise Zone III contour in this area primarily extends onto land that is used for
Figure 3-9: Small Arms Noise Zone Existing Land Use Pattern (West)
Figure 3-10: Small Arms Noise Zone Existing Land Use Pattern (East)
agricultural purposes, but it does also include one single-family residence, which is located a short distance from the eastern boundary of CCTC. While limited to only one dwelling, this does represent a potential long term compatibility issue since residential uses are generally defined as being incompatible with the potential noise impacts found in Noise Zone III. Based on anecdotal evidence from CCTC, however, there have not been any significant issues related to noise encroachment in the past in this location.

The area covered by Noise Zone II around the eastern portion of CCTC extends into areas that are primarily used for agricultural purposes, or are otherwise undeveloped. The portion of Noise Zone II that extends south of CCTC is completely undeveloped. To the east of CCTC, only several scattered residential uses are within the Noise Zone II contour. Two of these residences are located adjacent to CCTC’s northeastern boundary, while two other properties are partially covered by the far edge of the noise contour. The northern portion of the Noise Zone II contour extends over a relatively larger number of residentially developed properties along Overland Road, which runs parallel to CCTC’s northern boundary. This area represents the densest concentration of residential development in any of the noise zones. Since residential developments is deemed to have a low degree of compatibility with the potential noise impacts found in Noise Zone II areas, the concentration of residential uses along Overland Road presents a potential long term compatibility issue, particularly if the density of development were to increase over time. Taken as a whole, however, the existing land use pattern in the Noise Zone II contour is generally compatible with CCTC’s off-post noise impacts.

3. Summary of Noise Impact Area Land Use Compatibility

Given the size of the area covered by Noise Zones II and III, there are relatively few, and relatively minor, land use compatibility issues related to noise generated by training activities at CCTC. The lack of large concentrations of developed property within the Noise Zone III areas and the sparse development patterns in Noise Zone II areas, present a generally compatible environment in which to continue current training activities at CCTC.

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Noise Zone II (acres)</th>
<th>Noise Zone II (%)</th>
<th>Noise Zone III (acres)</th>
<th>Noise Zone III (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>30.6</td>
<td>3.4%</td>
<td>1.2</td>
<td>4.9%</td>
</tr>
<tr>
<td>Public / Institutional</td>
<td>30.7</td>
<td>3.4%</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Industrial</td>
<td>9.1</td>
<td>1.0%</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Agriculture / Undeveloped</td>
<td>828.7</td>
<td>92.2%</td>
<td>23.3</td>
<td>95.1%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>899.1</strong></td>
<td><strong>100%</strong></td>
<td><strong>24.5</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>
B. Ammunition Supply Point Safety Zone
The ammunition supply point at CCTC lies in close proximity to the southern boundary of the installation. The military establishes a distance around areas where munitions are stored called a "quantity distance arc", which correlates to a theoretical safe distance, based on the type and quantity of stored munitions, in the unlikely event of an explosion. In the case of CCTC, the quantity distance arc extends primarily to the north, east and west of the ammunition supply point, impacting areas on the installation (see Figure 3-11). A small portion of the safety zone, however, extends south across the installation boundary. As the land use map in Figure 3-12 shows, the safety zone only impacts land that is used for agricultural purposes. An easement put into place in 1988 between the property owner and the State of Missouri restricts the erection of any habitable buildings within this area without prior written notice to the Adjutant General’s office. While this does not guarantee long term future compatibility for the ongoing use of the ammunition supply point, it does provide a measure of protection that would prevent an unexpected incompatible use from being established in the safety zone without forewarning, which would give CCTC the ability to make plans for ensuring the ongoing compatible use of this facility.

C. Military Aircraft Operations
Camp Clark Training Center has limited facilities for conducting aircraft operations. A helipad in the cantonment area allows for the accommodation of transient rotary wing aircraft (helicopters), which primarily visit CCTC on VIP transport missions. Given the limited nature of aircraft operations at CCTC, and the lack of established facilities to accommodate them, there are no evident ongoing impacts related to the occasional use of airspace above and around CCTC by transient military aircraft.

D. Military Vehicle Convoys
Convoys of military vehicles travelling to or from CCTC primarily utilize Interstate 49 for their approach to the installation. From the interstate, convoys travel south from the interchange on Route K to the entrance of the Training Center. Route K is a rural highway that has low levels of traffic and no readily identifiable safety issues that would make the accommodation of military convoys incompatible with the general civilian use of the road. Based on the infrequent nature of convoy activity and the limited traffic volumes on the route leading to the installation, no significant impacts are known or anticipated related to this training and operational activity.

E. Demolitions Training Noise
There is a small demolitions training area at CCTC that can accommodate light weight explosive detonations. The location and types of demolitions activity that occurs at the demolitions training area do not create any known off-post noise impacts. The potential for future noise impacts from such activity is limited by the size of charges that are allowed to be used based on the small size of the facility and necessary safety zones.
Figure 3-11: Ammunition Supply Point Safety Zone
Figure 3-12: Ammunition Supply Point Safety Zone Existing Land Use
F. Dispersed Tactical Training Noise Impacts
Tactical field training, including the use of “blank” ammunition in small arms, as well as grenade and artillery simulators, occurs throughout CCTC’s maneuver training areas. Since the point of origin of the noise associated with these activities is not fixed, noise contours cannot be established to measure any off-post impacts. Per the findings of the 2013 ONMP, it is most likely that noise impacts from weapons fire that takes place outside of one of the fixed ranges are confined either within the installation boundary, or in the most extreme cases, would not extend past the established noise contours for the fixed ranges. While the fixed range contours do have some limited compatibility issues, it is not anticipated that the dispersed noise impacts associated with tactical field training causes any additional off-post compatibility impacts based on the findings of the ONMP.

V. External Impact Analysis
The following is a discussion of the potential impacts created by activities occurring outside of CCTC that could impact its ability to carry out its military training mission. While limited in scope, it is important to understand the degree and extent of any external impacts that may negatively affect the installation so that mitigation measures can be taken to reduce the external impacts, just as mitigation measures are taken on the installation to limit its impact on the community. For the purposes of this study, the potential for impacts from civil aviation, traffic and night lighting will be examined, as they are the most evident potential external impacts found in the area around CCTC.

A. Civil Aviation
The Nevada Municipal Airport is located approximately 1.25 miles north of CCTC. Currently, 10 aircraft are based at the airport, which sees approximately 50 operations per day. The absence of regular military aircraft operations from the airspace above and around CCTC, with only occasional VIP transport operations, means that there is little opportunity for civilian aircraft using the airport to conflict with military aircraft. No conflicts exist, either, between the takeoff and approach patterns of the airport’s primary runway and safety zones above weapons ranges at CCTC. In summary, the operations of the airport do not appear to present any external impacts that affect its compatibility with CCTC’s training mission.

B. Night Lighting
The ability to train and fight in a low light environment is a critical component of modern military training and doctrine. As a training focused installation, CCTC can be called upon to provide a wide range of training activities, including night training. These activities necessarily require low ambient light levels to ensure that night vision devices function to their potential and to provide the most realistic training environment possible. High background lighting levels can impair the function of such devices, and take away from the realism in training that the military strives for.
Figure 3-13: Ammunition Supply Point Safety Zone
Figure 3-14: Ammunition Supply Point Safety Zone
As the maps shown in Figures 3-13 and 3-14 demonstrate, the level of night lighting on CCTC increased significantly between 1992 and 2010, which are the first and last available datasets for background night lighting. While some of the growth in night lighting is likely attributable to additional lighting on the post, the maps do demonstrate the expansion of the highest levels of night lighting (shown in white on the maps) eastward from the City of Nevada towards the interstate area as growth and development has occurred. The change in average background lighting levels on CCTC is evident from the maps as well. In 1992, the areas that had the lowest background lighting levels (shown in full black) covered the eastern 1/3 of the installation, while in 2010, only the eastern 1/5 of the installation had this low average background lighting level.

Degraded night training capacity could eventually impact the ability of CCTC to offer certain dark-sky dependent training activities, especially if light intrusion becomes more pronounced on the training areas. Methods of mitigating the impact of night lighting could include “dark-sky” type lighting ordinances that require the shielding of outdoor lighting fixtures and generally directing lights downward to reduce background lighting effects at night.

C. Traffic
Access to CCTC from the surrounding road network is taken exclusively from the main gate on Route K, which runs parallel to the installation’s western boundary. This primary access point is supplemented by additional secondary access points on Route K that serve as auxiliary entrances for convoys and similar purposes. Traffic volumes on Route K are negligible, with recent MODOT traffic counts of around 3,500 vehicles per day on Route K near the interstate interchange and fewer than 700 per day south of CCTC. This small amount of pass-by traffic is supported by the rural / agricultural nature of the areas that are served by Route K. Based on these development patterns, any significant increase in volume on Route K is not anticipated in the foreseeable future. This should translate into few, if any, ongoing or recurring impacts from traffic on access to the installation.

VI. Land Use Compatibility Summary
Based on the available data, the analysis of land use compatibility revealed very few potential areas of incompatibility between Camp Clark Training Center and its neighbors. Those areas of potential incompatibility that do exist are relatively minor and limited in scope. A continuation of the current rural / agricultural land use and development patterns around CCTC will help to ensure continued compatibility into the future, based on the current types and levels of operations occurring at CCTC.