

**PROPOSED FEDERAL
CORRECTIONAL
INSTITUTION AND
FEDERAL PRISON CAMP
LEAVENWORTH, KANSAS**

**Draft Supplemental
Environmental
Impact Statement**

November 2020



U.S. Department of Justice
Federal Bureau of Prisons
320 First Street, NW
Washington, D.C.

ABSTRACT

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DRAFT SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT PROPOSED FEDERAL CORRECTIONAL INSTITUTION AND FEDERAL PRISON CAMP LEAVENWORTH, KANSAS

PROJECT SPONSOR: U.S. Department of Justice - Federal Bureau of Prisons

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BACKGROUND: The mission of the U.S. Department of Justice, Federal Bureau of Prisons (BOP) is to protect society by confining offenders in the controlled environments of prison and community-based facilities that are safe, humane, cost-efficient, and appropriately secure, and that provide work and other self-improvement opportunities to assist offenders in becoming law-abiding citizens. Pursuant to Section 102, 42 USC § 4332, of the National Environmental Policy Act (NEPA) of 1969, as amended and the Council on Environmental Quality Regulations (40 CFR Parts 1500-1508), a *Notice of Intent to Prepare a Draft Environmental Impact Statement (DEIS)* was published in the Federal Register on December 29, 2010 (Volume 75, Number 249) for the development of a new Federal Correctional Institution (FCI) and Federal Prison Camp (FPC). Publication of the DEIS occurred on November 18, 2011, a public hearing was held in Leavenworth, Kansas on December 11, 2011, and the DEIS public comment period concluded on January 2, 2012.

Publication of the Final EIS (FEIS) occurred on April 10, 2015 with the public comment period lasting until May 15, 2015. However, a decision whether to proceed with the proposed action and, in the absence of appropriated funds for the proposed project, no Record of Decision was issued by the Director of the BOP at that time. Upon appropriation of funds for the project, the BOP resumed the NEPA process in 2020 with preparation of a Draft Supplemental EIS (DSEIS) to provide updated information about the proposed project, the purpose and need for proceeding with developing a new FCI and FPC in Leavenworth, Kansas, and to provide the public, elected and appointed officials, regulatory agencies, and others the opportunity to voice their interests and provide comments concerning the proposed action.

PROPOSED ACTION: A growing challenge to the BOP's mission is that an increasing number of federal correctional facilities and supporting infrastructure are aging, resulting in an ongoing need for new facilities and infrastructure. Among the oldest are the medium-security facility and federal prison camp at the U.S. Penitentiary (USP) in Leavenworth. The BOP is proposing to construct and operate a new FCI designed to house approximately 1,152 medium-security inmates and an FPC designed to house 256 minimum-security inmates (total population of 1,408 inmates) with approximately 338 staff for operation. Development of a new FCI and FPC is intended to meet the need for modern correctional facilities and infrastructure and to address the specific need for a new medium-security FCI and minimum-security FPC in Leavenworth to replace the existing, aged correctional facilities.

Once development is completed and the new facilities are activated, inmates housed at the USP and FPC will be transferred to the new facilities along with the complement of correctional officers and other staff followed thereafter by the deactivation of the existing USP and FPC and other staff with the existing USP and FPC no longer housing inmates. Alternative actions have been evaluated, including the No Action Alternative, as stipulated by NEPA.

Development of a new FCI/FPC in Leavenworth will help ensure that the federal criminal justice system in general, and the BOP in particular, continues to function in a quality manner while addressing the need for modern, secure, efficient and cost-effective institutions. Doing so will also allow the BOP to better accomplish its mission to uphold justice and public safety, meet the needs of current and future federal inmate populations, and provide for the continued safety and security of inmates, staff, and the public.

Once operational, the new FCI/FPC would improve living and working conditions for inmates and staff and be an advancement over conditions at the existing USP. Improving living and working conditions has been shown to reduce the levels of stress and depression among inmates and staff, resulting in an overall positive effect on institution operation, safety and security.

PROPOSED PROJECT LOCATION: The USP Leavenworth property is bordered by Metropolitan Avenue, immediately north of the City of Leavenworth and south and west of the Fort Leavenworth U.S. Army Garrison. The property is generally bordered by Corral Creek to the north, Grant Avenue to the east, Metropolitan Avenue to the south, and Santa Fe Trail to the west. Two alternative locations within the USP Leavenworth property, known as the East Site and West Site and totaling approximately 371 acres, were investigated as part of the DEIS, FEIS and this DSFEIS.

FINDINGS: Development of the FCI/FPC is intended to meet the on-going need for modern and secure correctional facilities generally, as well as to address an identified need for a new FCI and FPC in Leavenworth, Kansas. Each alternative site has been evaluated against the BOP's siting and development criteria. Development of the FCI/FPC within the East Site best meets the project's goals and objectives and is considered by the BOP to be the environmentally-preferred alternative.

Construction and operation of the proposed FCI/FPC would result in impacts to the selected building site and surrounding community. Impacts to topographic and geologic conditions, soils, hydrology, land use, utility services, transportation, aesthetics, air quality and noise are anticipated, with none constituting significant adverse impacts. Any significant adverse impacts would be mitigated as appropriate.

Beneficial impacts would be derived from implementation of the proposed action, including contributions toward fulfilling the BOP's mission to protect society along with achieving the goals of the U.S. Department of Justice and the mandates of the U.S. Congress. Implementation of the proposed project should result in no significant adverse impacts as defined by NEPA while resulting in such positive impacts as creation of modern correctional facilities to house a portion of the federal inmate population; stimulation of the local and regional economies with creation of employment opportunities during the project's construction phase, and maintaining BOP employment during the operating phase. Cumulative, secondary and construction-related impacts and any other potentially adverse impacts would be controlled, mitigated or avoided to the maximum extent possible.

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ACRONYMS AND ABBREVIATIONS

AADT	Average Annual Daily Traffic	NEPA	National Environmental Policy Act
APE	Area of Potential Effect	NRHP	National Register of Historic Places
AST	Aboveground Storage Tank	NRCS	Natural Resources Conservation Service
ASTM	American Society of Testing Materials	NWI	National Wetlands Inventory
BOP	Federal Bureau of Prisons	pCi/L	Picocuries per liter
CAA	Clean Air Act	RCRA	Resource Conservation and Recovery Act
CAAA	Clean Air Act Amendments	ROD	Record of Decision
CFR	Code of Federal Regulations	SHPO	State Historic Preservation Office
CWA	Clean Water Act	SIP	State Implementation Plan
dB	Decibels	tpy	Tons per year
EIS	Environmental Impact Statement	USACE	U.S. Army Corps of Engineers
ESA	Environmental Site Assessment	USDA	U.S. Department of Agriculture
FCI	Federal Correctional Institution	USEPA	U.S. Environmental Protection Agency
FEMA	Federal Emergency Management Agency	USFWS	U.S. Fish and Wildlife Service
FPC	Federal Prison Camp	USGS	U.S. Geological Survey
gpd	Gallons per day	USP	U.S. Penitentiary
KDHE	Kansas Department of Health and Environment	UST	Underground Storage Tank
MBTA	Migratory Bird Treaty Act	WWTP	Wastewater Treatment Plant
mgd	Million gallons per day		
msl	Mean sea level		
NAAQS	National Ambient Air Quality Standards		

EXECUTIVE SUMMARY

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A. INTRODUCTION

This Draft Supplemental Environmental Impact Statement (DSEIS) provides an analysis of a proposed action by the U.S. Department of Justice, Federal Bureau of Prisons (BOP), to construct and operate a new Federal Correctional Institution (FCI) and Federal Prison Camp (FPC) on the grounds of the U.S. Penitentiary (USP) Leavenworth, located north of the City of Leavenworth, in Leavenworth, Kansas. The FCI would be designed to house approximately 1,152 medium-security male inmates and the FPC would be designed to house 256 minimum-security male inmates for a total population of 1,408 inmates along with approximately 338 staff necessary for operation. Once development is completed and the new FCI/FPC are activated, inmates will be transferred to the new facilities along with the complement of correctional officers and other staff. At that time, the existing USP and FPC will permanently cease housing inmates while a Transition Study is conducted to determine a possible future USP and FPC use or mission. The result would be little to no change in the number of inmates and BOP staff or to the security levels of the inmate population to be housed at the new facilities

The DSFEIS, the assessments it presents, and the procedures by which the environmental investigations are conducted and incorporated in decision-making are parts of a process established by the National Environmental Policy Act (NEPA) to ensure that the environmental consequences of federal projects are adequately taken into account and to ensure that public officials make decisions based on a full understanding of the environmental impacts of proposed actions and take all appropriate steps to *“protect, restore and enhance the environment.”*

A growing challenge to the BOP’s mission is that an increasing number of federal correctional facilities and supporting infrastructure are aging, resulting in an ongoing need for new facilities and infrastructure. Among the oldest are the facilities comprising the USP in Leavenworth. The BOP is proposing construction of a new FCI and FPC to meet the need for modern correctional facilities and infrastructure. The proposed development will also address the specific need for a new medium-security FCI and minimum-security FPC in Leavenworth to replace the existing, aged correctional facilities.

In planning the development of new federal correctional facilities in the United States, consideration has been given to use of lands and facilities at other federal correctional facilities located with the BOP’s North Central Region with most facilities eliminated from consideration due to limitations on available land, infrastructure and/or other resources needed to accommodate such development. However, sufficient land and infrastructure exists at USP Leavenworth and, therefore, the BOP has focused its attention on evaluating the development potential and resulting environmental impacts of constructing and operating a new FCI and FPC within the BOP’s property at USP Leavenworth.

Provision of modern and secure facilities in Leavenworth, Kansas would allow the BOP to continue housing inmates originating from the north-central United States nearer to their family and friends which aids in the rehabilitative process. It is the BOP’s policy that, to the extent possible, it will house inmates within a 500-mile radius of their homes. Locating the proposed FCI/FPC at USP Leavenworth

would advance implementation of that policy for inmates originating from states comprising the North Central Region.

B. NATIONAL ENVIRONMENTAL POLICY ACT COMPLIANCE

Publication of the Draft Environmental Impact Statement (DEIS) occurred on November 18, 2011, initiating a 45-day public comment period during which time the BOP hosted a public hearing in the City of Leavenworth on December 11, 2011. During the public comment period, which ended on January 2, 2012, federal, state, regional, and local officials, agencies, organizations, and the public were invited to provide their comments on the proposed action.

On June 11, 2014, the BOP distributed a letter to all interested parties informing them that preparation of the FEIS was underway with additional technical analyses to be conducted during 2014 and 2015 to address comments received on the DEIS. On April 10, 2015, the FEIS was published with the public comment period lasting until May 15, 2015. However, a decision whether to proceed with the proposed action and if so, where, was delayed and, in the absence of appropriated funds for the proposed project, no Record of Decision was issued by the Director of the BOP at that time.

Upon appropriation of funds for the project, the BOP resumed the NEPA process in June 2020 with the intent of preparing a DSEIS that would provide current information about the proposed FCI/FPC project and to offer the public, elected and appointed officials, regulatory agencies, and others the opportunity to voice their interests and provide comments concerning the proposed action. In furtherance of the NEPA process, the BOP distributed a letter on June 15, 2020 to all interested parties informing them that the BOP was commencing preparation of the DSEIS and published a *Notice of Intent to Prepare a DSEIS* for the development of a new FCI and FPC in the Federal Register on June 30, 2020 (Volume 85, Number 126) and a notice in the Leavenworth Times newspaper on July 1, 2020.

C. ALTERNATIVES CONSIDERED

The analysis conducted under NEPA guidelines address the following alternatives:

- **No Action Alternative.** A decision not to proceed with the proposed action to develop a new FCI/FPC.
- **Alternative Locations.** Locations other than Leavenworth, Kansas for implementation of the proposed action and warranting only a brief explanation of the reasons for elimination.
- **Action Alternatives.** Alternative building locations within the grounds of USP Leavenworth which best meet BOP requirements for development while minimizing potential adverse environmental impacts.
- **Preferred Alternative.** The alternative preferred by the BOP for implementation of the proposed action.

No reasonable alternatives outside the jurisdiction of the BOP (the lead agency) have been identified or warrant inclusion in the report. Development of the proposed FCI/FPC at USP Leavenworth under the East-1 plan is considered by the BOP to be the Preferred Alternative.

D. AFFECTED ENVIRONMENT, POTENTIAL IMPACTS, AND MITIGATION

Two locations within the BOP's property are under consideration for FCI/FPC development. The first alternative, known as the East Site, consists of approximately 227 acres of primarily undeveloped land situated east of the USP and north of Metropolitan Avenue, west of Grant Avenue, and south of Corral Creek. The second alternative, described as the West Site, comprises approximately 144 acres and is located west of the USP. The West Site includes the minimum-security prison camp and is generally bounded by Metropolitan Avenue on the south, Santa Fe Trail/County Road 14 on the west, and an abandoned railroad grade on the north.

- **Topography:** U.S. Geological Survey topographic maps depict the USP Leavenworth property at an average elevation of 860 feet above mean sea level (msl). The topography of the East Site generally consists of rolling terrain with moderately steep areas; elevations range from 825 to 890 feet above msl. Topography of the West Site is generally level with an average elevation of 860 feet above msl. To minimize topographic alterations and potential adverse impacts, sensitive site design practices will be employed together with implementation of soil erosion and sediment control measures during construction.
- **Geology:** Geologic resources within the USP Leavenworth area consist of loess deposits underlain by residual clay soils and the Lawrence Shale Member. The majority of the Lawrence Formation is comprised of gray shale and sandstone with minor red shale, coal, gray limestone and conglomerate. The potential for seismic activity is low to moderate in the Leavenworth County area. Development of the proposed project is expected to have only minor effects on geologic conditions at either alternative site. Detailed subsurface engineering studies would be undertaken in advance of design and construction in order to ensure that sound building practices and appropriate design standards are implemented.
- **Soils:** According to the Natural Resources Conservation Service (NRCS), soils found within the East Site include Sharpsburg silty clay loams, Ladoga silt loam and Knox silt loam, Kennebec silt loams and Marshall silt loam. On the West Site, soils identified by the NRCS include Sharpsburg silty clay loams. Prime farmland and hydric soils are found within both sites. Appropriate soil erosion and sediment control measures would be employed during the construction phase to mitigate potential soil impacts.
- **Water Resources:** The project area is within the Missouri River Basin and the Independence-Sugar Watershed. The surface waters that drain the area consist of drainages and/or stormwater conveyances, ephemeral streams, intermittent streams, and a perennial stream with the majority occurring on the East Site. According to FEMA flood maps, no portions of the East and West Sites are located within the 100-year or 500-year flood zones. Although development of the proposed project would result in increased runoff, a stormwater management system would be constructed to collect, hold and slowly release runoff to avoid adversely affecting downstream properties. Development of the proposed project at either alternative site would pose no significant adverse impacts upon flood prone areas.
- **Biological Resources:** Biological resources have been determined through the use of database inventories, maps and other information sources, regulatory agency contacts, and field surveys

of each site. Dominant plant species and biotic communities, including wetland and non-wetland (upland) habitats, were identified and recorded. Aquatic resources found on the East and West Sites include ephemeral tributaries, intermittent tributaries, perennial tributary, palustrine emergent, scrub-shrub and forested wetlands, and open waters. The location and extent of wetlands, streams, and open waters within both alternative sites have been verified by the U.S. Army Corps of Engineers (USACE) and impacts to jurisdictional wetlands and other waters of the U.S., are not anticipated. Habitats were also compared to requirements of rare, threatened, endangered and other species of concern. According to the USFWS, four federally protected species may occur in the vicinity of the East and West Sites: federally threatened Mead's milkweed, federally threatened western prairie fringed orchid, federally endangered pallid sturgeon and federally threatened northern long-eared bat. Based on known habitat requirements, it is unlikely that Mead's milkweed and western prairie fringed orchid would occur on the project study areas. No large rivers are present on the project study areas that would support the pallid sturgeon. Threats to the northern long-eared bat relate to the loss and degradation of forested habitat. If suitable habitat exists, clearing of trees will adhere to seasonal clearing restrictions.

- **Cultural Resources:** Development within the East and West sites has the potential to directly impact previously recorded archaeological sites, newly recorded archaeological sites and isolated find spots. Reviewing agencies have concurred that following archaeological survey of the two proposed sites and archaeological evaluation of the newly recorded sites previously identified as potentially eligible for listing in the NRHP, none of the previously recorded sites, newly recorded sites, and isolated finds spots are eligible for listing in the NRHP. No further archaeological studies are recommended for the archaeological sites or isolated find spots that are not eligible for listing in the NRHP. Neither development alternative will adversely affect contributing staff housing located within the USP Leavenworth Historic District. The units would continue to be maintained and occupied with the FCI/FPC access road located so as to avoid any demolitions or alterations of these units and any adverse effects to the integrity of the historic district's design, workmanship, and feeling. Development of the FCI/FPC in open areas of the property will diminish the district's integrity of design, setting, and feeling and the BOP will consult with the Kansas Historical Society on the future of the USP and any appropriate mitigation measures.
- **Waste Disposal:** The East Site and West Site are located within the larger USP Leavenworth property which has been affected by past hazardous materials use and waste disposal. Investigations have been conducted which identified past industrial operations that produced or may have produced hazardous waste. These conditions warrant further action depending on the areas to be developed. In the case of the East Site, extensive subsurface investigations have already been conducted as part of a program of environmental investigations and remediation within the USP Leavenworth property. Because of the history of on-site waste disposal, additional subsurface investigations in advance of construction are planned.
- **Fiscal Considerations:** The USP Leavenworth property has been in Federal Government ownership for many years and throughout that time has been exempt from tax payments. Therefore, FCI and FPC development will result in no direct loss of tax revenue to the City of Leavenworth, Leavenworth County or the State of Kansas. Conversely, positive fiscal impacts will result from the economic benefits derived from construction of the new facilities and the continued operation of a federal correctional facility in Leavenworth and the economic activity

that result from such operation. Expenditures for utility services and related expenses are recouped through the BOP's payment of user fees and, therefore, have no net impact.

- **Visual and Aesthetic Resources:** USP Leavenworth is a distinguishing feature that contributes to the broader landscape of the Leavenworth area. Its design, known as the Auburn Federal Style, is visually unique as it characterizes one of the three initial designs of USPs dating from the early 1900s. Other dominant features include the western portion of the USP Leavenworth property where the prison camp, cemetery and Warden's house are located, as well as the corridor of Metropolitan Avenue to the south. While the West Site has unobstructed views from Metropolitan Avenue and Santa Fe Trail/County Road 14, the buildings comprising the FPC are dwarfed by the central building of USP Leavenworth. Aesthetic features of the East Site are dominated by the rolling terrain which is bisected by several tree and shrub-lined drainageways and surface water features. Following development, views of the proposed FCI/FPC would reveal an architecturally integrated composition. Thoughtful site design and landscape planning would be integral parts of the project to ensure a development compatible with its surroundings.
- **Demographics:** Population trends show modest growth with the City of Leavenworth, City of Lansing, and Leavenworth County recording increased populations between 2010 and 2019. Of Leavenworth County's 2019 population of 81,758, approximately 84.8 percent were White, 9.2 percent were Black or African American; 0.9 percent were American Indian; 1.5 percent were Asian; 0.2 percent were some other race; and 3.3 percent were of two or more races. Of the total population, 7.0 percent were Hispanic or Latino (of any race). In 2018, 6.4 percent of Leavenworth County residents were under the age of five; 19.8 percent ranged between five and 19 years of age; 12.2 percent ranged between 20 and 34 years of age; 27.8 percent were between 35 and 54 years of age; 12.9 percent were between 55 and 64 years of age; and 13.5 percent were 65 years or older. Development of the proposed project is expected to maintain the number of inmates and staff residing in the city, county, and surrounding region without significant adverse impacts.
- **Economic Characteristics:** The civilian labor force in the City of Leavenworth in 2018 totaled 14,243 workers and 35,062 workers in the county. The largest percentages of those employed in the city and county have jobs in educational services, health care and social assistance along with public administration and retail trade. Leavenworth County and the City of Leavenworth had a smaller percentage of its population with incomes below the poverty line than the nation as a whole with 9.1 percent of the county's population and 14.6 percent of the City's population having incomes below the poverty line, compared to 11.8 percent for the nation. Operation of the proposed FCI/FPC is expected to continue employment and business opportunities for the region's residents and service industries while contributing approximately \$40 million annually in wages, goods, and services to the regional economy.
- **Housing Characteristics:** There were 29,998 housing units in Leavenworth County in 2018 of which approximately 3,330 units were vacant with 1,460 of the vacant units located within the City of Leavenworth. In the City of Leavenworth, the median value of individual housing units in 2018 was approximately \$120,900 and the median monthly gross rent (with utilities) was \$976; comparable figures for Leavenworth County were \$196,000 and \$968. In addition to the private housing market, 17 single-family housing units are located on the USP Leavenworth property for use by BOP employees under a rental agreement. Once development is completed and the new

FCI/FPC are activated, inmates and staff will be transferred to the new facilities at which time the USP and prison camp will permanently cease housing inmates. Most BOP employees are residents of Leavenworth County and the surrounding area and with no increase in the number of employees and family members residing in the area as a result of FCI/FPC operation, no significant adverse impact upon the housing market is expected.

- **Community Services and Facilities:**

- **Police Protection:** Law enforcement in Leavenworth County is provided by municipal police departments and the County Sheriff's Department. The proposed facility would be equipped to handle virtually all emergency situations, relying upon its own staff to ensure overall institution security and other federal law enforcement agencies, if necessary, in the event of an incident at the facility. Significant adverse impacts to law enforcement agencies serving the City of Leavenworth and Leavenworth County are not anticipated.
- **Fire Protection:** Fire protection within the City of Leavenworth is provided by the Leavenworth Fire Department with the closest station located less than one mile south of USP Leavenworth. The BOP undertakes stringent precautions within all its facilities to guard against fire emergencies by design and construction measures as well as by facility policies and procedures, inspections, fire prevention, control and evacuation planning. The BOP typically provides for emergency back-up fire protection through agreements for such assistance as needs arise. There is no reason to expect such situations would place an undue burden upon fire protection agencies or resources.
- **Medical Facilities:** The greater Kansas City area has numerous hospitals within 20 to 40 miles of the project site. In addition to medical staff and facilities planned at the proposed FCI, the BOP operates Federal Medical Centers at locations around the country to serve most non-emergency medical needs of federal inmates. Until its planned closure, St. Luke's Cushing Hospital is the community hospital in Leavenworth and the primary health care facility serving residents of the city. The BOP proposes to continue its current arrangements with area medical facilities for emergency assistance through contracts for such assistance. BOP emergency medical needs are not expected to place an undue burden upon regional medical facilities or providers.
- **Public Education:** Public education in Leavenworth County is provided by six school districts: Basehor-Linwood Unified School District 458 [USD 458]), Easton (USD 449), Fort Leavenworth (USD 207), Lansing (USD 469), Leavenworth (USD 453) and Tonganoxie (USD 464). Once development is completed and the FCI/FPC are activated, BOP employees at the USP and FPC will be transferred to the new facilities at which time the USP and prison camp will permanently cease housing inmates. With little to no net increase in the number of BOP employees, no change (increase or decrease) is expected in the number of school age children already enrolled within the regional public school systems.
- **Land Use:** Much of the southern portion of the USP Leavenworth property, bordered by Metropolitan Avenue, has already been developed with the USP, minimum-security prison camp, warehouses, staff housing, internal roadways, parking areas and other ancillary support facilities. The East Site consists of approximately 227 acres of undeveloped land east of the USP while the West Site comprises approximately 144 acres and is located west of the USP. The West

Site includes the minimum-security prison camp and is generally bounded by Metropolitan Avenue on the south, Santa Fe Trail/County Road 14 on the west, and an abandoned railroad grade on the north. The West Site is also comprised of regularly maintained grassland with the southeastern portion, adjacent to Metropolitan Avenue, occupied by a large pasture which is home to several buffalo. The proposed project would have a direct impact on land use by transforming an undeveloped area into a correctional institution use. However, the self-contained nature of the facility would limit any potential direct impacts to the selected site with few, if any, impacts to adjoining or nearby land uses.

- **Utility Services:**

- **Water Supply:** The Leavenworth Waterworks serves a population of approximately 50,000 people with approximately eight million gallons per day (mgd). Adequate water pressure to support the proposed FCI/FPC is reported present within the distribution system adjacent to the BOP property. Providing water service to the proposed FCI/FPC requires a connection to the water main located along the south side Metropolitan Avenue or to the BOP's line north of Metropolitan Avenue. Following activation of the proposed FCI/FPC, water demands at the USP are expected to decrease substantially since inmates and staff will have vacated the institution and large water consuming operations will largely cease. Slight temporary impacts such as noise, dust, soil erosion, and traffic disruption may occur during extension of service to the new facilities. Such impacts would be minimized by ensuring proper design, permitting, and construction; limiting construction to the shortest periods possible; and implementing effective soil erosion and sediment control and traffic and worker safety practices.
- **Wastewater Collection and Treatment:** Wastewater collection and treatment are provided by the City of Leavenworth's Water Pollution Control Division and serving a population of approximately 34,000. Wastewater is treated at the City's treatment plant which following several upgrades is designed to treat an average daily flow of 6.88 mgd although it currently treats only 3.01 mgd with treated wastewater discharged to the Missouri River. Since the USP and prison camp will no longer house inmates once the new facilities are activated, there will be a substantial reduction in wastewater flows from the existing facilities. In addition, the new facilities will employ modern water-conserving fixtures and highly-efficient heating and cooling equipment that will be a significant improvement over the current operation. As a result, no net increase in wastewater flow is anticipated and no improvements to the City's sewer system would be required to service the new FCI/FPC.
- **Electric Power:** Electric power is provided to USP Leavenworth by Evergy and according to company officials, the system serving the area has ample capacity to serve new customers. Overhead electric lines owned and operated by Evergy and FreeState Electric Cooperative (FreeState) currently traverse the East Site and in order to develop the FCI/FPC, both lines require relocation. Evergy has been planning to develop a new substation within the USP property and while independent of the proposed FCI/FPC, its development coincides with overhead powerline relocations and is therefore addressed in the analysis. Following activation of the proposed FCI/FPC, electric power demands at the USP are expected to decrease substantially since inmates and staff will have vacated the institution and security lights and other large power consuming equipment will largely cease operating. There are

- no limitations to providing the required electric power service and no significant adverse impacts are expected to result from development of the proposed FCI/FPC.
- **Natural Gas Service:** Natural gas service is provided to USP Leavenworth by Southern Star. Project development at the East Site involves the relocation of one existing natural gas transmission pipeline to the east of the proposed FCI/FPC (and within BOP property) and the abandonment of a second. Other than temporary impacts such as noise, dust and soil erosion resulting from pipeline relocation and from extending gas service lines to the new facilities, no significant adverse impacts are anticipated involving natural gas service. Pipeline relocation, extending service to the new facilities, and securing any required permits and approvals would be the responsibility of Southern Star.
 - **Telecommunications:** Telecommunications infrastructure in the Leavenworth area includes both copper and fiber optic lines. There are no significant limitations to extending telecommunications services to either alternative site. With the USP and prison camp no longer housing inmates, no significant adverse impacts to telecommunications customers or providers are expected to result from FCI/FPC development and operation.
 - **Solid Waste Management:** Construction generated wastes and solid, toxic, hazardous and bio-medical wastes generated during operation would be handled in accordance with applicable regulations. Once development is completed, inmates and staff will be transferred to the new FCI/FPC at which time the USP and prison camp will permanently cease housing inmates. With no significant change in the number of inmates and staff, the volume of solid waste produced daily is also not expected to change. The BOP's current practice of contracting for solid waste collection and disposal would continue for the proposed FCI/FPC. In addition, the BOP would continue its recycling program at the new facilities to minimize the volume of wastes requiring disposal. No significant adverse impacts to solid waste management operations are expected as a result of the proposed project.
 - **Transportation Systems:** Primary access to USP Leavenworth property is from Metropolitan Avenue, an important east-west corridor in the City of Leavenworth and an important link to communities across the Missouri River to the east. South of the USP and perpendicular to Metropolitan Avenue are local numbered and named streets in a predominantly residential part of Leavenworth. Although there will be a temporary increase in traffic during construction of the new facilities, coordination with local officials and other steps will be taken so that such impacts will be less than significant. Once development is completed, inmates and staff will be transferred to the new facilities at which time the USP and prison camp will cease housing inmates. With little to no change in the number of inmates and employees, the number of visitors, inmate transports, or service and delivery vehicles traveling to and from the proposed FCI/FPC each day is also not expected to change over current levels. Development of a new entrance drive from Metropolitan Avenue, along with internal roadway improvements leading to the FCI/FPC, would be the responsibility of the BOP.
 - **Meteorological Conditions:** Kansas experiences four distinct seasons with cold winters and hot, dry summers common. According to the U.S. National Climatic Data Center, temperatures in the Leavenworth area range from an average low of about 20° Fahrenheit (F) in January to an average high of nearly 90° F in July. The area receives nearly 41 inches of precipitation during an average year with the largest portion received in May and June. The Leavenworth area also has

a history of severe weather (i.e., tornado activity) with occurrences more common than Kansas and U.S. averages. Weather conditions would be addressed during design and operation of the proposed FCI/FPC which is not expected to result in significant emission of CFC's, halons or greenhouse gases. The facility would not influence the larger-scale climatology of the area or have a significant adverse impact on the surrounding region.

- **Air Quality:** Leavenworth County is in attainment for all criteria air pollutants. Potential air quality impacts would result during construction, from boiler operations, and vehicles traveling to and from the facility. Construction impacts result in fugitive dust emissions from site preparation and other related activities. Such impacts are temporary and can be controlled by properly maintaining equipment, using tarp covers on trucks, wetting unpaved surfaces, and prohibiting the burning of construction wastes on-site. The boiler system would be the primary stationary source of air emissions; however, the use of modern, highly-efficient heating and cooling equipment will be an improvement over the current operation with the volume of fuel combustion by-products having no significant adverse impacts on air quality. No new or additional air quality impacts are expected to result as there will be no meaningful change in the number of employees, visitors, inmate transports or service and delivery vehicles arriving and departing from the proposed FCI/FPC each day. To mitigate potential impacts, the BOP encourages the formation of carpools/vanpools and, where available, the use of public transit.
- **Noise:** Commercial and residential developments constitute the predominant land uses found surrounding the USP property with no major noise sources located nearby. Noise sources affecting the alternative sites are largely confined to motor vehicle operations along adjacent and nearby roadways, sporadic bird and wildlife calls, and aircraft overflights. The occasional noise from motor vehicle traffic is not substantial and is barely audible within the interior of the large property. The large land area limits any noise originating from the USP and FPC to be experienced within adjoining properties. Temporary noise impacts can be expected during construction and would be confined, when possible, to normal working hours. With no meaningful change in the number of employees, visitors, inmate transports or service and delivery vehicles arriving and departing from the proposed FCI/FPC each day, noise levels are not expected to change along principal travel routes. Noise associated with construction and operation is not expected to constitute a significant adverse impact.

E. CONSIDERATION OF SECONDARY AND CUMULATIVE IMPACTS

Construction and operation of the proposed FCI/FPC would result in less-than-significant impacts to the immediate development site, the overall USP Leavenworth property, and host region. Less-than-significant impacts would be anticipated on utility services, traffic and transportation movements, noise levels, and air quality in the vicinity of the project site. The compact nature of the proposed development coupled with its location within the USP Leavenworth property would not significantly affect local land use patterns and would have little, if any, secondary impacts on land use. Extending water supply, wastewater collection, electric power and natural gas services within the USP Leavenworth property to serve the proposed FCI/FPC is not expected to induce or foster additional development in the area.

Sustained/increased economic activity is an intended consequence of the proposed project. Any such potential impact would be considered by City of Leavenworth and Leavenworth County officials in the

planning and development of community facilities or utility system improvements. In addition, sustained/ increased economic activity would be consistent with the goals of local planning and development officials to secure employment opportunities and stimulate economic activities in the area. Construction and operation of the proposed FCI/FPC would cause unavoidable impacts; however, such activities would comply with all federal statutes; implementing regulations; Executive Orders; and other consultation, review, and permit requirements potentially applicable to this project. Unavoidable impacts to topography, geology, soils, water resources, land use, transportation movements, noise levels, and air quality would follow the mitigation measures identified for each resource to reduce or eliminate adverse impacts. The project would comply with the Clean Water Act (33 U.S.C. 1251 et seq.) by obtaining all required permits, if necessary, prior to construction involving the potential disturbance of wetlands and other waters of the U.S. and complying with permit conditions.

Development of the proposed FCI/FPC would contribute to the efficient operation of the national criminal justice system. Beneficial impacts, direct, indirect, and secondary, to the region's economy would also be realized by virtue of the substantial construction and operating budgets associated with the proposed project. Secondary and construction-related impacts and other potential adverse impacts would be controlled, mitigated and avoided to the extent possible. There are no present or foreseeable actions occurring in the City of Leavenworth or Leavenworth County that are directly attributable to the proposed project.

The proposed project is not expected to result in cumulative effects, in terms of intensity or context, to any social, cultural or natural features. The incremental rate of growth in the Leavenworth area and surrounding Leavenworth County region, the absence of other reasonably foreseeable actions, and the local regulatory framework, all function to offset potentially negative cumulative impacts.

F. NEXT STEPS

The DSEIS is subject to a public review period of not less than 45 days during which time a public hearing will take place. During this time, federal, state, regional, and local officials, agencies, organizations, and the public will be invited to provide their comments on the proposed project. Following the end of the comment period, the BOP will review all comments and prepare and make available a Final Supplemental EIS (FSEIS) which responds to all comments received on the DSEIS. A decision on whether to proceed with the proposed action based on the preferred alternative identified in the FSEIS would be made following the end of the FSEIS public review period. That decision will take into account all environmental analyses and public comments and will be documented by a Record of Decision issued by the Director of the BOP, pursuant to the requirements of the NEPA and U.S. Department of Justice regulations.

Comments on the DSEIS should be directed to:

- Kimberly S. Hudson, COR, Site Selection Specialist
Construction and Environmental Review Branch
Federal Bureau of Prisons
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Washington, D.C. 20534
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I. INTRODUCTION

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A. PURPOSE OF THE ENVIRONMENTAL IMPACT STATEMENT

This document, together with its appendices and incorporations by reference, constitutes a Draft Supplemental Environmental Impact Statement (DSEIS) prepared pursuant to Section 102(2)(C) of the National Environmental Policy Act (NEPA) of 1969, as amended. Section 102, 42 USC § 4332, of NEPA provides that all agencies of the Federal government shall prepare a detailed statement on major Federal actions significantly affecting the quality of the human environment. The DSEIS follows the Council on Environmental Quality *“Regulations for Implementing NEPA”* (40 Code of Federal Regulations [CFR] Part 1500-1508). Its purpose is to present an assessment of the environmental consequences of a proposed action by the U.S. Department of Justice, Federal Bureau of Prisons (BOP), to construct and operate a new Federal Correctional Institution (FCI) and Federal Prison Camp (FPC) at property comprising the United States Penitentiary (USP) Leavenworth, located north of the City of Leavenworth, Kansas (Exhibit I-1).

The DSEIS, the assessment it presents, and the procedures by which the environmental investigations are conducted and incorporated in decision-making are parts of a process established by NEPA to ensure that the environmental consequences of federal projects and actions are adequately taken into account. The process is designed to ensure that public officials make decisions based on a full understanding of the environmental impacts of proposed actions and take all appropriate steps to *“protect, restore and enhance the environment”* (40 CFR 1501.7).

Chapter I of the DSEIS provides the background and context of the proposed action while Chapter II describes alternatives to the proposed action. Chapter III describes conditions within the natural and manmade environments, potential impacts of the proposed action, and measures to mitigate potential impacts. Chapters IV, V and VI respectively, comprise a List of References used in preparing the DSEIS, a List of DSEIS Preparers, and a Distribution List of agencies, officials and others to be provided with copies of the DSEIS for review and comment. Additional information is incorporated within various appendices as indicated by the Table of Contents.

Throughout the preparation of this DSEIS, BOP officials considered communications and other indications of interest or concern from residents and elected and appointed officials of the City of Leavenworth and Leavenworth County, Kansas regarding the proposed FCI/FPC project. Federal, state, and local officials, regulatory agencies, and others were also consulted in preparing this DSEIS with the resulting scope of study indicated by the foregoing Table of Contents and the materials presented in subsequent sections of the document and its incorporations by reference.

B. PUBLIC ENGAGEMENT

Regulations for the implementation of NEPA are promulgated by the Council on Environmental Quality (40 CFR 1501.7) and include a requirement for *“an early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to a proposed action.”* The

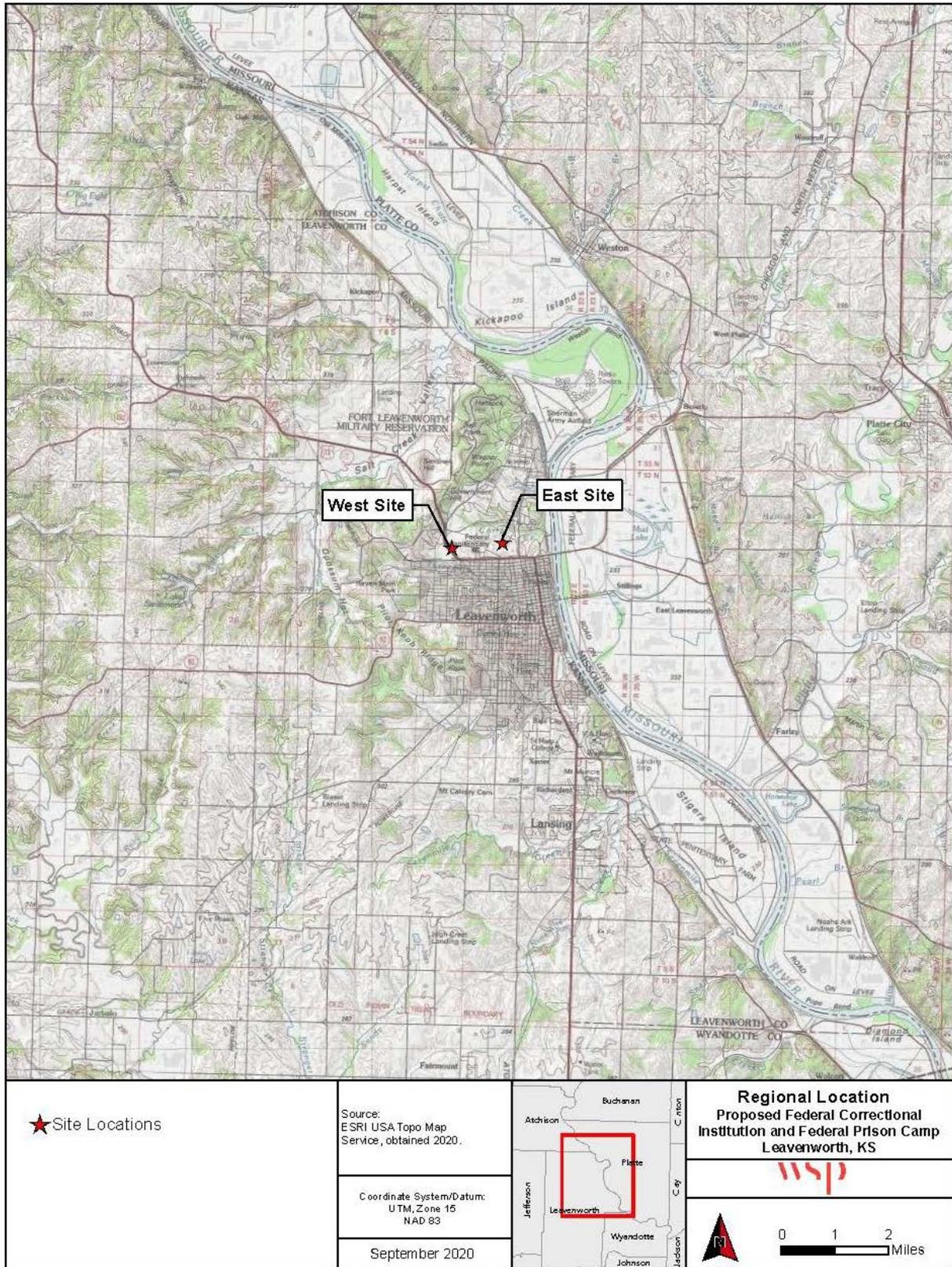


Exhibit I-1: Regional Location Map

process is known as “scoping.” In accordance with these regulations, the BOP conducted the following public scoping and other public engagement activities:

- Published a *Notice of Intent to Prepare a DEIS* for development of a new FCI and FPC in Leavenworth, Kansas in the Federal Register on December 29, 2010 (Volume 75, Number 249).
- Invited federal, state, county, and local agencies, officials, organizations, and the public to participate in the scoping and environmental impact study process.
- Held a Public Scoping Meeting at City Hall in Leavenworth, Kansas on January 20, 2011. BOP officials presided at the meeting and approximately 50 citizens and officials attended. Members of the media were also present, and the Public Scoping Meeting was reported in newspapers with local and regional circulations. The proposed FCI/FPC project along with the NEPA process, were described and issues and concerns were identified by those in attendance. A transcript of the Public Scoping Meeting is included in Appendix A.
- Prepared a Public Scoping Meeting Handout that describes the BOP, the proposed action, and alternative project locations under consideration within the USP Leavenworth property and sought information and expressions of interest and concern at the onset of the DEIS process. This document was made available to all individuals who attended the Public Scoping Meeting on January 20, 2011, and key state and federal regulatory agency officials, Native American organizations among others (Appendix A).
- Conducted scoping and information/coordination meetings in Kansas City, Kansas; Topeka, Kansas; and Leavenworth, Kansas during 2011 involving representatives of local, state and federal agencies and BOP officials. Information concerning the BOP and the proposed project was shared with meeting attendees and procedures and protocols required to ensure compliance with NEPA and the regulations and requirements of various federal and state agencies were discussed. Comments, guidance, and recommendations received at the meetings were incorporated within the project scoping and DEIS study process (Appendix A).
- Determined the scope and significance of issues to be included within the DEIS on the basis of all relevant environmental considerations and information obtained throughout the scoping process. The determination defined the scope and significance of the issues to be included in the DEIS and identified issues that could be eliminated from detailed study as irrelevant or insignificant.
- Identified additional data requirements on the basis of information obtained from the scoping process so that analyses and findings could be integrated into the DEIS.

Following publication of the Notice of Intent in the Federal Register and the subsequent Public Scoping Meeting, and throughout the months of DEIS preparation that followed, BOP officials and staff reviewed incoming correspondence, newspaper articles and other indications of interest or concern on the part of regulatory agencies, local and national organizations, elected officials, Native American organizations, and the public regarding the proposed project. During this time, meetings and discussions were also held with federal, state, county, and local officials and regulatory agency representatives to further refine DEIS tasks.

Publication of the DEIS occurred on November 18, 2011, initiating a 45-day public comment period during which time the BOP hosted a public hearing in the City of Leavenworth on December 11, 2011. During the public comment period, Federal, state, regional and local officials, agencies, organizations and the public were invited to provide their comments on the proposed project (Appendix A).

On June 11, 2014, the BOP distributed a letter to interested parties informing them that preparation of the FEIS was underway with additional technical analyses to be conducted during 2014 and 2015 to address comments received on the DEIS. On April 10, 2015, the FEIS was published with the public comment period lasting until May 15, 2015. However, a decision whether to proceed with the proposed action was delayed and, in the absence of appropriated funds for the proposed project, no Record of Decision was issued by the Director of the BOP at that time.

Upon appropriation of funds for the project, the BOP resumed the NEPA process in June 2020 with the intent of preparing a DSEIS to provide current information about the proposed project and the purpose and need for proceeding with developing a new FCI and FPC in Leavenworth, Kansas, and to offer the public, elected and appointed officials, regulatory agencies, and others the opportunity to voice their interests and provide comments concerning the proposed action. In furtherance of the NEPA process, the BOP distributed a letter on June 15, 2020 to interested parties informing them that the BOP was commencing preparation of the DSFEIS and inviting all parties and the public to participate in the resumed NEPA study process. Soon thereafter, the BOP published a *Notice of Intent to Prepare a DSEIS* for the development of a new FCI and FPC in the Federal Register (Volume 85, Number 126, June 30, 2020) and a similar notice in the Leavenworth Times newspaper on July 1, 2020 (Appendix A).

Over the course of DSEIS preparation, the BOP also arranged and held meetings with representatives of the City of Leavenworth, U.S. Army Garrison Fort Leavenworth, utility providers, and federal and state regulatory agencies. In addition, on August 20, 2020, the Director of the BOP and members of his staff, along with a group of federal, state, and local elected and appointed representatives, economic development officials, media, and others, participated during a tour of USP Leavenworth and a roundtable discussion in the City of Leavenworth. Due to the National Emergency declared in response to the coronavirus (COVID-19) pandemic, and to ensure the health and safety of all involved, meetings that would normally take place in-person were, for the most part, held remotely using virtual meeting services that allow attendees to participate from their homes or other safe locations.

C. BACKGROUND

The BOP was established in 1930 to provide more progressive and humane care for federal inmates, to professionalize the prison service, and to ensure consistent and centralized administration of the 11 federal prisons in operation at the time. Since the inception of the BOP in 1930, its responsibilities have grown, as has the federal inmate population, and by the end of 1930, the agency operated 14 facilities housing just over 13,000 inmates. By 1940, the federal prison system had grown to 24 facilities housing 24,360 inmates. Except for a few fluctuations, the number of inmates did not change significantly between 1940 and 1980 at which time the inmate population was 24,252. However, the number of facilities increased from 24 to 44 as the BOP gradually moved from operating large facilities housing inmates of many security levels to smaller facilities housing inmates with similar security levels.

As a result of federal law enforcement efforts and new legislation that dramatically altered sentencing in the federal criminal justice system, the 1980s brought a significant increase in the number of federal inmates. From 1980 to 1989, the inmate population more than doubled, from just over 24,000 to almost

58,000. During the 1990s, the population more than doubled again, reaching approximately 136,000 at the end of 1999 as efforts to combat illegal drugs and illegal immigration contributed to significantly increased conviction and incarceration rates.

Today, the BOP operates 122 institutions, six regional offices, a Central Office (headquarters), two staff training centers, and 26 residential reentry management offices. The regional offices and Central Office provide administrative oversight and support to BOP facilities and community corrections offices. Community corrections offices oversee community corrections centers and home confinement programs. At the time the FEIS was published in April 2015, approximately 80 percent of all federal offenders were confined in BOP-operated correctional facilities or detention centers. The remainder were confined through agreements with state and local governments or through contracts with privately-operated community corrections centers, detention centers, prisons and juvenile facilities.

Among the facilities currently operated by the BOP are the USP and FPC in Leavenworth, Kansas approximately 35 miles northwest of Kansas City. The USP is notable for many reasons, among them is that when opened in 1906, it was among the first federal correctional facilities. In 1895, Congress transferred the military prison at Fort Leavenworth to the U.S. Department of Justice and when the War Department objected, Congress authorized 1,000 acres adjacent to the prison for a new penitentiary to house approximately 1,200 inmates.

During Fiscal Year 2006, the BOP transitioned USP Leavenworth from a high-security facility to a medium-security facility to accommodate the growth in the medium-security inmate population. This transition was part of the BOP's long-range plan to utilize older high-security institutions to house medium-security inmates as new and more modern high-security facilities are developed. Operation of the USP, which houses 1,325 male inmates, and the FPC, housing approximately 271 male inmates, employs approximately 338 total staff (BOP, September 18, 2020).

The BOP is proposing to construct and operate a new FCI designed to house approximately 1,152 medium-security inmates and an FPC designed to house 256 minimum-security inmates for a total population of 1,408 inmates along with approximately 338 staff for operation. Once development is completed and the new facilities are activated, inmates housed at the USP and FPC will be transferred to the new facilities along with the complement of correctional officers and other staff with the existing USP and FPC no longer housing inmates followed by deactivation of the USP and FPC.

D. PURPOSE AND NEED FOR THE PROPOSED ACTION

The BOP's mission is to protect society by confining offenders in the controlled environments of prisons and community-based facilities that are safe, humane, cost-efficient, and appropriately secure, and that provide work and other self-improvement opportunities to assist offenders in becoming law-abiding citizens. A growing challenge to the BOP's mission is that an increasing number of federal correctional facilities and supporting infrastructure are aging, resulting in an ongoing need for new facilities and infrastructure. Among the oldest of the aging facilities is the U.S. Penitentiary (USP) in Leavenworth. The BOP is proposing to construct a new medium-security FCI and a new FPC to meet the need for modern correctional facilities and infrastructure.

USP Leavenworth was one of three first-generation federal prisons constructed in the early 1900s and continues in operation today and is not comparable to the contemporary prison designs that are more

common today. As a result, USP Leavenworth is operationally inefficient and along with its age and condition and the necessity for costly and difficult to implement security, life safety, mechanical, electrical and plumbing system replacements and/or upgrades, requires development of a new FCI and FPC to meet current and future inmate housing needs.

Development of a new FCI and FPC in Leavenworth is among the BOP's priority projects. Once developed, the new FCI and FPC would improve living and working conditions for inmates and staff. Improving living and working conditions has been shown to reduce the levels of stress and depression among inmates and staff, resulting in an overall positive effect on institution operation, safety and security. Development of a new FCI/FPC in Leavenworth will also help ensure that the federal criminal justice system in general, and the BOP in particular, continues to function in a quality manner while addressing the need for modern, secure, efficient and cost-effective institutions. Doing so will allow the BOP to better accomplish its mission to uphold justice and public safety, meet the needs of current and future federal inmate populations, and provide for the continued safety and security of inmates, staff, and the public.

E. DESCRIPTION OF THE PROPOSED ACTION

Given the previously stated purpose and need for a new FCI/FPC, the BOP would typically consider potential development sites both within and outside of its jurisdiction that might serve as a reasonable alternative to the proposed action. Because existing BOP correctional sites lack sufficient land on which to construct new facilities, the BOP must identify land that would be a reasonable alternative on which the needed and proposed new facilities could be constructed. However, when, as here, new facilities are needed to replace facilities on existing BOP land and can feasibly and reasonably be built on that same land, incurring the expense and time to acquire other land on which to construct new facilities would neither reasonably nor logically meet the purpose and need. Therefore, the rationale for selecting the USP Leavenworth property for detailed study included the following:

- The BOP controls the 754-acre property which contains abundant undeveloped land potentially suitable for correctional facility development.
- Use of available USP Leavenworth property avoids the time and costs associated with land acquisition for development.
- Infrastructure necessary to support correctional facility development is currently in place in the Leavenworth area.
- The Leavenworth community and the BOP have had a positive and mutually beneficial relationship for many years which is expected to continue into the future.
- Similar conditions, involving sufficient developable land and infrastructure, are not evident or equivalent at other BOP facilities within the North Central Region.

Additional information concerning the BOP's site identification, evaluation and selection process is provided in Chapter II (Alternatives).

The mission of the proposed FCI and FPC would be to provide a safe, secure and humane environment for the care and custody of medium-security and minimum-security federal inmates originating primarily

from the North Central Region. General design characteristics of the proposed facility, internal and external (perimeter) security arrangements, profiles of the inmates to be housed at the FCI/FPC, and other aspects of the proposed facility are described in the sections that follow.

1. General Design Features of the Proposed Federal Correctional Institution

All structures comprising the proposed FCI would be similar in scale and appearance to a light industrial park or secondary school with most buildings comprising one- and two-story structures. The buildings would provide multi-purpose activity spaces, with areas divided according to function. Basic groupings would include administration, services, housing, religion, education, training, recreation, with an option for prison industries, and a central utility plant, and taken together, having a gross building area of approximately 580,000 square feet. Buffer zones of undeveloped acreage would generally surround the facility, providing both visual and physical setbacks from the property boundaries. A single road for controlled access from the public roadway network is planned along with a parking lot accommodating both employees and visitors to be located near the public entrance to the FCI.

The general site design of the proposed FCI would present an integrated composition of structures reflecting the differing characteristics and requirements of the facility's major components. An administration area would be located close to the main entrance of the facility, where it would be readily accessible to visitors. Offices for the warden and other administrative staff would be included in this area as well as office space for other departments, such as financial management and personnel. A visitor waiting area would also be located near the front entrance with the visiting room designed so that it can also be used for other activities. Multi-purpose activity space would be provided for group meetings and general assembly services as well as indoor and outdoor recreation areas. Program spaces for education, vocational training, and recreation activities would also be developed, as well as a chapel that would be used for multi-denominational religious services. In order to provide inmate health care services, a medical clinic for general examination and treatment, including an in-patient suite, a long-term care unit, and a dental clinic is also planned.

The interior functions would be designed to foster positive interpersonal relationships between inmates and staff with staff interacting directly with inmates since they would not be separated by architectural barriers. Space would be provided to accommodate administrative functions and a variety of activities and programs. All structures would be fire-resistant and applicable building code requirements, including the National Fire Protection Association 101 Life Safety Code, would be applied to the FCI and FPC as determined appropriate by the BOP.

2. Perimeter Security Measures

The proposed FCI requires stringent perimeter security systems, while other components, including the FPC, warehouses, and central utility plant are not subject to perimeter security measures and are generally unfenced. Perimeter security at the FCI would be provided by two parallel 12-foot high chain-link fences with coils of barbed tape mounted on the fences and placed within the 20-foot wide space between the two fences. BOP staff in vehicles would be assigned to patrol the perimeter of the FCI and respond to automatic alarms received from the electronic detection system. Employee and visitor traffic, along with service and delivery vehicles traveling to the facility, would be separated from patrol traffic operating along the perimeter road surrounding the FCI. There is no plan to install fencing around the entire USP Leavenworth property.

Energy-efficient LED lighting would also be installed at the FCI to provide ground and perimeter illumination to be supplemented by common walkway and roadway lighting. Attention would be given to the avoidance of excessive illumination of adjacent areas. Searchlights or similar floodlighting associated with traditional prison security are not anticipated. Appendix B provides photographs of a typical FCI and FPC which are indicative of the facilities proposed for development in Leavenworth, Kansas.

3. Internal Security Policies and Procedures

Internal BOP security policies and procedures requires all inmates to be formally counted and physically identified multiple times a day. BOP staff would verify the whereabouts of each inmate throughout the workday and would also perform census counts for inmate accountability. Inmates are also observed, monitored, and may be recorded via strategically placed video cameras. Inmate telephone conversations may also be recorded. Inmate quarters would be supervised 24 hours a day and would be checked often for contraband material. An intensive urinalysis program, involving both specific and random sampling, would be carried out to detect and deter drug or alcohol use by inmates. The interior spatial arrangements of the facility would provide internal control while permitting relatively free movement within the secure perimeter of the institution. Individual rooms in all units would have locking devices that enable staff in the unit to provide necessary controls when required.

The FCI would rely on its own staff to ensure overall security. It is also the responsibility of the United States Marshals Service and the Federal Bureau of Investigation to assist the BOP, if necessary, in the event that an inmate is reported missing. State and local law enforcement agencies would also be advised of the situation and would assist the BOP as necessary. Local media would be contacted as a means to inform the public. Law enforcement personnel would also be responsible for removing any person involved in violating a federal law, such as trespassing, damaging federal property or possessing contraband on the BOP's property.

4. Inmate Housing Units

Inmate housing units within the FCI would consist of individual cells that can accommodate more than one person. Housing units are generally two to four-level structures that also contain activity spaces for inmates and office spaces for staff assigned to work in the units. Each inmate housing unit would contain a centrally located multi-purpose space devoted to activities such as watching television, playing table games and attending group meetings. Small activity rooms would also be provided for quiet activities such as reading and would be used for group and individual counseling sessions. Different from the FCI, dormitory-style housing is provided for inmates at the FPC.

The BOP employs a decentralized method for managing its institutions with staff assigned to work in the housing units where the inmates live. Offices for correctional officers, unit managers, case managers, counselors, and administrative assistants are also located in inmate housing areas. Other staff, such as psychologists, teachers, and chaplains, would periodically visit housing units to meet with inmates and unit staff. This system permits greater contact, communication, and interaction between staff and inmates. The first consideration for all BOP staff, regardless of position, is security and supervision of inmates.

5. Special Housing Unit

There are two categories of special inmate housing: disciplinary segregation and administrative detention. Disciplinary segregation is a status of confinement assigned to inmates who have violated institution rules or regulations, have had a hearing by a unit disciplinary committee or a Disciplinary Hearing Officer (DHO), and have been assessed a sanction by that committee or DHO. Administrative detention is a related category of confinement for inmates who are being investigated for rule infractions, are being held for non-disciplinary reasons, but have not yet had a hearing as prescribed by disciplinary policy, or are being held outside the general inmate population for non-disciplinary reasons.

One structure usually accommodates both disciplinary segregation and administrative detention and typically comprises three wings: two wings for administrative detention and one wing for disciplinary segregation. Unlike the other inmate housing units, there is no need for a large, central multi-use space since inmates are confined to their cells much of the time and are not allowed to congregate. Minimal office space is required since unit managers, case managers and counselors are not stationed in the housing unit and instead conduct periodic visits to the inmates. Since inmates are housed in segregation temporarily, BOP staff from their original units visit them in the special housing unit.

6. Description of Security Levels

The BOP operates institutions of various security levels to appropriately house a broad spectrum of offenders. Security levels are based on such features as the presence of external patrols, security barriers, or detection devices; the type of housing within the institution; internal security features; and the staff-to-inmate ratio. Inmates are housed in facilities that are rated as minimum-security, low-security, medium-security and high-security as described below.

- **Minimum-Security.** Minimum-security institutions, also known as FPCs, are characterized by dormitory-style housing, a relatively high inmate-to-staff ratio, and no fences. These institutions are work-and program-oriented, and most are located adjacent to other federal correctional institutions or on military installations where inmates help serve the labor needs of the institution or base.
- **Low-Security.** Low-security FCIs have double-fenced perimeters, mostly dormitory-style housing, and strong work and program components. The inmate-to-staff ratio in low-security institutions is higher than in minimum-security facilities.
- **Medium-Security.** Medium-security FCIs have strengthened perimeters (often double-fences with electronic detection systems), cell-type housing, a wide variety of work and treatment programs, and an even more stringent inmate-to-staff ratio than do low-security institutions, providing even greater controls.
- **High-Security.** High-security institutions, also known as USPs, have highly secure perimeters (either walled or double-fenced with a taut wire fence), multiple and single occupant cell housing, non-lethal/lethal fences, and close staff supervision and movement controls.

Approximately 126,821 inmates are housed within the 122 federal correctional facilities that have levels of security ranging from minimum to maximum. An additional 14,036 federal inmates are housed within

privately-managed secure facilities and 14,884 inmates are housed in other contract facilities for a total federal inmate population of 155,741 (BOP, September 17, 2020).

7. Federal Inmate Population Profile

The BOP uses a classification system to determine inmate security level based on factors such as severity of the offense, expected length of incarceration, and types of prior offenses. Prison camps have generally the least restrictive environment and house inmates at the lowest security level, usually those serving short sentences or nearing the completion of longer sentences begun elsewhere. Low- and medium-security FCIs present increasingly more restrictive environments, while USPs provide high-security and very restrictive environments. Administrative maximum facilities provide for the highest level of security and the most restrictive conditions within the federal prison system. The BOP also operates administrative facilities which are used to house unclassified inmates and groups of inmates across various classifications and may include pretrial facilities and medical centers.

The inmate classification system has proven effective in that it enables the BOP to separate violent offenders from the rest of the inmate population, keep the inmate population in better balance, decrease the number of inmate transfers, and make better use of available resources, while confining offenders in the appropriately secure environment. Exhibit I-2 presents statistics which provide insight into the current inmate population housed within the federal prison system (BOP, June 27, 2020).

8. Work Programs

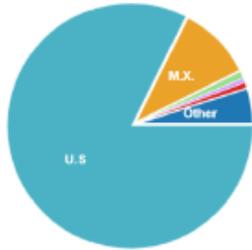
All sentenced offenders who are medically-able are required to complete daily work assignments and all offenders have opportunities to participate in self-improvement programs including education, vocational training, religious instruction and counseling. Federal inmates spend an initial two weeks in orientation where their needs, requirements, and interests are identified and where they learn about program and work opportunities. After orientation, inmates receive program and work assignments which are periodically reviewed and changed, if necessary, through inmate unit team consultation.

Many BOP institutions include a prison industry operated by Federal Prison Industries, Inc. (trade name UNICOR) as a way for inmates to learn skills in a vocation that promotes their rehabilitation back into society, reduces recidivism, and gives former inmates the means to support themselves in post-institutional life. Created in 1934, UNICOR provides job training and work opportunities to inmates through production of quality goods and services in multiple business segments where job skills can be developed and work habits acquired.

All medically-able inmates not employed by UNICOR are required to work at productive jobs. Work assignments reduce idleness and tension, and create a more easily managed environment. Institution work assignments may be in food service, the business office, carpentry and electrical maintenance, or any other work necessary for the upkeep and operation of the facility. Efforts are also made to place inmates in job assignments where they can use previously acquired skills or can receive on-the-job training in an employable skill.

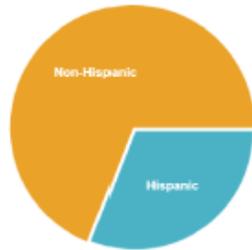
Program opportunities may include formal education from adult basic education through post-secondary courses, vocational training, social education programs to enhance self-confidence, library services including a law library, athletic and leisure programs, group and individual counseling,

Citizenship



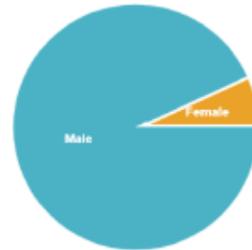
Country	# of Inmates	% of Inmates
Colombia	1,592	1.0%
Cuba	984	0.8%
Dominican Republic	1,259	0.8%
Mexico	16,522	10.3%
Other/Unknown	7,918	4.9%
United States	132,540	82.4%

Ethnicity



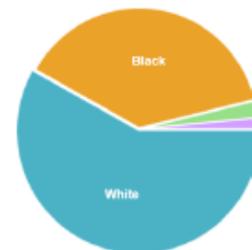
Ethnicity	# of Inmates	% of Inmates
Hispanic	49,874	31.0%
Non-Hispanic	110,941	69.0%

Gender



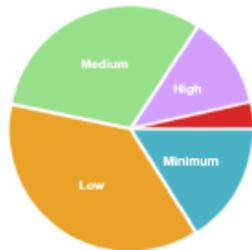
Gender	# of Inmates	% of Inmates
Female	10,994	6.8%
Male	149,821	93.2%

Race



Race	# of Inmates	% of Inmates
Asian	2,449	1.5%
Black	61,274	38.1%
Native American	3,716	2.3%
White	93,376	58.1%

Prison Security Levels



Security Level	# of Inmates	% of Inmates
Minimum	25,800	16.0%
Low	59,899	37.2%
Medium	49,865	31.0%
High	19,673	12.2%
Unclassified	5,578	3.5%

Age

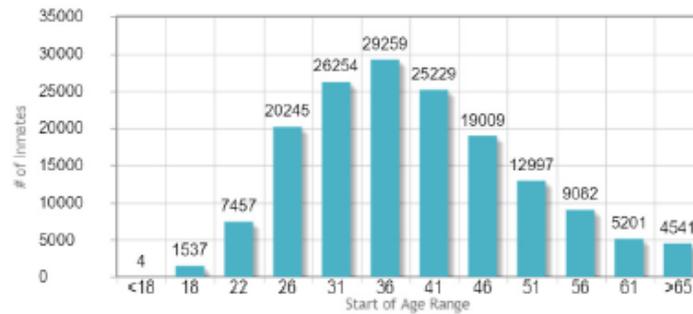


Chart Label	Age Range	# of Inmates	% of Inmates
<18	Under 18	4	0.0%
18	Ages 18-21	1,537	1.0%
22	Ages 22-25	7,457	4.6%
26	Ages 26-30	20,245	12.6%
31	Ages 31-35	26,254	16.3%
36	Ages 36-40	29,259	18.2%
41	Ages 41-45	25,229	15.7%
46	Ages 46-50	19,009	11.8%
51	Ages 51-55	12,997	8.1%
56	Ages 56-60	9,082	5.6%
61	Ages 61-65	5,201	3.2%
>65	Over 65	4,541	2.8%

Exhibit I-2: Federal Inmate Population Profile

Offenses

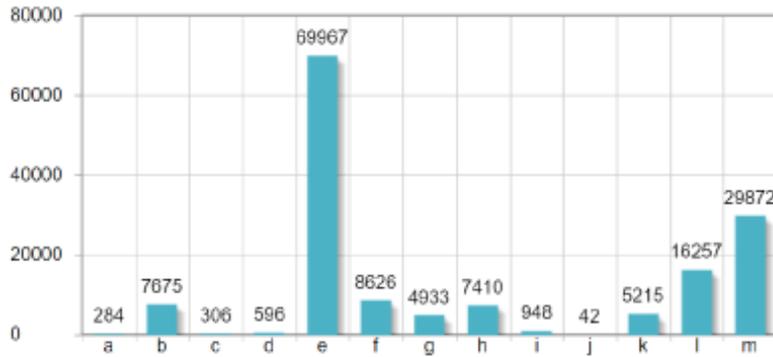
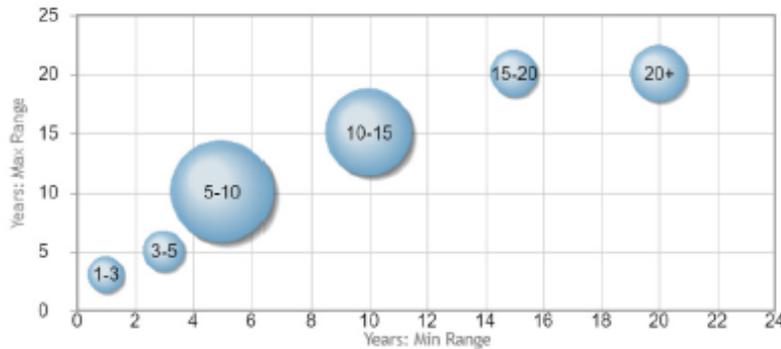


Chart Label	Offense	# of Inmates	% of Inmates
a	Banking and Insurance, Counterfeit, Embezzlement	284	0.2%
b	Burglary, Larceny, Property Offenses	7,675	5.0%
c	Continuing Criminal Enterprise	306	0.2%
d	Courts or Corrections	596	0.4%
e	Drug Offenses	69,967	46.0%
f	Extortion, Fraud, Bribery	8,626	5.7%
g	Homicide, Aggravated Assault, and Kidnapping Offenses	4,933	3.2%
h	Immigration	7,410	4.9%
i	Miscellaneous	948	0.6%
j	National Security	42	0.0%
k	Robbery	5,215	3.4%
l	Sex Offenses	16,257	10.7%
m	Weapons, Explosives, Arson	29,872	19.6%

Sentences Imposed



Sentence	# of Inmates	% of Inmates
0 to 1 year*	2,191	2.3 %
> 1 year to < 3 years**	14,397	9.5%
3 years to < 5 years	16,325	10.7%
5 years to < 10 years	40,247	26.4%
10 years to < 15 years	34,101	22.4%
15 years to < 20 years	18,437	12.1%
20 years or more but < Life	22,185	14.6%
Life	4,345	2.9%

* The sentence category "0 to 1 year" includes misdemeanor offenses (0-12 months).

** The sentence category "> 1 to < 3 years" includes the common sentence type: "Twelve months plus 1 day"

Exhibit I-2: Federal Inmate Population Profile (continued)

chaplains services, and inmate organizations. The literacy standard for inmates in federal prisons is a high school diploma or its equivalent. Inmate promotions in prison industries and institutional assignments to jobs above the entry level are contingent on meeting General Education Development literacy standards.

Community involvement in inmate programs within the facility is also encouraged and local civic and veterans groups often form chapters within the facility. Competitions at the institution with visiting sports teams, as well as participation with religious groups and service organizations are usually arranged on an on-going basis.

9. Future of the Existing USP and FPC

USP Leavenworth was constructed in the early 1900s and is not comparable to the contemporary prison designs that are common today. With its current configuration, USP Leavenworth is operationally inefficient than comparatively-sized, medium-security institutions of modern design. Due to its age and condition, the necessity exists for costly security, life safety, mechanical, electrical and plumbing system renovations, replacements and/or upgrades which are not currently feasible to carry out. As such, development of a new FCI/FPC is necessary in order to meet the BOP's current and projected future needs. Compounding the challenge of rehabilitating USP Leavenworth is that the complex of structures is eligible for listing on the NRHP, making renovation and reuse as a correctional facility more complex and costly than a facility not eligible for listing on the NRHP.

There is no plan to utilize USP Leavenworth to house inmates once the new FCI/FPC are constructed. Once constructed and activated, inmates and staff will be transferred to the new FCI/FPC with the existing USP and FPC no longer housing inmates.

As part of the plan to vacate the USP, the BOP intends to conduct a Transition Study that will focus on two objectives: maintain services to the USP that are necessary to avoid deterioration of the structures and infrastructure; and identify options for a new mission for the facility. The potential to adapt and/or reuse the USP for uses other than housing inmates will be determined as studies of the facility are undertaken to determine the nature and costs for adapting the structure for a future use. At this time the BOP has no plans to alter or demolish the USP and intends to maintain the facility until other uses and missions can be determined.

F. ENVIRONMENTAL JUSTICE CONSIDERATIONS

As required by Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice in Minority and Low-Income Populations*, February 11, 1996, environmental justice must be considered in the development of federally-funded projects. EO 12898 stipulates that each federal agency, "to the greatest extent practicable," should identify and address, as appropriate, "disproportionately high and adverse human health or environmental effects of its programs, policies and activities on minority populations and low-income populations in the United States." The EO embodies Title VI of the Civil Rights Act of 1964 and incorporates Title VI provisions into the planning and environmental impact study processes.

The BOP addressed environmental justice prior to initiating preparation of the DEIS by holding well-attended meetings in 2010 and 2011 to inform key community leaders about the proposed project and

to solicit advice and input from local, county, state, and federal agencies, officials, and organizations. The analysis completed in the preparation of the DEIS (2011), FEIS (2015), and now DSEIS (2020), took into account those comments and the demographic, economic, and housing characteristics of the region surrounding the proposed project site at USP Leavenworth (see Chapter III). Potential impacts, including socioeconomic impacts, are also reported in this document and include potential impacts of the proposed project on minority, low-income, and other vulnerable populations.

Developing a new FCI/FPC will generate potential short- and long-term benefits to the host community (City of Leavenworth) and surrounding region such as increased revenue to minority and small businesses during construction and operation, wholesale and retail sales opportunities, increased economic development, and job opportunities. Based on these factors, the project complies with EO 12898. The analysis of potential socioeconomic impacts on minority and low-income populations are included in this document and will be considered by the BOP prior to making a final decision on the proposed action.

For the purpose of this evaluation, the project area for environmental justice was defined using the same boundaries as described in the analysis of demographics, economics and housing. The project area reflects the region most likely to experience direct impacts and, in most cases, indirect community, human health, and environmental impacts from operation of the proposed FCI/FPC. Population and income characteristics from the U.S. Census of Population and Housing were inventoried and compiled to identify populations of concern for environmental justice. The following information was collected to enable a general comparison of the project area with the larger region in which USP Leavenworth is located.

- **Racial and Ethnic Characteristics:** Population of the study area was characterized using the racial categories White, Black or African American, American Indian, Asian, Native Hawaiian and Other Pacific Islander, and Other. These categories are consistent with the affected populations requiring study under EO 12898.
- **Percentage of Minority Population:** Persons of Hispanic origin characterized themselves as White, Black or African American, American Indian and Alaska Native on the long-form of the U.S. Census. Persons of Hispanic origin who identified themselves as White were included in the calculation of minority population for the purposes of this analysis.
- **Low-Income Population:** The percentage of persons living below the poverty level, as defined by the U.S. Census, is the key indicator used to identify the low-income population in a given region. Median household income is the second measure that has been used to characterize income levels within the study area.
- **Other Vulnerable Populations:** Age cohorts and the percentage of children and the elderly, as defined by the U.S. Census, are other key indicators used to identify vulnerable populations in a given region.

II. ALTERNATIVES

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A. INTRODUCTION TO THE ALTERNATIVES ANALYSIS

Council on Environmental Quality guidelines (40 CFR 1502) require an analysis of alternatives based *“on the information and analysis presented in the sections on the Affected Environment (40 CFR 1502.15) and the Environmental Consequences (40 CFR 1502.16).”* The guidelines state that the analysis *“should present the environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice.”* The guidelines further state that the alternatives analysis is required to:

- *“Include the alternative of no action”;*
- *“...explore and objectively evaluate all reasonable alternatives, and for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated”;*
- *“Devote substantial treatment to each alternative considered in detail including the proposed action so that reviewers may evaluate their comparative merits”;*
- *“Include reasonable alternatives not within the jurisdiction of the lead agency”;*
- *“Identify the agency’s preferred alternative or alternatives, if one or more exists, in the draft statement and identify such alternative in the final statement unless another law prohibits the expression of such a preference”;* and
- *“Include appropriate mitigation measures not already included in the proposed action or alternatives.”*

The analysis conducted under these guidelines addresses the following alternatives:

- **No Action Alternative.** A decision not to proceed with the proposed action to develop a new FCI/FPC.
- **Alternative Locations.** Locations other than Leavenworth, Kansas for implementation of the proposed action and warranting only a brief explanation of the reasons for elimination.
- **Action Alternatives.** Alternative building locations within the grounds of USP Leavenworth which best meet BOP requirements for development while minimizing potential adverse environmental impacts.
- **Preferred Alternative.** The alternative preferred by the BOP for implementation of the proposed action.

To the extent that reasonable alternatives which fulfill the purpose and need for modern correctional facilities to serve the BOP's North Central Region may be found at one or more locations already under the jurisdiction of the BOP, limitation of the reasonable alternatives to such locations would be in the best interest of the BOP. By developing the FCI/FPC within the grounds of an existing BOP institution, the proposed action has the potential to reduced overall development costs by avoiding acquiring additional public or private lands while capitalizing on the available utility and roadway infrastructure which currently serves the property. In the current climate of limited federal resources, if USP Leavenworth or another location already under the jurisdiction of the BOP is feasible for the proposed action, elimination of alternative locations not within the BOP's jurisdiction is believed to be reasonable and also in the best interest of the BOP, the federal government, and the public at large. A discussion of these alternatives follows.

B. NO ACTION ALTERNATIVE

The No Action Alternative is defined as a decision by the BOP not to proceed with the proposed action. This alternative would preclude the opportunity to develop and operate a new FCI/FPC to house a portion of the federal inmate population and would result in the continued of operation of USP Leavenworth. USP Leavenworth, constructed in the early 1900s, is operationally inefficient and along with its age and condition and the necessity for costly and difficult to implement security, life safety, mechanical, electrical and plumbing system replacements and/or upgrades, requires development of a new FCI/FPC to meet current and future needs.

Adoption of the No Action Alternative would avoid the potential impacts and inconveniences (albeit temporary) associated with construction of the proposed FCI/FPC such as increased noise, dust, soil erosion, energy consumption, traffic movements, and air emissions. Implementation of the No Action Alternative would also avoid the potential permanent impacts to land use, biological resources, utility services, and visual and aesthetic resources associated with FCI/FPC operation. Based on many years of experience developing new correctional institutions of a similar nature and scale throughout the country, the BOP anticipates that potentially significant adverse impacts from FCI/FPC construction and operation can and would be avoided and that none of the potential impacts associated with construction and operation, properly mitigated, would constitute significant adverse impacts as defined by NEPA.

While the No Action Alternative would avoid the potential impacts associated with development and operation of the FCI/FPC, adoption of this alternative would also result in the loss of the many positive benefits associated with the proposed action. These benefits include contributing to achieving the mandates of Congress; the need for modern, secure, efficient and cost-effective institutions; the societal benefits derived from efficient operation of the federal criminal justice system; along with the potential economic and employment opportunities which would become available to the residents and businesses in eastern Kansas and western Missouri as a consequence of FCI/FPC construction and operation.

The No Action Alternative, by definition, does not meet the purpose and need for the proposed action and, therefore, does not address the BOP's need to meet the on-going need for modern and secure correctional facilities and infrastructure generally, as well as to address an identified need for a new FCI/FPC in Leavenworth. As noted earlier, increasing numbers of federal correctional facilities are aged and physically obsolete requiring the BOP to continuously work to improve the system's infrastructure through

modernization of existing facilities when possible and construction of new institutions when necessary. Nonetheless, in order to compare and contrast the potential impacts of the proposed action, the No Action Alternative has been carried forward and discussed in Chapter III of the DSEIS.

C. ALTERNATIVE PROJECT LOCATIONS

1. Development of a New Correctional Facility

The term “alternative project locations” refers to locations in parts of the country other than that proposed. Locations of new federal prison facilities are determined by the demand for incarceration in various parts of the country and the age, capacity, and physical condition of existing facilities available to meet that demand. This requires the BOP to continuously work to improve the system’s infrastructure through modernization of existing facilities when possible and construction of new institutions when necessary.

Planning for new federal correctional institutions begins with identifying candidate sites according to a set of initial requirements involving minimum land area and configuration, roadway access, and proximity to population centers, among others. Those sites that meet such requirements are then screened for factors which, if present, would either preclude use for BOP purposes (e.g., excessive acquisition costs, steeply sloping terrain, inability to provide adequate water supply or wastewater treatment services at reasonable costs, flood hazards), or for determining the general categories of facilities for which a site may be appropriate. Candidate sites that successfully complete the screening process are then more rigorously evaluated against established criteria including optimal infrastructure and environmental requirements. The general criteria applied in this process have been established by the BOP and are supplemented as necessary during follow-up investigations to ensure that all issues or potential issues are adequately addressed. Candidate sites that appear suitable on the basis of initial investigations are then subjected to analysis in greater depth and documented in the form of Environmental Assessments or EISs as appropriate. The analysis becomes progressively more detailed at each step in the process, leading to in-depth, comprehensive documentation in compliance with NEPA and other environmental laws and regulations.

In planning for a new federal correctional facility to meet needs in the north-central region of the United States, consideration has been given to use of BOP-owned lands and facilities at FPC Yankton, FCI Milan, FCI Oxford, and the U.S. Medical Center for Federal Prisoners Springfield. Use of any of these properties has been eliminated from further consideration due to limitations on available land, infrastructure and/or other resources needed to accommodate development of a new FCI/FPC.

The BOP conducts similar investigations in areas of the country in which it has determined the need for new institutions as a part of an overall geographically-balanced program to manage its facilities and fulfill its mandate. Actions in other communities outside the BOP’s North Central Region, however, are considered to be in addition to the proposed action rather than true alternatives in lieu of action at USP Leavenworth. Therefore, failing to act at USP Leavenworth is considered to be essentially the same as the No Action Alternative. Accordingly, the BOP decided that it should proceed with the evaluation of potential development sites at USP Leavenworth to determine the degree to which such sites satisfy the established criteria and avoid significant adverse environmental consequences. Additional searches for alternative sites in other communities, in the absence of in-depth analysis of potential development sites at USP Leavenworth, would be neither prudent nor in the best interest of the public.

2. Use of Existing Correctional Facilities

In addition to its own facilities, the BOP also contracts with contractor-owned/operated facilities to house a portion of the federal inmate population. Contractor-owned/operated facilities employed by the BOP house predominantly a low-security inmate population and would not be suitable for housing medium-security federal inmates. The option of using a contractor-owned/operated facility to house USP Leavenworth inmates is not considered a reasonable alternative that would meet the purpose and need to replace USP Leavenworth with a new facility. Therefore, evaluating use of contract-owned/operated facilities is not considered a reasonable alternative has been eliminated from further consideration.

Other opportunities to use existing correctional facilities arise periodically and include unsolicited offers from public and private entities to acquire and adapt vacant correctional facilities. The BOP considers such offers when appropriate, but none have arisen that would meet the purpose and need to replace USP Leavenworth. Therefore, acquiring and adapting an existing correctional facility is not considered a reasonable alternative and has been eliminated from further consideration.

D. ALTERNATIVE PROJECT LOCATIONS WITHIN THE LEAVENWORTH AREA

The BOP's property holdings in the Leavenworth area consist of two separate tracts: a 754-acre parcel comprising the USP Leavenworth facility located north of the City of Leavenworth, Kansas, as well as an 1,320-acre parcel located approximately one to two miles from the USP and bordering the east bank of the Missouri River within the State of Missouri. The 1,320-acre tract in Missouri is vacant and located within the Missouri River floodplain. Given its isolated location, lack of infrastructure, and propensity for flooding, the property in Missouri was eliminated from further consideration.

Consideration has been given to alternative locations within the USP property in planning for the proposed FCI/FPC. The southern portion of the USP Leavenworth property, bordered by Metropolitan Avenue, has been developed for over 100 years with the USP, minimum-security prison camp, warehouses, staff housing, internal roadways, parking areas, and other ancillary support facilities; much of this area has been eliminated from consideration. In addition, the area located directly north of the USP was also eliminated due to its limited land area and the resulting inability to satisfy critical BOP requirements involving security zones and setbacks from structures, property lines, etc. necessary for FCI/FPC development and operation.

Of the remaining property, two separate locations east and west of the USP have been considered for development. The first location, known as the East Site, consists of approximately 227 acres of primarily undeveloped land situated east of the USP and north of Metropolitan Avenue, west of Grant Avenue, and south of Corral Creek (Exhibit II-1). The second location, described as the West Site, comprises approximately 144 acres and is located west of the USP. The West Site includes the existing minimum-security prison camp and is generally bounded by Metropolitan Avenue on the south, Santa Fe Trail/County Road 14 on the west, and an abandoned railroad grade on the north. The two locations together comprise approximately 371 acres of land.

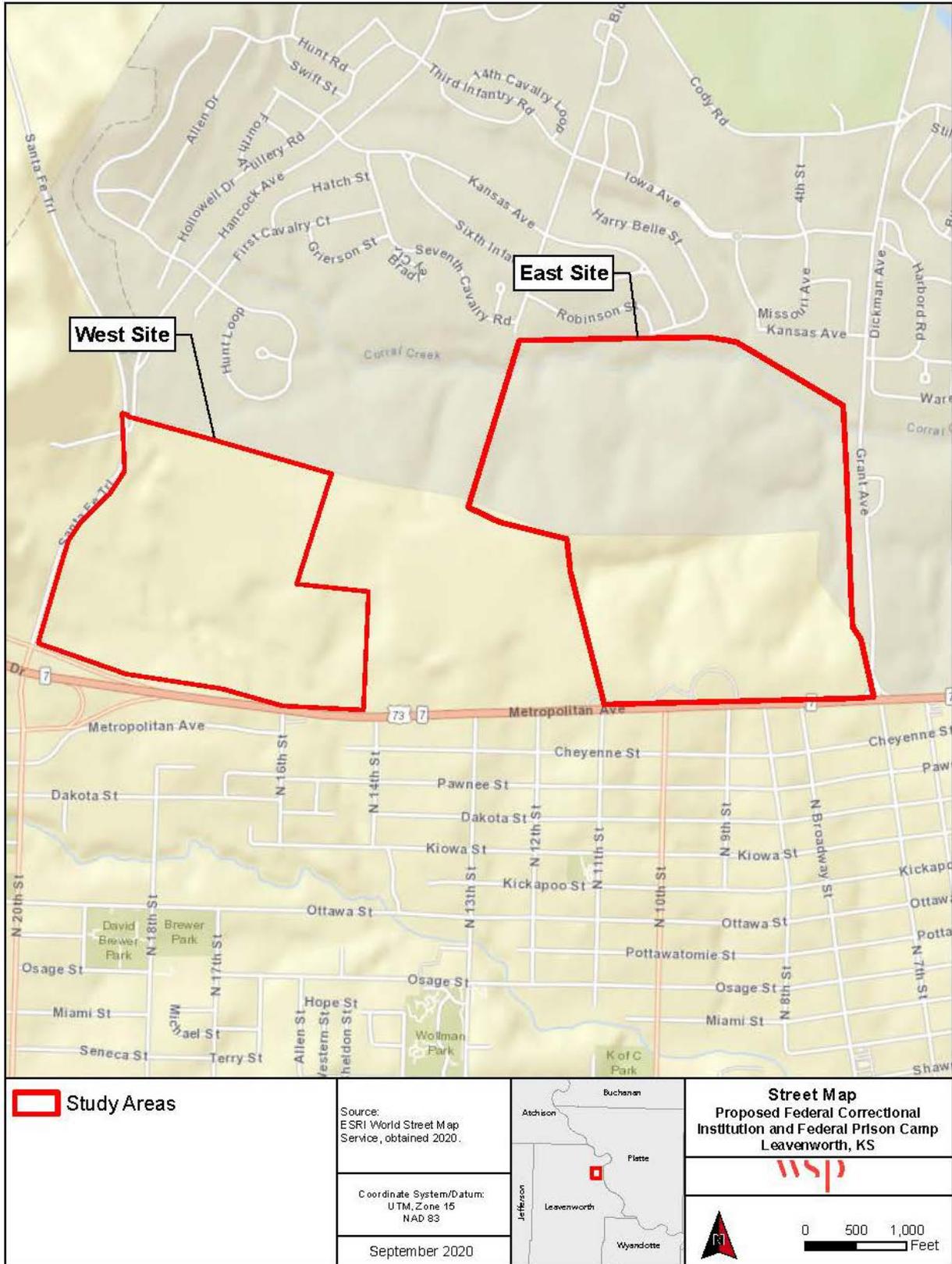


Exhibit II-1: East and West Sites

1. Alternative FCI and FPC Conceptual Development Plans

The BOP has conducted detailed studies of alternative locations for FCI and FPC development within the vacant portions of the USP Leavenworth property with due consideration to:

- Relationship to existing BOP facilities, operations, and infrastructure;
- Topographic conditions and soil characteristics;
- Locations of past waste disposal areas;
- Locations of drainage and water features;
- Proximity to neighboring properties and land uses;
- Locations and extent of wetlands, streams, tree stands and wildlife habitats;
- Utility services including underground and overhead utility lines and easements; and
- Motor vehicle access.

On the basis of the analysis, alternative conceptual development plans for the proposed FCI/FPC were prepared to establish facility configurations, spatial relationships, locations and orientations including the placement of inmate housing, administration spaces, utilities, recreational areas, warehouse locations, internal access roads and parking areas, and other ancillary development. This effort also served to avoid sensitive environmental features where possible while minimizing the potential costs and operational disruptions associated with the proposed development. The alternative development concept plans prepared for the East and West Sites utilized BOP design, security and operational requirements for federal correctional facilities, together with other development factors including:

- Adherence to BOP guidelines and standards involving security zones and setbacks from public roadways, structures, property lines, buffer areas, etc.
- Minimizing impacts to historic and cultural resources represented by the USP Leavenworth Historic District and other structures comprising the overall institution;
- Limiting temporary and permanent impacts to jurisdictional streams and wetlands;
- Minimizing earthwork and other site preparation requirements to achieve properly placed and level building surfaces;
- Limiting disruptions to daily USP and camp operations resulting from FCI/FPC construction activities;
- Developing safe and convenient pedestrian and motor access routes to the new facilities from the public roadway system; and

- Minimizing potential risks associated with existing underground natural gas pipelines and overhead electrical lines and relocating such utilities when necessary to ensure the health, safety, and security of inmates, staff and visitors.

The conceptual site development alternatives for both the East and West Sites depict building locations, orientations and configurations to achieve a balance between BOP operational and security requirements and the need to minimize potential environmental impacts, development costs, etc. The progression of alternative development plans served to incorporate favorable components derived from initial, less desirable plans as determined by the screening analysis. In this way, alternative development plans systematically evolved to produce a single overall development plan which incorporates the best features of each preceding plan and is considered the Preferred Alternative. All alternative development plans are included in Appendix C.

2. Alternative Development Plan East-1

The current Alternative Development Plan East-1 represents a refinement of the East-1 plan published in the Draft EIS (2011) and Final EIS (2015). East-1 continues to orient the FCI development footprint so that the main entrance is facing southeast towards the primary access road (Metropolitan Avenue) while accommodating all necessary FCI elements including employee and visitor parking areas; inmate housing; administration buildings; indoor and outdoor recreation areas; education and vocational training spaces; medical and dining facilities, among other components. The development plan includes a central utility plant, warehouse and/or garage landscape building, and other maintenance facilities to be located southeast of the FCI.

Under this plan, the proposed FPC would be located immediately south of the FCI and would be accessible via the proposed FCI access driveway from Metropolitan Avenue east of the existing USP. The new entrance driveway would be sited on Metropolitan Avenue, mid-way between North 10th and North 11th Streets in a location that avoids adversely impacting the historic staff housing units which front on Metropolitan Avenue. Features of the East-1 plan are summarized below:

- Alternative Development Plan East-1 meets all critical BOP security and operational requirements involving security zones and setbacks from structures, property lines, etc. necessary for development and operation of a FCI and FPC.
- The plan places the FPC in close proximity to the FCI which relies upon camp inmates to carry out or help support various operation and maintenance activities.
- This plan requires relocation of an overhead electrical line easement containing two overhead power lines and placement of a planned new electrical substation (by Evergy) in the southeastern portion of the USP property, thereby avoiding conflicts with FCI/FPC development.
- This plan requires relocation of one high-pressure natural gas pipeline which follows a north-south alignment and abandonment of a second pipeline which follows an east-west alignment.
- The plan involves remediation of known waste disposal areas prior to FCI/FPC construction.

- The FPC is more compact and its location has been adjusted to increase the distance from the historic staff housing units and includes an earthen berm extending the length of the housing units to provide a physical barrier between the units and the FPC.
- No historic staff housing units (contributing features to the NHRP-eligible USP Leavenworth Historic District) would be adversely impacted, and no NRHP-eligible archaeological sites would be impacted.

The features of Alternative Development Plan East-1 are shown in Exhibit II-2 and summarized in Table II-1.

Table II-1. Summary Comparison of Alternative Development Plans Leavenworth, Kansas

Alternative Sites Alternative Development Plans	East Site			West Site		Combination of East and West Sites East/West Composite	
	East-1	East-2	East-3	West-1	West-2		
Land Area	227 acres			144 acres		371 acres	
Security and Operational Requirements	In Compliance			In Violation		In Compliance	
	None	Staff Housing	Staff Housing	Minimum-security camp and USP warehouses		Staff Housing	
	Acceptable	Acceptable	Acceptable	Acceptable		Unacceptable	
	Access	New entrance driveway from Metropolitan Avenue, between N. 10 th and N. 11 th Streets	New entrance driveway from Metropolitan Avenue opposite N. 10 th Street (full intersection)	New entrance driveway from Metropolitan Avenue opposite N. 10 th Street (full intersection)	New entrance driveway from Santa Fe Trail. Demolition of existing service road and creation of a circuitous internal roadway (not desired) before connecting to Santa Fe Trail.		Access to FCI provided by new entrance driveway from Metropolitan Avenue opposite N.10th Street (full intersection). Access to FPC via existing Service Road to Santa Fe Trail
Biological Resource Considerations	Area of Impacted Jurisdictional Wetlands	0 acre	0 acre	0 acre	0 acre	0 acre	
	Area of Impacted Jurisdictional Streams	0 linear feet	0 linear feet	0 linear feet	0 linear feet	0 linear feet	
Waste Disposal Considerations	Potential to Encounter Known Contaminated Areas	Yes			No		Yes
	Potential Hazards associated with Remediation	None			Associated with demolition of minimum-security camp and USP warehouses		None
Utility Considerations	Overhead Electric Line Relocation	Yes	Yes	Yes	No		Yes
	Natural Gas Pipeline Relocation	Yes	Yes	Yes	No		Yes
Cultural Resource Considerations	Potential Impacts to NHRP-Eligible Archaeological Sites	None			None		None
	Potential Impacts to NHRP-Eligible Architectural Historic District and Resources	None			Yes. Demolition of contributing structures (minimum-security camp and USP warehouses).		Yes. Demolition to contributing structures (staff housing).

3. Alternative Development Plan East-2

Alternative Development Plan East-2 orients the FCI building footprint so that the main entrance is facing west towards the northeastern corner of the USP while accommodating all necessary FCI elements including employee and visitor parking areas; inmate housing; administration buildings; indoor and outdoor recreation areas; education and vocational training spaces; medical and dining facilities, among other components. This development plan includes a central utility plant, warehouse and/or garage landscape building, and other maintenance facilities to be located southeast of the FCI. The proposed FPC would be located directly south of the proposed FCI and would be accessible via the new entrance driveway which connects with Metropolitan Avenue east of the existing USP and creating a full intersection at North 10th Street. Features of Alternative Development Plan East-2 are summarized below:

- Alternative Development Plan East-2 meets all critical BOP security and operational requirements involving security zones and setbacks from structures, property lines, etc. necessary for development and operation of a FCI and FPC.
- This plan places the FPC in close proximity to the FCI which relies upon camp inmates to carry out or help support various operation and maintenance activities.
- This plan requires relocation of an overhead electrical line easement containing two overhead power lines and placement of a planned new electrical substation (by Evergy) in the southeastern portion of the USP property, thereby avoiding conflicts with FCI/FPC development.
- This plan requires relocation of one high-pressure natural gas pipeline which follows a north-south alignment and abandonment of a second which follows an east-west alignment.
- The plan involves remediation of known waste disposal areas prior to FCI/FPC construction.
- Seven historic staff housing units fronting on Metropolitan Avenue (contributing features to the NHRP-eligible USP Leavenworth Historic District) would require demolition or be adversely impacted. No NRHP-eligible archaeological sites would be impacted.

The features of Alternative Development Plan East-2 are summarized in Table II-1.

4. Alternative Development Plan East-3

Alternative Development Plan East-3 orients the FCI building footprint so that the main entrance is facing south towards Metropolitan Avenue while accommodating all necessary FCI elements including employee and visitor parking areas; inmate housing; administration building; indoor and outdoor recreation areas; education and vocational training spaces; medical and dining facilities, among other components. As with each Alternative Development Plan, this plan includes a central utility plant, warehouse and/or garage landscape building, and other maintenance facilities to be located southeast of the FCI. The proposed FPC would be located directly south of the proposed FCI and east of the existing USP. The FPC would be accessible via the FCI access road which connects with Metropolitan Avenue east of the existing USP and forming a full intersection with North 10th Street. Features of Alternative Development Plan East-3 are summarized below:

- Alternative Development Plan East-3 meets all critical BOP security and operational requirements involving security zones and setbacks from structures, property lines, etc. necessary for development and operation of an FCI and FPC.
- This plan places the FPC in proximity to the FCI which relies upon camp inmates to carry out or help support various operation and maintenance activities.
- This plan requires relocation of an overhead electrical line easement containing two overhead power lines and placement of a planned new electrical substation (by Evergy) in the southeastern portion of the USP property, thereby avoiding conflicts with FCI/FPC development.
- This plan requires relocation of one or both high-pressure natural gas pipelines which extend through the site along east-west and north-south alignments.
- The plan involves remediation of known waste disposal areas prior to FCI/FPC construction.

- Three of the historic staff housing units fronting on Metropolitan Avenue (contributing features to the NHRP-eligible USP Leavenworth Historic District) would require demolition with other units adversely affected. No NRHP-eligible archaeological sites would be impacted.

The features of Alternative Development Plan East-3 are summarized in Table II-1.

5. Alternative Development Plan West-1

Alternative Development Plan West-1 orients the FCI footprint so that the main entrance is facing west toward the Santa Fe Trail/County Road 14 (the northern extension of North 20th Street across from the Metropolitan Avenue interchange) while accommodating all necessary FCI elements including employee and visitor parking areas; inmate housing; administration building; indoor and outdoor recreation areas; education and vocational training spaces; medical and dining facilities, among other components. Alternative Development Plan West-1 includes a central utility plant, warehouse and/or garage landscape building, and other maintenance facilities to be located southeast of the FCI and west of the USP. The proposed FPC would be located west of the FCI and close to Santa Fe Trail/County Road 14. Access to the FCI and FPC would be via a new entrance from Santa Fe Trail/County Road 14.

Due to the limited land area and configuration of the West Site, development of the FCI/FPC would violate critical BOP security and operational requirements including substandard security zones and setbacks (less than 300 feet) from structures, property lines, etc. necessary for development and operation of a FCI and FPC. This plan places the FCI in unacceptably close proximity to Fort Leavenworth family housing and requires demolition of the existing FPC and relocation of camp inmates throughout the period of construction. Based on these factors, Alternative Development Plan West-1 was eliminated from further consideration. Features of Alternative Development Plan West-1 are summarized in Table II-1.

6. Alternative Development Plan West-2

Alternative Development Plan West-2 orients the FCI footprint so that the main entrance is facing north towards Fort Leavenworth while accommodating all necessary FCI elements including employee and visitor parking areas; inmate housing; administration building; indoor and outdoor recreation areas; education and vocational training spaces; medical and dining facilities, among other components. Alternative Development Plan West-2 includes a central utility plant, warehouse and/or garage landscape building, and other maintenance facilities to be located west of the FCI with the FPC located north of the FCI. Both the FCI and FPC would share an entrance from the Santa Fe Trail/County Road 14.

Due to the limited land area and configuration of the West Site, development of the FCI/FPC would violate critical BOP security and operational requirements including substandard security zones and setbacks (less than 300 feet) from structures, property lines, etc. necessary for development and operation of the FCI and FPC. This plan places the FPC in unacceptably close proximity to Fort Leavenworth family housing and requires demolition of the existing FPC and relocation of camp inmates throughout the period of construction. Based on these factors, Alternative Development Plan West-2 was eliminated from further consideration. Features of Alternative Development Plan West-2 are summarized in Table II-1.

7. Alternative Development Plan East/West Composite

During the preparation and analysis of various conceptual development plans, the BOP also examined an additional alternative plan that places development within both the East Site and West Site. Such a plan, described hereinafter as the East/West Composite Alternative, would place the proposed FCI, central utility plant, warehouse, and landscape and other maintenance garages entirely within the East Site and the proposed FPC on the West Site. On the East Site, the main entrance road to the proposed FCI would be sited on Metropolitan Avenue forming an intersection with North 10th Street. On the West Site, access to the FPC would be via the current entrance roadway from Santa Fe Trail/County Road 14. Features of the East/West Composite Alternative are summarized as follows:

- The East/West Composite Alternative meets all critical BOP security and operational requirements involving security zones and setbacks from structures, property lines, etc. necessary for development and operation of a FCI and FPC.
- With the new FPC located west of the USP, camp inmates would be far removed from the FCI where they would be assigned to support various operation and maintenance activities. The

result will be an increased logistical burden upon BOP staff to oversee the daily movement of camp inmates to/from the FCI, increased operating costs associated with daily movements, and an overall less efficient and secure operation.

- This alternative avoids the need to demolish the existing minimum-security camp allowing for the possible reuse in the future.
- This plan requires relocation of an overhead electrical line easement containing two overhead power lines and placement of a planned new electrical substation (by Evergy) in the southeastern portion of the USP property, thereby avoiding conflicts with FCI development.
- Implementation of this plan requires relocation of one high-pressure natural gas pipeline which follows an east-west alignment.
- The plan involves remediation of known waste disposal areas prior to FCI/FPC construction.
- Three of the historic BOP staff housing units fronting on Metropolitan Avenue (contributing features to the NHRP-eligible USP Leavenworth Historic District) would be demolished and others would be adversely affected. No NRHP-eligible archaeological sites would be impacted.
- With separate access to the proposed FCI and FPC (via Metropolitan Avenue and Santa Fe Trail/County Road 14, respectively), BOP-related traffic is better distributed.

Features of the East/West Composite Alternative Development Plan are shown in Exhibit II-3 and summarized in Table II-1.

8. Conclusion

The Alternatives Analysis has assessed No Action and six Action Alternatives pursuant to NEPA guidelines. Each alternative was assessed to determine whether it met project objectives. If an alternative did not meet project objectives it was not advanced for further consideration. Each alternative was also assessed in terms of impacts to infrastructure and environmental resources including cultural resources, waste disposal areas, wetlands and other waters of the United States, overhead and underground utility systems among others. Avoidance, minimization, and reduction components were included in each plan to reduce environmental and infrastructure impacts to the maximum extent practicable and feasible.

Each alternative plan was evaluated against security, operational, environmental, and infrastructure criteria until a preferred alternative was identified that best met project objectives while accommodating security considerations, existing technology, logistics, and costs. These criteria specified that the preferred alternative must meet project goals, demonstrate utility, and represent a reasonable and practicable alternative, taking into consideration cost, current technology, and logistics, in light of project purposes. Alternatives were also evaluated to determine the environmental consequences associated with implementation.

Selection of two alternative development plans for analysis in the DSEIS was made following a review and analysis of all plans; the two selected represent the best combination of BOP-preferred design, security, and operational features and the fewest environmental and other potential adverse impacts. For example, both the FCI East-1 and East/West Composite plans met security and operational requirements and avoid demolition of the existing prison camp, thereby allowing for possible future use. For these and similar reasons, the East-1 and East/West Composite plans were selected for detailed analysis.

Each alternative development plan consists of similar concept designs that incorporate the necessary features of the FCI/FPC (e.g., inmate housing, administration buildings, recreation areas). However, the East-1 plan best meets BOP operational and security requirements while minimizing potential environmental and other impacts and is considered the Preferred Alternative. The East-1 and East/West Composite plans are analyzed further in the remainder of this document.

**III. AFFECTED ENVIRONMENT, POTENTIAL
IMPACTS, AND MITIGATION**

III. AFFECTED ENVIRONMENT, POTENTIAL IMPACTS, AND MITIGATION

A. INTRODUCTION

1. Existing Conditions

Implementation of the proposed action has the potential to affect various environmental resources found within the two alternative development sites as well as resources which exist beyond the boundaries of the BOP's property in Leavenworth. This chapter examines specific environmental resources that have the potential to be affected by implementation of the proposed action. Both natural resources, including topographic features, geology and soils, hydrological and biological resources among others, as well as community resources such as social and economic factors, land use, utility services, and transportation networks, are addressed. Each resource description focuses on the relevant attributes and characteristics of that resource with the potential to be affected by the proposed action or that represent potential encumbrances to the proposed action.

2. Potential Impacts and Mitigation

NEPA regulations direct federal agencies to discuss any direct and/or indirect adverse environmental effects which cannot be avoided should the proposed action be implemented, and the means to mitigate adverse impacts if they occur. The NEPA regulations instruct federal agencies to consider both beneficial and adverse impacts of the proposed project in terms of public health, unique features of the geographic area, the precedential effect of the action, public opinion concerning the action, and the degree to which the impacts are uncertain. Mitigation measures are identified as those actions that would reduce or eliminate potential environmental impacts that could occur as a result of construction or operation of the proposed project. Mitigation, as defined by the NEPA regulations, includes:

- *"Avoiding the impact altogether by not taking a certain action or parts of an action";*
- *"Minimizing impacts by limiting the degree or magnitude of the action and its implementation";*
- *"Rectifying the impact by repairing, rehabilitating, or restoring the affected environment";*
- *"Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action"; and*
- *"Compensating for the impact by replacing or providing substitute resources or environments."*

The analyses which follow address the potential impacts associated with the development and operation of a new FCI designed to house approximately 1,152 medium-security inmates and a new FPC designed to house approximately 256 minimum-security inmates. Potential impacts and measures to mitigate potential adverse impacts associated with the proposed action are discussed under each topic.

Integral to the analyses which follow is the BOP's plan to transfer all inmates and staff from the USP and FPC to the new facilities and to cease housing inmates at the existing facilities. As a result, there would be no net increase in the inmate population or staff in Leavenworth.

B. TOPOGRAPHIC FEATURES

1. Existing Conditions

Leavenworth County lies within the Glaciated, Dissected Till Plains physiographic division of the central United States, an area of rolling hills formed by glacial drift deposited during the last two Ice Ages (Lauver 1989; McCauley 1998). United States Geological Survey (USGS) 7.5-minute topographic quadrangle maps depict the USP Leavenworth property to be at an average elevation of 860 feet above mean sea level (msl). The topography of the East Site generally consists of rolling terrain, a portion of which is moderately steep, with elevations ranging from 825 to 890 feet above msl. The topography of the West Site is generally more level with the ground surface at an average elevation of 860 feet above msl (Exhibit III-1).

2. Potential Impacts and Mitigation

a. No Action Alternative

Under the No Action Alternative, the proposed FCI/FPC would not be developed. The BOP's Leavenworth property would remain in its current condition, topographic conditions would not be affected, and mitigation measures would not be necessary.

b. Potential Impacts

Construction of the proposed FCI/FPC under either the East-1 or the East/West Composite development plans would require clearing, excavation and grading for building construction which would reshape topographic conditions. While the full extent of topographic alterations would be identified once a detailed site development plan is finalized, topographic conditions are such that only moderate alterations would be necessary to provide the level building surfaces required for development. While topographic alterations resulting from development are unavoidable, such changes are not expected to produce significant adverse impacts. Additional grading activities or other topographic changes are not anticipated once FCI/FPC construction is completed.

c. Recommended Mitigation

To minimize potential adverse topographic impacts, the BOP would seek to locate the FCI/FPC building footprints, internal roadways and parking areas, utility corridors, and drainage facilities in a manner compatible with existing topography and drainage patterns. Doing so would serve to unify the architectural design of the FCI/FPC while minimizing earth disturbance. Areas to be excavated, graded, or otherwise disturbed for FCI/FPC development would be either built upon or stabilized and seeded. Where feasible, all grading and subsurface excavations would be performed using conventional equipment, however, the potential exists to utilize other means to carry out site preparation activities. Appropriate soil erosion and sediment control measures would be employed throughout the construction phase to minimize soil losses and similar short-term impacts resulting from site preparation

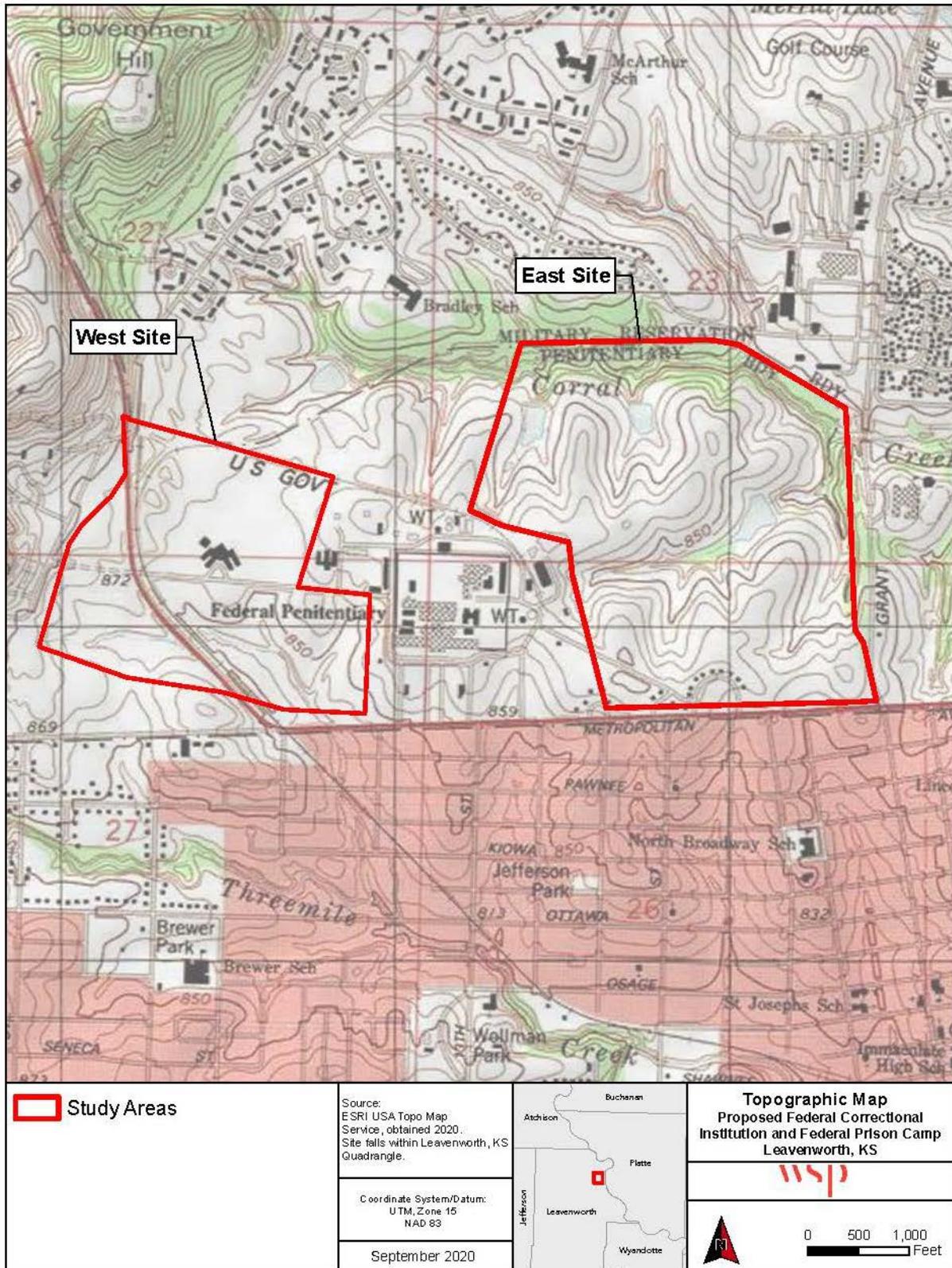


Exhibit III-1: Topographic Features

and development activities. Implementation of best management practices (BMPs), to the extent practicable, would also occur to prevent damage from sedimentation, erosion or dust into streams, watercourses, natural areas, and adjoining properties. No other mitigation measures for topographic impacts are warranted.

C. GEOLOGY

1. Existing Conditions

a. Geology

Geologic resources within the study areas consist of loess deposits underlain by residual clay soils and the Lawrence Shale Member. The Lawrence Shale Member is located within the Douglas Formation of the Pennsylvanian Series (KGS, March 2008; Butler 1991). The majority of the Lawrence Formation is comprised of gray shale and sandstone with minor red shale, coal, gray limestone and conglomerate. The thickness of this formation ranges from 140 feet to 250 feet. The primary rock types associated with the Douglas formation are shale, sandstone, coal, limestone, and conglomerates.

b. Seismicity

Based on historical earthquake locations and the recurrence rate of fault ruptures, the USGS has produced seismic hazard maps that show, by contours, earthquake ground motions that have a common probability of being exceeded in a specified time period under specific geological site conditions (USGS 2006). The predicted maximum amount of earthquake-induced shaking with a two percent probability of being exceeded in 50 years is shown on this map. The ground motion is expressed as a percentage of the force of gravity (percent g) and is proportional to the hazard faced by a particular type of building.

In general, little or no damage can be expected at values less than 10 percent g, moderate damage at 10 to 20 percent g, and major damage at values greater than 20 percent g. Leavenworth County, including the proposed development areas, is situated between contours ranging from 2 to 4 percent g (Exhibit III-2). Thus, the potential for damage from seismic activity is a low concern for new developments in this region of Kansas. Although the concern over earthquakes is low, the design of new developments, including the proposed correctional facilities, must consider seismic risk and address this risk properly.

2. Potential Impacts and Mitigation

a. No Action Alternative

Under the No Action Alternative, the proposed FCI/FPC would not be developed. The BOP's Leavenworth property would remain in its current condition, geologic conditions would not be affected, and mitigation measures would not be necessary.

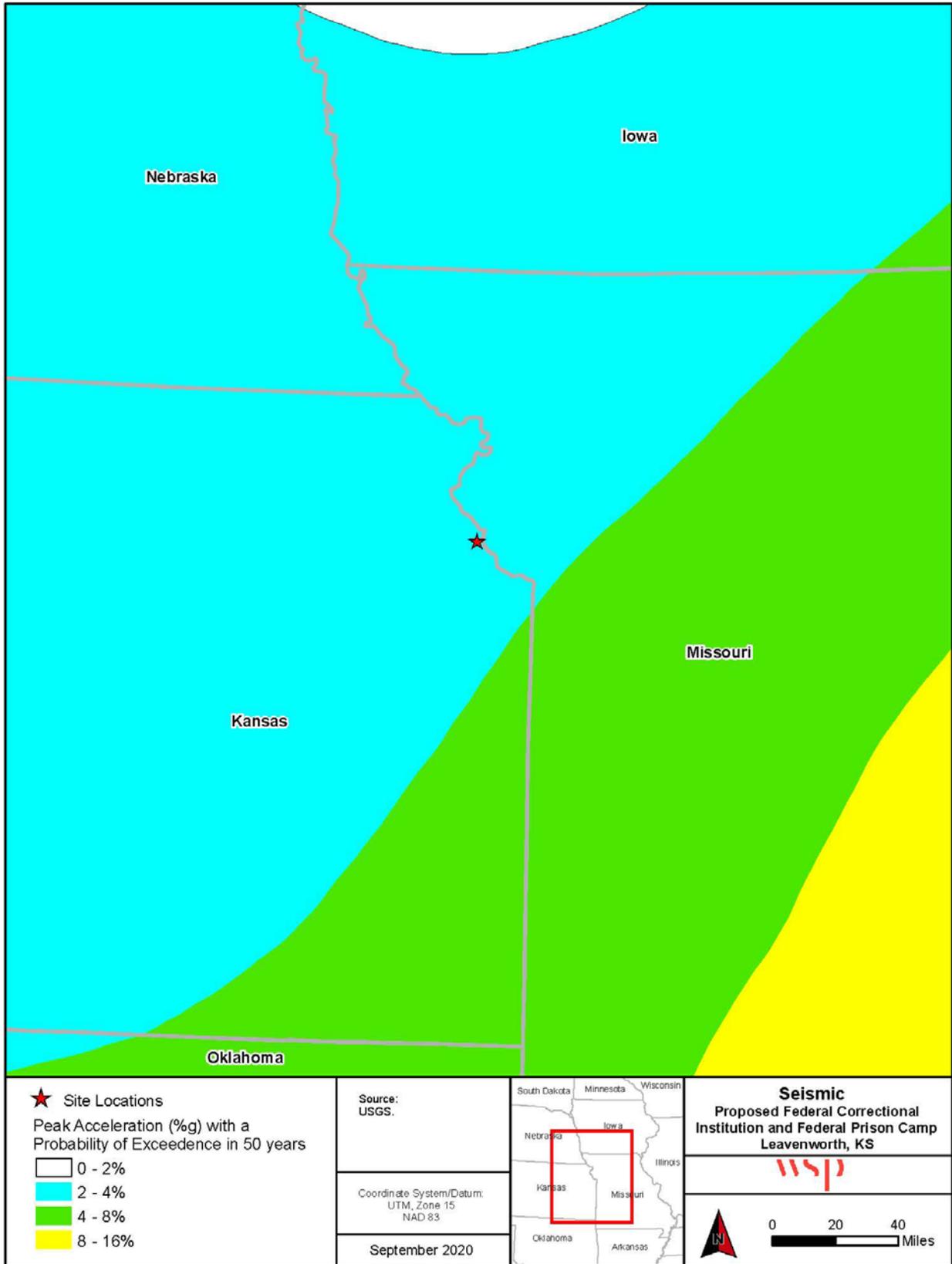


Exhibit III-2: Seismic Activity Map

b. Potential Impacts**• Geologic Features**

Construction of the proposed FCI/FPC under either development plan would require excavations for building footings and foundations, internal access roads, underground and above-ground utilities, stormwater management facilities, etc. Deep excavations for building footings and foundations or utility installations are not planned and as a result, only minor adverse effects to subsurface conditions would be expected under either development plan. Disturbance of natural geologic features would be limited to only those areas where excavations for footings and foundations would occur. Construction activities associated with development are not expected to result in significant adverse impacts to geologic features and conditions at the selected development location.

• Seismic Hazards

Potential seismic hazards affecting the proposed project are discussed below.

- **Ground Shaking.** There is a low potential for the development sites to experience ground shaking. The intensity of ground shaking is highly dependent upon the distance to a fault, the magnitude of the earthquake, and the soil conditions beneath the site. The USP property is located in an area of low seismic potential and is not susceptible to ground shaking.
- **Primary Ground Rupture.** Primary ground rupture is ground deformation that occurs along the surface trace of the causative fault during an earthquake. The development sites are not known to be located on or near an active fault and, therefore, are not susceptible to primary ground rupture.
- **Liquefaction.** Liquefaction is the transformation of a cohesionless (sandy) soil from a solid to a liquid state caused by an increase in pore pressure and a reduction in effective stress. It can occur when sandy soils are subjected to strong ground shaking. Because the development sites do not contain sandy soils, the potential for liquefaction is low.
- **Seismically-Induced Settlement and Differential Compaction.** Seismically-induced settlement and differential compaction occur when relatively soft or loose soils experience a reduction in strength caused by strong ground motion. Seismically induced settlement is not likely to occur at the development sites.
- **Other Phenomena.** Other phenomena include earthquake-induced flooding and tsunamis. Because the USP property is not located near or at elevations below any major lakes, dams, or other large surface water bodies, these phenomena are not likely to occur.

c. Recommended Mitigation

Alterations to geologic conditions resulting from development of the proposed FCI/FPC would not be expected to result in significant adverse impacts. Nonetheless, various subsurface engineering investigations would be undertaken prior to design and construction in order to ensure that appropriate

design standards and sound building practices are implemented. No mitigating measures involving geologic conditions are warranted.

D. SOILS

1. Existing Conditions

The “Soil Survey for Leavenworth County, Kansas” prepared by the U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) and published in the Web Soil Survey was reviewed to identify soil types, descriptions, and constraints associated with proposed project sites. The Web Soil Survey identifies seven soil mapping units within the proposed sites (Exhibit III-3).

The Web Soil Survey (USDA NRCS 2011b) identifies soils in the East Site as Sharpsburg silty clay loams, 1 to 8 percent slopes on the highest elevations and adjacent hillsides. Ladoga silt loam, 3 to 8 percent slopes is present on the lower hill sides and Knox silt loam, 7 to 12 percent slopes is present in the areas of the ponds. Kennebec silt loams, occasionally and frequently flooded are present on floodplains along Corral Creek and Marshall silt loam, 5 to 9 percent slopes is present on the lower hill sides on the north side of Corral Creek. On the West Site, the soil identified by the NRCS is Sharpsburg silty clay loams, 1 to 4 percent slopes in the north-western portion of the site and 4 to 8 percent slopes in the south-eastern portion of the site. Two small areas of Sharpsburg silty clay loams, 4 to 8 percent slopes also occur along the west and northwest boundaries of the West Site. Soil characteristics are described below and summarized in Table III-1.

7050 - Kennebec Silt Loam, Occasionally Flooded: This moderately well drained, level soil on floodplains and river valleys comprises less than one percent of the East Site. Soils of the Kennebec silt loam, occasionally flooded map unit are formed in alluvium. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is very high and shrink-swell potential is moderate. This soil is occasionally flooded but not ponded and not identified as a hydric soil. Flood hazard, depth to water table, low strength, frost action, and shrink-swell potential are limitations if the Kennebec soil is used for sanitary facilities, roadway construction, or site development (USDA NRCS 2011b).

7051 - Kennebec Silt Loam, Frequently Flooded: This moderately well drained, level soil of floodplains and river valley comprises approximately eight percent of the East Site. Soils of the Kennebec silt loam, frequently flooded map unit formed in alluvium. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is very high and shrink-swell potential is moderate. This soil is frequently flooded but not ponded and not identified as a hydric soil. Flood hazard, depth to water table, low strength, frost action, and shrink-swell potential are limitations if the Kennebec soil is used for sanitary facilities, roadway construction, or site development (USDA NRCS 2011b).

7285 - Ladoga Silt Loam, 3 to 8 Percent Slopes: This moderately well drained, moderately sloping soil occurs on hillslopes on uplands and comprises approximately 16 percent of the East Site. Soils of the Ladoga silt loam, 3 to 8 percent slopes map unit formed in silty and clayey loess. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is high and shrink-swell potential is moderate. This soil is not flooded or ponded and is not identified as a hydric soil. Low

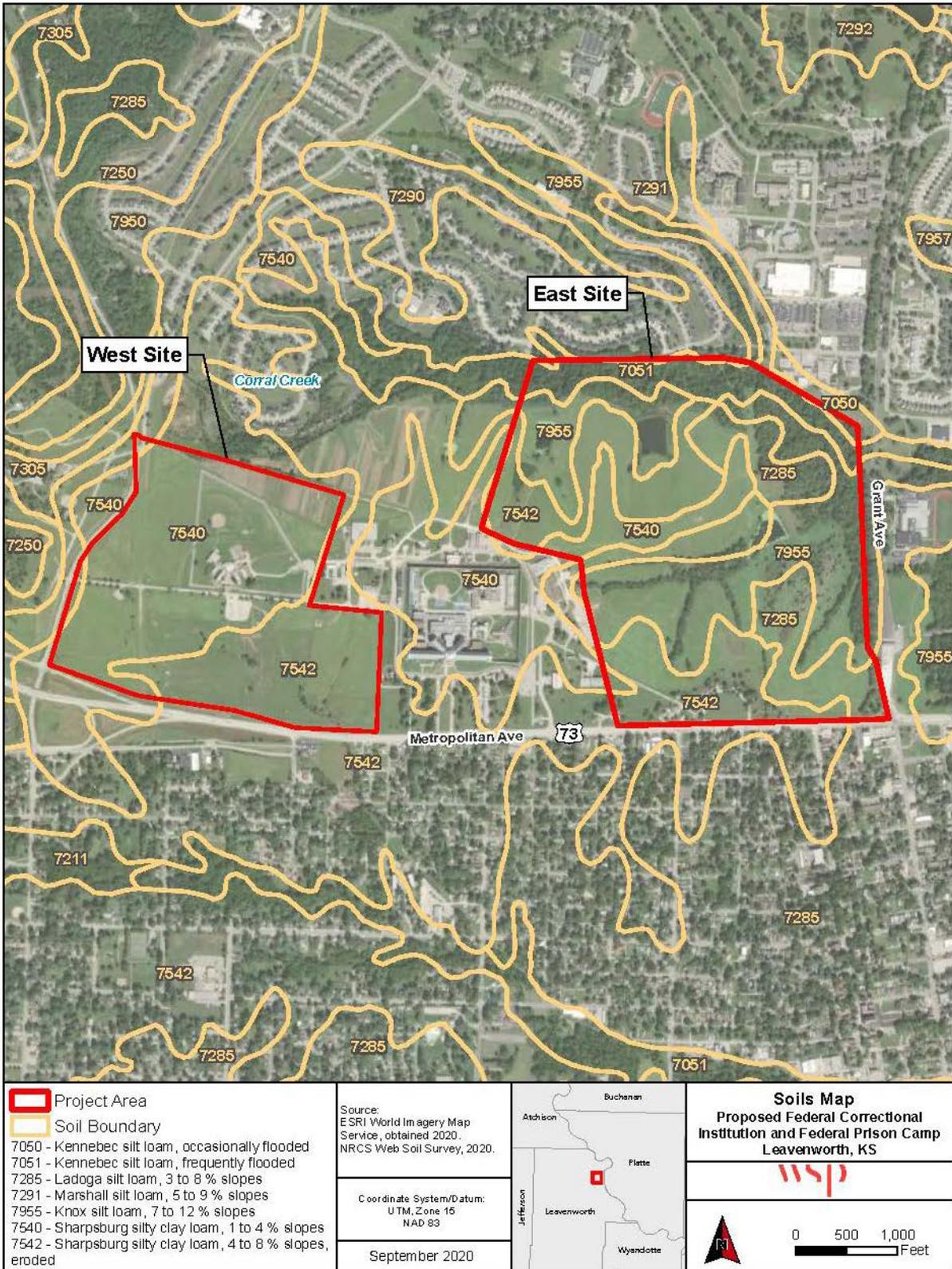


Exhibit III-3: Soils

strength, frost action, shrink-swell potential, and slope are limitations if the Ladoga soil is used for sanitary facilities, roadway construction, or site development (USDA NRCS 2011b).

7291 - Marshall Silt Loam, 5 to 9 Percent Slopes: This well drained, moderately sloping soil occurs on hillslopes on uplands and comprises less than one percent of the East Site. Soils of the Marshall silt loam, 5 to 9 percent slopes map unit formed in fine-silty loess. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is very high and shrink swell potential is moderate. This soil is not flooded or ponded and is not identified as a hydric soil. Low strength, frost action, shrink-swell potential, and slope are limitations if the Marshall soil is used as a site for sanitary facilities, roadway construction, or site development (USDA NRCS 2011b).

7540 - Sharpsburg Silty Clay Loam, 1 to 4 Percent Slopes: This moderately well drained, level soil occurs on hillslopes on uplands and comprises approximately eight percent of the East Site and 65 percent of the West Site. Soils of the Sharpsburg silty clay loam, 1 to 4 percent slopes map unit formed in loess. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches is high and shrink-swell potential is high. This soil is not flooded or ponded and not identified hydric. Depth to water table, low strength, frost action, and shrink-swell potential are limitations if Sharpsburg soil is used for sanitary facilities, roadway construction, or site development (USDA NRCS 2011b).

Table III-1: Soil Characteristics

Map Unit	Limitations for Septic Tank Filter Fields	Limitations for Roadway Construction	Drainage	Depth to Seasonal High Water	Limitations for Light Industry	Hydric Soil	Prime Farmland
7050 Kennebec Silt Loam Occasionally flooded	Very Limited; Flood Hazard; Depth to Water Table; Percolates Moderately	Very Limited; Frost Action; Flood Hazard; Low Strength; Shrink-Swell Moderate	Moderately Well Drained	3-4 feet	Very Limited; Flood Hazard; Shrink-Swell Moderate	No	Yes
7051 Kennebec Silt Loam Frequently Flooded	Very Limited; Flood Hazard; Depth to Water Table; Percolates Moderately	Very Limited; Frost Action; Flood Hazard; Low Strength; Shrink-Swell Moderate	Moderately Well Drained	3-4 feet	Very Limited; Flood Hazard; Shrink-Swell Moderate	No	No
7285 Ladoga Silt Loam	Very Limited; Percolates Slowly	Very Limited; Low Strength; Shrink-Swell High; Frost Action Moderate	Moderately Well Drained	>6 feet	Very Limited; Shrink-Swell High; Somewhat Sloping	No	Yes
7291 Marshall Silt Loam	Somewhat Limited; Percolates Moderately	Very Limited; Frost Action; Low Strength; Shrink-Swell Moderate to High	Well Drained	>6 feet	Somewhat Limited; Shrink-Swell High; Sloping	No	Yes
7540 Sharpsburg Silty Clay Loam 1-4% slopes	Very Limited; Depth to Water Table; Percolates Slowly	Very Limited; Shrink-Swell High; Low Strength; Frost Action Moderate	Moderately Well Drained	4 feet	Very Limited; Shrink-Swell High	No	Yes

Map Unit	Limitations for Septic Tank Filter Fields	Limitations for Roadway Construction	Drainage	Depth to Seasonal High Water	Limitations for Light Industry	Hydric Soil	Prime Farmland
7542 Sharpsburg Silty Clay Loam 4-8% slopes	Very Limited; Depth to Water Table; Percolates Slowly	Very Limited; Shrink-Swell High; Low Strength; Frost Action Moderate	Well Drained	4 feet	Very Limited; Shrink-Swell High; Somewhat Sloping	No	Yes
7955 Knox Silt Loam	Somewhat Limited; Depth to Water Table; Moderately Sloping	Very Limited; Frost Action; Shrink Swell High; Moderately Sloping	Well Drained	> 6 feet	Very Limited; Shrink-Swell High; Sloping	No	Farmland of Statewide Importance

Sources: *Soil Survey of Leavenworth County, Kansas*. USDA-NRCS 2011b.

Hydric Soils of the United States. USDA-NRCS 2011c.

7542 - Sharpsburg Silty Clay Loam, 4 to 8 Percent Slopes, Eroded: This moderately well drained, moderately sloping soil occurs on hillslopes on uplands and comprises approximately 31 percent of the East Site and 35 percent of the West Site. Soils of the Sharpsburg silty clay loam, 4 to 8 percent slopes, eroded map unit formed in loess. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches is high and shrink-swell potential is high. This soil is not flooded or ponded and is not identified as a hydric soil. Some small, isolated areas of the project area mapped with this unit are associated with wetlands. Depth to water table, low strength, frost action, shrink-swell potential, and slope are limitations if the Sharpsburg soil is used for sanitary facilities, roadway construction, or site development (USDA NRCS 2011b).

7955 - Knox Silt Loam, 7 to 12 Percent Slopes: This well drained, moderately sloping soil occurs on hillslopes on uplands and comprises approximately 36 percent of the East Site. Soils of the Knox silt loam, 7 to 12 percent slopes map unit formed in fin-silty loess. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is high and shrink-swell potential is moderate. This soil is not flooded or ponded and is not identified as a hydric soil. Some small, isolated areas of the project area mapped with this unit are associated with wetlands. Depth to water table, frost action, shrink-swell potential, and slope are limitations if the Knox soil is used for sanitary facilities, roadway construction, or site development (USDA NRCS 2011b).

According to the *“Soil Survey for Leavenworth County, Kansas”*, some of the soil types occurring on the USP Leavenworth property are considered prime farmland soils by the NRCS. The presence of prime farmland soil is a necessary component of prime farmland and is the primary indicator used to determine where potential prime farmland occurs. Prime farmland is defined as land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops, and is also available for these uses. The soil qualities, growing season, and moisture supply are those needed for a well-managed soil to produce a sustained high yield of crops in an economic manner. The land could be cropland, pasture, rangeland, or other land, but not urban built-up land or water. Kennebec silt loam (occasionally flooded), Ladoga silt loam (3 to 8 percent slopes), Marshall silt loam (5 to 9 percent slopes), and Sharpsburg silty clay loams (1 to 4 percent slopes and 4 to 8 percent slopes) are considered to be prime farmland soils. Knox silt loam (7 to 12 percent slopes) is considered farmland of statewide importance.

Prime farmland is protected under the Farmland Protection Policy Act (FPPA) of 1981. The intent of the Act is to minimize the extent to which federal programs contribute to the unnecessary or irreversible conversion of farmland to nonagricultural uses. The Act also ensures that federal programs are administered in a manner that, to the extent practicable, will be compatible with private, state, and local government programs and policies to protect farmland. The NRCS is responsible for overseeing compliance with the FPPA and has developed the rules and regulations for implementation of the Act (7 CFR Part 658, July 5, 1984).

The implementing procedures of the FPPA and NRCS require federal agencies to evaluate the adverse effects (direct and indirect) of their activities on prime and unique farmland, as well as farmland of statewide and local importance, and to consider alternative actions that could avoid adverse effects. (Farmland of statewide importance is land that is not prime or unique but is considered of statewide importance for the production of food, feed, fiber, forage and oilseed crops while farmland of local importance has local significance for production of food, feed, fiber and forage.) Determining whether an area is considered prime or unique farmland and potential impacts associated with a proposed action is based on the outcome from preparation of the Farmland Conversion Impact Rating Form AD1006 for areas where prime farmland soils occur and by applying criteria established in the FPPA.

2. Potential Impacts and Mitigation

a. No Action Alternative

Under the No Action Alternative, the proposed FCI/FPC would not be developed. The BOP's Leavenworth property would remain in its current condition, soils would not be affected, and mitigation measures would not be necessary.

b. Potential Impacts

Construction activities associated with site preparation (i.e., clearing, excavation, grading, etc.) at the development site would directly affect those native soils found within the limits of the FCI/FPC construction zone as well as along internal access roads, utility corridors, stormwater management basins, etc. The large area of ground clearing and grading necessary to construct the FCI/FPC would expose soils to potential wind and water erosion and therefore, some slight adverse effects to native soils would be expected.

FCI/FPC construction typically requires redistribution of considerable volumes of earthen material to provide the level building surfaces and proper elevations required for development. Assuming that FCI/FPC construction requires similar redistribution, native soils throughout the building zone would be altered as would other areas as the majority of material will originate on site. Long-term impacts would occur in those areas where soils would be excavated, redistributed, compacted or covered by impervious surfaces such as buildings, internal roads, walkways, support structures, and parking lots.

While portions of the study areas were cultivated in the past, no agricultural activities are currently underway on either study area. Therefore, the proposed project would pose no significant adverse impact to agricultural activities. In accordance with the Farmland Protection Policy Act, preparation and submission of Form AD1006 has occurred to document impacts to prime farmland soils, however, the

presence of prime farmland soils will not preclude correctional facility development. The completed Form AD1006 is included in Appendix D.

c. Recommended Mitigation

Detailed engineering studies would be conducted prior to initiating FCI/FPC construction to ensure proper building layout and design. During these studies, attention would be directed toward erosion potential and engineering characteristics of the affected soils within the project site.

As a means to minimize potential adverse impacts to native soils and the erosion and sedimentation which can result from large-scale developments, the BOP would employ appropriate soil erosion and sedimentation control measures throughout the construction phase. Among the soil erosion and sediment control measures to be considered for use during construction would be sediment basins, fabric (silt) fencing, inlet protection, stabilized construction entrances, etc. Erosion control measures to be considered following construction would be maintained lawns and landscaping, discharge pipe aprons, pipe outlet channels, and stormwater detention facilities. The BOP will employ such techniques to ensure compliance with applicable regulations.

A soil erosion and sediment control plan would be prepared and implemented prior to, during, and after earth disturbance activities with a copy of the plan to be maintained at the site throughout the duration of construction. Temporary and permanent erosion control measures would also be inspected periodically and replaced or repaired as required. It would be the responsibility of the construction contractors, with appropriate oversight and monitoring by the BOP, to install and maintain temporary erosion and sedimentation control measures such as those described below.

- **Construction Entrances**

A stabilized construction entrance would be installed at the building site and be inspected periodically during FCI/FPC construction. Additional stone would also be available so that the minimum dimensions can be maintained throughout construction. The construction entrance to the FCI/FPC site would be maintained to ensure that sediment from construction vehicles is not tracked onto internal BOP roadways and public thoroughfares.

- **Sediment Basins**

Sediment basins, if incorporated within the FCI/FPC design plan, would be inspected periodically during the construction phase. Sediment which accumulates within the basins would be removed when it reaches the clean-out elevation. Filters around riser pipes would also be maintained throughout the construction phase as would the dimensions of each basin.

- **Filter Fabric Fences**

Filter fabric (silt) fences would be installed where and when appropriate during the construction phase, and following installation, would be inspected periodically. Sediment would be removed when the buildup reaches approximately one-half the height of the fence. Filter fabric fences that are damaged during construction would be replaced in-kind.

- **Swales and Berms**

Swales and berms, if utilized, would also be inspected periodically to ensure proper functioning. Proper berm heights and swale depths would also be maintained throughout the construction phase.

- **Inlet Protection**

Inlets would be inspected periodically during construction. Sediment accumulating around inlets would be removed when the build-up reaches about half the height of the inlet filter. Additional stone would be available so that the minimum dimensions can be maintained throughout the construction phase.

- **Other Measures**

During trenching or other excavation work, soil should be deposited on the upgrade side of the excavation wherever possible to minimize soil migration from excavated areas. Soil preparation, fertilizing, and temporary and permanent seeding should follow the construction phase as soon as practicable. If seasonal restrictions affect planting, exposed earth should be covered with hay, straw mulch, or other suitable protective covering. Additional measures to consider include protecting slopes and channels, minimizing impervious surfaces and promoting infiltration where possible, controlling the site perimeter during the construction phases, and minimizing area and duration of exposed soils.

E. WATER RESOURCES

1. Existing Conditions

a. Surface Water Resources

The USP Leavenworth property is situated within the Missouri River Basin and the Independence-Sugar Watershed. The surface waters that drain the area consist of drainages and/or stormwater conveyances, ephemeral streams, intermittent streams, and one perennial stream (Table III-2).

There are 21 stormwater conveyances and/or drainages within the East Site. Stormwater conveyances include swales, erosional features, ditches, or small washes that are characterized by low-flow volume as well as by infrequent and short duration flow (USACE 2007). These conveyances typically have a variety of bed compositions ranging from silt, sand, and gravel to vegetation. Most of the conveyances have either a forested or herbaceous riparian buffer although several have a buffer of mowed grass. Most of the stormwater conveyances flow into intermittent tributaries or the perennial tributary (Corral Creek) in the northern portion of the East Site. Several stormwater conveyances flow into the palustrine emergent wetlands on the East Site. Most of these are natural drainages, which are considered non-jurisdictional by the USACE and therefore are not protected by Clean Water Act regulations.

A total of 13 ephemeral tributaries were identified within the East and West Sites. Within the northern portion of the East Site, nine ephemeral tributaries flow north-northeast to the confluence with Corral Creek which runs along the northern boundary of the USP Leavenworth property. The remaining ephemeral tributaries on the East Site drain into other water resources such as intermittent tributaries. Most of these tributaries have a forested riparian buffer although two have a mix of forested and herbaceous vegetation. One ephemeral tributary was identified within the West Site that flows east or

southeast exiting the site's southern boundary. A portion of the tributary is piped. The riparian buffer of the tributary consisted of herbaceous vegetation in the form of managed grassland or pasture.

Seven intermittent tributaries were identified within the East Site. The two intermittent tributaries flow north and are direct or indirect tributaries of Corral Creek (perennial tributary Stream K). Stream M, in the central portion of the East Site, drains through a palustrine emergent wetland (Wetland O), into an open water area (Wetland N), and through intermittent tributary (Stream T) before draining into Stream R, a tributary of Corral Creek. At the time of the field investigation in July 2020, approximately half of the intermittent tributaries were flowing. Groundwater was a suspected source of hydrology for portions of Stream K and Stream R. The riparian buffer of all tributaries consisted of forested vegetation.

Stream K (Corral Creek) is a meandering tributary with a silt, sand, gravel, cobble, and bedrock bed bounded by a forested riparian buffer. Drainage through the tributary comes from runoff from surrounding forested and agricultural land. The tributary flows east through the northern portion of the East Site and discharges offsite to the east into the Missouri River, about one mile from the project area.

In addition to the stormwater conveyances and ephemeral, intermittent, and perennial tributaries, there are four open water features within the East Site. These open water areas are the result of tributary impoundments and encompass a total of 7.332 acres of the East Site.

Table III-2: Surface Waters Delineated Within the East Site

Feature ID	Type of Feature	Length (linear feet)	Area (acres)
A	Emergent Wetland	n/a	0.557
B	Open Water	n/a	1.047
D	Open Water	n/a	1.440
E	Emergent Wetland	n/a	0.104
G	Emergent Wetland	n/a	0.114
I	Open Water	n/a	2.431
J	Intermittent Tributary	102	0.107
K	Perennial Tributary	4,066	1.807
M	Intermittent Tributary	1,503	0.942
L	Intermittent Tributary	221	0.099
MM	Open Water	n/a	0.004
N	Open Water	n/a	2.404
O	Forested Wetland	n/a	0.220
P	Intermittent Tributary	771	0.445
Q	Intermittent Tributary	174	0.042
R	Intermittent Tributary	2,413	1.526
S	Intermittent Tributary	490	0.170
T	Intermittent Tributary	450	0.191
U	Emergent Wetland	n/a	0.192
V	Intermittent Tributary	258	0.097
W	Scrub-shrub Wetland	n/a	0.066
Totals		10,448	14.005

Source: WSP, 2020.

b. Floodplain Considerations

The East Site contains drainages and intermittent and perennial, ephemeral tributaries to the Missouri River with the intermittent tributaries generally flowing towards the east. The entire USP Leavenworth property is classified as flood hazard Zone X on the FEMA Flood Insurance Rate Map (FIRM) Number 20103C0129F with an effective date of August 18, 2009 (Exhibit III-4). Zone X (unshaded) is a flood insurance rate zone used for areas outside the 0.2-percent-annual-chance floodplain (500-year floodplain). No Base Flood Elevations (100-year elevations) or depths are shown in this zone, and insurance purchase is not required.

c. Groundwater Resources

Previous investigations have found groundwater throughout the East and West Sites at close to the surface, with the depth to groundwater typically within 10 feet of the ground surface. The direction of groundwater flow is variable across the sites although the topography generally determines flow direction. Within the West Site, the groundwater flows in an east-southeast direction towards Three Mile Creek which is south of and outside of the West Site boundary. Within the East Site, groundwater flow direction is variable. In the northern portion of the East Site, the groundwater generally flows north or northeast towards Corral Creek while in the southern portion, groundwater typically flows east. The Missouri River alluvial aquifer is close to Leavenworth, Kansas however the walls of the aquifer end before the USP Leavenworth site boundary. Groundwater, likely collected from surficial runoff, is the suspected source of several of the intermittent tributaries that run through the property.

2. Potential Impacts and Mitigation**a. No Action Alternative**

Under the No Action Alternative, the proposed FCI/FPC would not be developed. The BOP's Leavenworth property would remain in its current condition, water resources and hydrologic features would not be affected, and mitigation measures would not be necessary.

b. Potential Impacts

Development of the FCI/FPC under either alternative development plan would result in additional impervious surfaces associated with construction of buildings, internal roadways, parking areas, walkways, etc., and potentially increase stormwater runoff from the site, which would have a negative impact on the time of concentration compared to pre-development conditions.

At the onset of planning for the new FCI/FPC, city officials expressed concern regarding potential impacts to the drainage system south of Metropolitan Avenue along 15th Street and near 12th Street. In response, a stormwater analysis was undertaken and completed in 2014 that evaluated potential impacts to downstream drainage features and waterbodies, as well as mitigation measures. Under the proposed development, the on-site impervious area is expected to increase, potentially increasing the total volume of runoff generated from the project site. The stormwater analysis included modeling of the site under existing conditions and those associated with the proposed development. The modeling indicated that development on the East Site would not impact the two areas of concern, but would require Best Management Practices (BMPs) to prevent a net increase of stormwater runoff to other

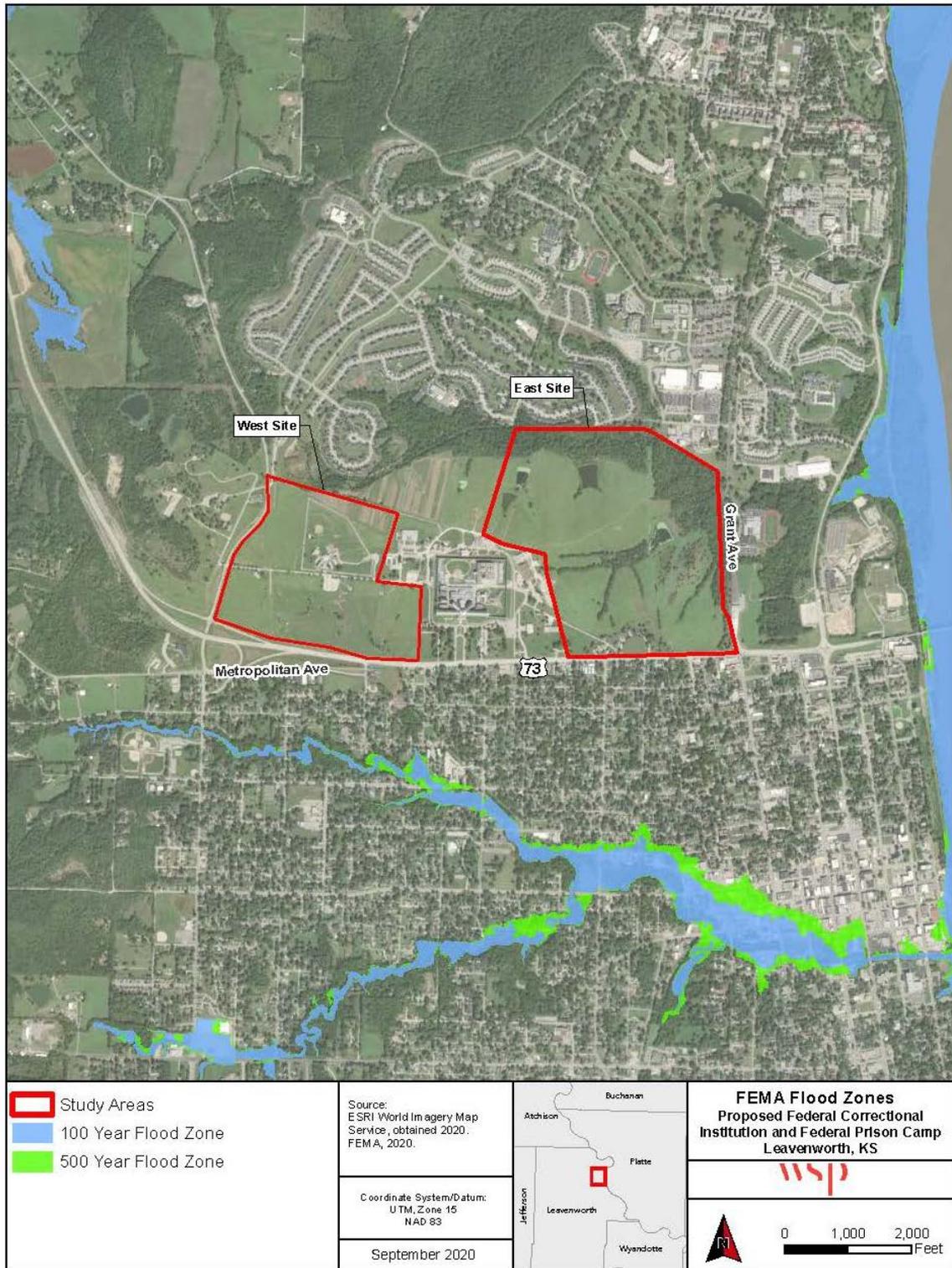


Exhibit III-4: FEMA Map

discharge points. For development of the West Site, stormwater management features would be required to protect these areas.

To control stormwater runoff associated with the proposed development, design features under the proposed conditions would incorporate BMPs to collect, store, and slowly release stormwater flows to avoid adversely affecting downstream properties and waterbodies, as well as increase on-site infiltration. Site design would also include grading to maintain the existing hydrologic drainage patterns to the extent practical and provide gentle slopes, grassed areas, waterways, shallow swales and detention basins to increase the time of concentration and improve water quality. Therefore, runoff velocities would be maintained and the potential for soil erosion would be minimized.

With the incorporation of the BMPs, it is not anticipated that the proposed development will result in an increase in stormwater runoff from the BOP's property to the City's storm drainage system from either the East or West Sites. No additional hydrologic alterations are expected to occur once construction of the proposed development is completed.

The entire USP Leavenworth property area is classified as flood hazard Zone X on the FEMA Flood Insurance Rate Map (FIRM). Zone X is a flood insurance rate zone used for areas outside the 0.2-percent-annual-chance floodplain (500-year floodplain). No Base Flood Elevations (100-year elevations) or depths are shown in this zone, therefore no impacts to floodplains will occur. Impacts to surface water features under the jurisdiction of the USACE are discussed in the Wetlands and Waters of the U.S. section.

c. Recommended Mitigation

As a result of amendments to the federal Clean Water Act, the U.S. Environmental Protection Agency (USEPA) adopted regulations that require permits for a number of stormwater discharges, including discharges associated with construction activities disturbing one or more acres of land, and discharges associated with certain industrial activities. This definition does not include all industries that discharge stormwater; it only includes those expressly defined and included in the regulations.

The goal of the federal Stormwater Permit Program is to improve water quality by preventing pollutants from entering surface waters through stormwater discharges. The principal emphasis of this program is the use of source reduction and pollution minimization as the primary stormwater control techniques. The methods used for administering/implementing the permit program are based on the following objectives:

- Maximum use of pollution prevention and source controls to minimize or eliminate contact between rainfall and potential pollution sources; and
- Cooperative development of permit conditions with the appropriate regulatory authorities to ensure implementation of permit requirements.

In addition to those already on site, the BOP will develop stormwater collection systems for use at the proposed FCI/FPC to control runoff by directing stormwaters into basins prior to discharge into receiving streams. Use of detention basins will serve a dual function: the basins would attenuate the intensity of the flow discharged to the receiving streams and rivers and allow for suspended solids in the

stormwater to settle out prior to discharge. Vegetated or riprap-lined channels to reduce stream flow velocities and protect water quality will also be considered as may be appropriate to site conditions.

Recommendations contained in the USDA document entitled "Water Management and Sediment Control for Urbanizing Areas" would be considered in planning for stormwater management. This would be in addition to other USEPA stormwater guidance materials and measures required by applicable federal and State of Kansas regulations including use of appropriate best management practices in key locations; a grading plan that maintains the existing hydrologic drainage patterns where possible and provides for slopes that can be properly vegetated and stabilized; and sufficient and adequately designed discharge outfalls to avoid erosive point discharge conditions.

Mitigation regarding impacts to surface water features under the jurisdiction of the USACE is discussed in the Wetlands and Waters of the U.S. section.

F. BIOLOGICAL RESOURCES

1. Existing Conditions

Biological resources have been determined through the use of agency contacts, available database inventories and maps, previous studies, and direct field observations. The utilized maps included USGS topographic maps and USDA aerial photographic maps. Dominant vegetative species were recorded. Vegetative communities, including wetlands discussed below under Wetlands and Waters of the U.S., were examined for habitat types and size. Habitats were analyzed and compared to habitat requirements of species known to occur in the vicinity, including species of special status, to assess their potential for area use. Direct observations of wildlife and/or their sign were also recorded.

a. Vegetation

The majority of the project area and the surrounding vicinity is dominated by maintained fields and retired cropland. The vegetation on the East Site consists mainly of upland areas that are regularly mowed and maintained. Mostly pastureland herbaceous species were identified in these areas. The remaining land includes riparian corridors along one perennial tributary and the non-perennial tributaries with four palustrine emergent wetlands and one palustrine forested wetland abutting and adjacent to the non-perennial tributaries. The palustrine emergent and forested wetlands include predominantly hydrophytic herbaceous and shrub vegetation. The riparian corridors are dominated by white oak (*Quercus alba*), American elm (*Ulmus americana*), hackberry (*Celtis occidentalis*), honey locust (*Gleditsia triacanthos*), sycamore (*Platanus occidentalis*), Osage orange (*Maclura pomifera*), grape species (*Vitis* spp.), and buckbrush (*Symphoricarpos orbiculatus*). The understory is mostly dominated by non-native shrub species including bush honeysuckle (*Lonicera mackii*) and multiflora rose (*Rosa multiflora*). The most significant riparian corridor is on the northern portion of the East Site adjacent to Corral Creek.

The vegetation on the West Site consists mostly of upland species. The majority of the stormwater conveyances and stream corridors are regularly mowed and maintained or are grazed by buffalo. Mostly herbaceous pastureland species were identified on the West Site. The remaining land includes narrow riparian corridors along the non-perennial tributary with two palustrine emergent wetlands located adjacent to this tributary in low lying drainage swales. The palustrine emergent wetlands include

predominantly hydrophytic herbaceous vegetation. Most of the upland areas within the West Site are mowed or grazed.

The vegetation in the grassland communities found on both the East and West Sites is dominated by mixed grasses and forbs including smooth brome (*Bromus inermis*), tall fescue (*Schedonorus phoenix*), yellow foxtail (*Setaria pumila*), white clover (*Trifolium repens*), little bluestem (*Schizachyrium scoparium*), and switchgrass (*Panicum virgatum*). A list of common vegetation species is provided in Table III-3.

b. Common Wildlife

Wildlife observed utilizing both the East and West Sites during field surveys conducted in 2009, 2011, and 2020 included wild turkey (*Meleagris gallopavo*), white-tailed deer (*Odocoileus virginiana*), and eastern gray squirrel (*Sciurus carolinensis*). Avian species observed include downy woodpecker (*Picoides pubescens*), hairy woodpecker (*Picoides villosus*), northern cardinal (*Cardinalis cardinalis*), brown thrasher (*Toxostoma rufum*), killdeer, (*Charadrius vociferus*), canada goose (*Branta canadensis*), eastern bluebird (*Sialia sialis*), great blue heron (*Ardea herodias*) and mallard ducks (*Anas platyrhynchos*). Raptor species observed flying over the site included the red-tailed hawk (*Buteo jamaicensis*). Aquatic species including reptiles and amphibians observed during July 2020 field visits included green frog (*Rana clamitans*).

Table III-3: Vegetation Observed in the East and West Sites

Scientific Name	Common Name	Wetland Indicator Status
<i>Acer negundo</i>	Ash-leaf maple	FAC
<i>Acer rubrum</i>	Red maple	FAC
<i>Acer saccharinum</i>	Silver maple	FACW
<i>Agrimoniagy posepala</i>	Tall hairy agrimony	FACU
<i>Alliaria petiolata</i>	Garlic mustard	FAC
<i>Asclepias incarnata</i>	Swamp milkweed	OBL
<i>Asclepias syriaca</i>	Common milkweed	UPL
<i>Asimina triloba paw</i>	Common paw	FAC
<i>Carex lupulina</i>	Hop sedge	OBL
<i>Carex stipata</i>	Stalk-grain sedge	OBL
<i>Carya ovata</i>	Shag-bark hickory	FACU
<i>Catalpa speciosa</i>	Northern catalpa	FACU
<i>Celtis occidentalis</i>	Common hackberry	FAC
<i>Cirsium arvense</i>	Canada thistle	FACU
<i>Cornus florida</i>	Flowering dogwood	FACU
<i>Cyperus esculentus</i>	Yellow nut sedge	FACW
<i>Daucus carota Que</i>	Queen Anne's-lace	UPL
<i>Echinochloa crus-galli</i>	Large barnyard grass	FACW
<i>Eleusine indica</i>	Indian goose grass	FACU
<i>Elymus virginicus</i>	Virginia wild rye	FACW

Scientific Name	Common Name	Wetland Indicator Status
<i>Equisetum arvense</i>	Field horsetail	FAC
<i>Erigeron annuus</i>	Eastern daisy fleabane	FACU
<i>Eupatorium perfoliatum</i>	Common boneset	OBL
<i>Festuca arundinacea</i>	Tall fescue	NI
<i>Fraxinus pennsylvanica</i>	Green ash	FACW
<i>Galium</i> sp.	Bed-straw	--
<i>Galium aparine</i>	Goosegrass	FACU
<i>Gleditsia triacanthos</i>	Honey locust	FACU
<i>Juncus effusus</i>	Lamp rush	OBL
<i>Juniperus virginiana</i>	Eastern red cedar	FACU
<i>Leersia oryzoides</i>	Rice cut grass	OBL
<i>Lepidium latifolium</i>	Broad-leaf pepperwort	FACW
<i>Lespedeza cuneata</i>	Chinese bushclover	FACU
<i>Ligustrum sinense</i>	Chinese privet	FAC
<i>Lonicera japonica</i>	Japanese honeysuckle	FACU
<i>Lythrum salicaria</i>	Purple loosestrife	OBL
<i>Maclura pomifera</i>	Osage-orange	FACU
<i>Mentha arvensis</i>	American wild mint	FACW
<i>Microstegium vimineum</i>	Japanese stilt grass	FAC
<i>Morus rubra</i>	Red mulberry	FACU
<i>Parthenocissus quinquefolia</i>	Virginia-creeper	FACU
<i>Persicaria hydropiperoides</i>	Swamp smartweed	OBL
<i>Phalaris arundinacea</i>	Reed canary grass	FACW
<i>Phleum pratense</i>	Common timothy	FACU
<i>Phytolacca americana</i>	American pokeweed	FACU
<i>Platanus occidentalis</i>	American sycamore	FACW
<i>Poa</i> sp.	Bluegrass	--
<i>Podophyllum peltatum</i>	May-apple	FACU
<i>Polygonum lapathifolium</i>	Pale smartweed	FACW
<i>Polygonum sagittatum</i>	Arrowleaf tearthumb	OBL
<i>Populus deltoides</i>	Eastern cottonwood	FAC
<i>Populus tremuloides</i>	Quaking aspen	FAC
<i>Potamogeton nodosus</i>	Long-leaf pondweed	OBL
<i>Prunus serotina</i>	Black cherry	FACU
<i>Quercus alba</i>	White oak	FACU
<i>Quercus palustris</i>	Pin oak	FACW
<i>Reynoutria japonica</i>	Japanese-knotweed	UPL
<i>Rosa multiflora</i>	Rambler rose	FACU
<i>Rubus allegheniensis</i>	Black berry	UPL

Scientific Name	Common Name	Wetland Indicator Status
<i>Salix amygdaloides</i>	Peach-leaf willow	FACW
<i>Salix babylonica</i>	Weeping willow	FAC
<i>Scirpus atrovirens</i>	Dark-green bulrush	OBL
<i>Setaria pumila</i>	Yellow bristle grass	FAC
<i>Solidago</i> spp.	Goldenrods	--
<i>Symphoricarpos orbiculatus</i>	Coral-berry	FACU
<i>Tilia americana</i>	American basswood	FACU
<i>Toxicodendron radicans</i>	Poison ivy	FAC
<i>Trifolium repens</i>	White clover	FACU
<i>Typha latifolia</i>	Broad-leaved cattail	OBL
<i>Ulmus rubra</i>	Slippery elm	FAC
<i>Urtica dioica</i>	Stinging nettle	FACW
<i>Verbesina alternifolia</i>	Wingstem	FAC
<i>Viburnum dentatum</i>	Southern arrow-wood	FAC
<i>Vitis labrusca</i>	Fox grape	FAC
<i>Zanthoxylum clava-herculis</i>	Hercules-club	FAC

Key to indicator categories:

OBL: Obligate, almost always occur in wetlands.

FACW: Facultative Wetland, usually occur in wetlands, but may occur in non-wetlands.

FAC: Facultative, occur in wetlands and non-wetlands.

FACU Facultative Upland, usually occur in non-wetlands, but may occur in wetlands.

UPL: Upland, almost never occur in wetlands.

NI: Not found on national listings of plants occurring in wetlands.

According to the Kansas Department of Wildlife, Parks, and Tourism (KDWPT) other common wildlife that are likely to inhabit the East and West Sites include striped skunk (*Mephitis mephitis*), snakes, eastern cottontail (*Sylvilagus floridanus*), raccoon (*Procyon lotor*), bobcat (*Lynx rufus*), cotton mouse, short-tailed shrew (*Blarina hylophaga*), white-footed deermouse (*Peromyscus leucopus*), woodland vole (*Microtus pinetorum*), eastern chipmunk (*Tamias striatus*), and woodchuck (*Marmota monax*). Common birds not seen during field investigations that likely use the project area include tufted titmouse (*Baeolophus bicolor*), wood thrush (*Hylocichla mustelina*), blue-gray gnatcatcher (*Polioptila caerulea*), Carolina wren (*Thryothorus ludovicianus*), summer tanager (*Piranga rubra*), and warblers (*Dendroica* spp.) (KDWPT 2011 and 2020).

The East Site is undeveloped, and the habitat is predominantly maintained fields and some limited riparian forested and shrub areas on the northern and eastern boundaries. Wildlife species use the forested riparian area adjacent to Corral Creek on the East Site for cover and roosting, and some species are expected to use the open agricultural land for foraging. The West Site consists mainly of mowed grass areas through which various species of wildlife such as birds and small mammals such as rabbits and squirrels are likely to reside.

c. Wetlands and Waters of the U.S.

Wetlands are defined as those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal conditions do support a prevalence of vegetation typically adapted for life in saturated soil conditions (33 CFR, Part 328.3). Wetlands are identified by three elements: hydrology, hydric soils, and vegetation. The USACE regulates dredge and fill activities in wetland areas through its permit program pursuant to Section 404 of the Clean Water Act (33 CFR, Parts 320-329, November 13, 1986 and 33 CFR, Part 330, November 22, 1991).

As a first step in determining possible wetland locations, the USGS Leavenworth, Kansas 7.5-minute topographic map (USGS 2009), the *"Soil Survey of Leavenworth County, Kansas"* (USDA NRCS 2011b), and the NWI map for Leavenworth, Kansas (USDOI 2009) (Exhibit III-5), were gathered and reviewed to determine the likelihood of jurisdictional wetlands on site. These data sources were used to assess the site for the possible presence of hydric soils, wetland areas as well as water conveyances including watercourses which may provide an indication of jurisdictional areas, or "waters of the United States".

The USGS topographic map shows that there are three intermittent streams within the project area. The northernmost stream, Corral Creek, flows east through the East Site and discharges offsite to the east into the Missouri River, located about one mile east of the USP Leavenworth property. The remaining streams on the East Site are headwater areas that drain east-southeast through the project area and eventually connect to the Missouri River. Although not indicated as blue-line streams on the USGS map, there are several areas that appear to contain smaller intermittent and ephemeral tributaries.

Following review of data sources, a wetland delineation of the East and West Sites was conducted in 2011 and again on the East Site in 2020 during times of the year when the upper 18 inches of soil was not frozen and there was sufficient live and persistent vegetative cover to reasonably make a wetland determination. Wetlands were delineated in accordance with the procedures outlined in the USACE *Wetlands Delineation Manual* (USACE 1987) and the *2010 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region Version 2.0*. Wetlands, as defined in the manual are: *"Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation adapted to life in saturated soil conditions."* Wetlands thus possess three characteristics: 1) hydric soils; 2) wetland hydrology; and 3) hydrophytic vegetation.

The wetland delineations were performed to determine the federal jurisdictional boundaries of all wetlands, including waters of the U.S. (WOUS), identified within the project area. The boundaries of the wetlands were surveyed in the field by qualified biologists using a Trimble Geo XH Global Positioning System (GPS) unit with sub-meter accuracy. Data was also collected for manmade ditches or stormwater conveyances unless they expressed characteristics of wetlands (hydric soils, hydrophytic vegetation, and wetland hydrology). Exhibits III-6a and III-6b show the locations of aquatic resources observed on the East and West Sites, respectively.

Wetlands and waters of the U.S. were also subject to verification by the USACE. The final Jurisdictional Verification Request report was submitted to the USACE on August 16, 2011 after which the USACE conducted a desktop analysis to confirm the location of the jurisdictional wetlands and other WOUS. An Approved Jurisdictional Determination for the East and West Sites was provided by the USACE on September 21, 2011. The complete 2011 Wetland Delineation Report and the USACE Approved Jurisdictional Determination are provided in Appendix E-1.

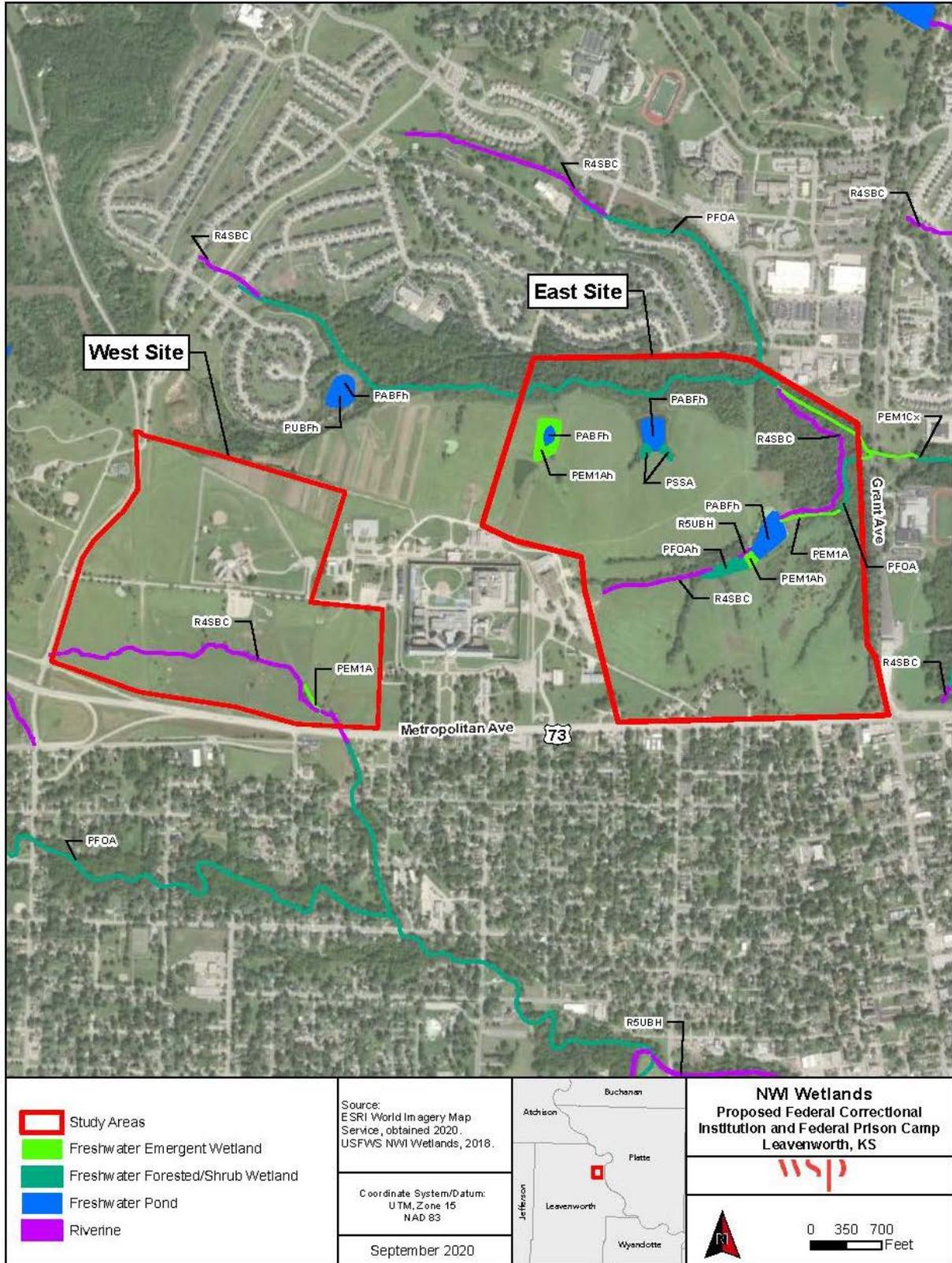


Exhibit III-5: NWI Map

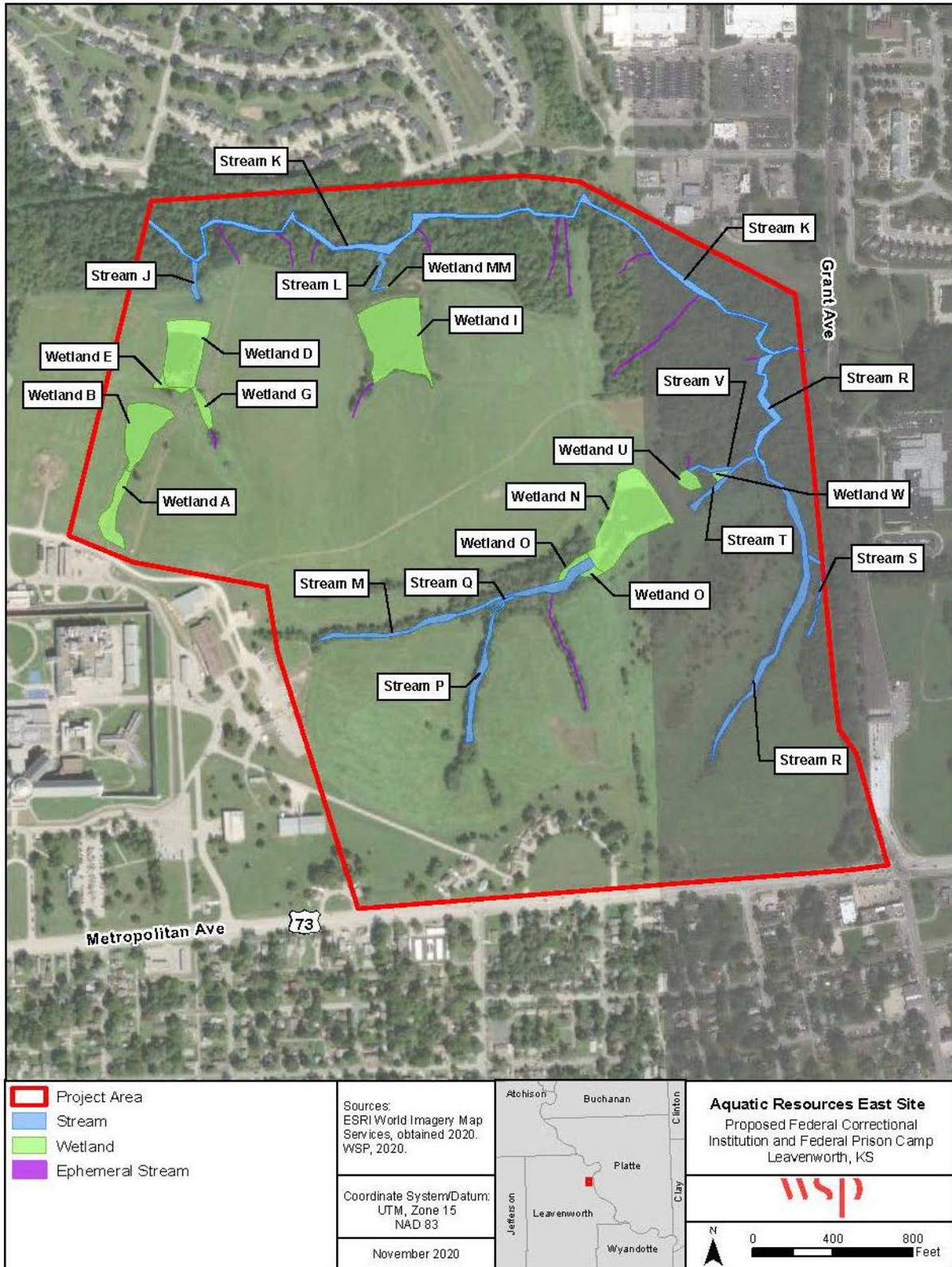


Exhibit III-6a: Aquatic Resources Map - East Site

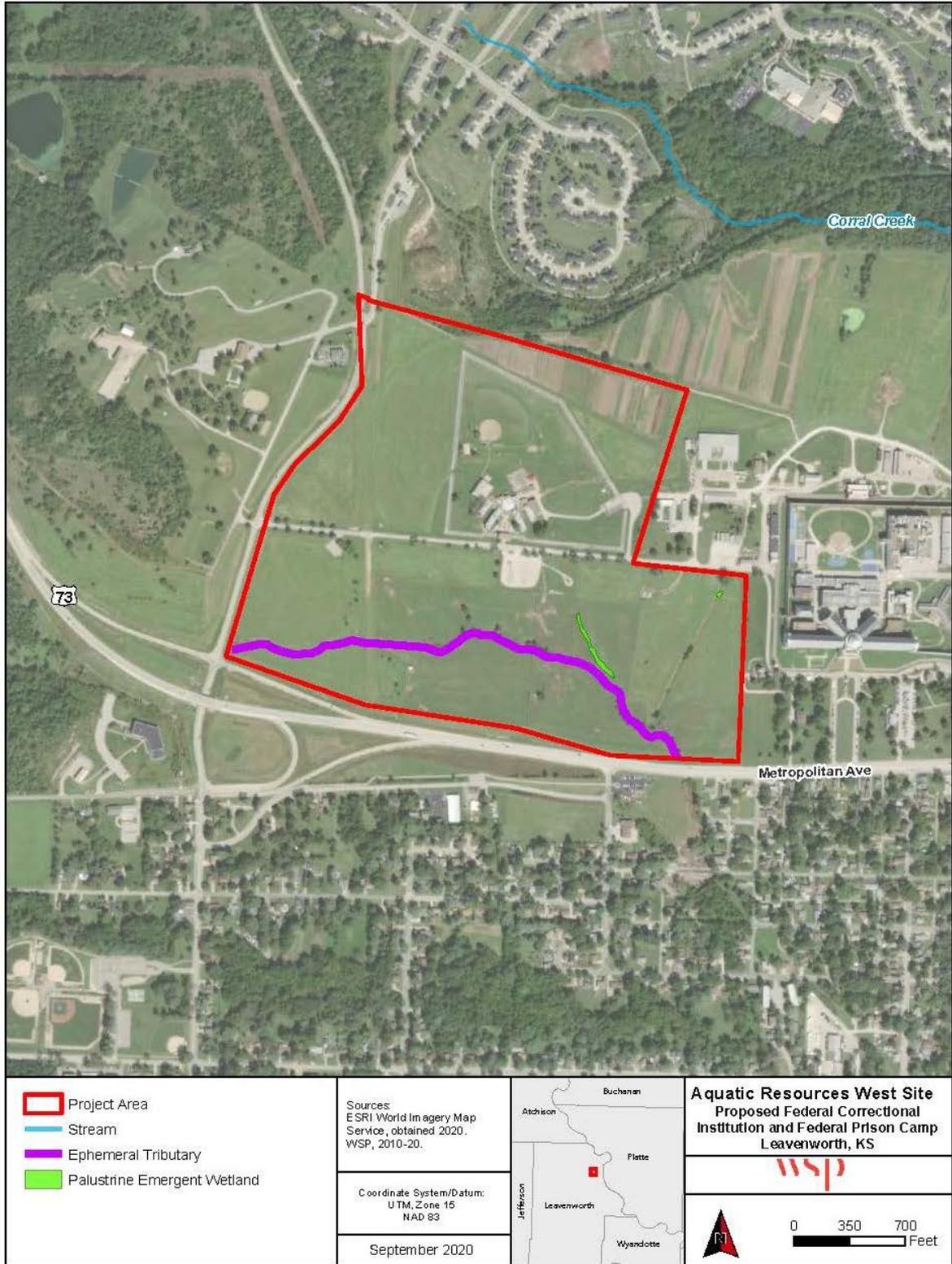


Exhibit III-6b: Aquatic Resources Map - West Site

Given the passage of time, a field investigation and new delineation was conducted of the East Site in July 2020. With FCI development proposed within the East Site under both alternatives, it was necessary to perform a current delineation to identify any changes that may have occurred since 2011 and seek a new approved jurisdictional determination for the East Site.

The 2020 wetland investigation resulted in identification of 11 wetland areas within the East Site consisting of four wetland classes. The wetland area cover type consisted of five palustrine emergent wetland communities, one palustrine scrub-shrub wetland community, one palustrine forested wetland community and four palustrine aquatic bed communities. Palustrine emergent wetlands include predominantly herbaceous vegetation. Palustrine forested wetlands include a mixture of trees and shrubs, with an herbaceous understory. Palustrine scrub-shrub wetlands include shrubs and small trees under 10 feet. Palustrine aquatic bed communities include open waters (ponds) with submerged/floating aquatic vegetation. Table III-4 illustrates those wetlands delineated within the East Site in 2020.

Table III-4: Wetlands Delineated Within the East Site

Wetland	Cowardin Classification	Size (Acres)	USACE Jurisdictional*
A	Palustrine Emergent Wetland	0.557	non jurisdictional
B	Palustrine Aquatic Bed	1.047	non jurisdictional
D	Palustrine Aquatic Bed	1.440	non jurisdictional
E	Palustrine Emergent Wetland	0.104	non jurisdictional
G	Palustrine Emergent Wetland	0.144	non jurisdictional
I	Palustrine Aquatic Bed	2.431	non jurisdictional
MM	Palustrine Emergent Wetland	0.004	non jurisdictional
O	Palustrine Forested Wetland	0.220	non jurisdictional
N	Palustrine Aquatic Bed	2.404	non jurisdictional
U	Palustrine Emergent Wetland	0.192	non jurisdictional
W	Palustrine Scrub-shrub Wetland	0.066	non jurisdictional
Total		8.603 acres	

* Status as a jurisdictional feature is final based on the approved jurisdictional determination provided by the USACE on September 29, 2020.

Seven vegetative wetlands were identified within the East Site (Wetland A, E, G, MM, O, U, and W). The vegetation in the palustrine emergent wetlands was predominantly hydrophytic, with a mixture of emergent wetland species. Soils displayed morphological features of a depleted matrix hydric soil indicator and numerous indicators of wetland hydrology were noted. The vegetation in the palustrine forested wetland was predominantly hydrophytic, with a mixture of trees and shrub wetland species. Soils displayed morphological features of a depleted matrix hydric soil indicator and numerous indicators of wetland hydrology were noted. Two wetlands were identified within the West Site (PEM-4 and PEM-5). The vegetation was predominantly hydrophytic, with a mixture of emergent wetland species. Soils displayed morphological features of a depleted matrix hydric soil indicator and numerous indicators of wetland hydrology were noted. A list of vegetation observed is provided in Table III-3.

Based on the wetland delineation conducted in July 2020, USACE issued an Approved Jurisdictional Determination for the East Site on September 29, 2020, identifying those wetlands and open waters that are jurisdictional under federal regulation. Abutting and adjacent wetlands are jurisdictional waters of the U.S. Isolated wetlands are those that satisfy the three criteria but have no direct surface connection

to navigable waters or their tributaries that are not jurisdictional WOUS (EPA/USACE April 21, 2020). The Approved Jurisdictional Determination identified Stream K (Corral Creek) and the northern 600 feet of Stream R, a tributary to Corral Creek, as being jurisdictional under the USACE (Exhibit III-6c). The USACE Approved Jurisdictional Determination for the East Site is provided in Appendix D with the complete Wetland Delineation Report (July 2020) provided in Appendix E-2.

As described in the Water Resources section, in addition to jurisdictional wetlands, several different types of streams extend through the project area. Two of these stream channels are under the jurisdiction of the USACE and are considered WOUS. The systems within the East Site function primarily to convey water to Corral Creek and its tributaries while the system within the West Site conveys water to Three Mile Creek, located approximately one-third of a mile south of the project area. These streams are characterized by a well-defined bed and bank with low velocity flowing waters. In some cases, no water was flowing at the time of the delineation.

d. Species of Special Status

Large-scale development activities are often performed in consultation with the USFWS in compliance with Section 7 of the Endangered Species Act and with state wildlife agency officials. Special status vegetation and wildlife species are of particular concern given the challenges associated with development in or near such habitats.

To determine whether development of the project area may impact any listed species and their habitats, information from the USFWS and the KDWPT was acquired relative to rare species with the potential to occur on or near the project area. Available data sources for county-specific information were reviewed as well as published environmental survey reports prepared for projects in proximity to the area. Information from the USFWS on August 13, 2020, indicates that four federally listed species may occur on the East and West Sites: threatened northern long-eared bat (*Myotis septentrionalis*); endangered pallid sturgeon (*Scaphirhynchus albus*); threatened Mead's milkweed (*Asclepias meadii*); and threatened western prairie fringed orchid (*Platanthera praeclara*) (USFWS, 2020).

KDWPT publishes county species lists. A review of the Leavenworth County threatened and endangered species list identified the following species: endangered muck mussel (*Actinonaias ligamentina*); threatened sturgeon chub (*Macrhybopsis gelida*); threatened shoal chub (*Macrhybopsis hyostoma*); endangered pallid sturgeon; endangered sicklefin chub (*Macrhybopsis meeki*); threatened western silvery minnow (*Hybognathus argyritis*); threatened plains minnow (*Hybognathus placitus*); threatened flathead chub (*Platygobio gracilis*); endangered silver chub (*Macrhybopsis storeriana*); threatened snowy plover (*Charadrius alexandrinus*); threatened eastern spotted skunk (*Spilogale putorius*); endangered American burying beetle (*Nicrophorus americanus*); endangered least tern (*Sterna antillarum*); and threatened piping plover (*Charadrius melodus*).

Suitable western prairie fringed orchid habitat includes warm season, native grasslands, or hay meadows. Based on known habitat requirements, it is unlikely that western prairie fringed orchid would occur on the project study areas given the absence of warm season, native grasslands and the occurrence of past disturbance on the project area. Additionally, the hay meadows located throughout the study areas consist mostly of cultivated nonnative species which would decrease the potential for occurrence of western fringed prairie orchid. During field visits and investigations conducted in 2011 and 2020, western prairie fringed orchid was not observed on either the East or West Sites. However, the optimal time to detect the western prairie fringed orchid is in early June.



Exhibit III-6c: Jurisdictional Determination

The Kansas Biological Survey (KBS) was contacted to determine the necessity of plant surveys on the project areas. Information provided by the KBS on October 20, 2011 indicated that a review of the Kansas Natural Heritage Inventory was performed for records of the western prairie fringed orchid and its habitat at the project area. There were no records located and a survey performed in 2005 in Leavenworth County did not identify any potential habitat in the vicinity of the project area. Additionally, due to the absence of any untilled, native prairie and hay meadows that are planted to non-native species it is unlikely that the western prairie fringed orchid would occur on the project area. Therefore, surveys would not be required for the western prairie fringed orchid.

Northern long-eared bats are found in Leavenworth County roosting and foraging in deciduous upland and riparian forests using snag or den trees 9-36 inches diameter breast height (dbh) with loose bark during the spring and summer. In autumn they swarm in wooded areas surrounding caves and mines where they hibernate (USFWS, 2013). The primary threat to the Northern long-eared bat is a disease, white-nose syndrome, which has killed an estimated 5.5 million cave hibernating bats in the United States and Canada. Other threats include destruction, modification, or curtailment of its habitat or range and man-made factors affecting the Northern long-eared bat's continued existence. These threats combined with white-nose syndrome heighten the level of risk. No designated critical habitat for the Northern long-eared bat has been determined currently.

Habitat assessment studies were undertaken during field visits conducted on both sites during March 2011 and again for the East Site in July 2020. During the habitat assessment, biologists surveyed the project area by conducting pedestrian random meander surveys throughout the entire property to characterize habitat conditions within each community and to look for evidence of current or past presence of listed species. No state or federal species of special status were observed during the site visits or have been reported to occur on the project area.

Both KDWPT and U.S. Fish and Wildlife Service (USFWS) confirmed that no other species on the threatened and endangered list or species in need of conservation list are likely to be present within the project area. Suitable habitat to support threatened and endangered species most likely does not exist within the project area. However, the riparian forested areas may contain some suitable habitat for several of the bird and small mammal species. The eastern spotted skunk also was present historically according to KDWPT; however, it has not been observed within the county recently (TEC, Inc. 2009).

A list of threatened and endangered species and species in need of conservation in Leavenworth County was acquired from the KDWPT (Table III-5). Of the 14 threatened and endangered species, eight are fish species and one is a mussel. The water sources present throughout the site are not suitable habitat for these fish which prefer turbid, fast waters or deep, slow waters accompanied by a range of silt, sand, and gravel substrates.

Table III-5: Leavenworth County Threatened and Endangered Species

Scientific Name	Common Name	Scientific Name	Common Name
Avian			
<i>Charadrius alexandrinus</i>	snowy plover	<i>Charadrius melodus</i>	piping plover
<i>Sterna antillarum</i>	least tern		
Mammalian			
<i>Spilogale putorius</i>	eastern spotted skunk		
Fish/Mussel			
<i>Actinonaias ligamentina</i>	Mucket mussel	<i>Macrhybopsis storeriana</i>	silver chub
<i>Platygobio gracilis</i>	flathead chub	<i>Macrhybopsis hyostoma</i>	Shoal chub
<i>Scaphirhynchus albus</i>	pallid sturgeon	<i>Macrhybopsis gelida</i>	sturgeon chub
<i>Macrhybopsis meeki</i>	sicklefin chub	<i>Hybognathus argyritis</i>	western silvery minnow
<i>Hybognathus placitus</i>	Plains minnow		
Insect			
<i>Nicrophorus americanus</i>	American burying beetle		

Source: Kansas Department of Wildlife, Parks, and Tourism, 2020.

2. Potential Impacts and Mitigation

a. No Action Alternative

Under the No Action Alternative, the proposed FCI/FPC would not be developed. The BOP's Leavenworth property would remain in its current condition, biological resources would not be affected, and mitigation measures would not be necessary.

b. Vegetation

Construction of the FCI/FPC under both alternative development plans (East-1 and East/West Composite) would result in unavoidable impacts to vegetative communities, including unregulated wetlands. The majority of impacts resulting from construction of the FCI/FPC would occur to upland areas that have long been used as agricultural pasture. These areas, in their current condition, bear little resemblance to their original native condition. Although areas that have been previously cleared may promote regeneration of early successional species which provide habitat for pioneer species, the natural connectivity of habitats within the East and West Sites has already been substantially altered.

The proposed FCI requires stringent perimeter security systems including an approximately 300-foot clear zone extending from the edge of the outer security fence around the circumference of the FCI to permit unimpeded visual observation. Although large trees and shrubs within this clear zone would be removed, low growing native vegetation would remain and be permanently maintained to ensure clear lines of sight by security personnel. The FPC, warehouses, and similar facilities do not require such security measures and are generally unfenced.

Impacts to any herbaceous wetlands as a result of the 300-foot FCI clear zone and overhead power line relocations would be considered as temporary impacts since the location, extent and functioning of any affected emergent wetland areas would not be permanently altered. Tree or shrub clearing performed in the clear zone or powerline alignment that occurs in wooded/forested wetlands or wooded riparian zones would be considered a permanent impact and require mitigation to offset ecological losses to habitat and their functional value to the local and regional environment and to comply with USACE and USEPA joint federal regulation "*Compensatory Mitigation for Losses of Aquatic Habitat*" (33 U.S.C. 1344, Part 332). The Kansas Stream Mitigation Guidance will be used to evaluate condition factors that are project site specific. The precise estimate of permanent and temporary impacts to wetlands will be dependent upon the final development scheme.

Temporary construction impacts include access roads and construction equipment staging and storage areas. In these areas, potential impacts include vegetation clearing, vehicular movements possibly resulting in tire ruts and surface soil disturbance. Mitigation in these areas would commence upon construction completion. Restoration would include grading and leveling to remove surface disturbance and tire ruts. This would be followed by seeding and planting of temporarily disturbed areas.

c. Common Wildlife

Development of the proposed project under either alternative would have both short-term (temporary) and long-term (permanent) impacts on biological resources located within the immediate vicinity of the selected site. Short-term impacts are directly related to construction activities required for the establishment of the construction pads; (i.e. clearing, grubbing and grading) as well as noise and visual disturbance from construction machinery and the presence of humans. Long-term impacts include the permanent loss of vegetative communities within the footprint of development, and a decrease in the quality of the habitat immediately adjacent to the facility due to increase noise levels, vehicle movements, lighting and other human activities. In addition, long-term changes in the availability and type/composition of vegetative habitat, including an increase in habitat fragmentation, is a possibility.

Wildlife may be harmed or displaced, primarily as a result of construction machinery operations during initial site clearing, utility installations, and similar earthwork. Less mobile species, such as small mammals, reptiles, and amphibians, are expected to incur greater mortality than more mobile species. More mobile species such as shrew, raccoon, and deer may disperse to adjacent habitat when disturbed by construction activities. Areas with similar habitats are present adjacent to the alternative sites and would accommodate most of the displaced wildlife. Wildlife that is unable to find adequate breeding and foraging habitat may fail to breed successfully or disperse greater distances increasing the possibility of mortality. Upland riparian corridors or wetland/stream areas temporarily disturbed would likely be recolonized by wildlife communities similar to pre-existing communities after construction has been completed.

Increased noise levels, as a result of construction activities, can affect wildlife by inducing physiological changes, nest or habitat abandonment, behavioral modifications or disrupt vocalization of species required for breeding or defense (Larkin, 1996). Continuous noise levels from construction activities would range from 71 to 98 dBA at 50 feet from the source. The Environmental Impact Data Book (Golden et al., 1980) suggests that noise levels higher than 80 to 85 dBA are sufficient to startle or frighten birds and small mammals. At 800 feet from the source, the noise level would be reduced to 65 dBA, and little potential for disturbing wildlife would occur. As a result, impacts on wildlife from

construction noise are expected to be temporary, lasting for the approximately 12 months needed for utility extensions and relocations and 36 months for FCI/FPC construction, and are negligible.

Construction during breeding season and while rearing of young can reduce or prevent successful reproduction, while construction during winter weather may force wildlife from protective cover and increase the probability of mortality. To minimize construction-related impacts on wildlife, the BOP would adhere to permit conditions, if any, that may restrict the timing of construction activities based on important biological periods. No additional impacts to biological resources are expected to occur once construction of the proposed facility is completed.

Riparian corridors are important wildlife habitat and potentially used as a travel corridor for various species. Development of the FCI/FPC may impact these riparian corridors. Placement of the facilities within the interior of the site, while limiting views of the facility from nearby roads and adjoining properties, has the potential to contribute to habitat fragmentation. Perimeter security fences would be placed around the FCI only, allowing wildlife to utilize undeveloped portions of the site.

d. Wetlands and WOUS

Section 404 of the Clean Water Act, requires consideration of impacts to wetlands and waters of the U.S. and their associated functions and values. Other impacts considered include habitat fragmentation, stormwater runoff, sedimentation, hydrologic modifications and temporary disturbance incurred during construction that may adversely affect a wetland's functions and values. Impacts to wetlands and other WOUS are subject to the Section 404 permitting process.

Regulated wetlands and waters of the U.S., memorialized in the USACE Approved Jurisdictional Determination on September 29, 2020 for the East Site, are not proposed to be impacted by the construction of the FCI/FPC. Therefore, no USACE Section 404 permitting is anticipated. Nonetheless, the following best management practices would be utilized during construction to further reduce potential impacts to ecologically sensitive areas. Depending on their practicability and feasibility, best management practices to be followed include:

- To the maximum extent possible, existing surface water drainage patterns would be maintained through the use of pipes, swales and culverts.
- Track or balloon tire vehicle rigs would be used whenever possible to perform construction in soft areas. Skid rigs may only be used when wooden planks or wooden snow fencing is laid down to minimize disturbance of the ground surface.
- Access routes to the construction locations shall be minimized to the maximum extent practicable. Matting or track equipment would be used when the ground is soft to avoid soil compaction. When used, matting should not remain in place for more than five days. If it is necessary to leave matting in place long enough that underlying vegetation would perish, the disturbed area would be revegetated with appropriate native species as soon as practical.
- Excess soil material may be spread evenly over the ground surface in a shallow layer no more than three inches deep, and would not form an impediment to surface water flow nor would it be compacted.
- Disturbance/removal of trees for construction shall be minimized to the extent practicable.

- A Sediment and Erosion Control Plan would be developed as an integral part of the construction plans. Emphasis would be given to the prevention of sediments from entering adjacent and nearby wetlands/open water. This can be controlled through the use of diversion ditches at the toe of slope of fill and the installation of sedimentation basins and traps. Slopes would be protected as soon as possible with vegetative cover, or as a temporary measure with fiber mats, hay, mulch or straw. A protective area of vegetative cover would be established between embankments and wetland/open water areas.
- Temporarily disturbed areas would be restored to their pre-existing conditions. Planting of disturbed areas would occur as soon as possible to minimize the possibility of erosion. Stormwater outlets would be designed to minimize outlet velocities that might otherwise cause downstream erosion.
- Excavation and filling activities would be conducted in a manner to minimize turbidity and sedimentation into wetlands/open water. Placement of embankments (filling) would be conducted in such a manner as to contain sediment at the fill areas. All construction activities would be performed in accordance with an approved Soil Erosion and Sediment Control Plan.
- The limits of disturbance would be indicated on the final design plans and would be the maximum necessary for the construction. The limits of encroachment would also be identified to prevent unauthorized intrusion by construction vehicles.
- Equipment storage would be restricted to areas disturbed for actual construction. Temporary roads or soil stockpiles would not be permitted in wetland/open water areas that are not needed for actual facility construction.

e. Special Status Species

Based on information provided by the USFWS, four federally protected species may occur in the vicinity of the East and West Sites if suitable habitat is present. Based on known habitat requirements, it is unlikely that Mead's milkweed and western prairie fringed orchid would occur on the project study areas given the absence of warm season, native grasslands and the occurrence of past disturbance on the project area. Additionally, according to observations made during the field surveys, the hay meadows located within the study areas consist mostly of cultivated nonnative species which provide unsuitable to marginal habitat for these two species. There are no records of the western prairie fringed orchid and its habitat in the vicinity of the project area and it is unlikely that the western prairie fringed orchid would occur on the project area. Therefore, surveys would not be required for the western prairie fringed orchid. Habitat for the pallid sturgeon, which prefers gravel deposits along slow-moving side channels of large rivers, is not located on site.

Threats to the northern long-eared bat during summer months relate to the loss and degradation of forested habitat. Seasonal clearing restrictions, including not cutting potential roost trees, during the period when bats occupy their summer range minimizes the potential that a roost tree will be cut and greatly reduces the potential for death or injury to large numbers of bats. If suitable habitat for the northern long-eared bat is identified by the USFWS within the project area and development of the proposed project under either development scenario is expected clearing of trees will adhere to seasonal clearing restrictions.

G. CULTURAL RESOURCES

1. Existing Conditions

The cultural resource requirement is met through compliance with Section 106 of the National Historic Preservation Act of 1966, as amended, which is implemented through regulations contained in 36 CFR Part 800. These regulations require federal agencies to consider the existing information, undertake identification activities if the existing information is insufficient, determine whether any cultural resources contained within a given project area meet the criteria for eligibility for inclusion in the National Register of Historic Places (NRHP), determine the effect of the proposed project on significant historic properties, consult with the State Historic Preservation Office (SHPO) and afford the Advisory Council on Historic Preservation the opportunity to comment.

Cultural resource investigations in support of the proposed action were undertaken pursuant to Section 106 of the National Historic Preservation Act of 1966 (as amended); the Archaeological and Historical Preservation Act of 1974; Executive Order 11593; and Title 36 of the Code of Federal Regulations, Parts 660-66 and 800 (as appropriate). Field investigations and related work met the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation (Federal Register 48:190:44716-44742) (U.S. Department of the Interior 1983) and the Kansas SHPO Guide for Archaeological Survey, Assessment and Reports (KSHS 2004) issued by the Kansas SHPO.

Pursuant to 36 CFR 800.3, consultation with the Kansas SHPO was initiated by letter on November 29, 2010, informing that agency of the potential for a BOP project undertaking in Leavenworth, Kansas. A meeting was held with SHPO on December 1, 2010 to discuss the cultural resource investigation to be undertaken in support of the proposed project. Also, in accordance with 36 CFR 800.3-4, the BOP initiated consultation regarding this undertaking with Native American Tribes in January 2011.

Archaeological surveys and an architectural survey were performed in April 2011. A Phase I Cultural Resources Survey report was prepared and reviewed by SHPO in September 2011. SHPO concurred with the findings of the report; but requested details of the project impacts to be delineated in the report abstract. In July 2014, archaeological evaluations of Sites 14LV169, 14LV171, 14LV172, 14LV176, and 14LV181 were completed. The five sites were recommended not eligible for listing in the NRHP. The report of the site evaluations was reviewed by SHPO in October 2014. SHPO concurred with the recommendations in a letter dated November 6, 2014. Copies of the SHPO correspondence are provided in Appendix D. The BOP informed the SHPO that it was resuming the NEPA process on June 12, 2020. A meeting was held with the SHPO on September 9, 2020, to discuss the current status of the proposed undertaking including modifications to reduce potential project impacts. Following the meeting, the BOP provided the Kansas SHPO with additional and updated information on the project undertaking in a letter dated September 22, 2020. The SHPO acknowledged receipt of the information, concurred with the current status of the archaeological and architectural surveys, and stated that it would await additional information on the proposed transition study in a letter dated October 9, 2020 (Appendix D).

The purpose of the investigation was to identify any cultural resources within the area of potential effects (APE) for the proposed undertaking, and to evaluate such resources as may be found regarding their eligibility for listing in the NRHP. The criteria for evaluating a cultural resource for inclusion in the National Register of Historic Places are set forth in 36 CFR 60.6: National Register Criteria for Evaluation. The quality of significance in American History, architecture, archaeology, and culture is present in

districts, sites, buildings, structures, and objects of State and local importance that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and

- (a) That are associated with events that have made a significant contribution to the broad patterns of our history; or
- (b) That are associated with the lives of persons significant in our past; or
- (c) That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- (d) That have yielded or may be likely to yield, information important in prehistory or history.

In 2009, TEC, Inc. performed a cultural resource reconnaissance survey for the proposed project. However, the TEC, Inc. study included only 52 acres surrounding the current federal prison camp (the "Camp Site") and 161 acres east and northeast of the USP (the "South Site" and the "North Site", respectively). In 2011, an intensive cultural resource survey was completed for 371 acres in an expanded project area with additional architectural survey of the extant USP and FPC.

a. Archaeology

As part of project planning, intensive archaeological survey investigations were conducted across 371 acres at the USP Leavenworth property including the 144-acre West Site and 227-acre East Site. The project site lies within portions of Sections 22, 23, 26, and 27 all in Kickapoo Township (T52N, R22E).

The APE coincides with the 371 acres described above and shown in Exhibits III-7a and III-7b. Within the APE there is the potential for direct impacts from ground-disturbing activities associated with construction of the proposed facility. Such ground-disturbing activities include but are not limited to stripping and scarification of surface soils, construction of foundations and footings, trenching and excavation for infrastructure relocations and extensions for water, sewer, power and natural gas services, and installation of security fencing, lighting fixtures, roadways, and parking areas. In general, the vertical dimension of the APE is limited to approximately 3.28 feet (one meter), except in those areas where trenching is necessary for foundations and utilities.

In general, both prehistoric and historic archaeological sites tend to be situated on landforms which are usually dry and level, near reliable sources of water, and often near timber for fuel and construction material. Sites are commonly located on terraces, hill tops, bluff tops, and ridge tops to take advantage of vista that allow game animals or enemies to be observed at a distance. Archaeological sites in the USP Leavenworth project vicinity follow this pattern.

The archaeological survey conducted re-examined six previously recorded archaeological sites: 14LV110, 14LV111, 14LV337, 14LV364, 14LV365, and 14LV366. Site 14LV110 is a historic dump strung along an intermittent drainage with butchered cow and pig bone, and hundreds of broken dish fragments, bottle glass, and other materials associated with the early history of the USP (1906 to about 1920). This site was investigated by pedestrian survey and eight shovel tests at five-meter intervals by the American Resources Group, Ltd. in 1988. The site was recommended potentially eligible for listing in the NRHP under Criterion D (McNerney et al., 1988).



Exhibit III-7a: Archaeological/Architectural APE – East Site



Exhibit III-7b: Archaeological/Architectural APE – West Site

Site 14LV111 consists of an isolated find of one chipped stone flake of chert situated in a bulldozed area by a cattle loading facility. The site was investigated by pedestrian survey and was recommended not eligible for listing in the NRHP (McNerney et al., 1988).

Site 14LV337 consists of three chipped stone fragments, one very small, possible grit-tempered pottery sherd, and one small mollusk shell recovered from a grass-covered field in the southwest portion of the proposed West Site by Kansas State Historic Society (KSHS) archaeologists in 1974. Brick, historic ceramic fragments, and burned and unburned rock also were noted. No subsurface testing was performed. No recommendation of NRHP eligibility was made, but it was hypothesized that the historic materials might be associated with the freight yards of Russell, Majors, and Waddell and date from 1850 to 1860 (Barr and Rowlison, 1974).

In 1984, KSHS archaeologist Randy Thies excavated three shovel tests on the high ground at the west end of the site. Only scattered brick and modern debris were found (Thies, 1984). In 2006, Thies investigated the western part of Site 14LV337 within the proposed construction corridor associated with a realignment of U.S. Highway 73 and north extension of 20th Street. Thies made a pedestrian survey and excavated eight auger holes and one shovel test. No prehistoric or historic artifacts were recovered. Site 14LV337 was recommended not eligible for listing in the NRHP (Thies, 2006).

Site 14LV364 was recorded by KSHS archaeologists Tom Barr and Don Rowlison in 1977 as a small prehistoric camp or lithic reduction site on a ridge toe in the northwestern part of the East Site. A pedestrian survey yielded several chipped stone artifacts, including a biface, a corner-notched projectile point base, a piece of a scraper, a core remnant, two flakes, and mollusk fragments. No subsurface testing was performed at the site and no recommendation regarding NRHP eligibility was made (Barr and Rowlison, 1977).

The KSHS archaeologists recorded nearby site 14LV365 on a knoll of another ridge toe while performing a pedestrian survey in 1977. Prehistoric artifacts recovered from the site included two biface sections, a hammerstone, two possible celts, two core fragments, and 44 pieces of flaking debris. Historic artifacts included two brass cartridges, a bullet, a picket pin, a mule shoe, a metal chain segment, and bottle glass. No subsurface testing was performed at the site and no recommendation regarding NRHP eligibility was made (Barr and Rowlison, 1977).

Barr and Rowlison also recorded Site 14LV366 as a small camp or lithic reduction site on a ridge top south of Site 14LV364. Recovered artifacts included a core fragment and four chipped stone flakes. No subsurface testing was performed at the site and no recommendation regarding NRHP eligibility was made (Barr and Rowlison, 1977).

The archaeological survey investigated each of the six previously recorded sites. Table III-6 summarizes the findings and recommendations for each site. Site 14LV110 apparently has been highly disturbed by stream flooding and erosion. Almost no evidence of the densely concentrated dump reported by Wagner et al. (1989) and the artifacts seem to be redeposited by intense episodic flooding. Because of the disturbance, no subsurface testing was performed at the site. The artifacts at Site 14LV110 are redeposited rather than stratified and have low potential to answer important questions about the penitentiary. Therefore, Site 14LV110 was recommended not eligible for listing in the NRHP. The Kansas SHPO concurred with this recommendation in a letter to the BOP dated December 1, 2011 (Appendix D).

Subsurface testing at the recorded location of Site 14LV111 did not yield any prehistoric or historic archaeological deposits. McNearney et al. (1988:139) reported that this area had been disturbed by bulldozing and cattle. Shovel testing indicated that cultivation and erosion also have disturbed the site area. Site 14LV111 remains the location of an isolated find consisting of one chert flake. Therefore, LBG concurred with the original recommendation that this site be considered not eligible for listing in the NRHP. The Kansas SHPO concurred with the recommendation that Site 14LV111 be considered not eligible for listing in the NRHP in a letter to the BOP dated December 1, 2011 (Appendix D).

Subsurface testing at Site 14LV337 resulted in the recovery of no prehistoric or historic archaeological remains. Therefore, this site was recommended not eligible for listing in the NRHP. It is very likely that the prehistoric artifacts found by Barr and Rowison in 1974 were displaced by cultivation and erosion and are associated with nearby Site 14LV169 (LBG-3), which was identified during the current investigation. The Kansas SHPO concurred with the recommendation that Site 14LV337 be considered not eligible for listing in the NRHP in a letter to the BOP dated December 1, 2011 (Appendix D).

Site 14LV364 was investigated by shovel testing at 10-meter intervals. Only one chipped stone flake was found at the site. The ridge toe has been significantly disturbed by cultivation and erosion. Therefore, Site 14LV364 was recommended not eligible for listing in the NRHP. The Kansas SHPO concurred with the recommendation that Site 14LV364 be considered not eligible for listing in the NRHP in a letter to the BOP dated December 1, 2011 (Appendix D).

Site 14LV365 also was investigated by shovel testing at 10-meter intervals. Several chipped stone flakes were recovered from the plowzone in eight of the 81 shovel tests. No historic artifacts were found. This ridge toe has been significantly disturbed by cultivation and erosion, suggesting poor site integrity. Therefore, Site 14LV365 was recommended not eligible for listing in the NRHP. The Kansas SHPO concurred with the recommendation that Site 14LV364 be considered not eligible for listing in the NRHP in a letter to the BOP dated December 1, 2011 (Appendix D).

Table III-6: Site Summary for USP Leavenworth

Field Site Number	Location	Cultural Affiliation	Site Type	NRHP Status
14LV110	East Site	Historic (circa 1900)	Dump	Not Eligible: Significant Disturbance by Borrow and Erosion
14LV111	East Site	Unknown Prehistoric	Isolated Find; 1 Debitage	Not Eligible: Significant Disturbance by Grading, Cultivation, and Erosion
14LV337	West Site	Unknown Prehistoric	Camp; 1 Sherd and 3 lithic debitage	Not Eligible: No Positive of 31 Shovel Tests; Some Disturbance by Cultivation
14LV364	East Site	Unknown Prehistoric	Lithic Scatter; 1 Lithic debitage	Not Eligible: Only 1 Positive of 61 Shovel Tests; Significant Disturbance by Cultivation and Erosion
14LV365	East Site	Unknown Prehistoric	Lithic Scatter; 1 Biface and 11 debitage	Not Eligible: 8 Positive of 67 Shovel Tests; Significant Disturbance by Cultivation and Erosion
14LV366	East Site	Unknown Prehistoric	Lithic Scatter; 1 Core and 4 debitage found in 1977	Not Eligible: 11 Negative Shovel Tests; Significant Disturbance by Cultivation and Erosion

Field Site Number	Location	Cultural Affiliation	Site Type	NRHP Status
14LV167	West Site	Unknown Prehistoric	Lithic Scatter; 7 Lithic debitage	Not Eligible: 4 Positive of 27 Shovel Tests; Some Disturbance by Cultivation
14LV168	West Site	Late Prehistoric	Lithic Scatter; 3 Arrow points, 12 bifaces, 5 utilized flakes, and 106 lithic debitage	Not Eligible: 11 Positive of 96 Shovel Tests and Surface Collection; Significant Disturbance by Cultivation (Garden Area)
14LV169	West Site	Late Prehistoric	Camp; 7 Sherds, 1 possible ochre fragment, 2 arrow points, 1 biface, and 124 lithic debitage	Not Eligible: 31 Positive of 81 Shovel Tests and 5 Test Units; Some Disturbance by Cultivation
14LV170	West Site	Unknown Prehistoric	Lithic Scatter; 13 Lithic Debitage	Not Eligible: 2 Positive of 16 Shovel Tests; Significant Disturbance by Cultivation and Erosion
14LV171	West Site	Late Prehistoric	Habitation; 5 Sherds, 1 Burned clay, 2 points, 1 drill, 1 biface, 1 core, and 70 Lithic Debitage	Not Eligible: 39 Positive of 124 Shovel Tests and 5 Test Units; Some Disturbance by Cultivation and Erosion
14LV172	West Site	Late Prehistoric	Camp; 3 Burned clay, 2 arrow points, 1 dart point, 7 bifaces, 3 cores, 222 lithic debitage	Not Eligible: 57 Positive of 143 Shovel Tests and 5 Test Units; Some Disturbance by Cultivation and Erosion
14LV173	West Site	Unknown Prehistoric	Lithic Scatter; 1 Biface and 12 lithic debitage	Not Eligible: 5 Positive of 22 Shovel Tests; Significant Disturbance by Cultivation and Erosion
14LV174	East Site	Unknown Prehistoric	Lithic Scatter; 1 Biface, 1 core, and 6 lithic debitage	Not Eligible: 3 Positive of 49 Shovel Tests and Surface Collection; Significant Disturbance by Cultivation and Erosion
14LV175	East Site	Historic (1938-1980s)	Foundation and Artifact Scatter; 4 Sherds, 13 bottle glass fragments, window glass, bone, nails, and brick	Not Eligible: 11 Positive of 35 Shovel Tests, Concrete House Foundation; Some Disturbance by Demolition and Cultivation
14LV176	East Site	Unknown Prehistoric	Lithic Scatter; 2 utilized flakes, 2 cores, 1 hemite fragment, and 152 lithic debitage	Not Eligible: 18 Positive of 72 Shovel Tests and 5 Test Units; Some Disturbance by Cultivation and Erosion

Field Site Number	Location	Cultural Affiliation	Site Type	NRHP Status
14LV177	East Site	Unknown Prehistoric	Lithic Scatter; 15 Lithic debitage	Not Eligible: 3 Positive of 16 Shovel Tests; Some Disturbance by Erosion
14LV178	West Site	Unknown Prehistoric	Lithic Scatter; 2 Lithic debitage	Not Eligible: 2 Positive of 15 Shovel Tests; Significant Disturbance by Cultivation and Erosion
14LV179	West Site	Unknown Prehistoric	Lithic Scatter; 5 Lithic debitage	Not Eligible: 1 Positive of 8 Shovel Tests; Significant Disturbance by Road Grading and Erosion
14LV180	East Site	Unknown Prehistoric	Isolated Find; 3 Debitage	Not Eligible: 8 Negative Shovel Tests. Some Disturbance by Cultivation and Erosion
14LV181	East Site	Unknown Prehistoric	Camp; 1 Biface, 1 flake tool, 2 pipe stone fragments, 1 red ochre fragment, 2 burned clay, 1 fired clay, 1 hematite fragment, 339 lithic debitage, and 72 fire-cracked rock	Not Eligible: 20 Positive of 93 Shovel Tests and 5 Test Units; Some Disturbance by Cultivation and Erosion
IF-1	West Site	Unknown Prehistoric	Isolated Find (1 Debitage)	Not Eligible: Single Generic Chipped Stone Flaking Debris
IF-2	West Site	Unknown Prehistoric	Isolated Find (1 Debitage)	Not Eligible: Single Generic Chipped Stone Flaking Debris
IF-3	West Site	Unknown Prehistoric	Isolated Find (1 Debitage)	Not Eligible: Single Generic Chipped Stone Flaking Debris
IF-4	West Site	Unknown Prehistoric	Isolated Find (1 Debitage)	Not Eligible: Single Generic Chipped Stone Flaking Debris
IF-5	West Site	Unknown Prehistoric	Isolated Find (1 Debitage)	Not Eligible: Single Generic Chipped Stone Flaking Debris
IF-6	West Site	Unknown Prehistoric	Isolated Find (1 Debitage)	Not Eligible: Single Generic Chipped Stone Flaking Debris
IF-7	West Site	Unknown Prehistoric	Isolated Find (1 Debitage)	Not Eligible: Single Generic Chipped Stone Flaking Debris
IF-8	East Site	Unknown Prehistoric	Isolated Find (1 Debitage)	Not Eligible: Single Generic Chipped Stone Flaking Debris
IF-9	East Site	Unknown Prehistoric	Isolated Find (1 Debitage)	Not Eligible: Single Generic Chipped Stone Flaking Debris
IF-10	East Site	Unknown Prehistoric	Isolated Find (1 Debitage)	Not Eligible: Single Generic Chipped Stone Flaking Debris
IF-11	East Site	Unknown Prehistoric	Isolated Find (1 Biface Frag.)	Not Eligible: Midsection of a Chipped Stone Biface/Point
IF-12	East Site	Unknown Prehistoric	Isolated Find (1 Debitage)	Not Eligible: Single Generic Chipped Stone Flaking Debris

Field Site Number	Location	Cultural Affiliation	Site Type	NRHP Status
IF-13	East Site	Unknown Prehistoric	Isolated Find (1 Debitage)	Not Eligible: Single Generic Chipped Stone Flaking Debris
IF-14	East Site	Unknown Prehistoric	Isolated Find (1 Debitage)	Not Eligible: Single Generic Chipped Stone Flaking Debris
IF-15	East Site	Unknown Prehistoric	Isolated Find (1 Debitage)	Not Eligible: Single Generic Chipped Stone Flaking Debris

Close-interval shovel testing was applied across the reported location of Site 14LV366 as well. None of the subsurface tests yielded any prehistoric or historic artifacts. The ridge top has been significantly disturbed by cultivation and erosion. Therefore, Site 14LV366 was recommended not eligible for listing in the NRHP. The Kansas SHPO concurred with the recommendation that Site 14LV364 be considered not eligible for listing in the NRHP in a letter to the BOP dated December 1, 2011 (Appendix D).

Six previously recorded sites, 15 new archaeological sites and 15 new isolated find spots were identified and subjected to subsurface testing during the current survey investigation. Fourteen of the new sites (14LV167 through 14LV174, 14LV176 through 14LV181) are prehistoric period sites. They generally consist of chipped stone flaking debris with occasional arrow points and, at Site 14LV171, with two small pottery shards. The prehistoric sites are situated on terraces of streams and on ridge or hill tops. The single historic period site, 14LV175, consists of a concrete house foundation and associated structural and household debris. The site, which was the location of the prison farm manager's residence (1938 to about 1980), also is on a terrace.

Within the West Site and East Site, ground surface visibility was less than 20 percent, except in the area of the prison camp garden at the north end of the West Site and the staff housing garden located in the southwestern part of the East Site. In the prison garden area, surface visibility was 60 to 90 percent in the eastern third and western third, but less than 10 percent in the central third. In the staff housing garden area, surface visibility was 100 percent. Close interval pedestrian survey (three to five meters between surveyors) was performed across both garden areas and artifacts locations were recorded.

Elsewhere, most of the ground surface was covered with low prairie grasses. The forested areas at the north and east sides of the East Site included mostly deciduous trees varying from about two to 20 inches in diameter, shrubs, brambles, lianas and low grasses. The surface of the forested areas was covered with leaves and other detritus and low grasses and surface visibility was less than 20 percent. As the time of the survey, early spring, leaves did not begin to appear on the vegetation until the last full week of the survey. The pedestrian survey occurred primarily as systematic shovel testing was performed. In locations where slopes were too steep to be suitable for intact archaeological deposits, where subsurface utilities were present (especially the high pressure gas pipelines), where surface deposits had been stripped for borrow or as the result of construction, and where modern dumps were identified, no subsurface testing was performed, but nonsystematic pedestrian survey was made. Thus, all parts of the East Site and West Site were inspected.

A 30-meter grid of shovel tests was excavated across the West Site and East Site, except in parts of the forested areas of the East Site and at the locations described above. The grid was staggered, so that the shovel tests in every other line of tests were off-set 15 meters. This procedure followed Kansas SHPO

guidelines and optimized the effectiveness of the survey grid. In the forested area of the East Site north of Corral Creek and in the wooded area south of Corral Creek west of the clear-cut area for the overhead transmission lines, the shovel test grid was composed of transects set 15 meters apart with shovel tests at 30-meter intervals in a parallel pattern. This was done because deep erosional ravines cut through these areas and the vegetation, even without leaves on the branches, was sufficiently dense that it was difficult to maintain regular testing intervals.

Where archaeological remains were identified by surface finds or shovel testing, close-interval shovel testing was performed to determine the horizontal boundaries of the resource. A cruciform of shovel tests were placed in the cardinal directions at five-meter intervals around nine of the single artifact surface finds, at five- and ten-meter intervals around 11 of the single artifact surface finds, and at five- and 10-meter intervals around shovel tests that were "positive" for artifacts. If a shovel test radial to the original positive shovel test yielded one or more artifacts, then additional radial shovel tests were dug at five- and ten-meter intervals in the cardinal directions around the positive radial test until at least two shovel tests were excavated in each direction at five-meter intervals that were "negative" (e.g. no artifacts found). This procedure follows the Kansas SHPO guidelines and was consistent with the overall grid of shovel tests across the West Site and East Site.

As previously stated, 15 new archaeological sites were identified in the recent study, seven in the West Site (14LV167 through 14LV173) and eight in the East Site (14LV174 through 14LV181). Site 14LV167 was a small prehistoric lithic scatter consisting of seven pieces of chipped stone flaking debris from four of 27 shovel tests excavated at the site. The site, which is situated in the northwest part of the West Site, had generic artifacts that could not be attributed to any cultural group or time period. The site had been disturbed by cultivation. Because the site could not contribute important new information about the prehistory of the Leavenworth locality or the broader region, the site was recommended not eligible for listing in the NRHP. The Kansas SHPO concurred with the recommendation that Site 14LV167 be considered not eligible for listing in the NRHP in a letter dated December 1, 2011 (Appendix D).

Site 14LV168 was a broadly distributed lithic scatter identified in the prison garden area in the northern part of the West Site. A total of 97 artifacts were collected from the ground surface and 19 artifacts from 11 of the 96 shovel tests. Three Scallorn type arrow points indicated that site was associated with the Late Prehistoric period (A.D. 700 to about 1500). In Kansas, this is also known as the "Middle Ceramic" period. Although temporally diagnostic artifacts were recovered, the site deposits had been significantly disturbed by decades of cultivation and erosion. The site appeared to have low potential to contribute important new information about the prehistory of the Leavenworth locality or of the region. Therefore, the site was recommended not eligible for listing in the NRHP. The Kansas SHPO concurred with the recommendation that Site 14LV168 be considered not eligible for listing in the NRHP in a letter dated December 1, 2011 (Appendix D).

Site 14LV169 was a moderately-sized camp located south of Honor Farm Drive and west of the former alignment of Santa Fe Trail/County Road 14 in the southwest part of the West Site. A total of 68 artifacts were collected from 31 of the 81 shovel tests. Two Scallorn type arrow points indicated that site was associated with the Late Prehistoric/Middle Ceramic period (A.D. 700 to about 1500). Subsurface testing indicated that there had been some disturbance as a result of cultivation, but the site appeared to have potential for intact archaeological deposits.

Archaeological evaluation of Site 14LV169 in July 2014 consisted of excavation of five one-meter test units at locations where shovel tests yielded artifacts. Seven small prehistoric pottery shards, 61 lithic

debitage, and 108 limestones were recovered from the test unit excavations. No archaeological features were found that suggested the presence of a house or activities areas. No cultigens were discovered and no bone tools or bone from processing animals for food were recovered. The prehistoric artifacts were nearly all from the upper 40 centimeters of the site deposits and predominately from the disturbed plow zone. Because Site 14LV169 was considered to have low potential to yield significant new information about the prehistory of the Leavenworth locale or the broader region, the site was recommended not eligible for listing in the NRHP. The Kansas SHPO concurred with this recommendation in a letter dated November 6, 2014 (Appendix D).

Site 14LV170 was a small prehistoric lithic scatter located in the northwest part of the Buffalo Pasture in the southwest portion of the West Site. A surface concentration in a buffalo wallow and two of the 16 shovel tests yielded a total of 13 pieces of chipped stone debitage. The site had generic artifacts that could not be attributed to any cultural group or time period and had been significantly disturbed by cultivation and erosion. Site 14LV170 appeared to have no potential to yield significant new information about the prehistory of the Leavenworth locale or the broader region and was recommended not eligible for listing in the NRHP. The Kansas SHPO concurred with the recommendation that Site 14LV170 be considered not eligible for listing in the NRHP in a letter dated December 1, 2011 (Appendix D).

Site 14LV171 was a large camp site on a terrace near a tributary stream in the Buffalo Pasture area in the southern part of the West Site. Thirty-nine of the 124 shovel tests yielded 40 pieces of chipped stone flaking debris and two small, grit-tempered pottery shards with plain/smoothed surfaces. The pottery fragments and two side-notched arrow points suggested that the site was associated with the Late Prehistoric/Middle Ceramic period (A.D. 700 to about 1500). Subsurface testing indicated that there had been some disturbance as a result of cultivation, but the site appeared to have potential for intact archaeological deposits and to contribute significant new information about the late prehistory of the area. Therefore, the site was recommended potentially eligible for listing in the NRHP. The Kansas SHPO concurred with the recommendation that Site 14LV171 be considered not eligible for listing in the NRHP in a letter dated December 1, 2011 (Appendix D).

Archaeological evaluation of Site 14LV171 in July 2014 consisted of excavation of five one-meter test units at locations where shovel tests yielded artifacts. Three small grit-tempered pottery sherds, one piece of burned clay, a chipped stone drill base, a biface tip, and 23 lithic debitage were recovered. No archaeological features were found that suggested the presence of a house or activities areas. No cultigens were discovered and no bone tools or bone from processing animals for food were recovered. The prehistoric artifacts were nearly all from the upper 40 centimeters of the site deposits and predominately from the disturbed plow zone. The artifacts were mixed with historic items, indicating that there is no integrity of site deposits. The prehistoric artifacts by themselves recovered lacked volume or diversity and had low potential to contribute important new information about the Leavenworth area or the broader region. For these reasons, Site 14LV171 was recommended to be considered not eligible for listing in the NRHP. The Kansas SHPO concurred with this recommendation in a letter dated November 6, 2014.

Site 14LV172 was a large lithic scatter on a terrace near a tributary stream in the Buffalo Pasture area in the southern part of the West Site. Fifty-seven of the 143 shovel tests yielded a total of 113 pieces of chipped stone flaking debris, two cores, four bifaces, and two Scallorn type arrow points. The two arrow points indicated that site is associated with the Late Prehistoric/Middle Ceramic period (A.D. 700 to about 1500). Subsurface testing indicated that there had been some disturbance as a result of cultivation, but the site appeared to have potential for intact archaeological deposits and to contribute

important new information about the late prehistory of the area. Therefore, the site was recommended potentially eligible for listing in the NRHP. The Kansas SHPO concurred with the recommendation that Site 14LV172 be considered potentially eligible for listing in the NRHP in a letter dated December 1, 2011 (Appendix D).

Archaeological evaluation of Site 14LV172 in July 2014 consisted of excavation of five one-meter test units at locations where shovel tests yielded artifacts. One arrow point, three bifaces, one flake tool, one core, 114 lithic debitage, 3 burned clay fragments, four fire-cracked rock, and 10 limestones were recovered. No archaeological features were found that suggested the presence of a house or activities areas. No cultigens were discovered and no bone tools or bone from processing animals for food were recovered. The prehistoric artifacts were typically from the disturbed plow zone. The materials recovered had low potential to contribute important new information about the Leavenworth area or the broader region. For these reasons, Site 14LV176 was recommended to be considered not eligible for listing in the NRHP. The Kansas SHPO concurred with this recommendation in a letter dated November 6, 2014.

Site 14LV173 was a small prehistoric lithic scatter in the northeast part of the Buffalo Pasture area in the southern portion of the West Site. Five shovel tests yielded 13 pieces of chipped stone flaking debris. The site had generic artifacts that could not be attributed to any cultural group or time period and had been significantly disturbed by cultivation and erosion. Because the site had no potential to provide important new information about the prehistory of the locality or region, the site was recommended not eligible for listing in the NRHP. The Kansas SHPO concurred with the recommendation that Site 14LV173 be considered not eligible for listing in the NRHP in a letter dated December 1, 2011 (Appendix D).

Site 14LV174 was a small prehistoric lithic scatter in staff garden area located in the southwestern portion of the East Site. Six surface finds and three of the shovel tests yielded eight pieces of chipped stone flaking debris. The site had generic artifacts that could not be attributed to any cultural group or time period. The site had been significantly disturbed by cultivation and erosion. As a result, the site appeared to have low potential for yielding important new information about the prehistory of the Leavenworth area or broader region. Therefore, the site was recommended not eligible for listing in the NRHP. The Kansas SHPO concurred with the recommendation that Site 14LV174 be considered not eligible for listing in the NRHP in a letter dated December 1, 2011 (Appendix D).

Site 14LV175 was the location of the prison farm manager's residence (1938 to 1980) in the southern side of the East Site. The site consisted of a concrete house foundation and associated structural and household debris. Charred material observed in shovel tests suggested that the house may have been burned. Small amounts of wire nails, window glass, asbestos tiles, brick, screws, spacers, bottle glass, and broken stoneware, earthenware, porcelain, and whiteware dish fragments (totaling 73 items) were recovered from 11 of the shovel tests at the site. Some disturbance had occurred as a result of demolition of the structure and cultivation in the northern part of the site area. The site was considered unlikely to yield any important new information about the operation of the prison farm or U.S. Penitentiary. Therefore, the site was recommended not eligible for listing in the NRHP. The Kansas SHPO concurred with the recommendation that Site 14LV175 be considered not eligible for listing in the NRHP in a letter dated December 1, 2011 (Appendix D).

Site 14LV176 was a large lithic scatter situated in the northeast portion of the East Site. Eighteen of the shovel tests yielded 39 pieces of chipped stone flaking debris. Subsurface testing indicated that there

had been some disturbance as a result of cultivation, but the site appeared to have potential for intact archaeological deposits. Because the site had good potential for contributing significant new information about the late prehistory of the Leavenworth area and region, the site was recommended potentially eligible for listing in the NRHP. The Kansas SHPO concurred with this recommendation in a letter dated December 1, 2011.

Archaeological evaluation of Site 14LV176 in July 2014 consisted of excavation of five one-meter test units at locations where shovel tests yielded artifacts. One fragment of hematite, 117 pieces of chipped stone debitage, and four fire-cracked rocks were collected. However, no ceramics or finished points, bifaces, or other tools were recovered. No archaeological features were found that suggested the presence of a house or activities areas. No cultigens were discovered and no bone tools or bone from processing animals for food were recovered. The prehistoric artifacts were nearly all from the upper 40 centimeters of the site deposits and predominately from the disturbed plow zone. The materials recovered had low potential to contribute important new information about the Leavenworth area or the broader region. For these reasons, Site 14LV176 was recommended to be considered not eligible for listing in the NRHP. The Kansas SHPO concurred with this recommendation in a letter dated November 6, 2014.

Site 14LV177 was a small lithic scatter situated on a terrace on the north side of Corral Creek in the northern portion of the East Site. Three of the shovel tests yielded 15 pieces of chipped stone flaking debitage, 12 of which came from one shovel test. The site had been disturbed by some erosion. The site included a small assemblage of generic flaking debris and was considered not likely to contribute important new information about the prehistory of the area. Therefore, the site was recommended not eligible for listing in the NRHP. The Kansas SHPO concurred with the recommendation that Site 14LV177 be considered not eligible for listing in the NRHP in a letter dated December 1, 2011 (Appendix D).

Site 14LV178 was a small lithic scatter on a terrace on the north side of an intermittent stream located in the Buffalo Pasture area in the southern portion of the West Site. Two pieces of chipped stone flaking debitage were recovered from two of the shovel tests at this site. The site had suffered significant disturbance by cultivation and erosion. Site 14LV178 was considered to have no potential to provide important new information about the prehistory of the area. Therefore, the site was recommended not eligible for listing in the NRHP. The Kansas SHPO concurred with the recommendation that Site 14LV178 be considered not eligible for listing in the NRHP in a letter dated December 1, 2011 (Appendix D).

Site 14LV179 was a small lithic scatter on the uplands south of the fire house and landscape maintenance building at the west side of the USP. One of nine shovel tests at this location yielded five pieces of chipped stone flaking debris from the plowzone. The site was significantly disturbed by road grading and erosion. Because the site had no potential to yield important new information about the prehistory of the Leavenworth locale or broader region, the site was recommended not eligible for listing in the NRHP. The Kansas SHPO concurred with the recommendation that Site 14LV179 be considered not eligible for listing in the NRHP in a letter dated December 1, 2011 (Appendix D).

Site 14LV180 was a small lithic scatter situated on a small terrace at the south and west of the confluence of an intermittent stream and Corral Creek in the eastern portion of the East Site. One shovel test at the site yielded three pieces of chipped stone flaking debris. The site had been disturbed by cultivation and erosion. The site was recommended not eligible for listing in the NRHP because it had no potential to provide significant new information about the prehistory of the area. The Kansas SHPO

concluded with the recommendation that Site 14LV180 be considered not eligible for listing in the NRHP in a letter dated December 1, 2011 (Appendix D).

Site 14LV181 was a large prehistoric camp on a ridge in the southeastern portion of the East Site. Twenty of 93 shovel tests yielded a large number of chipped stone flakes and two pieces of fire-cracked rock. The presence of fire-cracked rock suggested the possibility of hearths that could yield charred material suitable for radiocarbon dating. The archaeological deposits were in the surface layer of soil, but did not appear to be significantly disturbed by cultivation or erosion. The quantity of flaking debris suggested that activity areas might be discerned. Therefore, Site 14LV181 was recommended potentially eligible for listing in the NRHP under Criterion D for its potential to contribute important new information about the prehistory of the Leavenworth County, Kansas. The Kansas SHPO concurred with this recommendation in a letter dated December 1, 2011 (Appendix D).

Archaeological evaluation of Site 14LV181 in July 2014 consisted of excavation of five one-meter test units at locations where shovel tests yielded artifacts. Two fragments of pipestone, burned clay fragments, one piece of fired tempered clay, one piece of red ochre, one fragment of hematite, one biface fragment, one utilized flake, over 300 pieces of chipped stone debitage, and 74 fire-cracked rocks were collected. However, no archaeological features were found that suggested the presence of a house or activities areas. No cultigens were discovered and no bone tools or bone from processing animals for food were recovered. The prehistoric artifacts were nearly all from the upper 40 centimeters of the site deposits and predominately from the disturbed plow zone. The materials recovered had low potential to contribute important new information about the Leavenworth area or the broader region. For these reasons, Site 14LV181 was recommended to be considered not eligible for listing in the NRHP. The Kansas SHPO concurred with this recommendation in a letter dated November 6, 2014 (Appendix D).

In summary, the current archaeological investigation revisited six previously recorded sites and identified 15 new archaeological sites and 15 new isolated find spots. Table III-6 summarizes the site information. All six of the previously recorded sites (14LV110, 14LV111, 14LV337, 14LV364, 14LV365, and 14LV366) have been heavily disturbed by cultivation and erosion to a point where no cultural remains were discovered at Sites 14LV111, 14LV337, and 14LV366 and only a few artifacts were present at Sites 14LV110, 14LV364, and 14LV365. These six sites were recommended not eligible for listing in the NRHP under any criteria. The Kansas SHPO concurred with these recommendations.

Newly recorded sites 14LV169, 14LV171, 14LV172, 14LV176, and 14LV181 were recommended as potentially eligible for listing in the National Register under Criterion D for their possible contribution of important new information about the prehistory of the region. These five sites appeared to have intact archaeological deposits, despite some disturbance by cultivation and erosion. Sites 14LV169, 14LV171, and 14LV172 had chronologically diagnostic artifacts (e.g. arrow points and/or pottery sherds) that suggested Late Prehistoric/Middle Ceramic occupation (circa A.D. 700 to about 1500). The spatial relationships of these three sites also suggested seasonal reoccupation of this locale. Criterion A (associated with important historic events), Criterion B (associated with persons important in our history), and Criterion C (associated with distinctive construction or artistic work) did not apply to these sites.

Archaeological site evaluation was performed at Site 14LV169, 14LV171, 14LV172, 14LV176, and 14LV181 in July 2014. Five test units were excavated at each site. Test Unit excavations yielded additional amounts of chipped stone debitage and small numbers of pottery sherds, biface fragments, utilized flakes, cores, and fire-cracked rock. Site 14LV181 included two pieces of pipestone. Previous

disturbance by grading, cultivation, and erosion appeared to have undermined the integrity of archaeological deposits. No archaeological features were identified at any of the five sites. No charcoal or other charred material was recovered that could be used to obtain a radiocarbon date from the sites. There was a general lack of volume and diversity of artifacts at each site that might be used to determine the cultural affiliation of each site, the kinds of plant or animal resources used by site occupants, or the organization of space at each site. Although three sites were determined to be Woodland in age, it was not possible to determine whether the sites belonged to the Early Ceramic or Middle Ceramic period. The Kansas SHPO concurred with the recommendations in a letter dated November 6, 2014 (Appendix D).

The other nine newly identified prehistoric sites (14LV167, 14LV168, 14LV170, 14LV173, 14LV174, 14LV177, 14LV178, 14LV179, and 14LV180) did not appear to have subsurface integrity as a result of cultivation and/or erosion. With the exception of 14LV168, the sites were small and lacked chronologically diagnostic artifacts. Indeed, the chipped stone items at most of the sites was low in number and consisted of generic debitage that could not be associated with any cultural group over the past 12,000 years that stopped briefly in this location. Thus, these sites were considered unlikely to contribute any important new information about the prehistory of the area and were recommended not eligible for listing in the NRHP under Criterion D. Criteria A, B, and C do not apply to these sites. The Kansas SHPO concurred with these recommendations.

Historic Site 14LV175 is the location of the prison farm manager's residence. The house was constructed in 1938 and was destroyed about 1980. The site consisted of a concrete foundation and a distribution of structural and household debris. The archaeological remains did not appear to offer any significant new information about the operation of the prison farm different than that which probably could be obtained from historic records. Therefore, Site 14LV175 was recommended not eligible for listing in the NRHP under Criterion D. Criteria A, B, and C do not appear to apply to this site. The Kansas SHPO concurred with this recommendation.

The isolated find spots are typically considered to not be eligible for listing in the NRHP. With rare exception, such finds have virtually no characteristics that can contribute important new information about the prehistory or history of an area. Therefore, isolated find spots IF-1 through IF-15 were recommended not eligible for listing in the NRHP under any criteria. The Kansas SHPO concurred with this recommendation.

b. Architecture

A reconnaissance architectural survey was conducted to identify of all resources on the BOP's Leavenworth property to assess their eligibility for listing in the NRHP. Data collection for this survey involved the compilation of background information and review of previous architectural resource documentation. The APE for the architectural survey coincides with the USP Leavenworth property boundary.

A review of BOP files indicated that several architectural surveys had been conducted in the past. In December 2005, BELL Architects, PC completed a Historic Structure Report (HSR) for the BOP's Leavenworth property (Appendix F). In that report, BELL Architects concluded that the complex constituted an historic district eligible for listing in the NRHP under Criterion A "for its association with the early development of the Federal Prison system, which was the result of efforts by the U.S. Government to consolidate federal inmates into one maximum-security prison" and Criterion C as "an

outstanding example of a prison constructed almost exclusively by convict labor” at a national level of significance. The period of significance for the district was defined as 1897 to 1945 (BELL Architects, PC 2005:2-1).

In 2009, TEC, Inc. completed a reconnaissance study of the proposed project location. Background research at the Kansas SHPO identified the NRHP-eligible USP Leavenworth Historic District within and adjacent to the project area. A previously un-surveyed pillbox structure was also identified. TEC, Inc. proposed an NRHP evaluation of all unidentified structures; and determination, through consultation with the Kansas SHPO, of the USP Leavenworth Historic District boundaries and contributing/non-contributing status of buildings, structures, and landscapes within the district.

The architectural survey identified a total of 73 buildings and structures at USP Leavenworth (Table III-7). Most of these properties had been identified by BELL Architects in 2005 as part of the historic district; but had not been formally included in the Kansas Historic Resource Inventory. Three buildings had not been previously surveyed and/or evaluated with respect to NRHP Criteria: 1960 Warden’s Residence, FPC Camp Site, and a pillbox bunker in the north-central part of the property. Four buildings had been removed since 2005: the disc throw tower, firing range cabin, FPC Weight Pavilion and oil tanks.

The architectural survey confirms the recommendations of BELL Architects that USP Leavenworth is eligible for listing in the NRHP under Criteria A and C at a national level of significance. However, results of the background research and survey indicate that the Camp Site, built in 1960 as a farm dormitory, is a significant structure within the history of the BOP’s Leavenworth property and should be considered as a contributing structure.

The Camp Site was constructed in 1960 with mostly prison labor as a replacement for the farm dormitory located on the prison farm in Platte County, Missouri. Prisoners resided in the new farm dormitory and continued their farming operations at USP Leavenworth and the prison farm in Missouri until 1980 when prison farm operations nationwide were eliminated. Thus, it is recommended that the period of significance be extended to 1960 to include this structure. Table III-7 lists the proposed contributing/non-contributing status of buildings and structures within the district.

Table III-7: Properties Surveyed USP Leavenworth Historic District

BLDG. No.	HSR BLDG. No.	Name	Date	Status
	A-10	Roadways	ca.1905	Contributing Structures
70	A-14	Perimeter Wall	1904, 1911-1917, 1971	Contributing Structure
56	B-01	Administration/Visitation	1929	Contributing Building
56	B-02	Rotunda	1929	Contributing Building
56	B-03	Intermediate Building	1929	Contributing Building
56	B-04	Inmate Housing, Unit A	1924	Contributing Building
56	B-05	Inmate Housing, Unit B	1920	Contributing Building
69	B-06	Gymnasium and Passageway	1976	Noncontributing Building
56	B-07	Inmate Housing, Unit D	1904/1905	Contributing Building
56	B-08	Inmate Housing, Unit C	1904	Contributing Building
68	B-09	Education	1963	Noncontributing Building

BLDG. No.	HSR BLDG. No.	Name	Date	Status
57	B-10	Laundry/Safety	1904	Contributing Building
58	B-11	Isolation	1905	Contributing Building
59	B-12	West Store Room/Food Service Store	1939	Contributing Building
60	B-13	Food Service	1906	Contributing Building
60	B-14	Dining Hall	1906	Contributing Building
60	B-15	Auditorium/Chapel	1909	Contributing Building
60	B-16	Refrigeration Building	1971	Noncontributing Building
61	B-17	Hospital	1941	Contributing Building
	B-17a	Electrical Substation	Unknown	Noncontributing Building
	B-17b	Storage Shed	Unknown	Noncontributing Building
62	B-18	Special Housing Unit	1988	Noncontributing Building
63	B-19	Maintenance Shop/CMS	1938	Contributing Building
64	B-20	UNICOR Lumber Storage	1955	Noncontributing Building
65	B-21	UNICOR Industries Complex	1926/ca.1936	Contributing Building
66	B-22	UNICOR Paint Shop/Chemical Storage	1933	Contributing Building
	B-23a	West Yard Shack	1955	Noncontributing Building
	B-23b	New East Yard Shack	1983	Noncontributing Building
67	B-25	Recreation Pavilion	1939/ca.1965	Noncontributing Building
70	B-26a	Rear Sally port	1916/1937	Contributing Structure
70	B-26b	Rope House	1952	Noncontributing Building
	B-26c	Garden Tool Shed	Pre-1938	Contributing Building
	B-27	Tunnels	1922/1929	Noncontributing Structure
6	N/A	Superintendent of Farm's Residence/Associate Warden's Residence	1912	Contributing Building
7	N/A	Deputy Warden's Residence	1906	Contributing Building
1	N/A	Physician's Residence/Chief Medical Officer's Residence	1924	Contributing Building
47	N/A	Cemetery, including walls, grave markers, U.S.P. markers, and entrance features	ca. 1903	Contributing Building
12	N/A	2 Bedroom Staff Residence	ca. 1937	Contributing Building
13		4 Bedroom Staff Residence	ca. 1937	Contributing Building
14		5 Bedroom Staff Residence	ca. 1937	Contributing Building
15		2 Bedroom Staff Residence	ca. 1937	Contributing Building
16		2 Bedroom Staff Residence	ca. 1937	Contributing Building
16		2 Bedroom Staff Residence	ca. 1937	Contributing Building
17		2 Bedroom Staff Residence	ca. 1937	Contributing Building
17		2 Bedroom Staff Residence	ca. 1937	Contributing Building
18		2 Bedroom Staff Residence	ca. 1937	Contributing Building
18		2 Bedroom Staff Residence	ca. 1937	Contributing Building

BLDG. No.	HSR BLDG. No.	Name	Date	Status
20		2 Bedroom Staff Residence	ca. 1937	Contributing Building
21		3 Bedroom Staff Residence	ca. 1937	Contributing Building
22		2 Bedroom Staff Residence	ca. 1937	Contributing Building
23		3 Bedroom Staff Residence	ca. 1937	Contributing Building
24		2 Bedroom Staff Residence	ca. 1937	Contributing Building
25		3 Bedroom Staff Residence	ca. 1937	Contributing Building
26		4 Bedroom Staff Residence	ca. 1937	Contributing Building
	N/A	Railroad Tracks	1915	Contributing Structure
3	C-1	Armory	1982	Noncontributing Building
2	C-2	Physical Fitness Center/Warden's Residence	1906	Contributing Building
9	C-3	Receiving Depot	1991	Noncontributing Building
11	C-4	Disturbance Control/Command Center	1920	Contributing Building
46	C-5a	FPC Gymnasium	1980	Noncontributing Building
46	C-5b	FPC Inmate Housing	1960	Contributing Building
46	C-5c	FPC Inmate Services	1960	Contributing Building
	C-5d	FPC Weight Pavilion	Unknown	Non-Extant
46	C-6	FPC Entrance	1961	Non-contributing Building
27	C-7	Garage	1962	Contributing Building
28	C-8	Plumbing Shop/Industrial Warehouse	1937	Contributing Building
29	C-9	UNICOR Warehouse/Receiving Depot	1956	Contributing Building
30	C-10	UNICOR Raw Material Storage	1982	Noncontributing Building
31	C-11	Salvage Depot	1943	Contributing Building
32	C-12	UNICOR Warehouse	Pre-1938	Contributing Building
33	C-13	UNICOR Old Cement Storage Shed	Pre-1938	Contributing Building
	C-14	Oil Tanks	Unknown	Non-Extant
73	C-15	Chemical Storage	ca. 1952	Contributing Building
34	C-16	Power Plant/Generator Room	1952	Contributing Building
74	C-16a	Electrical Equipment Shed	ca. 1970	Noncontributing Building
35	C-17	HVAC Shop	1943	Contributing Building
36	C-18	Landscape Storage Building	1921	Contributing Building
75	C-18a	Landscape Storage Shed	ca. 1960	Contributing Building
37	C-19	Dry Storage	1961	Non-contributing Building
38	C-20	UNICOR Industries Office/Depot	1981	Noncontributing Building
39	C-21	UNICOR Storage Shed	1950	Contributing Building
41	C-22	Regional Emergency Preparedness Warehouse	1961	Non-contributing Building
40	C-23	Maintenance Building/Dairy Barn	1903/1917	Contributing Building
75	C-23a	Maintenance Store 1	ca. 2000	Non-contributing Building
76	C-23b	Maintenance Store 2	ca. 2000	Non-contributing Building
42	C-24	Project Office/Dairy Barn/Mule Shed	1903	Contributing Building

BLDG. No.	HSR BLDG. No.	Name	Date	Status
43	C-25	Fire House/Landscape Maintenance	1931	Contributing Building
44	C-26	Radio Tower	ca. 1990	Noncontributing Building
	C-27-1	Guard Tower #1	1940	Contributing Building
	C-27-2	Guard Tower #2	1971	Noncontributing Building
	C-27-3	Guard Tower #3	1938	Contributing Building
	C-27-4	Guard Tower #4 (not including wall)	Pre-1916	Contributing Building
	C-27-5	Guard Tower #5 (not including wall)	1904/1938	Contributing Building
	C-27-6	Guard Tower #6	1994	Noncontributing Building
	C-27-7	Guard Tower #7	1971	Noncontributing Building
48	C-28	Staff Training Center	1939	Contributing Building
49	C-28A	Pool House	ca. 1960	Contributing Building
54	C-28B	Pavilion 1	ca. 1970	Noncontributing Building
54	C-28C	Pavilion 2	ca. 1970	Noncontributing Building
50	C-28D	Weapons Cleaning Center	1948	Contributing Building
77	C-28-E	Target Store	1948	Contributing Building
51	C-28G	Practice Tower	ca. 1970	Noncontributing Building
52	C-28H	Firing Range Shed	ca. 1970	Noncontributing Building
53	C-28K	Firing Range Observation Tower	1948	Contributing Building
45	C-29	FPC Lift Station	1961	Non-contributing Building
8	C-30	Lift Station # 1	1995	Noncontributing Building
72		Concrete Pillbox Bunker	ca. 1920	Contributing Building
55		Captain's Residence	1960	Contributing Building
9		Outside Food Service Warehouse	ca. 2008	Noncontributing Building
5		Shelter (Along Main Drive)	ca. 2006	Noncontributing Building
71		Sheds and Tank (east of Power Plant)	ca. 2006	Noncontributing Building
78		Outdoor Grill Structures	ca. 1935	Contributing Structures
79		Storm Sewer Line	ca. 1900	Contributing Structure

The historic district boundary proposed by BELL Architects included only the buildings and the Buffalo Pasture area; not any open areas to the north and east. The boundary of the historic district should be expanded to include the surrounding open areas. This would provide a more clearly defined historic district boundary that includes areas historically associated with the USP. The proposed boundary for the historic district would follow the USP Leavenworth property boundary on the west, north, and east sides, and Metropolitan Avenue/US 73 on the south side.

Most of the buildings have a moderate to high degree of integrity with only minor modifications to windows. Brick is a predominant building material for buildings constructed up into the mid-twentieth century. All four residences on the south lawn of the USP are constructed of brick. Five of the 14 staff houses, constructed with Public Works Administration funds, are frame construction; the remainder constructed of brick. There are several movable wood frame sheds in various locations around the USP.

2. Potential Impacts and Mitigation

a. No Action Alternative

Under the No Action Alternative, the proposed FCI/FPC would not be developed. The BOP's Leavenworth property would remain in its current condition, cultural resources would not be affected, and mitigation measures would not be necessary.

b. Archaeology

Selection of Alternative FCI East-1 will result in direct impacts to previously recorded archaeological sites 14LV110, 14LV111, 14LV364, and 14LV366 as well as to newly recorded archaeological sites 14LV175, 14LV176 and 14LV181 and to isolated find spots IF-8, IF-9, IF-11, and IF-13.

Selection of the Alternative Composite option will result in direct impacts to previously recorded archaeological sites 14LV110, 14LV111, 14LV364, and 14LV366 as well as to newly recorded archaeological sites 14LV171, 14LV176, 14LV178, and 14LV181 and to isolated find spots IF-8 and IF-9.

Archaeological sites 14LV169, 14LV171, 14LV172, 14LV176, and 14LV181 have been recommended as potentially eligible for listing in the NRHP, and the SHPO has concurred with this finding in December 2011. As a result, site evaluation excavations were completed at the five sites in July 2014. All five sites were recommended to be considered not eligible for listing in the NRHP. The Kansas SHPO concurred with these recommendations in a letter to the BOP dated November 6, 2014 (Table III-9). A report of the 2011 archaeological survey and the 2014 evaluations of Sites 14LVC169, 14LV171, 14LV172, 14LV176, and 14LV818 were submitted to the SHPO for review (see Appendix F). Maps depicting the locations of archaeological sites have only been shared with the Kansas SHPO at its request and in the interest of protecting the integrity and content of such sites.

No further archaeological studies are recommended for archaeological sites 14LV110, 14LV111, 14LV337, 14LV364, 14LV365, 14LV366, 14LV168, 14LV169, 14LV170, 14LV171, 14LV172, 14LV173, 14LV174, 14LV175, 14LV176, 14LV177, 14LV178, 14LV179, 14LV180, 14LV181 or at isolated find spots IF-1 through IF-15. Should artifacts or other evidence of unrecorded cultural resources be discovered during the course of project construction, the Kansas SHPO will be notified so that the potential significance and NRHP eligibility of such resources can be adequately evaluated.

c. Architecture

An assessment of the two development alternatives with the USP Leavenworth Historic District reveals that neither alternative will adversely affect contributing staff housing along Metropolitan Avenue, concrete pillbox bunker (72) and storm sewer line (79). To avoid impacts to the contributing staff housing, the proposed FCI/FPC access driveway was adjusted to a location mid-way between North 10th Street and North 11th Street. The housing units would continue to be occupied by BOP staff with the FCI/FPC access driveway located so as to avoid demolition or alteration of these units and adverse effects to the integrity of the historic district's design, workmanship, and feeling. In addition, the proposed FPC has been moved northward and away from the historic staff housing and configured into a more compact arrangement that realigns the outdoor recreation fields and courts. In addition, the BOP is proposing to install an earthen berm extending the length of the staff housing units to provide

additional visual separation from the FCI/FPC to the north. Construction activities will not impact the concrete pillbox bunker and storm sewer line, which are both located on the northern edge of the FCI-East site.

Construction of the FCI under both alternatives will diminish the district's integrity of design, setting, and feeling. Vacating the existing USP Leavenworth also has the potential to adversely impact the historic facility. In addition, the FPC in the Alternative Composite will directly impact a non-contributing lift station (#45). Consequently, measures to mitigate any potential adverse impacts to architectural resources would be recommended. The BOP is proposing to enter into a Memorandum of Agreement (MOA) with SHPO on appropriate mitigation measures, which may include Historic American Building Survey (HABS) documentation of removed buildings or structures and a Transition Study that will focus on two objectives: maintain services to the USP that are necessary to avoid deterioration of the structures and infrastructure; and identify options for a new mission for the facility.

Table III-8: Archaeological Site Impacts Summary

Field Site Number	Location	Site Type	SHPO NRHP Determination	Impacts by Alternative
14LV110	East Site	Dump	Not Eligible	Alt. FCI East-1: No Adverse Effect Alt. Composite: No Adverse Effect
14LV111	East Site	Isolated Find	Not Eligible	Alt. FCI East-1: No Adverse Effect Alt. Composite: No Adverse Effect
14LV364	East Site	Lithic Scatter	Not Eligible	Alt. FCI East-1: No Adverse Effect Alt. Composite: No Adverse Effect
14LV366	East Site	Lithic Scatter	Not Eligible	Alt. FCI East-1: No Adverse Effect Alt. Composite: No Adverse Effect
14LV170	West Site	Lithic Scatter	Not Eligible	Alt. FCI East-1: Avoided Alt. Composite: Avoided
14LV171	West Site	Camp 2 Sherds and Lithic Scatter	Not Eligible	Alt. FCI East-1: Avoided Alt. Composite: No Adverse Effect
14LV175	East Site	Foundation and Historic Artifact Scatter	Not Eligible	Alt. FCI East-1: No Adverse Effect Alt. Composite: No Adverse Effect
14LV176	East Site	Lithic Scatter	Not Eligible	Alt. FCI East-1: No Adverse Effect Alt. Composite: No Adverse Effect
14LV178	West Site	Lithic Scatter	Not Eligible	Alt. FCI East-1: No Adverse Effect Alt. Composite: No Adverse Effect
14LV181	East Site	Lithic Scatter	Not Eligible	Alt. FCI East-1: Potential Adverse Effect Alt. Composite: Potential Adverse Effect
IF-8	East Site	Isolated Find (1 Debitage)	Not Eligible	Alt. FCI East-1: No Adverse Effect Alt. Composite: No Adverse Effect
IF-9	East Site	Isolated Find (1 Debitage)	Not Eligible	Alt. FCI East-1: No Adverse Effect Alt. Composite: No Adverse Effect

Field Site Number	Location	Site Type	SHPO NRHP Determination	Impacts by Alternative
IF-11	East Site	Isolated Find (1 Biface Frag.)	Not Eligible	Alt. FCI East-1: No Adverse Effect Alt. Composite: No Adverse Effect
IF-13	East Site	Isolated Find (1 Debitage)	Not Eligible	Alt. FCI East-1: No Adverse Effect Alt. Composite: No Adverse Effect

H. HAZARDOUS MATERIALS

1. Existing Conditions

The East and West Sites have been the subject of a Phase I Environmental Site Assessment (ESA) in 2010/2011. Given the BOP's long history of property ownership and the in-depth studies of past waste disposal practices conducted of the property over the past 20 years, there was no need to prepare another Phase I ESA as part of this round of study (Appendix G).

The purpose for conducting the Phase I ESA was to identify the presence of any Recognized Environmental Conditions (RECs), Business Environmental Risks and/or Historical Recognized Environmental Conditions as defined by ASTM International (ASTM) Standard Practice E1527-05, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*, with respect to the East and West Sites. Recognized Environmental Conditions are the presence or likely presence of any hazardous or petroleum products under conditions that indicate an existing release, a past release or a material threat of release of such substances onto a subject property. A Business Environmental Risk is a risk which can have a material environment or environmentally-driven impact on the business associated with the current or planned used of a property. Site screening, the precursor to preparation of ASTM Phase I ESA, comprised visual inspections of both sites, including a visual inspection of the exteriors of structures present on the sites; a review of historical aerial photographs of the sites; a review and evaluation of local, state and federal environmental databases containing information on each site; and interviews with appropriate public officials regarding past uses of the sites.

The search of available environmental records was obtained from Environmental Data Resources, Inc. The database search was intended to meet the search requirements of the U.S. Environmental Protection Agency's Standards and Practices for all Appropriate Inquiries (40 CFR Part 312) and ASTM Standard E1527-05. The review and evaluation of local, state and federal databases included the National Priorities List, CERCLIS List, CERCLIS-NFRAP List, RCRA TSD List, RCRA Generators List, RCRA CORRACTS List, ERNS List, and various State of Kansas databases as described in the Phase I ESA.

a. Hazardous Materials Investigations at USP Leavenworth

The East Site and West Site are located within the larger USP property and have been affected to varying extent by hazardous materials use at the USP. USP Leavenworth is located between the East and West Sites and includes the walled USP facility and multiple outlying support structures. Facilities located immediately adjacent to the East Site, outside of the USP walls, include a UNICOR (Federal Prison Industries) warehouse where materials and equipment are stored and gasoline pumps for refueling BOP motor vehicles.

Multiple waste disposal landfill sites are located on Fort Leavenworth, north of the USP. U.S. Army maps depicting the locations of these landfill sites appears to show them within hazardous waste disposal site Area B (described below) on the USP Leavenworth property. The remaining waste sites at Fort Leavenworth are located opposite Corral Creek, which forms a natural drainage divide between the Fort Leavenworth and the USP. There is no known evidence that contamination from Fort Leavenworth has migrated to the East Site or the West Site.

Extensive environmental investigations have been conducted since 1984 at the USP Leavenworth, including the East Site and West Site, as described below. These investigations identified several current and historical industrial operations that produce or may have produced hazardous materials at USP Leavenworth including a furniture factory, brush factory, printing factory, vehicle maintenance shop, and landscaping department. These operations generated varying quantities of waste oils, spent solvents, auto part cleaning agents, lacquer thinners, paint, stored polychlorinated biphenyl-contaminated transformers, gasoline, and empty pesticide containers. The USP Leavenworth is currently classified as a Resource Conservation and Recovery Act (RCRA) Small-Quantity Generator, generating less than 1,000 kilograms of hazardous waste per month.

The State of Kansas registered underground storage tanks (USTs) database includes the USP Leavenworth. Current USTs on the USP include one 3,000-gallon diesel UST and one 5,000-gallon fuel oil UST located at the vehicle maintenance building. Fuel oil for use in the USP Leavenworth emergency generator is stored in two aboveground storage tanks (ASTs), totaling 450,000 gallons, that are located adjacent to the USP Power Plant. A 12,000-gallon No. 2 fuel oil AST is also currently located on the main USP as a backup fuel source for the USP Powerhouse.

There are several identified hazardous waste disposal sites on the USP Leavenworth property that are recognized by the KDHE and have been investigated and monitored since 1991 (Exhibit III-8). The hazardous waste sites identified at the USP during these investigations have been grouped into three larger hazardous waste areas. These areas are identified as Areas A, B and C and are further described as follows:

- Area A includes the paint can disposal area ("Site 1"), trench burial area ("Site 2") and waste oil dumping area ("Site 8"). Pond 1 and Pond 2, also known as "Subsites 3.1 and 3.2", were grouped with Area A, although located separately to the north. Area A and Ponds 1 and 2 are located largely within the limits of the East Site.
- Area B includes the north sanitary landfill ("Site 4"), fuel oil spill ("Site 7"), Building 80 ("Site 5") and east yard hot barrel site. Ponds 3, 4 and 5, also known as "Subsites 3.3, 3.4 and 3.5", are located within Area B. The east yard hot barrel site and Building 80 were later designated as Area B-1. Area B/B-1 is located directly north of the existing USP facility and between the East Site and West Site.
- Area C includes the cemetery landfill ("Site 6") and hot barrel site at the shale pits ("Site 9b"). The hot barrel site at the shale pit was later designated as Area C-1. Site C/C-1 is located west of the existing prison camp and Santa Fe Trail/County Road 14, near the USP training facility and cemetery.



Exhibit III-8: Waste Disposal Areas

The hydraulic conductivity of the surficial geologic strata was determined to be very low across the USP property. Groundwater movement was determined to vary across the USP property and to be generally northeasterly at Area A, northerly at Area B and southerly at Area C. Remedial actions were taken following KDHE review of investigation reports and preparation of a Removal Action Decision Document in 1996. The following remedial actions were taken:

- Clay barriers were added to the waste disposal areas.
- Dams were reconstructed or newly constructed for associated ponds.
- A sediment retention system was constructed consisting of surface cover added to landfills in Areas A and B. Ponds 1, 3, 4, 5 and 7, located in Areas A, B and C, were reconstructed to retain surface water.
- Prevention of access to the site via 24-hour security patrols, guarded observation towers and a chain-link fence around the entire facility.
- Establishment of the groundwater and surface water monitoring program. The KDHE has requested a 30-year monitoring plan, with groundwater samples to be collected on a schedule of 1, 2, 4, 7, 10, 15, 20, 25 and 30 years.

The most recent groundwater monitoring report (September 18, 2019) indicated that:

- According to analytical laboratory results, contaminant concentrations within the sampled groundwater monitoring wells at USP Leavenworth are significantly below State of Kansas contaminant levels.
- Based on current and previous years of groundwater analytical data, elevated contaminants of concern have not migrated beyond the waste areas; therefore, additional remedial response actions at USP Leavenworth do not appear necessary at this time.

The next groundwater monitoring event at USP Leavenworth is scheduled for August 2024 at which time an updated groundwater contour map will be completed.

b. East Site

The East Site has been the subject of previous subsurface investigations, as described above. Field inspections were conducted at the East Site in January 2011 and photographs taken during those site visits were included in the Phase I ESA Report. Field visits were also conducted in July 2020.

There are gullies transecting the East Site through which surface water drains. Some dumping of brush and construction debris (brick and concrete) was observed in the gullies. Some litter was observed along the banks of Corral Creek on the northern boundary of the East Site, but no major dumping was observed. Groundwater monitoring wells from previous subsurface investigations were observed on portions of the East Site.

The only structures on the East Site are the BOP residences located along the southern boundary of the East Site on Metropolitan Avenue. These houses are grouped in three clusters and some have storage sheds in the rear. The interiors of these buildings were not inspected; however, the only hazardous materials expected to be contained in the residences are typical household cleaners, paints and incidental amounts of petroleum products such as motor oil.

c. West Site

The southern portion of the West Site is dominated by the Buffalo Pasture, which is an enclosed paddock housing 10 to 20 bison that are attended to by inmates and BOP personnel. The West Site is partially occupied by the FPC, which has two main structures, the original dormitory structure and the newer Visitors' Center. There is also a sewage lift station that serves the FPC, which is located southeast of the two main structures.

The main FPC building includes dormitory halls, a kitchen and dining hall, recreational rooms and office space. The FPC kitchen contains a 200-gallon grease trap that is pumped out by an outside contractor on a quarterly basis. Floor drains in the kitchen discharge to the wastewater system. Refrigeration storage units are located on the exterior of the main FPC building. Solid waste is transported off-site by a private contractor for final disposal. The basement of the main FPC building contains utility piping and electrical equipment with heat for both FPC buildings supplied by steam from the USP powerhouse.

2. Potential Impacts and Mitigation

a. No Action Alternative

Under the No Action Alternative, the proposed FCI/FPC would not be developed. The BOP's Leavenworth property would remain in its present condition and remedial measures current in place would remain and groundwater monitoring would continue as scheduled.

b. Potential Impacts

Activities associated with the construction of the FCI/FPC may require the use and storage of potentially hazardous materials (e.g., solvents, fuel oil, lubricants, etc.). To avoid potential releases of such materials into the environment, a temporary staging area would be designated at the construction site for the storage and handling of such materials. Stored materials would be removed from designated areas by authorized personnel only, and removals would be recorded by on-site personnel overseeing the construction of each institution. Liquid storage areas would have secondary containment systems in place to reduce the risk of potential spillage. The storage of hazardous materials on-site during construction would be minimized or avoided where practicable (e.g., fuel oil for construction and other equipment would be transported to the site by fuel trucks as needed).

Wastes considered hazardous that may be generated during construction would be handled, stored and disposed of in accordance with applicable regulations. The amount of waste generated during construction should have no significant impact on the ability or availability of waste handlers to collect and properly dispose of such wastes.

Operation of the proposed FCI/FPC may result in wastes consisting of spent lubricants and solvents and generally represent a small portion of the overall volume of wastes generated at a federal correctional facility. Any such wastes would be handled, stored, and disposed of in accordance with federal and other applicable regulations. In addition, the volume of hazardous wastes generated during correctional facility operation should have no significant impact on the ability or availability of waste handlers to collect and properly dispose of such wastes. Therefore, FCI/FPC operation would not result in significant adverse impacts.

- **Potential Impacts - East-1 Alternative**

As described in the Phase I ESA Report, the Recognized Environmental Conditions identified would warrant further action depending on the development site selected for the proposed new facilities. A Phase I ESA normally results in a recommendation as to whether a Phase II ESA (i.e., subsurface investigation) is necessary. In the case of the East-1 alternative, extensive subsurface investigations have already been conducted as part of larger environmental investigations and remediation on the main USP Leavenworth property. Because of the long history of on-site waste disposal, some additional subsurface investigations in advance of potential construction should be considered.

Development of the East-1 alternative would include draining and filling of the two surface water ponds on the East Site. These ponds have previously been identified as potentially hazardous waste sites on the main USP property. If contamination is identified, management and/or remediation of sediments from these ponds would likely be required by KDHE prior to the development and reuse of these portions of the East Site. Consequently, the BOP will collect sediment quality data as needed to determine the volume of potentially contaminated sediments that would require management during construction. The data would be collected by advancing a series of borings through the pond sediments and performing laboratory analysis on sediment samples for such parameters as volatile organic compounds, semi-volatile organic compounds, polychlorinated biphenyls, pesticides, metals, and total petroleum hydrocarbons.

The KDHE has indicated that it does not allow construction over "Closed Solid Waste Sites." Within Area A on the East Site, Sites 1 and 2 are considered Closed Solid Waste Sites because of historical waste disposal in this area. The concerns related to construction over a landfill site are generation of methane or other hazardous gases as well as ground subsidence. Construction could also damage clay caps constructed over these areas as a remedial measure to prevent rainwater from percolating through waste materials. The KDHE has indicated that should construction expose any wastes, these wastes must be transported to and disposed of at a KDHE-approved landfill.

The KDHE does not have any survey data reflecting physical or regulatory limits of the USP Leavenworth hazardous waste sites; there is no deed restriction or Activity and Use Limitation with an attached legal survey description. Therefore, the locations of Areas A, B and C as shown on Exhibit III-8 are approximate, as transferred from previous reports and plans.

The proposed development of the East-1 alternative includes portions of the designated hazardous waste site Area A, and therefore it would be done in coordination with the KDHE in order to address (including avoid where possible) the disturbance of buried waste materials or landfill cap areas. A program of subsurface exploration near the western and southern extent of the proposed East-1 alternative development will be conducted to determine the limits of the waste disposal areas and whether the disposal areas extend into the area planned for FCI/FPC development. Doing so is intended

to ensure no buried hazardous materials are present in the development area that would present health and safety issues during construction, or potential methane generation and vapor intrusion issues following construction.

As part of the study process the BOP is communicating and coordinating its plans with KDHE officials to ensure compliance with all applicable regulations governing the USP waste disposal areas. This includes developing a program of additional investigation that may include use of ground penetrating radar (GPR), excavation of test pits and/or drilling of borings, sediment sampling and laboratory analysis within the limits of proposed FCI/FPC development to determine whether buried waste and/or hazardous materials are present and if so, the appropriate course of action to remove or remediate the materials prior to construction.

- **Potential Impacts – East/West Composite Alternative**

Under the East/West Composite Alternative, the FCI would be developed on the East Site and the FPC would be developed on the West Site. The East/West Composite Alternative has been proposed in order to minimize potentially hazardous waste impacts on the East Site. Under the East-1 Alternative, the majority of the anticipated ground disturbances to the designated hazardous waste site Area A would be associated with the development of the new FPC adjacent to the proposed FCI.

As with the East-1 Alternative, development of the East/West Composite Alternative would require similar communication and coordination with KDHE and a program of investigation for the construction of the FCI on the East Site (even though ground disturbances to the designated hazardous waste site Area A would be to a lesser extent). Construction of the FPC on the West Site and related ground disturbances would present fewer issues with respect to waste/hazardous materials disposal since the West Site is located outside of designated waste/hazardous material areas. Under the East/West Composite Alternative, the existing FPC would be deactivated with the new FPC developed to the south and across the internal service road. In the event demolition of the existing FPC becomes necessary in the future, the BOP will determine whether the structures contain any hazardous building materials and working with KDHE, the appropriate methods for demolition and waste disposal.

Although extensive subsurface investigations conducted at the USP since 1991 have not identified any contamination issues in area of the West Site, the BOP would collect soil and groundwater data in the footprint of the proposed facilities prior to development of the West Site. Prior to gathering soil samples, a geophysical survey using GPR would be conducted within the limits of the proposed FPC footprint to determine whether buried materials are present that may hinder construction. Soil borings would also be undertaken within the proposed building footprints to collect representative soil and groundwater data for laboratory analysis to determine whether buried materials are present. If so, an appropriate course of action to remove or remediate the materials prior to construction would be developed.

- b. Recommended Mitigation**

In the event the sampling program reveals the presence of waste and/or hazardous materials exceeding acceptable limits within the preferred site, a removal/remediation plan will be proposed and reviewed and approved by KDHE prior to undertaking any earth-disturbing activities.

I. FISCAL CONSIDERATIONS

1. Existing Conditions

Fiscal considerations are those having to do with the public treasury or revenue. Potential fiscal impacts could, but do not always, include removal of property from the public tax rolls; acquisition of property through use of public funds; and other public expenditures related to a proposed action (e.g., utility connections). Fiscal considerations of Federal Government-sponsored projects or actions, such as the development of the proposed FCI/FPC in Leavenworth, are of particular interest to local governments due to the possible loss of local tax revenues since Federal Government agencies typically do not pay property taxes or make similar payments to local governments for federal institutions or facilities. In this case, the USP Leavenworth property is under federal ownership and control. These lands were removed from the tax rolls at the time they were acquired in the late 1800s and have not contributed tax revenues or similar payments since their acquisition.

2. Potential Impacts and Mitigation

a. No Action Alternative

Under the No Action Alternative, the proposed FCI/FPC would not be developed. The BOP's Leavenworth property would remain in its current condition, there would be no fiscal impacts, and mitigation measures would not be necessary.

b. Potential Impacts

The USP Leavenworth property has been in Federal Government ownership for over 100 years and exempt from tax payments. Therefore, FCI/FPC development at the USP property will result in no direct loss of tax revenue to the City of Leavenworth, Leavenworth County, or the State of Kansas. Conversely, positive fiscal impacts will result from the economic benefits derived from the facilities' construction and operational phases, as well as from multiplier effects caused by the continued economic activity provided by the new facilities and their employees. Expenditures for utility services and related expenses are recouped through payment of user charges and, therefore, have no adverse impact.

c. Recommended Mitigation

In the absence of adverse impacts, no mitigation measures are warranted.

J. VISUAL AND AESTHETIC RESOURCES

1. Existing Conditions

Locally nicknamed "The Big Top" because of its distinctive central building with an elevated domed structure, USP Leavenworth is the dominant feature within the area. Its design, known as the Auburn Federal Style, is visually unique as it characterizes one of the first designs of USPs in the early 1900s. It has been the subject of several U.S. pictorial history publications and remains a distinguishing feature that contributes to the broader landscape of the Leavenworth area.

Other dominant features include the rolling hills within the western portion of the USP Leavenworth property where a cemetery and Warden's house are located as well as the corridor of Metropolitan Avenue, which distinctively separates the BOP and U.S. Army Garrison properties from the rest of Leavenworth. Metropolitan Avenue is located directly south of the USP Leavenworth property.

Aesthetic features of the East Site are dominated by the rolling topography which is bisected by several drainageways. The riparian zones of the drainageways are lined with trees and shrubs. Two relatively large surface water features are present on the East Site: the first is located near the northern boundary of the site near the wooded area associated with Corral Creek; the second is situated near the central portion of the site.



Big Top – USP Leavenworth (August 2020)

Views of the East Site from Grant Avenue, including from Patton Junior High School, which abuts the eastern boundary of the East Site, are obstructed by the dense tree stand that parallels Grant Avenue. Views of the East Site from the south (Metropolitan Avenue) are obstructed by staff housing, the rolling topography, and vegetation while views from the north (Fort Leavenworth's Frontier Heritage Community and Bradley Elementary School) are obstructed by the riparian forest that borders Corral Creek. Despite those screenings, the sensitive viewer groups with direct line of sight to the East Site include:

- Travelers along Metropolitan Avenue. Metropolitan Avenue is publicly accessible and views towards the USP property can be seen by many people.
- Families residing in the Frontier Heritage Community and attending Bradley Elementary School and travelers along Grant Avenue have direct line of sight to the East Site. Since those two areas are within Fort Leavenworth and are not publicly-accessible, views towards the USP property are seen by fewer individuals than the above viewer group.

The West Site is fairly level and regularly maintained with the dominant features being the existing FPC and adjacent buffalo pasture. While the West Site has unobstructed views from Metropolitan Avenue and Santa Fe Trail/County Road 14, the buildings comprising the FPC and the Buffalo pasture are dwarfed by the abutting central building of USP Leavenworth and surrounding perimeter wall. Aesthetic features of the West Site are not considered unique to the area.

2. Potential Impacts and Mitigation

a. No Action Alternative

Under the No Action Alternative, the proposed FCI/FPC would not be developed. The BOP's Leavenworth property would remain in its current condition, there would be no changes to the landscape and visual environment, and mitigation measures would not be necessary.

b. Potential Impacts**• Construction Phase**

Under both the East-1 and East/West Composite alternatives, the proposed FCI would be constructed on the East Site and be the dominant visual feature on the landscape. To that end, the following discussion focuses on the potential visual impacts associated with the FCI at the East Site. By comparison, the far smaller FPC, whether located on the East Site or West Site, would be visually inconsequential as it would be dwarfed in comparison to the new FCI and the existing USP central building and its surrounding perimeter wall.

Immediately following the onset of construction, conditions within the East Site would be disrupted. Throughout the construction period, the visual and aesthetic characteristics of that portion of the USP property undergoing development would be altered by the use of construction equipment performing site preparation (clearing, excavating, grading, etc.), the delivery and stockpiling of construction materials and equipment, building construction, utility installations, etc. The duration of such impacts would extend for the period of time devoted to FCI/FPC construction which is estimated at approximately 36 months.

For approximately 12 months prior to FCI/FPC groundbreaking, utility infrastructure installations and relocations would also be undertaken. This would involve new electric substation development and relocation of overhead power lines, as well as underground (natural gas, water supply, wastewater collection, etc.) utility extensions and relocations.

• Operational Phase

Following construction, the principal visual features of the FCI would comprise the inmate housing units; administrative offices, program spaces, and support buildings; indoor and outdoor recreational facilities; internal roadways, parking areas, and pedestrian walkways; central utility plant, warehouses and other support structures; lighting fixtures, security fencing, and signage. The principal groupings associated with inmate housing, administrative structures, and support components, totaling approximately 580,000 square feet of floor area, would be organized as an overall architectural composition and would remain as permanent additions to the landscape.

The campus-style arrangement would present a visually simplified and unified structural mass or feature that would be generally compatible with the adjoining USP in terms of site arrangements and building uses. The structures comprising the FCI would be primarily low-rise (one and two stories in height) and, to the degree feasible, be designed to be unobtrusive. Visually sensitive views from nearby public roadways would be given attention during the design process. Internal roadways and parking areas would also be designed, constructed and maintained to a high standard.

FCI structures would rise one to two stories in height with security lighting fixtures rising as high as 100 feet above the ground surface. Following completion of construction, the visual and aesthetic characteristics of the eastern portion of the USP Leavenworth property (i.e., East Site) would be permanently changed from a, largely upland grassland to an intensively developed area. Depending upon one's vantage point, portions of the proposed FCI/FPC could be visible although the proposed facility would not be an unusual or unique feature in the area.

Representative Photographs – East Site

	
View towards northwest from interior of site (typical)	View towards north from interior of site (typical)
	
View towards northeast from interior of site (typical)	View towards northeast from interior of site (typical)
	
Aerial view of East Site	View of site northward from Metropolitan Avenue

WSP, August 2020.

Representative Photographs – West Site



View eastward from Santa Fe Trail/County Road 14 (USP in background)



View eastward (USP in background)



View eastward of USP Leavenworth from Metropolitan Avenue



Aerial view of West Site



View eastward from Santa Fe Trail/County Road 14 (USP in background)



View eastward from Santa Fe Trail/County Road 14 (USP in background)

WSP, August 2020.

Views to the new FCI/FPC from adjacent properties (public roadways as well as the residential community of Fort Leavenworth) will continue to be largely obstructed by either natural or man-made features. When it comes to the views to/from Fort Leavenworth (e.g., housing, schools), the densely forested area of Corral Creek will continue to provide partial and/or near complete obstruction and thus prevent significant adverse visual impacts.

Potential impacts during night-time operation of the FCI would result primarily from lighting equipment used to illuminate the secure compound, parking lots and internal access roads. Lights would be both building- and pole-mounted and would provide a minimum of 1.5 foot-candles of illumination within and immediately surrounding the grounds of the FCI. Traditional lighting standards for FCIs have involved use of 100-foot tall metal poles with high-pressure sodium and metal halide fixtures. Pole height and the mix of light sources used to illuminate the secure compound of FCIs are employed for the ability to relight the institution quickly in the event of a power outage. Similar lighting standards are not used at the FPC or nearby support areas. Following activation of the proposed FCI/FPC it will no longer be necessary to operate the security lights at the USP and existing prison camp.

Nighttime operation of the proposed FCI would be partially visible from adjoining properties and roadways and to a portion of the residential neighborhood within Fort Leavenworth (which will be the most sensitive nighttime receptors for homes facing the East Site). Nonetheless, the potential for adverse impacts would be minimized to the extent possible using the measures described below.

c. Recommended Mitigation

While visual/aesthetic impacts are anticipated as a result of the proposed project, impacts would be minimized/mitigated by implementing design features that are sensitive to the unique visual resources of the surroundings. These features include a low-rise and compact development in a campus-style arrangement with undeveloped land surrounding the facility to limit views from public roadways and adjoining properties.

It is recognized that the night sky is an important component of the visual and aesthetic environment and that security lighting used during evening operation of the FCI has the potential to have negative impacts. Correctional facilities are generally not governed by codes or standards that address light pollution. While the precise details of the lighting plan to be employed at the FCI have not yet been fully developed, BOP Technical Design Guidelines, Section 16521 - Exterior Lighting, presently incorporate many of the most effective measures to limit unwanted light. This includes use of full cutoff luminaries for all security lights which provide complete concealment of the light source above the rim of the fixture. By incorporating such fixtures, the light emitted is projected below the horizontal plane of the lowest point of the fixture resulting in maximum downlighting while minimizing upward dispersal of light to the sky. In addition to security lighting, the facility will employ typical parking lot, roadway, and pathway lighting which also includes use of full cutoff luminaries to minimize potential impacts.

To further limit potential lighting impacts, new generation LED fixtures mounted on tall metal poles are proposed for use at the FCI to provide state-of-the-art, energy-efficient illumination for the secure compound. Recent BOP experience with LED fixtures has demonstrated less light spread beyond the FCI compound than high-pressure sodium and metal halide fixtures, resulting in lower ambient light pollution levels.

The BOP has reviewed its typical security lighting system in order to identify additional measures which could be employed to further reduce potential impacts associated with security lighting. While use of full cutoff luminaries and LED fixtures would address most concerns over unwanted light, the review produced recommendations for employing during design of the lighting plan for the proposed FCI:

- Include the requirements for full cutoff fixtures for wall pack lighting in all applications.
- Use shields on luminaries in which light trespass may be an issue. Shields are not normally recommended for use at correctional facilities since spill light is beneficial to serve as transition lighting for security purposes.
- Employ low-reflectance surface materials where practical to minimize the upward reflection of light. An example of a low-reflectance surface material would be use of asphalt rather than concrete for parking areas, walkways, etc. The BOP already uses asphalt rather than concrete in areas which can function with that material.

To further mitigate visual and aesthetic impacts of the FCI/FPC, the BOP's plan incorporates an earthen berm extending the length of the staff housing units that front on Metropolitan Avenue. Such a berm would be placed to the rear of the housing units to separate and isolate the clusters of homes from the FCI/FPC development to the north and further limit views by travelers on Metropolitan Avenue. Along with the earthen berm, an 8-foot high decorative concrete barrier will encircle the planned substation to reduce views of the substation. No other mitigation measures are warranted.

K. DEMOGRAPHICS

1. Existing Conditions

In order to gauge the potential effects of a project, the current demographic characteristics of the area are first established and potential demographic changes due to the project are then identified. Potentially significant adverse impacts could result if a project would substantially alter the location, composition and distribution of the population or segment of the population within a given geographic area or cause the population to increase or decrease beyond traditional historical growth rates.

The Primary Study Area selected for analysis includes Leavenworth County, Kansas, within which the new FCI/FPC would be located, and the City of Leavenworth which is situated directly south of the USP property. With the City of Lansing adjacent to the City of Leavenworth, and because development is uninterrupted when traveling from one to the other, demographic data for Lansing are included as part of the Primary Study Area.

Information previously gathered on the place of residence of USP Leavenworth employees was used to develop the Secondary Study Area. An analysis of residential Zip Code data revealed that approximately 65 percent of employees of the USP and prison camp live in Kansas with 35 percent residing in Missouri. Of the total workforce, approximately 82 percent reside in only five counties in the vicinity of the facility. These five counties comprise the Secondary Study Area and include Platte County, Buchanan County, and Jackson County in Missouri and Wyandotte County and Leavenworth County in Kansas.

a. Primary Study Area

Between 1990 and 2000, the population of the City of Leavenworth decreased eight percent to 35,420, and continued declining, although at a much slower rate, to 35,251 in the following decade. Conversely, the population of Lansing increased significantly during both decades, while the population of Leavenworth County increased steadily, although at a slower rate, during the same period. Recently, population trends are showing modest growth with the City of Leavenworth, City of Lansing, and Leavenworth County recording increased populations between 2010 and 2019 (Table III-9).

Of Leavenworth County's 2019 population, approximately of 38,263 (46.8 percent) were female and 43,495 persons (53.2 percent) were male (Table III-10). Also, in 2019, 84.8 percent of Leavenworth County residents were White; 9.2 percent were Black or African American; 0.9 percent were American Indian; 1.5 percent were Asian; 0.2 percent were some other race; and 3.3 percent were of two or more races. Of the total population, 5,723 (7.0 percent) were Hispanic or Latino (of any race).

Table III-9: Historic Population Trends – Primary Study Area

Jurisdiction	1990	2000	% Change	2010	% Change	2019	% Change
City of Leavenworth	38,495	35,420	-8.0%	35,251	-0.5%	35,957	2.0%
City of Lansing	7,120	9,199	29.2%	11,265	22.5%	11,949	6.0%
Leavenworth County	64,371	68,691	6.7%	76,227	11.0%	81,758	7.4%

Source: U.S. Census, 1990, 2000, 2010, 2019.

Table III-10: Demographic Characteristics – Primary Study Area

Category	Leavenworth County		City of Lansing		City of Leavenworth	
	Total	% of Total	Total	% of Total	Total	% of Total
Population	81,758	100.0%	11,949	100.0%	35,957	100.0%
Female	38,263	46.8%	4,935	41.3%	16,540	46.0%
Male	43,495	53.2%	7,014	58.7%	19,417	54.0%
White	69,331	84.8%	8,460	70.8%	26,932	74.9%
Black	7,358	9.2%	1,434	12.0%	5,178	14.4%
American Indian	736	0.9%	48	0.4%	252	0.7%
Asian	1,226	1.5%	299	2.5%	611	1.7%
Other Race	164	0.2%	0	0.0%	827	2.3%
Two or More Races	2,698	3.3%	956	8.0%	2,085	5.8%
Hispanic* Origin	5,723	7.0%	1,052	8.8%	3,164	8.8%

Source: U.S. Census, 2019.

*Hispanic can be of any race.

The City of Leavenworth, the most populated community in Leavenworth County and the county seat, had a population of 35,957 in 2019 of which 16,540 (46.0 percent) were female and 19,417 (54.0 percent) were male (Table III-10). Of the city's 2019 population, 26,932 (74.9 percent) were White; 5,178 (14.4 percent) were Black or African American; 252 (0.7 percent) were American Indian; 611 (1.7 percent) were Asian; 827 (2.3 percent) were of some other race; and 2,085 (5.8 percent) were of two or more races. Approximately 3,164 (8.8 percent) were of Hispanic or Latino origin.

U.S. Census data for 2018 indicates that 5,130 persons (6.4 percent) in Leavenworth County were under the age of five; 15,828 (19.8 percent) ranged between five and 19 years of age; 10,585 (12.2 percent) ranged between 20 and 34 years of age; 22,303 (27.8 percent) were between 35 and 54 years of age; 10,272 (12.9 percent) were between 55 and 64 years of age; and 10,829 (13.5 percent) were 65 years or older (Table III-11).

Regarding age, approximately 2,883 persons (8.0 percent) in the City of Leavenworth were under the age of five; 6,933 (19.3 percent) ranged between five and 19 years of age; 7,887 (21.9 percent) ranged between 20 and 34 years of age; 9,718 (27.0 percent) were between 35 and 54 years of age; 4,331 (12.0 percent) were between 55 and 64 years of age; and 4,256 (11.8 percent) were 65 years or older

Table III-11: Age Characteristics – Primary Study Area

Age Group (years)	Leavenworth County		City of Lansing		City of Leavenworth	
	Total	% of Total	Total	% of Total	Total	% of Total
All	80,042	100%	11,835	100%	36,008	100%
< 5	5,130	6.4%	416	3.5%	2,883	8.0%
5 to 19	15,828	19.8%	2,166	18.3%	6,933	19.3%
20 to 34	10,685	12.2%	2,812	23.8%	7,887	21.9%
35 to 54	22,303	27.8%	3,725	31.5%	9,718	27.0%
55 to 64	10,272	12.9%	1,357	11.5%	4,331	12.0%
65 +	10,829	13.5%	1,359	11.5%	4,256	11.8%

Source: U.S. Census, 2018.

Approximately 28.1 percent (6,636) of the 23,648 persons 25 years of age or older in the City of Leavenworth had a high school diploma in 2018 (Table III-12). In Lansing, approximately 26.0 percent (2,144) had a high school diploma, and in Leavenworth County, approximately 28.7 percent (15,510) of the population 25 or older had a high school diploma. Of those 25 years and older residing in the City of Leavenworth, approximately 16.2 percent had a Bachelor's degree, with 18.2 percent in Leavenworth County, and 19.0 percent in Lansing having a Bachelor's degree.

Table III-12: Educational Characteristics – Primary Study Area

Category	Leavenworth County		City of Lansing		City of Leavenworth	
	Total	% of Total	Total	% of Total	Total	% of Total
Population 25 years and older	54,089	100%	8,258	100%	23,648	100%
High School graduate	15,510	28.7%	2,144	26.0%	6,636	28.1%
Associates degree	4,789	8.9%	668	8.1%	2,067	8.7%
Bachelor's degree	9,857	18.2%	1,569	19.0%	3,833	16.2%
Graduate or professional degree	7,270	13.4%	1,142	13.8%	3,542	15.0%

Source: U.S. Census, 2018.

b. Secondary Study Area

The Secondary Study Area consists of nearby counties that are more populated than other counties in eastern Kansas and western Missouri, and have the potential to attract BOP employees as permanent residents. Population data show the greatest growth occurring in Leavenworth County in Kansas and

Platte County in Missouri with a slight population decline in Buchanan County, Missouri (Table III-13). Table III-14 presents the gender and racial makeup of the population of the Secondary Study Area.

2. Potential Impacts and Mitigation

a. No Action Alternative

Under the No Action Alternative, the proposed FCI/FPC would not be developed. The BOP's Leavenworth property would remain in its current condition and there would be no changes to the BOP's workforce. Therefore, the demographic composition of Leavenworth County and its surroundings would be unaffected and mitigation measures would not be necessary.

Table III-13: Historic Population Trends – Secondary Study Area

County, State	1990	2000		2010		2019	
	Total	Total	% Change	Total	% Change	Total	% Change
Buchanan, MO	83,083	85,998	3.4%	89,408	3.8%	87,364	-2.3%
Jackson, MO	633,232	654,800	3.4%	674,158	2.9%	703,011	4.3%
Leavenworth, KS	64,371	68,691	6.7%	76,227	9.9%	81,758	7.2%
Platte, MO	57,867	73,781	27.5%	89,322	17.4%	104,418	16.9%
Wyandotte, KS	161,993	157,882	-2.5%	157,505	-0.2%	165,429	5.0%

Source: U.S. Census 1990, 2000, 2010, 2019.

Table III-14: Demographic Conditions – Secondary Study Area

Category	Buchanan (Missouri)	Jackson (Missouri)	Leavenworth (Kansas)	Platte (Missouri)	Wyandotte (Kansas)	Total
Population	88,571	700,307	81,758	102,985	165,324	1,138,945
Female	43,465	362,132	38,263	52,208	83,459	579,527
Male	45,106	338,175	43,495	50,777	81,865	559,418
White	77,057 (87.0%)	473,711 (67.6%)	69,331 (84.8%)	87,196 (84.7%)	95,143 (57.5%)	802,438 (70.5%)
Black	4,681 (5.3%)	163,281 (23.3%)	7,358 (9.2%)	7,389 (7.2%)	34,860 (21.1%)	217,569 (19.1%)
American Indian or Alaskan Native	233 (0.3%)	2,039 (0.3%)	736 (0.9%)	403 (0.4%)	618 (0.4%)	4,029 (0.4%)
Asian	756 (0.9%)	12,554 (1.8%)	1,226 (1.5%)	2,602 (2.5%)	7,957 (4.8%)	25,095 (4.5%)
Native Hawaiian and Other Pacific Islander alone	0 (0%)	2,275 (0.3%)	164 (0.02%)	209 (0.2%)	1,379 (0.8%)	4,027 (0.4%)
Other Race	1,712 (1.9%)	20,437 (2.9%)	2,698 (0.2%)	1,204 (1.2%)	18,174 (11.0%)	44,225 (3.9%)
Two or More Races	4,132 (4.7%)	26,010 (3.7%)	5,723 (3.3%)	3,982 (3.9%)	7,193 (4.4%)	47,040 (4.1%)
Hispanic* Origin	6,099 (6.9%)	63,768 (9.1%)	81,758 (7.0%)	6,369 (6.2%)	48,472 (26.6%)	206,466 (18.1%)

Source: U.S. Census, 2018.

*Hispanic can be of any race.

b. Potential Impacts**• Construction Phase**

Construction of the proposed project has the potential to attract additional residents to northeastern Kansas/western Missouri region. Any potential increase in population during the construction phase is dependent on the duration of construction, the number of construction jobs created, and the ability of the local labor market to fill those positions.

With both a large population base and a large construction workforce available in northeastern Kansas/western Missouri, most construction jobs are expected to be filled by residents of the region with a small percentage, primarily managerial and supervisory positions, would likely be filled by individuals from outside this region. Those managerial and supervisory personnel assigned by the construction contractors to oversee development would relocate to the Leavenworth County area to work at the project site. Persons filling these positions would likely remain temporarily because of the limited period devoted to construction of the institution (estimated at 36 months). Given the nature of the managerial and supervisory positions, these individuals are typically transferred to subsequent projects elsewhere following completion of construction and, as a result, family members are less likely to permanently relocate to each new project site.

During construction, a small contingent of BOP staff (typically four employees representing the Procurement/Property Branch and the Construction/Environmental Branch) would also be assigned to Leavenworth to observe and monitor project development, periodically meet with contractors, review construction progress, process payments, and carry out similar administrative functions. Following completion of construction, these employees would be assigned to other project locations or return to their original offices. Given that, population impacts directly attributable to the FCI/FPC construction phase would be temporary and minimal.

With FCI/FPC construction confined to the USP Leavenworth property, no sensitive population groups, (i.e., children, minorities, low income, seniors) would be displaced, relocated or otherwise adversely affected during this phase. Instead, FCI/FPC construction is expected to support population retention due to increased economic activity and employment opportunities. Taken together, population impacts directly attributable to the FCI/FPC construction phase would be minimal.

Induced Population Impacts During the Construction Phase: The FCI/FPC construction phase is expected to lead to the creation of temporary employment from both the direct hiring of construction workers along with the spin-off (“multiplier effects”) of construction payrolls and material and supply purchases. These impacts would last only for the duration of construction (12 months for utility infrastructure extensions and relocations and an additional 36 months for FCI/FPC development). A review of data concerning working age populations, labor forces, unemployment rates, and educational attainment suggests that there is an adequate labor pool within the Kansas City metropolitan region to support this secondary growth with any resulting induced population impacts expected to benefit the region as a whole.

• Operational Phase

Induced Population Impacts During the Operational Phase: With the complement of BOP staff to be transferred from the existing USP and FPC to the new FCI/FPC, the operational phase is not expected to

result in induced population impacts although the continuation of BOP employment in Leavenworth is expected to aid with population retention. A review of data concerning working age populations, labor forces, unemployment rates, and educational attainment suggests that there is an adequate labor pool within the Kansas City metropolitan area to support any lasting induced population impacts to the benefit of the region.

Addition of Federal Inmates to the Resident Population: Federal inmates are currently considered to be residents of the area in which they are housed and are counted as such by the U.S. Census Bureau at the time of the decennial census. Therefore, federal inmates, when housed within a local jurisdiction during the decennial census, can act to increase a host community's population (which may benefit the host community in some state and federal aid programs) without consuming any housing or increasing the burden on community services. With the proposed project located within Leavenworth County, any benefits which may result from having federal inmates housed in the county and included among its total population would be governed by state and federal laws and the requirements and regulations of particular population-based aid programs.

Available evidence indicates that federal inmates and their dependents generally do not relocate to the area of incarceration upon release, choosing instead to return to their home communities. Federal inmates are also not released to the host community at the completion of their sentence. Therefore, the direct impact of federal inmates on a host community population would be limited to the number housed in the facility which, in the case of the proposed FCI/FPC, would total approximately 1,408 inmates.

c. Recommended Mitigation

With construction lasting approximately 36 months, permanent population impacts attributable to FCI/FPC development would be minimal and no mitigation is warranted. Following construction, BOP staff will be transferred to the new FCI/FPC at which time the USP and prison camp will permanently cease housing inmates while a transition study is conducted of a possible future USP use or mission. With no adverse impacts to local and regional populations, no mitigation measures are warranted.

L. ECONOMIC CHARACTERISTICS

1. Existing Conditions

According to U.S. Department of Labor, Local Area Unemployment Statistics, the labor force available in the City of Leavenworth in 2018 totaled 14,243 individuals with the labor force available in the county totaled 35,062 (Table III-15). The unemployment rate in 2018 was approximately the same in the city (4.1 percent) as in the county (4.4 percent). According to U.S. Census, American Community Survey estimates for 2018, the largest percentage of those employed in the City of Leavenworth had jobs in educational services, health care and social assistance (26.1 percent) followed by public administration (16.8 percent) and retail trade (12.1 percent). For Leavenworth County, 24.6 percent of those employed had jobs in educational services, health care and social assistance, while 12.6 percent had jobs in retail trade and 11.7 percent in public administration (Table III-16).

Table III-15: Labor Force Data

Category	City of Leavenworth	Leavenworth County
Civilian labor force	14,243	35,062
Employed	13,661	32,264
Unemployed	582	2,798
Percent Unemployed	4.1%	4.4%

Source: U.S. Department of Labor, 2018.

Leavenworth County ranks below the national average for per capita income but above the national average for median household income. According to the U.S. Census, per capita income in Leavenworth County in 2018 was \$31,639 compared with \$31,456 in Kansas and \$53,820 for the U.S. However, the median household income for Leavenworth County in 2018 was \$71,184 compared with \$58,218 in Kansas and \$61,937 for the U.S. Per capita income in the City of Leavenworth in 2018 was \$26,283 and the median household income was \$58,989. Leavenworth County and the City of Leavenworth had a smaller percentage of its population with incomes below the poverty line than the nation as a whole in 2018 with 9.1 percent of the county's population and 14.6 percent of the City's population having incomes below the poverty line compared to 11.8 percent for the nation.

Table III-16: Principal Employment Sectors

Category	City of Leavenworth		Leavenworth County	
	Total	% of Total	Total	% of Total
Civilian employed population 16 years and over	13,859	100%	35,062	100%
Agriculture, forestry, fishing and hunting, and mining	61	0.4%	67	0.2%
Construction	812	5.9%	3,361	9.6%
Manufacturing	825	6.0%	2,593	7.4%
Wholesale trade	258	1.9%	618	1.8%
Retail trade	1,683	12.1%	4,416	12.6%
Transportation and warehousing, and utilities	542	3.9%	1,595	4.5%
Information	130	0.9%	384	1.1%
Finance and insurance, and real estate and rental and leasing	554	4.0%	1,436	4.1%
Professional, scientific, and management, and administrative and waste management services	1,015	7.3%	2,314	6.6%
Educational services, and health care and social assistance	3,624	26.1%	8,636	24.6%
Arts, entertainment, and recreation, and accommodation and food services	1,552	11.2%	3,821	10.9%
Other services, except public administration	478	3.4%	1,717	4.9%
Public administration	2,325	16.8%	4,104	11.7%

Source: U.S. Census, 2018.

2. Potential Impacts and Mitigation

a. No Action Alternative

Under the No Action Alternative, the proposed FCI/FPC would not be developed. The BOP's Leavenworth property would remain in its current condition, any potential impacts to the local and regional economy resulting from construction and operation of the proposed FCI/FPC would not occur, and mitigation measures would not be warranted.

b. Potential Economic Impacts

Development of the proposed FCI/FPC would stimulate the local and regional economy during both the construction and operational phases. Economic impacts would result from material purchases in the region generating local sales, from construction and operational payrolls for labor on- and off-site, and from related spending by supplying firms and laborers ("multiplier effects"). The economic impacts associated with the construction phase would occur for only the period of time while actual construction is underway, while economic activity generated during the operational phase would continue throughout the life of the new institution. Three types of economic impacts would result from the development of the proposed project:

- **Direct Impact.** The direct impact is defined as the initial change in final demand in which expenditures are made for materials and labor in the region. The direct impact to the region due to the construction or operation and maintenance is attributable to the local purchase of needed materials and services and the expenditure of project payroll by construction laborers or the permanent workforce.
- **Indirect Impact.** The initial direct expenditure impacts prompt further "indirect" economic activity by supplying industries that furnish requisite input materials and services to the industries directly involved in construction or the vendors supplying goods and services to the facility during permanent operation. These indirect impacts reflect the intermediate production or increased economic activity to supply services, materials, and machinery necessary to support the construction program.
- **Induced Impact.** The labor force would re-spend a significant portion of their salary and wage earnings on various consumer expenditures, producing an "induced" effect. The induced impact is the effect of increased consumer spending by salary and wage earners in the study industry and other supporting industries. The induced impact is conservatively estimated downward by accounting for potential "leakages" due to taxation, savings, and non-local re-spending.

The successive rounds of economic activity stimulated by the expenditure of funds during construction is the ripple or "multiplier effect" and can account for a significant portion of the total regional economic impact. Together, the indirect and induced impacts constitute the multiplier effect – the extent to which the direct impact results in additional economic activity. Expressed numerically, a multiplier of 1.50 indicates that for every \$1.0 directly generated by the industry under study, an additional \$0.50 of ripple effects are experienced within the local region, for a total impact of \$1.50.

It is assumed that impacts of material purchases during construction and operation of the proposed FCI/FPC would occur primarily within the Kansas City metropolitan region, since workers are anticipated to be largely drawn from within these counties and commute to the proposed project site. Based on a review of U.S. Bureau of Labor Statistics data, there were approximately 33,000 employed construction workers residing within the Kansas City Metropolitan Area in 2011 which grew to approximately 54,800 employed construction workers by June 2019 and to 57,800 workers by June 2020.

c. Potential Economic Impacts During the Construction Phase

In determining the potential economic impacts of FCI/FPC construction, the following assumptions are made:

- A project budget of approximately \$356 million to be largely expended over the 36 months of FCI/FPC development; and
- A project budget divided between labor payroll (43 percent), materials and services (52 percent), and contingency, indirect business taxes, and profits (five percent).

The allocations were developed based on comparable BOP correctional facility development projects. Expenditures during the construction phase can be divided into three major elements: payroll; materials and services; and contingency, taxes and profits. Assuming average annual wages and benefits of \$100,000 for each member of the construction workforce, the FCI/FPC project is estimated to directly support approximately 510 construction-related jobs annually over a 36-month period, although a portion of these jobs are anticipated to be provided by workers permanently residing outside the Kansas City Metropolitan Area who commute to the project site. The proposed FCI/FPC is also estimated to generate total industry sales for construction materials, subcontractors, and other goods and services of approximately \$185 million. Construction payroll expenses are estimated to be approximately \$153 million with the remaining \$18 million devoted to contingency, indirect business taxes, and profits.

d. Potential Economic Impacts During Operation

As noted earlier, once development is completed and the new facilities are activated, inmates housed at the USP and FPC will be transferred to the new FCI/FPC along with the complement of correctional officers and other staff at which time the existing USP and FPC will be deactivated. As a result, little to no net increase in inmate populations or BOP staff are anticipated. Potential impacts on the local economy during FCI/FPC operation are the result of the continuation of direct labor payments as well as expenditures on materials and services, utilities, food purchases, and other necessities. Estimates of the operating employment and output have been made after reviewing budgets for similar operating federal correctional facilities, future staffing requirements, and the estimated number and security levels of inmates to be housed at the proposed FCI/FPC:

- An annual operating budget of approximately \$40 million (2020 dollars) based on operation of other federal correctional facilities of similar function, size, and security levels;
- An annual payroll of approximately \$27.8 million (2020 dollars). Take home wages would constitute approximately 70 percent of the total payroll, with deductions for federal, state and local taxes, social security, as well as other employee benefits; and

- Annual expenditures totaling approximately \$12.2 million (2020 dollars) for health care, food, utilities, equipment, and other goods and services necessary for operation.

Annual FCI/FPC operations and maintenance activities will directly support the continued employment of the approximately 338 BOP staff currently operating the USP and FPC while injecting over \$12 million annually for materials and services into the local economy. In addition, local multiplier effects associated with these direct expenditures are expected to continue supporting additional local sales each year, indirectly supporting additional private-sector jobs.

e. Recommended Mitigation

In considering development of the proposed FCI/FPC, attention was given to local employment and economic goals and objectives. Such an evaluation has revealed a project consistent and compatible with those goals and objectives as expressed by elected officials and community leaders representing the City of Leavenworth and Leavenworth County. Development of the FCI/FPC would be consistent with the goals of local planning and economic development officials to maintain current employment while seeking new opportunities, maintain current levels of economic activity while stimulating new economic activities in the area, and to direct such activities toward areas served by or near existing infrastructure.

Comments and input from local planning and economic development officials during preparation of this and earlier documents have firmly established the importance of the proposed FCI/FPC to achieving the social and economic development goals of the city and county. The financial impacts of the proposed project are considered beneficial to the economic health and well-being of the northeastern Kansas/western Missouri region by continuing the employment and economic opportunities to residents and business owners available from the federal correctional facilities. In the absence of adverse impacts, no mitigation measures are warranted.

M. HOUSING CHARACTERISTICS

Impacts to the housing market could be expected if a project would substantially alter the supply of housing, either by reducing the number of housing units or increasing the population above the capacity of the available housing stock. The study area for housing is defined as the immediate vicinity of the proposed project – the cities of Leavenworth and Lansing and Leavenworth County.

1. Existing Conditions

According to the 2018 U.S. Census there were 29,998 housing units in Leavenworth County and of this total, approximately 26,654 units (88.9 percent) were occupied and 3,330 units (11.1 percent) were vacant (Table III-17). In the cities of Leavenworth and Lansing, there were a total of 17,456 housing units of which 15,730 (90.1 percent) were occupied and 1,726 (9.9 percent) were vacant. Of the occupied units in the two communities, approximately 8,673 (49.7 percent) were owner-occupied and 7,057 (40.4 percent) were renter-occupied. The City of Leavenworth in 2018 had the highest percentage of vacant units, accounting for 1,460 units (10.5 percent) while Lansing had 266 vacant housing units. In the City of Leavenworth, the median value of individual housing units in 2018 was estimated to be \$120,900 and the median monthly gross rent (with utilities) was estimated to be \$976 with both figures higher in Lansing.

Table III-17: Housing Characteristics

Category	Leavenworth County		City of Lansing		City of Leavenworth	
	Total	% of Total	Total	% of Total	Total	% of Total
Housing Units (total)	29,998	100%	3,556	100%	13,900	100%
Occupied Units	26,654	88.9%	3,290	92.5%	12,440	89.5%
Vacant Units	3,330	11.1%	266	7.5%	1,460	10.5%
Owner-Occupied Units	17,245	64.7%	2,385	72.5%	6,288	50.5%
Renter-Occupied Units	9,409	35.3%	905	27.5%	6,152	49.5%
Median Year Built	1978	-	1987	-	1966	-
Median Monthly Gross Rent*	\$968	-	\$1,074	-	\$976	-
Median Value**	\$196,000	-	\$173,600	-	\$120,900	-

Source: U.S. Census, 2018.

*Renter-Occupied Units

** Owner-Occupied Units

Approximately 77.2 percent of the housing units in Leavenworth County were single-family detached units. In Lansing, a higher percentage (79.4 percent) was single-family detached units, while the City of Leavenworth has a lower (67.6 percent) percentage of single-family detached units (Table III-18). The highest percentage of mobile homes was found in Lansing while a higher percentage of multi-family housing units were found in the City of Leavenworth. In addition, the housing stock in the City of Leavenworth is, on average, older than in Lansing and Leavenworth County as a whole.

In addition to the private housing market, 17 single-family detached housing units are located on the USP Leavenworth property for exclusive use by BOP employees under a rental agreement. These units are largely situated in small clusters north of Metropolitan Avenue and east of the USP in the area between North 9th Street and North 11th Street.

Table III-18: Units in Structures

Units in Structure	Leavenworth County		City of Lansing		City of Leavenworth	
	Total	% of Total	Total	% of Total	Total	% of Total
Total Housing Units	28,560	100%	3,556	100%	13,900	100%
Single-Family Detached	22,807	77.2%	2,824	79.4%	9,401	67.6%
Duplex	2,177	7.4%	127	3.6%	1,577	11.3%
2 Units	897	3.0%	43	1.2%	632	4.5%
3 or 4 Units	1,112	3.8%	43	1.2%	708	5.1%
5 to 9 Units	1,090	3.7%	235	6.6%	749	5.4%
10 to 19 Units	405	1.4%	59	1.7%	346	2.5%
20 to More Units	557	1.9%	109	3.1%	400	2.9%
Mobile Home	508	1.7%	116	3.3%	80	0.6%

Source: U.S. Census, 2018.

2. Potential Impacts and Mitigation

a. No Action Alternative

Under the No Action Alternative, the proposed FCI/FPC would not be developed. The BOP's Leavenworth property would remain in its current condition, there would be no impacts to the local and regional housing markets, and the supply, availability, and cost of housing would not be affected. No mitigation would be necessary.

b. Potential Impacts

As noted earlier, a small contingent of BOP staff (typically four employees) would be assigned to Leavenworth during FCI/FPC construction to observe and monitor project development, periodically meet with contractors, review construction progress, process payments, and carry out similar administrative functions. Following completion of construction, these employees would be assigned to other project locations or return to their original offices.

Once activated, inmates housed at the USP and FPC will be transferred to the new facilities along with BOP staff at which time the USP and prison camp will permanently cease housing inmates. Current BOP employees at the USP and FPC are already residents of the northeastern Kansas/western Missouri area with virtually no new employees and family members expected to relocate into the area as a result of FCI/FPC operation. In addition, all single-family housing units owned by the BOP and occupied by BOP employees, are expected to remain with no need to vacate, demolish, or otherwise alter any to accommodate FCI/FPC development.

According to the 2018 U.S. Census, there were 3,330 vacant housing units in Leavenworth County with 1,460 vacant units in the City of Leavenworth and 266 vacant units in Lansing. Given the number of vacant housing units in Leavenworth County and the surrounding region, there is a sufficient supply of housing to meet future needs in the event current or future BOP employees and their families wish to relocate within the study area during the normal course of their employment.

c. Recommended Mitigation

The supply of vacant housing should easily accommodate any demands resulting from the very few and temporary BOP employees (estimated at four) involved in FCI/FPC construction. Operation of the proposed FCI/FPC is expected to continue to employ approximately 338 workers with none requiring relocation within or outside the Leavenworth County area. As a result, there would be no significant adverse impacts to the local and regional housing markets, the supply, availability and cost of housing would not be affected, and no mitigation would be necessary.

N. COMMUNITY SERVICES AND FACILITIES

1. Existing Conditions

a. Law Enforcement

The Leavenworth Police Department is responsible for law enforcement in the City of Leavenworth. With its headquarters located at 601 South 3rd Street in Leavenworth, Department resources are located only two miles from the project site. The Department is organized around three divisions: Police Operations, Investigations, and Support Services. The Operations Division provides comprehensive police service to the community and is comprised of patrol officers, traffic officers, the SWAT Team and K-9. The Investigations Division consists of Detective and Narcotic Units with detectives specializing in areas of crime such as property crimes, person crimes, child crimes, among others. The Support Services Division enhances the scope of services provided to the community and includes dispatchers, Animal Control, Records, Court, and Evidence staff. The Department maintains a force of 54 officers and has mutual aid agreements with the BOP and USP Leavenworth.

Law enforcement within Leavenworth County is provided by the Leavenworth County Sheriff's Office which is organized around three bureaus: Operations, Administrative, and Detention. The Sheriff's Department maintains detective services, jail operations and patrol divisions with a total force of over 100 personnel and a fleet of over 30 vehicles, including the recent addition of four-wheel drive pickup trucks. Specialty areas include Tactical Assistance Group, Bomb Unit, Incident Command, and Honor Guard. Recently, the Leavenworth County Sheriff's Office increased the number of deputies in its patrol division. Patrol deputies are responsible for law enforcement activities, traffic enforcement, investigations, assisting other law enforcement agencies, service of court papers, and other duties relating to public safety and service. This increase is intended to help provide additional patrol coverage in the county which encompasses 469 square miles.

b. Fire Protection

Fire protection service for residents and businesses within the City of Leavenworth is provided by the Leavenworth Fire Department. The Department maintains three station locations: Station 1, serving as the department headquarters, is located at 3600 S. 20th Street, in the southern part of Leavenworth, approximately five miles from the project site; Station 2 is located at 925 Shawnee Street at the intersection of S. 10th Street and Shawnee Street, less than one mile south of the project site; and Station 3, located at 2805 2nd Avenue, approximately four miles south of the project site.

The Leavenworth Fire Department, with approximately 55 personnel, provides fire control and suppression services, emergency medical services, vehicle extrication, hazardous materials response, high-angle rescue and water rescue. The Department maintains four engines (pumpers), a rescue truck and rescue boat, an aerial truck, a hazardous materials response trailer, a four-wheel-drive truck and a special piece of fire-fighting equipment (a quint) that serves five functions: pumper, water tank, fire hose, aerial device, and ground ladders. Fire protection services are also available at Fort Leavenworth.

c. Emergency Response

Leavenworth County Emergency Medical Service (EMS) provides advanced life support ambulance service throughout the county. The Leavenworth County EMS provides both emergency (911) and non-emergency services to the community and responds to an average of 15 calls per day. Leavenworth County EMS currently operates eight ambulances, six PAR vehicles, and one mass casualty trailer and is staffed 24 hours a day. The service also maintains four stations, two in Leavenworth, one in Tonganoxie, and one in Basehor, which helps decrease the response time for emergency calls. The Leavenworth County EMS also has a special operations team (Tactical Emergency Medical Services) which consists of paramedics specially trained in tactical medicine.

d. Medical Services

The greater metropolitan area of Kansas City has numerous hospitals within 20 to 40 miles of the project site including the Truman Medical Center, Saint Luke's Health System, University of Kansas Medical Center, Providence Medical Center, North Kansas City Hospital, Saint Joseph Medical Center, Olathe Medical Center among others. These facilities offer a wide array of services. Several facilities specialize in care and treatment of children, while others specialize in behavioral medicine.

Saint Luke's Cushing Hospital, located at 711 Marshall Street in Leavenworth, serves Leavenworth County. The general medical and surgical hospital, located approximately 2.5 miles from the project site, maintains 68 beds. Services available include cardiac rehabilitation, emergency services, imaging and radiology (CT scanner, Cardio-scan, echocardiography, mammography, ultrasound, and x-ray), and laboratory. The hospital employs five full-time and three part-time licensed practical nurses, and 47 full-time and 43 part-time registered nurses and supports an emergency room. Until its planned closure in late 2020, Cushing Memorial Hospital is the community hospital in Leavenworth and the primary health care facility serving residents of the City of Leavenworth. In addition, Saint John Hospital and the U.S. Department of Veterans Affairs operate two medical centers located in the southeast part of Leavenworth, off South 4th Street, approximately five miles south of USP Leavenworth.

e. Public Education

Public education in Leavenworth County is provided by six school districts: Basehor-Linwood (Unified School District 458 [USD 458]), Easton (USD 449), Fort Leavenworth (USD 207), Lansing (USD 469), Leavenworth (USD 453) and Tonganoxie (USD 464). The Basehor-Linwood USD operates three elementary schools, one intermediate school, one middle school, one high school, and a virtual school while the Easton USD operates two elementary schools, one middle school and one high school. Fort Leavenworth USD operates three elementary schools and one junior high school, the Lansing USD operates one elementary school, one intermediate school, one middle school, and one high school, and the Tonganoxie USD operates one elementary school, one middle school and one high school.

The Leavenworth USD operates four elementary schools (Anthony Elementary School; David Brewer Elementary School; Henry Leavenworth Elementary School; and Earl Lawson Elementary School), one middle school (Richard Warren Middle School), one high school (Leavenworth High School), and one virtual school. Enrollment during the 2019-2020 school year totaled 1,690 students among the elementary schools, 735 students in the middle schools, 1,333 students in the high school, and 85 enrolled in virtual school. Student enrollment and school capacity figures for the Leavenworth USD

indicate that elementary and middle schools are over capacity while Leavenworth High School has capacity for additional students (Table III-19).

The Leavenworth USD employed 232 certified staff members with 66 percent of the teachers holding advanced degrees and a support staff of approximately 303. The Leavenworth USD decreased per student expenditures from \$13,447 in 2017-2018 to \$13,006 in 2018-2019 but increased expenditures substantially to \$16,347 per student in 2019-2020.

Table III-19: Leavenworth USD Public Schools – Enrollment and Capacity

Public Schools	2019-2020 Enrollment	Capacity	Percent of Capacity	Excess Capacity
Elementary Schools	1,690	1,632	104%	-58
Middle/Intermediate	735	552	133%	-183
High School	1,333	1,484	90%	153

Source: Leavenworth Unified School District, 2020.

Information from other districts indicated that the Lansing USD is currently at capacity with an enrollment of 2,573 students reported for 2019-2020 school year. The Basehor-Linwood USD is almost at capacity; however, two new elementary schools are under construction and when completed will add capacity for the foreseeable future. However, Basehor-Linwood is anticipating increases in high school enrollment with potential future capacity issues for the high school. The 2019-2020 enrollment for the Easton USD was 657 students (Easton USD accepts out-of-district students if in-district students do not fill all available seats). The Tonganoxie USD is currently at capacity in its middle schools and high school and following development of a new elementary school in 2014, the USD is now under capacity with 890 students enrolled in the new school with a capacity of 1,100. Lansing USD is currently under capacity at all elementary, middle, and high schools; however, in order to add students, the district would need to also add teachers. The Fort Leavenworth USD admits students from Fort Leavenworth (including students living in BOP housing at USP Leavenworth), but does not admit students living outside the base. Capacity and enrollment for the Fort Leavenworth USD schools are not considered in this evaluation.

2. Potential Impacts and Mitigation

a. No Action Alternative

Under the No Action Alternative, the proposed FCI/FPC would not be developed. The BOP's Leavenworth property would remain in its current condition, law enforcement, public schools, medical care, and fire protection services would not be affected, and mitigation measures would not be necessary.

b. Potential Impacts – Construction Phase – Law Enforcement

Law enforcement in Leavenworth County is the responsibility of the Leavenworth County Sheriff's Office and various municipal police departments including the Leavenworth Police Department. Responses from the County Sheriff's Office and the Leavenworth Police Department are dispatched through a central 911 system. Individually and together, these law enforcement agencies provide ample police

protection and coverage throughout the area (although the BOP maintains responsibility for overall security of its facilities and grounds at USP Leavenworth and all its institutions).

During construction of the proposed FCI/FPC, safety fencing would surround the construction site and security would be provided by the contractor, however, with the proposed development located on USP property, the BOP has ultimate responsibility for overall security. Public roadways leading to and from USP Leavenworth and the construction site would remain open, accessible, and available for law enforcement patrols throughout the construction period. There is no reason to expect that FCI/FPC construction activities would place an undue burden upon law enforcement agencies serving the residents, businesses, and public institutions in the city and county. Significant adverse impacts to law enforcement services are not anticipated during FCI/FPC construction.

c. Potential Impacts – Operational Phase – Law Enforcement

The BOP relies upon a well-trained and well-equipped workforce to ensure the overall functioning and security of its institutions and to handle virtually all emergency situations which may arise. It is also the responsibility of the United States Marshals Service and the Federal Bureau of Investigation to assist the BOP, if necessary, in the event a federal inmate is reported missing (a rare and unusual occurrence). The BOP would also advise local law enforcement agencies of such situations and would seek their assistance and cooperation as necessary. As described earlier, once the FCI/FPC are constructed and activated, inmates housed at the USP and prison camp will be transferred to the new facilities at which time the USP and prison camp will permanently cease housing inmates.

From BOP experience operating similar facilities, the mere presence of a federal correctional facility does not result in an increase local crime rates within the host community. Rather, the presence of federal correctional officers working and residing in communities surrounding a BOP facility often provides added support in such areas. Based on over 100 years of experience operating USP Leavenworth, along with over 100 other correctional facilities around the country, significant adverse impacts to law enforcement agencies and services serving the Leavenworth County region are not expected to occur as a result of the proposed project.

d. Recommended Mitigation – Law Enforcement

Significant adverse impacts to law enforcement capabilities and resources are not anticipated as a result of construction and operation of the proposed FCI/FPC. Consequently, no mitigation measures, outside of the need to coordinate and communicate project construction and operating activities with local, county, and state law enforcement agencies as necessary, would be warranted.

e. Potential Impacts – Construction Phase – Fire Protection

Fire protection service to the residents and businesses in Leavenworth is provided by the Leavenworth Fire Department. Department officials estimate the response time to the project site to be approximately five minutes from the time an emergency call is received. During construction of the proposed FCI/FPC, the health and safety of the workforce and the security of the construction site would be the responsibility of the construction contractor which would implement safety measures to protect against injuries, fires and similar emergencies. Public roadways leading to and from the USP property and project site would not be affected by construction activities and would remain open, accessible, and available for emergency response throughout the construction period. Construction activities are not

expected to adversely affect fire protection services in the area of the project site or place an undue burden upon the Leavenworth Fire Department.

f. Potential Impacts – Operational Phase – Fire Protection

The BOP undertakes stringent precautions to guard against fire emergencies during operation of its facilities. Among the precautions are those involving policies and procedures; inspections, fire prevention, control and evacuation planning; and emergency drills as described below.

- **Policies and Procedures**

The design and construction of new federal correctional facilities comply with the most current edition of applicable fire safety codes, standards and regulations of the National Fire Protection Association, Occupational Safety and Health Act, and mandatory standards of the American Correctional Association, American Society for Testing and Materials, American National Standards Institute, and Factory Mutual Engineering Corporation.

- **Inspections**

Fire and safety inspections are conducted regularly by qualified BOP staff. Written reports of the inspections are typically forwarded to the Warden for review and corrective action, if needed. The inspection reports and documentation of corrective actions taken are maintained in the Safety Office for review by appropriate officials. In addition, a complete review of the institution's fire/safety program is conducted by the Safety Branch of the BOP's Program Review Division on a two-year interval. During the off-year, the Regional Safety Administrator conducts a review with inspections by other agencies, such as local or state fire officials, also permitted.

- **Fire Prevention, Control, and Evacuation Plan**

Each federal correctional facility develops and maintains a fire prevention, control and evacuation plan which includes the following:

- Provision of adequate fire protection service.
- Quarterly testing of fire equipment and monthly fire inspections.
- Proper placement of fire protection equipment throughout the institution.
- The location of building/room floor plans and publicly posted plans, and the use of fire exit signs and directional arrows for traffic flow. The plan is issued to the local fire department along with each revision.
- All areas of the institution have an individual exit diagram posted in a conspicuous location.

- **Emergency Fire Drills**

Emergency fire drills are conducted and documented regularly from all institutions by BOP staff. Drills are conducted in all areas occupied or manned during normal working hours and are rotated in order to conduct a drill on every shift annually. Along with a general area diagram, exit diagrams are also installed, depicting (in English and Spanish languages) areas of safe refuge, "You are here" points of reference, and emergency equipment locations. In addition, use of portable space heaters is prohibited in BOP institutions.

The BOP proposes to continue its relationships for emergency back-up fire protection through mutual aid agreements for such assistance as needs may arise. There is no reason to expect such situations would place an undue burden upon outside resources or agencies or result in a significant adverse impact to the Leavenworth Fire Department, Fort Leavenworth, or other area fire departments. As described earlier, once the FCI/FPC is constructed and activated, inmates will be transferred to the new facilities, which will be designed and constructed to current codes, at which time the USP and prison camp will permanently cease housing inmates.

g. Recommended Mitigation – Fire Protection

Because the potential impacts to fire protection services resulting from FCI/FPC development and operation would not result in significant adverse impacts, no mitigating measures, outside the need to coordinate project design, construction, and operation with the appropriate fire protection agencies, would be warranted.

h. Potential Impacts – Construction Phase – Medical Services

During FCI/FPC construction, the health and safety of the workforce would be the responsibility of the construction contractor which would implement safety measures to protect against accidents and similar emergencies. Public roadways would remain accessible to emergency vehicles during construction and would be available for emergency response. There is no reason to expect that injuries and accidents which may occur during construction would adversely affect emergency medical services and health care facilities or place an undue burden upon medical responders or health care providers operating in the Leavenworth County area.

i. Potential Impacts – Operational Phase – Medical Services

USP Leavenworth maintains its own on-site medical staff and equipment to provide inmates with routine examinations and medical care. In addition to on-site resources, the BOP operates Federal Medical Centers in North Carolina, Massachusetts, Minnesota, Kentucky, Missouri and Texas which serve most non-emergency medical needs of inmates within the BOP's custody. In order to provide inmate health care services, the proposed FCI would include a medical clinic for general examination and treatment, including an in-patient suite and a dental clinic.

Instances where outside medical assistance would be required to treat FCI/FPC inmates are anticipated to be minimal and would be addressed in the same manner as with the USP and other operating BOP correctional institutions; via contracts with area medical facilities for such assistance. The BOP would continue to contract for local emergency ambulance service in cases which require an inmate to be transported from the FCI or FPC to area medical facilities.

With the transfer of inmates from the USP to the FCI and by maintaining a relatively equivalent inmate population, there is no reason to expect that situations requiring outside medical assistance would place an undue burden upon medical facilities or health care providers operating in Leavenworth County and the northeastern Kansas/western Missouri region during operation of the proposed FCI/FPC. With the transfer of BOP staff from the existing to the new facilities and by maintaining a relatively equivalent level of staffing, existing health care facilities and providers would also be capable of continuing to serve the medical needs of staff members and their families. No significant adverse impacts to area medical services and facilities are anticipated as a result of FCI/FPC operation.

j. Recommended Mitigation – Medical Services

With an on-site medical staff and clinic planned at the proposed FCI, the availability of BOP-run Federal Medical Centers, and other nearby public and private medical facilities, no significant adverse impacts to area emergency medical services and health care facilities are anticipated. In the absence of significant adverse impacts, no mitigation measures would be warranted.

k. Potential Impacts – Construction Phase – Public Education

During construction of the proposed FCI/FPC, a small contingent of BOP staff (approximately four employees) will be assigned to Leavenworth to observe and monitor project development, periodically meet with contractors, review construction progress, process payments, and carry out similar administrative functions. Following completion of construction, these employees will be assigned to other project locations or return to their original office(s). With the small number of BOP employees assigned to the construction phase (and their family members), no significant adverse impacts to area public school systems are anticipated.

l. Potential Impacts – Operational Phase – Public Education

Once the new facilities are activated, inmates housed at the USP and prison camp will be transferred to the new facilities along with correctional officers and other staff thereby continuing to employ approximately 338 workers. Most of the current employees at the USP and FPC are already residents of the primary and secondary study areas and virtually no new employees and family members (and school-age children) are expected to permanently relocate into the area as a result of FCI/FPC operation. With no significant change in the number of school-age children to result from operation of the proposed facility, no significant adverse impacts to area public school systems are anticipated.

m. Recommended Mitigation – Public Education

Because no change (increase or decrease) in the number of school-age students is expected as a result of the proposed project, no significant adverse impacts are expected, and no mitigating measures are warranted.

O. LAND USE**1. Existing Conditions**

According to the Leavenworth Comprehensive Land Use Plan (2010), the city totals approximately 10,990 acres with the predominant uses shown below:

- Agricultural – 3,553 acres or 32.3 percent of the total area
- Commercial – 1,764 acres or 16.1 percent of the total area
- Single-family residential – 1,373 acres or 12.5 percent of the total area

Remaining uses include primarily parks, schools, houses of worship, and industrial uses. The City of Leavenworth's land use pattern is unique in some respects as a result of the large percentage of federally-owned land (approximately 6,790 acres). USP Leavenworth and U.S. Army's Fort Leavenworth

(both federal properties) lie north of the city's downtown business district and just outside the city limits which extends to Metropolitan Avenue and approximately 35 miles northwest of Kansas City.

In 1895, Congress transferred the military prison at Fort Leavenworth to the U.S. Department of Justice and when the War Department objected, Congress authorized 1,000 acres adjacent to the military prison for construction of a new penitentiary to house approximately 1,200 inmates. Opened in 1906, USP Leavenworth was among the first federal correctional facilities in the nation and in 1957, the minimum-security FPC was constructed immediately west of the USP. Since 1906, other USP support structures have been developed including various UNICOR facilities, warehouses and maintenance buildings, and parking areas as well as a Visitors Center in 1991. In 2006, USP Leavenworth transitioned from high-security to medium-security to accommodate the growth in the medium-security inmate population. This transition was also part of the BOP's long-range plan to utilize older high-security institutions to house medium-security inmates as new and more modern high-security facilities were developed.

Today, much of the southern portion of the USP Leavenworth property, bordered by Metropolitan Avenue, has already been developed with the USP, minimum-security prison camp, warehouses, staff housing, internal roadways, parking areas and other ancillary support facilities. Of the remainder of the property, two alternative development areas located east and west of the USP are under consideration for development.

The East Site consists of approximately 227 acres of primarily undeveloped land situated east of the USP and north of Metropolitan Avenue, west of Grant Avenue, and south of Corral Creek. The East Site is comprised primarily of regularly maintained and undeveloped hilly, grassland, bordered to the north by riparian forest that parallels Corral Creek. Two ponds are also situated on the East Site, located north of the primary drainage that bisects the property.

Lands surrounding the East Site consist of a mix of commercial and residential uses. Military family housing (known as the Frontier Heritage Community) associated with Fort Leavenworth is found to the north, with two schools situated northeast (Eisenhower Elementary) and east (Patton Junior High) of the East Site. Commercial development fronting on the south side of Metropolitan Avenue forms a buffer between the USP Leavenworth property and the concentration of residential housing located south of Metropolitan Avenue. The USP abuts the western boundary of the East Site (Exhibit III-9).

Commercial uses that front on Metropolitan Avenue are part of the designated "Downtown/North Leavenworth Redevelopment Area". This redevelopment plan targets the revitalization of downtown Leavenworth and also emphasizes redevelopment in the northeastern area of the City for better connection/continuity with downtown. Along Metropolitan Avenue, the plan includes a suggested framework for a cohesive campus or park-like setting for the business/innovation development component, as well as a comprehensive strategy for residential redevelopment that will ensure significant and substantial change in a planned and orderly manner. Strong north-south connections are emphasized as well as a predominance of street level retail with upper level office and residential.

The West Site comprises approximately 144 acres located west of the USP and includes the minimum-security prison camp. The West Site is generally bounded by Metropolitan Avenue on the south, Santa Fe Trail/County Road 14 on the west, and an abandoned railroad grade on the north. The West Site is also comprised of regularly maintained grassland. The southeastern corner, adjacent to Metropolitan Avenue, is occupied by a large pasture which is home to several buffalo (and described as the Buffalo

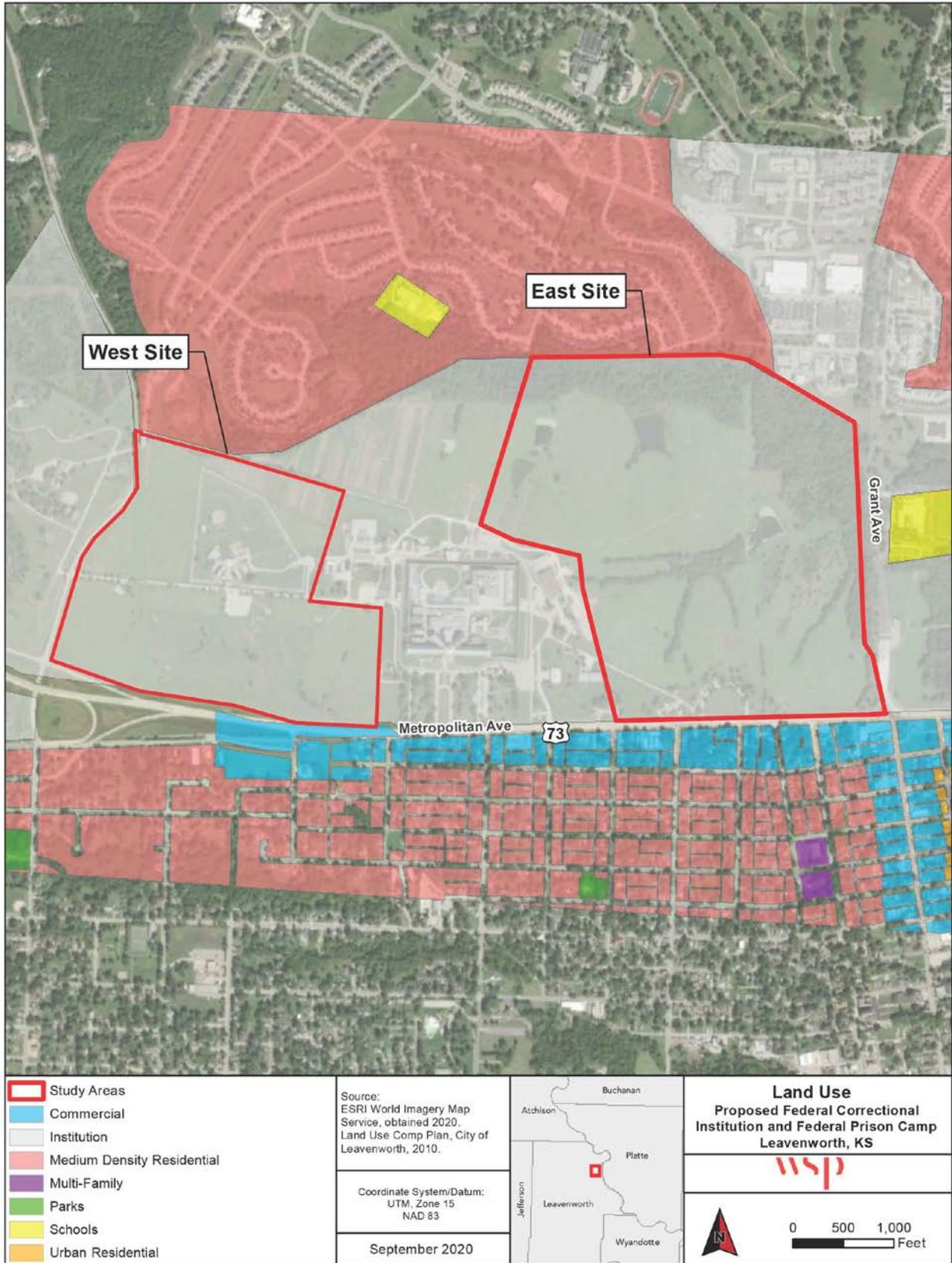


Exhibit III-9: Land Use

Pasture). Land uses adjacent to the West Site include the military family housing and the Bradley Elementary school to the north (both associated with Fort Leavenworth), USP Leavenworth property (cemetery and Warden's residence) to the west, and residential development (across Metropolitan Avenue) to the south. The eastern border of the West Site abuts the USP.

According to the City of Leavenworth Zoning Maps (2010) and the Leavenworth County Zoning Map (2009), the USP Leavenworth property (as well as Fort Leavenworth) is exempt from any zoning controls or ordinances as a result of its ownership by the Federal Government.

2. Potential Impacts and Mitigation

Potential FCI/FPC impacts to land use would be similar under either Build Alternatives (East-1 or East/West Composite). As a result, the discussion below is inclusive of both Build Alternatives, with distinctions in potential impacts (if any) amongst the two alternatives also identified.

a. No Action Alternative

Under the No Action Alternative, the proposed FCI/FPC would not be developed. The BOP's Leavenworth property would remain in its current condition and adjoining, and nearby land uses would not be affected. There would be no direct, indirect, or secondary impacts to land uses and mitigation measures would not be necessary.

b. Potential Impacts

Development of the proposed project would have a direct impact on land use by transforming an additional portion (estimated at 125 to 150 acres) of the overall USP Leavenworth tract from its undeveloped condition into an intensively developed institutional use. The self-contained nature of the FCI/FPC limits potential direct land use impacts to the project site itself, with no impacts, in the form of changes to land uses or new land developments, expected to occur on adjoining or nearby properties.

In considering development of the proposed FCI/FPC, attention was given to the relationship of such development to land use plans and policies of the City of Leavenworth and Leavenworth County. This evaluation has revealed a proposed project consistent and compatible with land use development goals and objectives as expressed by elected officials and community leaders representing the city and county.

Developing a new FCI/FPC within BOP-owned property would be consistent with the goals of local planning and development officials to secure new employment opportunities, stimulate new economic activities in the area, and to direct such activities towards areas served by existing infrastructure. The proposed project site at USP Leavenworth is already in government ownership, thereby avoiding additional land acquisition and the loss of taxable land and is located away from population concentrations and sensitive environmental features. Input from local planning and economic development officials has established the importance of the proposed project to achieving the social, economic, and land use development goals of City of Leavenworth and Leavenworth County.

c. Potential Indirect Impacts

Once the FCI/FPC are constructed and activated, inmates housed at the USP and FPC will be transferred to the new facilities at which time the USP and prison camp will permanently cease housing inmates. Therefore, it is not expected, nor likely, that the proposed project itself would result in any significant indirect or secondary land use impacts. The proposed FCI/FPC, being largely self-contained and confined to the USP property where a federal correctional facility has been operating for over 100 years, would have no indirect land use impact upon the designated "Downtown and North Leavenworth Redevelopment Area" along Metropolitan Avenue.

d. Potential Impacts to Property Values

Studies on the impact of correctional facilities on surrounding land values have shown that no significant adverse impacts occur to property values. Most studies involving correctional facilities and property values have focused on residential land uses, which are generally considered the most sensitive to impact. The studies analyzed property values adjacent to a given correctional facility in comparison to a control group of properties of similar value and style located away from the facility, but in the same community. The studies included a nationwide survey in which real estate brokers and appraisers were contacted in communities containing federal correctional facilities. The results of the studies indicated that other variables of equal or greater importance determine the assessed value of properties and are not limited solely to the property's proximity to a correctional facility. Such variables include:

- The location of the correctional facility relative to surrounding land uses;
- Values and marketability of properties in the area prior to construction of the correctional facility;
- Economic outlook- e.g., interest rates, income growth and unemployment rates and the resultant ability of new homeowners to purchase housing;
- Spatial distribution and availability of housing in a variety of price ranges within commuting distance of the facility;
- Community and economic growth relative to and independent of the correctional facility; and
- Other factors that may influence desirability of a particular location, e.g., quality public schools, availability of public transportation, proximity to recreational opportunities and cultural amenities, among others.

In light of these studies, surveys and past experiences, the proposed FCI/FPC is not expected to have an adverse effect on land uses or property values in the area surrounding the USP Leavenworth property. Rather, impacts to the value of adjacent properties would likely be the result of other unrelated factors. In addition, the proposed FCI/FPC would be developed in a location where a federal correctional facility has been operating for over 100 years. It is not expected that the addition of a modern new facility adjacent to USP Leavenworth would destabilize the value of adjacent properties.

e. Recommended Mitigation

Federal agencies such as the BOP are not subject to traditional zoning and land use development regulations. Nonetheless, the BOP commonly undertakes measures to mitigate potential adverse impacts and to maximize the benefits afforded to surrounding land uses:

- Incorporate thoughtful site design to provide harmony between existing facilities, the proposed facility, and its surroundings;
- Limiting the portion of the development site subject to disturbance to the degree possible, leaving a buffer area of open space between the new facility and neighboring properties; and
- Maintaining buffer areas to ensure visual compatibility and maximum positive contribution to the aesthetic character of the surrounding area.

The large land area comprising the USP Leavenworth property, and the fact that USP Leavenworth has been operating at this location for over 100 years, further ensures that potential impacts to neighboring properties are minimized or avoided entirely.

P. UTILITY SERVICES

1. Existing Conditions

a. Water Supply

The Leavenworth Waterworks provides potable water to the cities of Leavenworth and Lansing (via the Lan-Del Water District), as well as six other rural water districts. The Leavenworth Waterworks was formed in 1937 as a quasi-governmental entity and operates independently of the City of Leavenworth as it receives no tax revenues. The system has 10,000 customer meters and serves a population of approximately 50,000 people (not including Fort Leavenworth) in the cities of Leavenworth and Lansing, as well as the Lansing Correctional Facility (250,000 gallons per day).

Fort Leavenworth operates a separate water supply system; however, a major flooding event in 2019 forced the Fort to take their well-based system offline. The Leavenworth Waterworks has the ability to provide emergency back-up water supply and is currently supplying the Fort with approximately 1.0 million gallons per day (mgd).

Historically, water sales have reportedly averaged about five mgd with over 20 percent of the total water production sold wholesale to the Lan-Del Water District and other rural water districts. In recent years, water sales have increased to approximately eight mgd; however, it is anticipated that this volume will decrease once the Fort's water supply system is back online.

The Leavenworth Waterworks owns and operates two water treatment plants (North and South). The North Plant, constructed in 1938 to replace most of the original 1881 plant, draws raw water from the Missouri River. This plant has been upgraded and expanded many times over the years to its current treatment capacity of six mgd. The South Plant, constructed in 1978, draws raw water from nine shallow wells constructed in the Missouri River alluvial aquifer southeast of Leavenworth. Leavenworth

Waterworks reports that plans are underway to construct a new horizontal collector well with a capacity of 11 mgd to replace the existing wells which will continued to be maintained for system redundancy. The South Plant also has a current treatment capacity of six mgd, but was designed for expansion up to 12 mgd. Treatment at both plants includes filtration, lime softening, fluoridation, and disinfection and both plants pump treated water to the five-million gallon Pilot Knob Reservoir for distribution. The distribution system includes 180 miles of raw water and treated water transmission and distribution mains with pipe sizes ranging in diameter from two inches to 24 inches. The system also has one booster pump station. During the March 2019 flood, the Missouri River stage was over 30 feet. This flood event impacted the operation of the South Plant; however, the Leavenworth Waterworks was able to successfully maintain service to its customers. Since that time, Leavenworth Waterworks has taken additional measures to increase resiliency.

USP Leavenworth is provided with potable water from a 16-inch ductile iron water main located along the south side of Metropolitan Avenue. This 16-inch water main is interconnected to the Leavenworth Waterworks distribution network at several locations to the south of Metropolitan Avenue for system resiliency. The USP has two 12-inch connections to this main; one connection is located east of the main USP entrance off N. 13th Street and a second is located just east of the BOP staff housing units near N. Broadway Street. Representatives of the Leavenworth Waterworks have indicated that the static pressure available at these connections is approximately 105 to 110 pounds per square inch (psi).

b. Wastewater Collection and Treatment

Wastewater collection and treatment services in the Fort Leavenworth area are provided by the City of Leavenworth which operates a wastewater collection system consisting of 133.5 miles of pipe and 2,929 manholes. The system is operated by the City's Water Pollution Control Division and serves a population of approximately 34,000. Wastewater is treated at the City's wastewater treatment plant (WWTP) located at 1800 South 2nd Street. The WWTP was originally placed into service in the mid-1970s and has undergone three upgrades. Currently, the WWTP is designed to treat an average daily flow of 6.88 mgd and consists of influent screening and pumping; aerated grit removal; primary clarification; intermediate pumping; trickling filters; final clarification; and sludge dewatering. The WWTP reportedly treats approximately 3.01 mgd or 1.1 billion gallons of wastewater annually with a reported 90 percent removal efficiency. Treated wastewater is discharged to the Missouri River.

The complex of structures comprising USP Leavenworth is served by two BOP-owned and operated pump stations. One pump station is located at the existing prison camp and conveys wastewater from the camp to the BOP's main pump station which was designed and constructed in the mid-1990s and is located adjacent to Metropolitan Avenue (west of 12th Street). USP Facilities personnel report that this pump station has alternating pumps with a combined capacity of 1,250 gallons per minute (gpm) with both pumps rarely operating simultaneously.

The main pump station discharges to a 12-inch force main, which in turn, discharges into a 15-inch gravity sewer that connects to the City's 15-inch gravity sewer main along Metropolitan Avenue near the intersection of 6th Street. This 15-inch sewer main discharges into the City's 30-inch Missouri River interceptor. City officials report that the Missouri River interceptor has sufficient capacity to accept flows from a new FCI/FPC. Previously, city officials requested that a flow study be performed on the gravity sewer main from the USP connection to the Missouri River interceptor. The results of this study indicated that the City-owned gravity sewer lines had adequate capacity to accommodate the proposed wastewater flows.

c. Electric Power Service

Electric power service is provided to the USP Leavenworth property by Evergy which serves approximately 687,000 customers in eastern and central Kansas. Currently, there is a 115 KV transmission line that runs north-south through the eastern portion of the USP property and a 64 KV substation across Metropolitan Avenue that was built in the 1940s. Evergy currently supplies 12.47 KV to the USP via a separate overhead line. Also traversing the eastern portion of the USP property and largely paralleling Evergy's 115 KV line is a 34 KV overhead distribution line owned and operated by FreeState Electric Cooperative and serving Fort Leavenworth.

When the 115 KV transmission line, considered the backbone of Evergy's system in the area, was installed Evergy obtained an easement from the BOP for development of future substation within the USP property. Given that the equipment at the existing substation has reached the end of its useful life, Evergy is planning to develop a new substation with modern, upgraded equipment that conforms to current standards. Evergy plans to design, construct, and energize the new Carousel substation during 2022.

d. Natural Gas Service

Natural gas service is provided to USP Leavenworth by Southern Star Central Gas Pipeline, Inc. (Southern Star) which operates two 16-inch, high-pressure natural gas pipelines. One pipeline traverses the eastern portion of the USP property in a north/south direction for a distance of approximately 3,500 linear feet providing service to approximately 30,000 customers. The second pipeline traverses the property in an east/west direction for a distance of approximately 8,000 linear feet and continues to Platte City. It is from this pipeline that natural gas service is provided to the USP among other customers.

Kansas Gas Service also provides natural gas service to the Leavenworth area. Kansas Gas Service purchases gas from third parties and distributes it locally within its network of lines. In the Leavenworth area, Kansas Gas Service purchases gas from Southern Star. A Kansas Gas Service representative has indicated that no additional Kansas Gas facilities have been added to the area surrounding the USP and that the nearest Kansas Gas Service pipeline capable of supplying a large new customer in the Leavenworth area is located two miles from the USP property.

e. Telecommunications

Telecommunication lines are present underground and aboveground on electric provider utility poles throughout Leavenworth County. AT&T, Centurylink, Charter Communications (as Spectrum) and Midco are the primary providers for cable television, internet, and telephone within the county. AT&T provides service in the southwest, central, and northwest portions of the county; Centurylink serves the northwest and south portions of the county; and Midco operates south of Lansing to south of I-70 and from Tonganoxie to K-7. Midco also services Linwood and the surrounding Linwood area. All providers have capacity for new customers.

Telecommunications service is provided to USP Leavenworth by AT&T and Charter Communications (under the Spectrum brand). Telecommunications infrastructure in the area is continually being improved and extended as needed to support customer demands. There are no known limitations to providing telecommunications services to new and current customers in the Leavenworth area.

f. Solid Waste Management

Current operation of the USP and FPC generates approximately 3.0 tons of solid waste per day (based on a conservative estimate of four pounds per inmate per day and an inmate population of approximately 1,500), or approximately 1,100 tons annually. Collection and disposal of solid wastes is the responsibility of the carter retained by the BOP to remove solid wastes. To minimize the overall volume of solid wastes requiring disposal, the BOP operates a recycling program at USP Leavenworth that separates and bales cardboard, tin, aluminum and plastic. Paper is routinely shredded for informational security reasons and glass is not typically found in a secure prison setting.

According to the Leavenworth County Solid Waste Management Plan 5-Year Update (2017), waste collection services to residents and businesses in Leavenworth County are provided by a number of private companies including Brothers, Bumpy Roads, Deffenbaugh, Honey Creek Disposal, Republic Services and Seacoast. In addition, the City of Leavenworth provides collection services to its residents. Solid wastes generated at USP Leavenworth are transported to the Leavenworth County transfer station where wastes are loaded onto transfer trailers on the same day it arrives at the facility.

All collection companies haul wastes to the county's transfer station with final disposal occurring at various State-approved disposal facilities/regional landfills (Table III-20). Based on available information, there appears to be no constraints to the continued collection and disposal of solid wastes in the Leavenworth County region.

Table III-20: Regional Solid Waste Landfills

Location	Name	Annual Waste Volumes Accepted	Estimated Remaining Life
Johnson County, KS	Johnson County (Waste Management)	1,287,048 tons	> 20 years
Jefferson County, KS	Hamm Landfill	399,208 tons	> 80 years
Shawnee County, KS	Rolling Meadows (Waste Management)	234,810 tons	> 40 years
Pettis, MO	Central Missouri Landfill	450,849 tons	< 10 years
Jackson County, MO	Sugar Creek Landfill	687,344 tons	> 30 years
Buchanan County, MO	St. Joseph's Landfill	129,523 tons	> 20 years
Johnson County, MO	Show-me Regional Landfill	88,425 tons	> 30 years

Source: Johnson County Solid Waste Management Plan Update, 2019.

2. Potential Impacts and Mitigation

a. No Action Alternative

Under the No Action Alternative, the proposed FCI/FPC would not be developed. The BOP's Leavenworth property would remain in its current condition with water supply, wastewater collection and treatment, electric power, natural gas, telecommunications, and solid waste infrastructure serving the Leavenworth County area unaffected. There would be no adverse impacts and mitigation measures would not be necessary.

b. Potential Impacts - Water Supply

Average daily water demand at the proposed FCI/FPC is projected to total approximately 300,000 gallons with a peak water demand of approximately 700 to 800 gpm, fire flow requirements of approximately 2,000 gpm for 90 minutes, a minimum water pressure of 40 psi, and on-site water storage of approximately 500,000 to 750,000 gallons. Once development is completed and the new facilities are activated, inmates housed at the USP and FPC will be transferred to the new FCI/FPC along with the complement of BOP staff.

There is no plan to house inmates within the USP and prison camp once the new FCI/FPC are activated resulting in a substantial reduction in water demands from these facilities. In addition, the new FCI/FPC will employ modern water-conserving fixtures and highly-efficient heating and cooling equipment that will be a significant improvement over the current operation. As a result, no net increase in water demands are anticipated. Until the planned transition study is completed and a decision is reached on a future use or mission of the vacated USP, no estimate of water supply requirements can be determined; however, future use of the USP and FPC is not expected to be a large water consumer.

Development of a new correctional facility could result in additional water demands associated with the workforce operating the new facility and their families. However, once the new facilities are activated, BOP staff will also transfer from the current facilities to the new. With no increase in operating staff, no increase in water demands associated with BOP staff and their families is expected.

The Leavenworth Waterworks operates a water supply system currently supplying, on average, approximately eight mgd to its customers. The combined capacity of its two water treatment plants is 12 mgd implying an excess capacity of approximately four mgd, not accounting for peak demand. The City's five million gallon reservoir provides treated water to the entire distribution system. The City of Leavenworth's water storage and distribution system is sufficient to meet the water supply of its current customers as well as the needs of the proposed FCI/FPC.

At the present time, the city is planning to construct a new water storage tank near USP Leavenworth. To provide water storage dedicated to the proposed correctional facilities, the BOP is discussing including its water storage needs within the planned tank or constructing a larger tank that would serve both the city and BOP needs. This approach eliminates the need for the BOP to construct a separate on-site water storage tank to provide back-up supplies in the event of an emergency. The discussions between the city and BOP are on-going and both sides are optimistic on reaching a mutually beneficial agreement.

Provision of water supply service to the FCI/FPC requires a connection to the city's 16-inch water main located along the south side Metropolitan Avenue or to the BOP's 12-inch line north of Metropolitan Avenue. The Waterworks's initial analyses show that adequate flow rate and pressure is available in the 16-inch water main to support the demands of a new FCI/FPC. No booster pumping or other improvements to the existing water system are anticipated to serve the proposed project. With no anticipated increase in overall BOP daily water demands, it is expected that the BOP's 12-inch line would be able to meet the peak and fire flow demands of the new FCI/FPC however, flow tests of the line would need to be conducted to confirm this.

c. Recommended Mitigation - Water Supply

Development of the proposed FCI/FPC would result in an average daily water demand of approximately 300,000 gpd. The Leavenworth Waterworks's water system has adequate raw water supply, treatment, storage and distribution capacity to support the demands of current customers and the proposed project. With the USP and prison camp no longer housing inmates and use of modern water-conserving fixtures and highly-efficient heating and cooling equipment at the FCI/FPC, no net increase in water demands are anticipated.

Temporary impacts associated with extending water service to the FCI/FPC, such as noise, dust, soil erosion and traffic disruptions associated with water line installation would be minimized by ensuring that construction periods are kept to the shortest extent possible and effective traffic safety, dust control, and soil erosion and sediment control practices are implemented. Design and construction of water system improvements would follow applicable local and state regulations and permitting procedures.

With little or no change in daily water requirements as a result of the proposed project, no significant adverse impacts to the public water supply system are expected. No mitigation measures beyond coordination and approvals from the appropriate state and local regulatory agencies are warranted.

d. Potential Impacts - Wastewater Collection and Treatment

Wastewater flows resulting from operation of the proposed FCI/FPC are estimated to be approximately 85 percent of water demand, or 255,000 gpd, with a peak discharge of approximately 500 to 790 gpm. The primary source of flows would be domestic wastewater generated by the inmate population. These flows typically occur in a pattern with daily peaks between 6:00 AM and 9:00 PM resulting from periods of peak water usage (meal preparation, personal hygiene, etc.) and may be as high as two to three times the average flow. The possibility exists that the proposed FCI will incorporate operation of a prison industry (to be determined) which would be expected to be a low to moderate water user.

Since there is no plan to utilize the USP and prison camp to house inmates once the new facilities are activated, there will be a substantial reduction in wastewater flows from the existing facilities. In addition, the new facilities will employ modern water-conserving fixtures and highly-efficient heating and cooling equipment that will be a significant improvement over the current operation. As a result, no net increase in wastewater flow is anticipated. Until a decision is reached on a future use of the vacated USP and prison camp, no estimate of wastewater flow can be determined; however, future use of the USP and prison camp is not expected to generate large volumes of wastewater.

Wastewater treatment in the Fort Leavenworth area is provided by the City's WWTP. Flow data collected by the City from 2008 through 2010 indicated an average daily flow of 4.38 mgd, a maximum month flow of 7.63 mgd, and a peak daily flow of 12.39 mgd. The WWTP is designed for an average daily flow of 6.88 mgd implying excess capacity of approximately 2.5 mgd, not accounting for peak flows or wet weather conditions.

The City has developed a Wastewater Master Plan and associated Update to address long-term operation of the wastewater collection and treatment system. Improvements are identified in the plan to add ultraviolet disinfection, investigate nutrient removal, and to remove extraneous wet-weather related inflow and infiltration (I&I) from the collection system. The City continues to move forward with

their plans to remove extraneous I&I flows from the system to ensure that there is adequate capacity at the WWTP for proper treatment of the BOP's peak flows especially during wet weather events.

In cooperation with the City, flow monitoring was performed from July 3, 2014 to September 26, 2014 on the gravity sewer main from the BOP's force main discharge to the City's Missouri River interceptor. The sewer main was modeled using survey and GIS data provided by the City in conjunction the flow monitoring data and assumptions regarding the condition of the pipes. The results of the flow monitoring and analysis demonstrate that the entirety of this 15-inch sewer line has adequate capacity to accommodate the measured wastewater flows including the 10-year storm event. However, data analysis indicates that during the 10-year storm event the line segment along Metropolitan Avenue from the USP gravity sewer to 4th Street could operate at or near its full flow capacity when the USP pump station is operating at full capacity (1,250 gpm).

Although the City reported that the Missouri River interceptor had adequate capacity to support the proposed development, analysis of the available data indicates it may be at or near capacity downstream from where the gravity sewers serving the BOP and Fort Leavenworth combine. However, the accuracy of the data from the Fort's meter is questionable. The flow meter consistently recorded values 2 to 3 percent below zero and in excess of 100 percent during several storm events. The City monitors the occurrence of sanitary sewer overflows (SSO) within their collection system and post regular updates on their website as well as their online GIS database. Since the time of this study, no SSOs have been reported on the sanitary sewer serving the BOP facilities or along the Missouri River Interceptor.

It is anticipated that provision of sanitary sewer service to accommodate FCI/FPC development within the East Site would utilize the BOP's existing main pump station on Metropolitan Avenue with upgrades to modernize the equipment and monitoring capabilities. It is not anticipated that improvements to the City's gravity sewer main downstream from the BOP's connection would be required as there would be no net increase in wastewater flow following the transfer of inmates from the existing to the new facilities. The pump station and associated force main would continue to be owned and operated by the BOP.

e. Recommended Mitigation - Wastewater Collection and Treatment

The temporary impacts such as noise, dust and erosion which may result from renovation of the BOP's main pump station would be minimized by ensuring that construction periods are kept to the shortest extent possible and effective traffic control measures and soil erosion and sediment control practices are implemented. In addition, the design and construction of wastewater system improvements to serve the East Site would be conducted according to applicable local and state regulations and permitting procedures. Development of the proposed FCI/FPC may also include provision of a screening system and a grease trap for food service in order to lessen the potential impacts associated with the introduction of solids and greases to the collection system. No other mitigation measures beyond coordination with appropriate state and local authorities are anticipated.

f. Potential Impacts - Electrical Service

Provision of permanent electric service would be necessary prior to activation of the proposed FCI/FPC. Although actual energy demands and load estimates are dependent upon a final facility design and selection of mechanical and other equipment, operation of a typical FCI/FPC is anticipated to have an

electric service requirement of a 12 to 15 kilovolt (KV) system, three-phase, four-wire, wye; average annual energy use of approximately 15 to 18 million kilowatt-hours (KWH); and a demand load of approximately 4,500 to 5,000 kilowatts (KW). Following activation of the proposed FCI/FPC, electric power demands at the USP are expected to decrease since inmates and staff will have vacated the institution and security lights and other large power consuming equipment will cease operating or operate at a reduced level.

Overhead electric lines owned and operated by Evergy and FreeState traverse the East Site. To accommodate development of the FCI at the East Site, approximately 6,500 linear feet of overhead electric lines owned by Evergy and FreeState would be relocated eastward and outside the FCI/FPC development area. The new overhead lines would be relocated within a new north-south easement that would be established by the BOP along a new alignment across the property that would allow for the balance of the East Site to be developed.

A 64 KV substation located across Metropolitan Avenue supplies 12.47 KV power to the USP. The equipment at this substation has reached the end of its useful life and therefore, Evergy has proposed development of the Carousel substation with modern, upgraded equipment that conforms to current standards. Evergy's planned substation is to be located within the southeastern portion of the USP property and while this is independent from the proposed FCI/FPC, substation development coincides with FCI/FPC planning and along with overhead powerline relocation, is addressed in this document (Exhibit III-10). Evergy plans to design, construct, and energize the new substation during 2022. Discussions between the BOP and both power companies concerning the new substation and power line relocations are already underway and moving forward to allow substation and FCI/FPC development to occur as planned.

Substation development and relocation of overhead electric lines will result in temporary noise and dust impacts during construction. However, the somewhat isolated and relatively level site of the planned substation, the distance from streams and wetlands, and the short duration of substation construction are expected to avoid significant adverse impacts. This is also true for the relocated overhead power lines. With the small footprint for each power line pole, the ability to cross long distances with only a few carefully-place poles, and the short duration of power line installation, it is expected that significant adverse impacts can be avoided.

Development of the planned substation, relocation of the overhead power lines, and connecting electric service to the new facilities would be the responsibility of Evergy and FreeState with participation from the BOP. With USP and prison camp no longer housing inmates, the use of energy-efficient equipment and careful design and construction practices, operation of the proposed FCI/FPC are not expected to result in significant adverse impacts to the environment or to electric power suppliers or their residential, commercial, and industrial customers in the area.

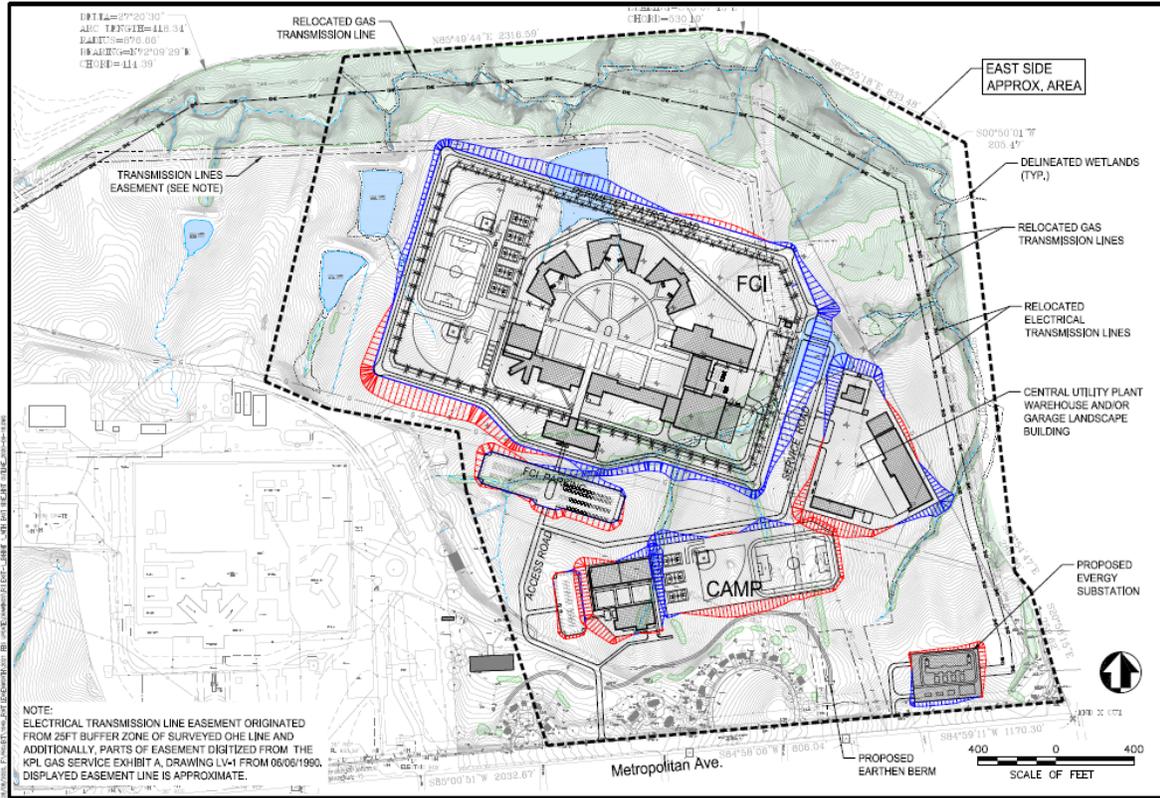


Exhibit III-10: Planned Evergy Substation and Relocated Overhead Power Lines (Preliminary)

g. Recommended Mitigation - Electrical Service

Mitigation measures would include ensuring that substation development and overhead power line relocations are carried out in conformance with applicable regulations and with a minimum of disruption to service. Any disruptions that might occur as a result of the service connections, service relocations or other similar improvements would be mitigated through careful coordination between BOP, Evergy, and FreeState and other participating entities. Any disruption in electric service during the facility's construction phase would be temporary and kept to the shortest duration possible. Any other temporary impacts resulting from providing electric service to the FCI/FPC would be minimized by ensuring that effective worker safety practices and procedures are implemented.

Although the location of the planned Carousel substation is approximately 800 feet east of the nearest BOP staff housing units, there is a potential for noise and visual impacts resulting from substation operation. With an earthen berm already planned to separate the homes from the substation and the new BOP developments, an additional eight-foot high decorative concrete wall is also proposed by Evergy to encircle the substation to both minimize views and reduce potential noise impacts. No other mitigation measures involving electric power service are planned or warranted.

h. Potential Impacts - Natural Gas Service

While projecting natural gas demands and load estimates is dependent upon facility design, operation of a typical FCI and FPC is anticipated to require 50,000 to 70,000 thousand cubic feet (Mcf) of natural gas annually, a maximum usage of 25,000 to 28,000 cubic feet per hour, and a maximum daily usage of 250,000 to 280,000 cubic feet.

Once the new FCI/FPC are constructed, inmates housed at the USP and FPC and BOP staff will be transferred to the new facilities at which time the USP and FPC will be deactivated. By deactivating the USP and employing modern, highly-efficient kitchen equipment and heating and cooling systems at the FCI/FPC, the volume of natural gas needed to operate the proposed facility will be easily accommodated by the existing natural gas infrastructure in the area without significant adverse impacts to current natural gas supplies to service to residential, commercial, or industrial customers in the region.

As noted earlier, two 16-inch high pressure natural gas pipelines owned and operated by Southern Star traverse the East Site in separate north-south and east-west alignments totaling approximately 11,500 linear feet. Due to limited land area available for FCI development and for the safety and security of inmates and staff, the natural gas pipelines need to be relocated or cease operation. Discussions between the BOP and Southern Star concerning the need for pipeline relocation are already underway.

Based on the analysis conducted to date, Southern Star officials believe they can eliminate the need for the east-west pipeline and relocate the north-south pipeline in a new easement further to the east, allowing FCI/FPC development to occur as planned. While Southern Star is continuing to study their current and future infrastructure needs, there is a high degree of confidence that the east-west pipeline can cease operating with no adverse impact to Southern Star or its customers. If so, the pipeline would be removed during FCI/FPC construction. As with the overhead power lines, the north-south pipeline would be relocated eastward along a new alignment and away from development; a new easement would be established for the relocated pipeline (see Exhibit III-10). With removal of the east-west gas line, provision of natural gas to the proposed FCI/FPC would require a new connection to Southern Star's relocated north-south gas main with a new metering station. This line is reported to have ample capacity to serve new customers.

Other than temporary impacts such as noise, dust and soil erosion resulting from pipeline relocation and extension of a natural gas service line to the FCI central utility plant, no significant adverse impacts are anticipated. Relocating the north-south pipeline and securing any required permits and approvals would be the responsibility of Southern Star. It is not expected that the proposed project would pose a significant adverse impact to current natural gas services or residential, commercial, or industrial customers in the region.

i. Recommended Mitigation - Natural Gas Service

Mitigation measures would include ensuring that natural gas pipeline relocation and service connection installation is carried out in conformance with applicable regulations and with a minimum of disruption to service. Any disruptions that might occur would be mitigated through careful coordination among the BOP, Southern Star, and applicable agencies. Diligent construction planning and scheduling would also be exercised to ensure gas pipeline relocation work is completed prior to FCI/FPC groundbreaking. Any disruption in gas service during the facility's construction phase would be temporary and kept to the

shortest duration possible. Any other temporary impacts due to construction would be minimized by ensuring that effective worker safety, dust, and soil erosion control practices are implemented.

j. Potential Impacts - Telecommunications

Telecommunication lines are present underground and aboveground on electric provider utility poles throughout Leavenworth County. AT&T, Centurylink, Charter Communications (as Spectrum) and Midco are the primary providers for cable television, internet, and telephone within the county. AT&T and Charter Communications (under the Spectrum brand) are the major telecommunication service providers to USP Leavenworth and operates and maintains the telecommunication infrastructure (i.e., poles, copper wire, and fiber optic) serving the facility.

Operation of the proposed FCI/FPC is expected to require approximately 100 pairs of voice circuits or optical carrier circuits and the availability of primary rate interface service. AT&T officials have indicated that copper cable, T1 service, and/or fiber optic cable exist in the vicinity of the USP Leavenworth and could be extended to either the East or West sites.

Extending telecommunications services to the FCI/FPC would be the responsibility of the local service providers. Other than temporary impacts such as noise, dust and traffic controls which may occur while extending telecommunications infrastructure, no significant adverse impacts are associated with providing these services.

Once the FCI/FPC are constructed and activated, inmates and staff will be transferred to the new facilities at which time the USP and prison camp will permanently cease housing inmates. By maintaining a relatively equivalent number of inmates and staff, there would be no significant change in the nature and overall level of telecommunications services required during operation. As a result, the proposed project is not expected to result in significant adverse impacts on telecommunications infrastructure, services, providers, or customers in the area.

k. Recommended Mitigation - Telecommunications

Providing telecommunications service to the proposed project would not result in significant adverse impacts to current or future customers of the region. However, temporary impacts such as noise, dust, and traffic controls during construction may occur to extend telecommunications infrastructure to the new FCI/FPC. Such impacts would be minimized by ensuring that construction periods are kept to the shortest duration possible and effective traffic safety measures are implemented.

USP Leavenworth will no longer house federal inmates once the new facilities are constructed. Until a decision is reached on a future use of the USP, the BOP intends to deactivate the facility and maintain it in its current state. Other than coordinating the telecommunications needs of the proposed facility with the appropriate service providers, no other mitigation measures appear warranted.

l. Potential Impacts - Solid Waste Management

Construction and operation of the proposed FCI/FPC would generate solid waste requiring collection and disposal by one or more of the commercial haulers which serve the Leavenworth County area and are currently serving USP Leavenworth. During the construction phase, solid waste of varying types and quantities would be generated by the erection of structures, utility installations, etc., with collection and

disposal the responsibility of the contractors involved in construction. Construction contractors would also be responsible for ensuring that all construction-derived wastes are properly stored on-site until collected and that all such wastes are disposed of only at facilities permitted to accept construction wastes. In the case of the proposed FCI/FPC, no standing structures require demolition and removal prior to construction thereby limiting the volume of construction waste requiring collection and disposal. It is not anticipated that construction-related wastes will adversely impact waste disposal services available in the region.

Operation of the FCI/FPC would generate approximately 2.8 tons of solid waste per day (based on a conservative estimate of four pounds per inmate per day and 1,408 inmates), or approximately 1,000 tons annually. Collection and disposal of solid wastes would be the responsibility of the carter selected by the BOP to remove solid wastes during operation of the proposed facility. Once the FCI/FPC are activated, inmates housed will be transferred to the new facilities, and by maintaining a relatively equivalent inmate population and staff, there would be no significant change in the overall volume of solid wastes requiring collection and disposal. As shown in Table III-21, landfills serving the Leavenworth County area have sufficient long-term capacity to accommodate wastes without significant adverse impact.

m. Recommended Mitigation - Solid Waste Management

Solid wastes generated during construction would be stored on-site and transported for disposal only to facilities permitted to accept construction wastes. Wastes generated during operation would be stored on-site in self-contained dumpsters until collection (on a regular schedule) and transport by licensed haulers to a transfer station or final disposal site (landfill). The volume of solid waste generated by the proposed FCI/FPC is expected to be equivalent to the volume of waste generated during USP and FPC operation and would continue to represent only a small portion of the total solid waste load in the region. As is currently done, operation of the proposed FCI/FPC would include a recycling program to minimize the volume of solid waste requiring disposal. Any toxic, hazardous, or bio-medical wastes generated by operation of the FCI/FPC would be handled, stored, and disposed of according to applicable regulations.

Q. TRANSPORTATION SYSTEMS

1. Existing Conditions

The roadway network in Leavenworth County is well developed and consists of major highways and arterials extending beyond the county to eastern Kansas and western Missouri. Kansas City, located approximately 35 driving miles south from USP Leavenworth, is at the intersection of three cross-country interstate highways: Interstate 70 (I-70) extending through St. Louis, Missouri in the east and Denver, Colorado in the west; I-35 extending through Des Moines, Iowa northeast of Kansas City, and through Wichita, Kansas southwest of Kansas City; and I-29, extending along the Missouri River Valley north of Kansas City. Other state and interstate highways provide access to the larger metropolitan area, including I-435 with connections to I-70, I-35, and I-29.

Access to USP Leavenworth is from Metropolitan Avenue which is one of the major east-west corridors in the City of Leavenworth and Leavenworth County. It is also an important link to communities across the Missouri River to the east, and to Atchison, Kansas located to the north. Metropolitan Avenue is also

the local name for Kansas State Route 7 (KS 7), which in the vicinity of USP Leavenworth, is also U.S. Route 73 (US 73). US 73/KS7 extends northwest of Leavenworth making connections with Atchison, Kansas approximately 25 miles north-northwest of Leavenworth. East of the USP, Metropolitan Avenue crosses the Centennial Bridge over the Missouri River where the roadway becomes Missouri State Route 92 (MO 92) and connecting with I-435. South of the USP and perpendicular to Metropolitan Avenue are local numbered and named streets in a predominantly residential part of Leavenworth.

Along the east side of the USP property and extending north from Metropolitan Avenue is Grant Avenue, a restricted entrance to Fort Leavenworth and farther east is a secondary entrance to Fort Leavenworth at Sherman Avenue. Extending south from Metropolitan Avenue and opposite Grant Avenue is N. 7th Street, and opposite Sherman Avenue is N. 4th Street (a continuation of US 73 and KS 7).

Bisecting the western portion of the USP property is County Road 14 and Hancock Avenue. County Road 14 (also identified as Santa Fe Trail) extends north from Metropolitan Avenue and connects to Hancock Avenue, which provides access to FPC Leavenworth and further north provides restricted access to Fort Leavenworth. Extending south from Metropolitan Avenue opposite County Road 14 is N. 20th Street which along with N. 10th Street and N. 7th Street, are classified by the Kansas Department of Transportation as major arterial streets.

Metropolitan Avenue in the vicinity of USP Leavenworth has two travel lanes in each direction and located between the eastbound and westbound lanes is a turning lane for left turns off the avenue (five lanes total). The roadway has an overall width of 62 feet, not including the curb and gutter. Signalized intersections along Metropolitan Avenue are located at N. 4th Street (Sherman Avenue) and N. 7th Street (Grant Avenue) east of the USP property. At the western end of the property is a grade-separated intersection at N. 20th Street (Santa Fe Trail/County Road 14). The local numbered and named streets extending south of Metropolitan Avenue, generally have one lane in each direction and some have designated left turn lanes onto Metropolitan Avenue. Metropolitan Avenue is well traveled corridor with a posted speed limit of 35 mph and many commercial driveways on the south side.

There are currently several entrances to the USP property located along the north side of Metropolitan Avenue. The main entrance, the employee entrance, and a visitor entrance are located between N. 13th Street and N. 14th Street while a service entrance is located opposite N. 12th Street. Access to the USP is also provided on Santa Fe Trail/County Road 14 west of the BOP property, via an internal service road that also provides access to the FPC.

Average Annual Daily Traffic (AADT) volumes are available from the Kansas Department of Transportation (KDOT) for streets in Leavenworth and Lansing, including counts along Metropolitan Avenue. In 2018, AADT volume on Metropolitan Avenue in the vicinity of USP Leavenworth ranged from 8,000 to 9,000 vehicles. Traffic counts were also conducted as part of the Draft EIS on Tuesday, March 29, 2011 to capture a typical weekday volume at sites throughout the city, including Metropolitan Avenue west of N. 7th Street. These counts were conducted in 15-minute intervals throughout the 24-hour period. The hourly traffic volumes were summarized, and the AM, midday, and PM peak hours were identified on Metropolitan Avenue west of N. 7th Street. The AM peak was identified between 7:00 and 8:00 AM with a total of 1,382 vehicles, the midday peak hour was between 12:00 noon and 1:00 PM with a total of 822 vehicles, and the PM peak hour was between 4:15 and 5:15 PM with a total of 1,402 vehicles.

There is no local public transit service operating in Leavenworth County. However, intrastate and interstate bus service to/from the City of Leavenworth is available via Greyhound Bus Lines with a stop located along Frontage Road in downtown Leavenworth and connecting the city to over 100 destinations. Bicycle transportation within and around the City of Leavenworth is a viable alternative to automobile use given the residential character of the area south of the facility and the city's network of current and planned designated bicycle routes.

2. Potential Impacts and Mitigation

a. No Action Alternative

Under the No Action Alternative, the proposed FCI/FPC would not be developed. The BOP's Leavenworth property would remain in its current condition and transportation infrastructure serving the City of Leavenworth and Leavenworth County would not be affected. There would be no adverse impacts and mitigation measures would not be necessary.

b. Potential Impacts - Construction Phase

During construction, employee and truck traffic would utilize a dedicated entrance off Metropolitan Avenue in order to avoid interfering with traffic associated with normal USP operation. This entrance would be located midway between N. 10th Street and N. 11th Street and between the two clusters of BOP staff housing. Eventually, this construction entrance would become the permanent entrance to the FCI and FPC under the East-1 Alternative. Under the East/West Composite Alternative, construction access to the proposed FPC development site would be from Santa Fe Trail/County Road 14 using the same route as for the current FPC.

- **Utility Installations**

For approximately 12 months prior to FCI/FPC groundbreaking, utility infrastructure installations and relocations would first be undertaken. This would involve new electric substation development, relocation/replacement of overhead electric power lines and underground natural gas pipelines, along with on-site infrastructure extensions to provide water supply, wastewater collection, electric power, natural gas, and telecommunications services. These activities are expected to increase traffic volumes slightly along Metropolitan Avenue and other principal routes leading to the USP property by workers traveling to and from the construction locations as well as the transportation of construction materials, supplies, and equipment. The number of construction workers on-site during utility relocations and installations would be relatively small given the limited extent of this phase and would total less than 50 workers at any one time. Deliveries of water, sewer and natural gas pipe, power poles, transformers and electric power and telecommunications cables would be distributed throughout the workday and generally occur between the hours of 6:30 AM and 4:30 PM, also depending on the stage and schedule for utility installations. Utility-related installations would largely be completed prior to FCI/FPC groundbreaking so there would be little or no overlap.

- **FCI/FPC Construction**

FCI/FPC construction is also expected to increase traffic volumes along the same routes leading to and from the USP property by construction workers and the delivery of construction materials, supplies, and

equipment. The number of construction workers on-site at any one time would vary depending on the phase of construction and at peak times could total several hundred workers. Truck movements would be distributed throughout the workday and generally occur between the hours of 6:30 AM and 4:30 PM, also depending on the stage of construction during the approximately 36-month schedule.

As a matter of general practice, permissible traffic movements into and out of the BOP property and matters of temporary (construction) access from Metropolitan Avenue would be coordinated with the appropriate state and county transportation agencies. Although some minor increases in traffic volumes along principal access roadways would be expected during FCI/FPC construction, any disruptions to normal traffic operations would be kept to the shortest duration possible. In addition, construction activities involving any off-site utility extensions, installations and/or relocations, including any temporary detours or lane closures, would be coordinated with local law enforcement and traffic control agencies to ensure public safety.

c. Recommended Mitigation - Construction Phase

No significant adverse impacts to traffic operations are anticipated during utility installations and FCI/FPC construction. Nonetheless, ensuring safety of the traveling public during construction will be a high priority evidenced by the emphasis to be placed on continuous communication and coordination between the BOP, construction contractors, and the appropriate transportation and traffic control agencies, and adherence to any applicable permit conditions.

d. Potential Impacts - Operational Phase

A dedicated new entrance driveway from Metropolitan Avenue to the proposed FCI is proposed at a location midway between N. 10th Street and N. 11th Street and between the two clusters of BOP staff housing. This location is proposed as a means to avoid impacting (i.e., demolition) any of the historic BOP staff housing for entrance driveway construction. For the East-1 Alternative, vehicle access to the proposed FPC would use the same FCI entrance from Metropolitan Avenue while for the East/West Composite Alternative, FPC access would be from Santa Fe Trail/County Road 14 using the same access route to the current FPC.

Operation of the FCI/FPC would generate traffic on roadways leading to the BOP property, consisting of commuting trips by BOP employees, visitor trips, service and delivery vehicles trips, and vehicles involved with inmate transportation. Typical weekdays experience the greatest number of staff trips as fewer trips are made by some administrative personnel and service vehicles on weekends.

Vehicular traffic, pedestrian and bicycle traffic, public transit and public parking facilities are considered in assessing potential transportation impacts associated with the proposed project. There are no public transit routes or public park-and-ride facilities located at or near the USP Leavenworth property. Although bicycle transportation to and from USP Leavenworth is an alternative to automobile use given the residential character of the area south of the facility and the city's existing and planned bicycle routes, it is expected that the vast majority of BOP employees will continue to use single-occupancy vehicles for commuting.

- **Employee Trips**

Approximately 338 BOP employees will oversee FCI/FPC operation with staff assigned among three shifts to accommodate 24-hour a day operation: 8:00 AM to 4:00 PM (Shift 1); 4:00 PM to 12:00 Midnight (Shift 2); and 12:00 Midnight to 8:00 AM (Shift 3). Based on experience at other BOP facilities, approximately 50 percent of the staff (169 employees) would be assigned to Shift 1, 35 percent (118 employees) to Shift 2, and 15 percent (51 employees) to Shift 3.

It has been assumed that employees would arrive at the facility within 30 minutes of the start of their shifts and depart within 30 minutes following the end of their shifts. Therefore, the AM peak hour is expected to be from 7:30 AM to 8:30 AM, accounting for employees arriving for Shift 1 and departing from Shift 3. The highest projected employee-generated traffic volumes would occur between 3:30 PM and 4:30 PM, during which the Shift 1 staff would depart and Shift 2 staff would arrive at the facility. Assuming a scenario involving only single occupancy vehicles, approximately 118 vehicles would arrive, and 169 vehicles would depart during the afternoon peak hour (287 vehicles total).

- **Visitor Trips**

The frequency and duration of visits by inmate friends, family members, attorneys and others are based on operating policies set by BOP management staff. In establishing visitation policies, BOP officials balance many day-to-day management considerations, including public safety, security of the institution, and the physical limitations of an institution's visiting area, resulting in wide latitude in visitation patterns.

Social visiting hours at BOP institutions are generally scheduled to avoid shift changes and peak hour traffic. As a result, arrivals and departures of visitors to the proposed FCI are expected to be distributed throughout off-peak hour periods, and thus would not contribute to peak-hour traffic volumes. With the proposed FCI/FPC housing approximately the same number of inmates as the USP and FPC, the total number of visitors is not expected to change (increase or decrease) over the current number with no significant change to the number of visitor vehicles traveling on Metropolitan Avenue and other roads to access the proposed facilities.

- **Service and Delivery Vehicle Trips**

Service and delivery vehicle trips include those needed to obtain the supplies and provisions necessary for day-to-day functioning along with those for mail delivery, equipment repair and maintenance, and waste removal among others. Based on experience at USP Leavenworth and other federal correctional facilities, these trips would also be confined largely to off-peak travel periods. With the proposed FCI/FPC to house approximately the same number of inmates as the USP and FPC, the total number of service and delivery vehicle trips is not expected to change (increase or decrease) with no significant change to the number of service and delivery vehicles traveling on Metropolitan Avenue and other roads to access the proposed facilities.

- **Inmate Transport Trips**

Among the BOP's responsibilities is to transport inmates for medical treatment, judicial appointments, and for transfer to other correctional facilities. Based on experience at USP Leavenworth and other federal correctional facilities, inmate transports, escorted by staff utilizing passenger cars, vans, or

buses, would also be confined largely to off-peak travel periods. With the proposed FCI/FPC to house approximately the same number of inmates as the USP and FPC, the total number of inmate transports are not expected to change (increase or decrease) with no significant change to the number of transport vehicles traveling on Metropolitan Avenue and other roads to and from the proposed facilities.

- **Total Vehicle Trips**

The BOP is proposing to construct a new FCI/FPC and once development is completed and the new facilities are activated, inmates will be transferred to the new facilities at which time the USP and prison camp will permanently cease housing inmates. By maintaining a relatively equivalent number of inmates and staff, there would be no significant change in the overall volume of employee, visitor, service and delivery, and inmate transport traffic arriving at and departing from the USP Leavenworth property.

e. Recommended Mitigation - Operational Phase

With no significant change in the overall volume of traffic arriving and departing the USP Leavenworth property, no mitigation measures are required. Nonetheless, the BOP will coordinate with KDOT and the City of Leavenworth concerning plans for construction access and permanent access from Metropolitan Avenue to ensure that the new entrance will be designed in compliance with applicable standards and criteria including providing dedicated left and right turn lanes for traffic exiting the USP property onto Metropolitan Avenue (Exhibit III-11).

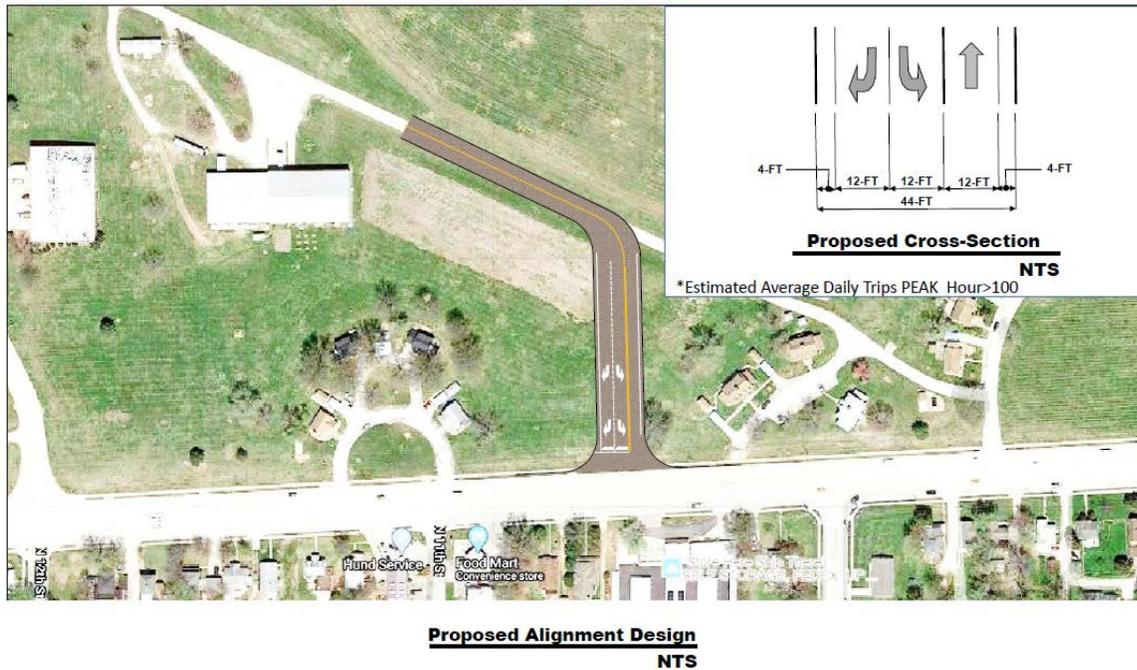


Exhibit III-11: Proposed Entrance at Metropolitan Avenue

R. METEOROLOGICAL CONDITIONS

1. Existing Conditions

Kansas experiences four distinct seasons with cold winters and hot, dry summers common. According to monthly climate summaries provided by the U.S. National Climatic Data Center, temperatures in the Leavenworth area over the course of a year, range from an average low of about 20° Fahrenheit (F) in January to an average high of nearly 90° F in July. The maximum temperature reaches 90° F an average of 44 days annually and reaches 100° F an average of four days annually. The minimum temperature falls below the freezing point on average 114 days per year. Typically, the first fall freeze occurs between the last week of September and the first day of November, and the last spring freeze occurs between the last day of March and the final week of April.

The Leavenworth area receives nearly 41 inches of precipitation during an average year with the largest share being received in May and June. There are, on average, 93 days of measurable precipitation per year. Winter snowfall averages about 10 inches, but the median is less than three inches. Measurable snowfall occurs, on average, four days per year with at least one inch of snow being received on three of those days. The Leavenworth County area and the State of Kansas rank high as compared to the rest of the U.S. in average daily wind speed. The Leavenworth area also has a history of severe weather (i.e., tornado activity) with occurrences more common than Kansas and U.S. averages.

2. Potential Impacts and Mitigation

a. No Action Alternative

Under the No Action Alternative, the proposed FCI/FPC would not be developed. The BOP's Leavenworth property would remain in its current condition with meteorological patterns (e.g., precipitation, temperature, wind speed and direction, etc.) unaffected. With the property remaining in its current condition, there would also be no additional contributions of greenhouse gases. In the absence of adverse impacts, mitigation measures would not be necessary.

b. Potential Impacts

Development of the FCI/FPC would alter the microclimate of wind and temperature at the project site, but only slightly. Due to its scale relative to its environs, the proposed project would not change the larger-scale climatology of the area or have a significant impact upon meteorological conditions affecting surrounding properties.

c. Recommended Mitigation

Measures to mitigate local weather modifications are not warranted. Any meteorological impacts resulting from the proposed action would be of a micro-climatic nature. The meteorological conditions characteristic of the project site are such that no extraordinary design features are necessary to adapt the facility to local climatic conditions.

S. AIR QUALITY

1. Existing Conditions

a. Definition of Air Pollutants

The USEPA defines ambient air quality in 40 CFR 50 as “*that portion of the atmosphere, external to buildings, to which the general public has access.*” In compliance with the 1970 Clean Air Act (CAA) and the 1977 and 1990 Amendments (CAAA), USEPA has designated criteria air pollutants in which ambient air quality standards have been established. Ambient air quality standards are intended to protect public health and welfare and are classified as either primary or secondary standards. Primary standards define levels of air quality necessary to protect the public health. National secondary ambient air quality standards define levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant. Human welfare is considered to include the natural environment (soil, water vegetation) and the manmade environment (physical structures).

Primary and secondary standards have been established for carbon monoxide (CO), one-hour and eight-hour ozone (O₃), sulfur dioxide (SO₂), total and inhalable particulates (PM₁₀ and PM_{2.5}), nitrogen dioxide (NO_x) and lead (Pb). Hydrocarbon standards have been rescinded because these pollutants are primarily of concern only in their role as ozone precursors. In addition to retaining PM₁₀ standards, the USEPA has adopted 24-hour and annual standards for PM_{2.5}, or particulate matter with an aerodynamic equivalent diameter less than 2.5 micrometers (µm). Adoption of the PM_{2.5} standard in 1997 was intended to provide increased protection of public health from fossil fuel combustion.

Counties in the U.S. that do not meet the National Ambient Air Quality Standards (NAAQS) for a particular pollutant are called “non-attainment areas” for this criteria pollutant; areas that meet both primary and secondary standards are known as “attainment areas.” Areas determined to be in recent attainment are known as “maintenance areas”. Under the CAA and the CAAA, state and local air pollution control agencies have the authority to adopt and enforce ambient air quality standards (AAQS) more stringent than the NAAQS. With the exception of lead, which was phased out during 1998, (due in large part to the significant drop in measured values caused by the elimination of lead compounds as an additive in gasoline), the State of Kansas has adopted the NAAQS that specify maximum permissible short-term and long-term emissions of the criteria pollutants. A description of NAAQS pollutants is provided in Table III-21 while national and State of Kansas ambient air quality standards are provided in Table III-22.

b. Regulatory Responsibilities

Although the USEPA has the ultimate responsibility for protecting ambient air quality, each state and delegated local agency has the primary responsibility for air pollution prevention and control. The CAA requires that each state submit a State Implementation Plan (SIP), which describes how the state will attain and maintain air quality standards in non-attainment areas. The SIP must be approved by the USEPA for each criteria pollutant. The agency responsible for implementing the SIP in Kansas is the KDHE, Bureau of Air and Radiation.

c. Baseline Conditions

Air quality at a particular location is a function of the kinds, amounts, and dispersal rates of pollutants being emitted into the air locally and throughout the basin. The major factors affecting pollutant dispersion are wind speed and direction, the vertical dispersion of pollutants (which is affected by inversions), and the local topography.

Air pollutant concentrations and meteorological information are continuously monitored by the KDHE at the air monitoring station at USP Leavenworth. According to the Green Book published by the USEPA (last updated June 30, 2020), Leavenworth County is classified by the USEPA as being in attainment for all NAAQS criteria pollutants. In addition, there are no major air pollution emission sources located in proximity to the USP Leavenworth property and proposed project sites.

d. Greenhouse Gases

Greenhouse gases (GHGs) are chemical compounds found in Earth's atmosphere that absorb and trap infrared radiation as heat. As incoming solar radiation is absorbed and emitted back from the Earth's surface as infrared energy, GHGs in the atmosphere prevent some of this heat from escaping into space, instead reflecting the energy back to further warm the surface (Center for Sustainable Systems, 2015). Global atmospheric GHG concentrations are a product of continuous release and storage of GHGs over time. In the natural environment, the release and storage of GHGs are recurring. Anthropogenic (originating from human activity) releases, which include deforestation, soil disturbance, and the burning of fossil fuels, disrupt the natural carbon cycle discussed below by increasing the GHG emission rate over the storage rate, resulting in a net increase of GHGs into the atmosphere. The accumulation of increased GHG levels in the atmosphere increases temperatures and warms the planet through a greenhouse effect (USEPA, 2016).

The GHGs emitted into the atmosphere through human activities are carbon dioxide (CO₂); methane (CH₄); nitrous oxide (N₂O); and fluorinated gases such as hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride (SF₆) (USEPA, 2016e). N₂O is emitted during agricultural and industrial activities and during the combustion of fossil fuels and solid waste. Fluorinated gases, particularly SF₆, are often used as an electrical insulator in high-voltage substation equipment such as circuit breakers, transformers, and ground switches. Although fluorinated gases are emitted in small quantities, they have the ability to trap more heat than CO₂ and are considered gases with a high global warming potential (USEPA, 2016e).

USP Leavenworth is operational and, subsequently, contributes GHG emissions from operation of staff vehicles, buildings and grounds maintenance vehicles, and heating, ventilation, and air conditioning equipment use. Facility building and security lighting can also be considered an indirect source of GHG emissions because electricity is often generated by GHG emissions-producing facilities.

Table III-21: Description of NAAQS Criteria Pollutants

Sulfur Dioxide (SO₂): A toxic, colorless gas with a distinctly detectable odor and taste. Oxides of sulfur in the presence of water vapor, such as fog, may result in the formation of sulfuric acid mist. Human exposure to SO₂ can result in irritation to the respiratory system, which can cause both temporary and permanent damage. SO₂ exposure can cause leaf injury to plants and suppress plant growth and yield. SO₂ can also cause corrosive damage to many types of manmade materials.

Particulates (PM_{2.5})/(PM₁₀)/(TSP): Particulates originate from a variety of natural and anthropogenic sources. Some predominant anthropogenic sources of particulates include combustion products (wood, coal and fossil fuels), automotive exhaust (particularly diesels), and windborne dust (fugitive dust) from construction activities, roadways and soil erosion. Human exposure to inhalable particulate matter affects the respiratory system and can increase the risk of cancer and heart attack. Small particulates affect visibility by scattering visible light and when combined with water vapor can create haze and smog. Micron and submicron particles are those that assume characteristics of a gas and remain suspended in the atmosphere for long periods of time. Until recently, particulate pollution had been measured in terms of total suspended particulates (TSP). These standards have been replaced with revised measurements of particulate matter under 10 microns in diameter (PM₁₀) in 1987. Particles less than 10 micrometers in diameter (PM₁₀) pose a health concern because they can be inhaled into and accumulate in the respiratory system. Particles less than 2.5 micrometers in diameter (PM_{2.5}) are referred to as "fine" particles and are believed to pose the largest health risks. In 1997, USEPA established annual and 24-hour NAAQS for PM_{2.5} for the first time. In 2006, USEPA revised the 24-hour NAAQS for PM_{2.5}.

Carbon Monoxide (CO): A colorless, odorless, tasteless and toxic gas formed through incomplete combustion of crude oil, fuel oil, natural gas, wood waste, gasoline and diesel fuel. Most combustion processes produce at least a small quantity of this gas, while motor vehicles constitute the largest single source. Human exposure to CO can cause serious health effects before exposure is ever detected by the human senses. The most serious health effect of CO results when inhaled CO enters the bloodstream and prevents oxygen from combining with hemoglobin, impeding the distribution of oxygen throughout the bloodstream. This process significantly reduces the ability of people to do manual tasks, such as walking.

Nitrogen Dioxide (NO₂): A reddish-brown gas with a highly detectable odor, which is highly corrosive and a strong oxidizing agent. Nitric oxide (NO) and nitrogen dioxide (NO₂) constitute what is commonly referred to as nitrogen oxides (NO_x). NO_x are formed by all combustion and certain chemical manufacturing operations. During combustion, nitrogen (N) combines with oxygen (O) to form NO. This combines with more oxygen to form NO₂. Under intense sunlight, NO₂ reacts with organic compounds to form photochemical oxidants. Oxidants have a significant effect on atmospheric chemistry and are gaseous air pollutants that are not emitted into the air directly. They are formed through complex chemical reactions which involve a mixture of NO_x and reactive volatile hydrocarbons (VOC) in the presence of strong sunlight. Human exposure to NO₂ can cause respiratory inflammation at high concentrations and respiratory irritation at lower concentrations. NO is not usually considered a health hazard. NO_x reduce visibility and contribute to haze. Exposure to NO_x can cause serious damage to plant tissues and deteriorate manmade materials, particularly metals.

Ozone (O₃): An oxidant that is a major component of urban smog. O₃ is a gas that is formed naturally at higher altitudes and protects the earth from harmful ultraviolet rays. At ground level, O₃ is a pollutant created by a combination of VOC, NO_x and sunlight, through photochemistry. Ground-level O₃ is odorless and colorless, and is the predominant constituent of photochemical smog. Human exposure to O₃ can cause eye irritation at low concentration and respiratory irritation and inflammation at higher concentrations. Respiratory effects are most pronounced during strenuous activities. O₃ exposure will deteriorate manmade materials and reduce plant growth and yield.

Lead (Pb): Lead is in the atmosphere in the form of inhalable particulates. The major sources of atmospheric lead are motor vehicles and lead smelting operations. The USEPA estimates that ambient concentrations have decreased dramatically in recent years (a drop of 70 percent since 1975) largely due to the decreasing use of leaded gasoline. Health effects from atmospheric lead occur through inhalation and consequent absorption into the bloodstream. Excessive lead accumulation causes lead poisoning with symptoms such as fatigue, cramps, loss of appetite, anemia, kidney disease, mental retardation, blindness and death.

Source: WSP, 2020.

Table III-22: National and State of Kansas Ambient Air Quality Standards

Pollutant	National		State of Kansas	
	Primary Standard	Secondary Standard	Primary Standard	Secondary Standard
Carbon Monoxide Maximum 1-hour Average ^a Maximum 8-hour Average ^a	35 ppm 9 ppm	35 ppm 9 ppm	35 ppm 9 ppm	35 ppm 9 ppm
Sulfur Dioxide Annual Arithmetic Mean Maximum 24-hour Average ^a Maximum 3-hour Average ^a	80 µg/m ³ 365 µg/m ³ ---	--- --- 1,300 µg/m ³	80 µg/m ³ 365 µg/m ³ ---	--- --- 1,300 µg/m ³
Particulate Matter—PM₁₀ Maximum 24-hour Average ^b	150 µg/m ³	150 µg/m ³	150 µg/m ³	150 µg/m ³
Particulate Matter—PM_{2.5} Annual Geometric Mean Maximum 24-hour Average ^c	15 µg/m ³ 35 µg/m ³	15 µg/m ³ 35 µg/m ³	15 µg/m ³ 35 µg/m ³	15 µg/m ³ 35 µg/m ³
Ozone 1-hour Maximum 8-hour Average	0.12 ppm 0.08 ppm	0.12 ppm 0.08 ppm	0.12 ppm 0.08 ppm	0.12 ppm 0.08 ppm
Nitrogen Dioxide Annual Arithmetic Mean	100 µg/m ³	100 µg/m ³	100 µg/m ³	100 µg/m ³
Lead Maximum Arithmetic Mean over a Calendar Quarter	1.5 µg/m ³	1.5 µg/m ³	N/A	N/A

Notes:

a - Maximum concentration not to be exceeded more than once per year.

b - Not to be exceeded by 99th percentile of 24-hour PM₁₀ concentration in a year (averaged over three years).c - Not to be exceeded by 99th percentile of 24-hour PM_{2.5} concentration in a year (averaged over three years).

ppm: parts per million.

µg/m³: micrograms per cubic meter.

Source: 40 CFR 50, and KDHE, Bureau of Air and Radiation (March 2011).

Climate change refers to a suite of changes occurring in the Earth's atmospheric, hydrologic, and oceanic systems. Although climate change is a global phenomenon, it manifests itself differently in different places such as sea level rise, temperature increases, hydrologic changes, increased wildfire activity, shifting ocean currents, extreme weather events, and altered terrestrial and marine ecosystems. While the warming trend has been discernable over the past 100 years, recent decades have exhibited an accelerated warming rate with recent years ranking among the warmest on record. Most of the observed temperature increase can be attributed to both natural and anthropogenic activities that contribute heat trapping gases to the atmosphere. These GHGs, particularly CO₂ from the burning of fossil fuels, cause the Earth's atmosphere to trap the sun's

heat. While the insulating effect (or GHG effect) of the atmosphere is important to living systems, the rapid increase in GHGs since the mid-19th century has adversely affected nature's systems.

2. Potential Impacts and Mitigation

a. No Action Alternative

Under the No Action Alternative, the proposed FCI/FPC would not be developed. The BOP's Leavenworth property would remain in its current condition, air quality in the City of Leavenworth and surroundings would not be affected, and mitigation measures would not be necessary.

b. Potential Air Quality Impacts

Potential air quality impacts as a result of the proposed project may occur from construction activities, routine operations, and motor vehicle traffic associated with facility operation. These potential impacts and mitigation recommendations, if necessary, are discussed below.

c. Potential Impacts - Construction Activities

The proposed project would include various construction activities extending over an approximate 36-month period. Construction methods, sequencing and duration for certain aspects are fairly well known as the BOP has been actively developing similar correctional facilities over the past three decades. These actions include, for example, site security, preparation of the site for construction, utility connections, facility construction, etc. Reasonable assumptions have been made for construction methods, sequencing and schedule since the specific design, materials and equipment are not fully known.

To understand potential air quality impacts associated with construction activities, one requires familiarity with the construction process itself. The following provides an overview of the construction process involving a typical federal correctional facility as it may potentially affect air quality. The construction process for the FCI/FPC would be similar to other federal correctional facilities developed throughout the north-central region.

- **Site Clearing and Preparation**

Initial site clearing and preparation would involve the use of heavy equipment to remove all vegetation and carry out preliminary site grading within the construction zone so as to establish level building locations. Other necessary site preparation activities which would be undertaken during this stage include initial installation of underground utilities, soil erosion and sediment control measures, stormwater control measures, and similar preliminary site work.

- **Excavations and Foundations**

Following initial site clearing and preparation, construction of the foundations and any below-grade components would commence. Excavation typically includes the use of heavy equipment to excavate and remove material in preparation for foundation construction. Foundation work would include preparation of forms and the pouring of concrete footings and the foundation slabs. Heavy trucks would

deliver concrete and other supplies to the project site and licensed commercial carters would remove wastes for off-site recycling or final disposal in a licensed disposal facility.

- **Building Construction**

This stage would include construction of the proposed structures (steel, concrete, reinforced concrete, etc.); the building facades (exterior walls and cladding); and roof. During this stage of construction, pouring of each building's concrete floors would occur. Installation of each structure's core, which consists of vertical riser systems for mechanical, electrical, and plumbing, as well as the satellite electrical and mechanical equipment rooms, individual cells, and plumbing facilities, would start during this stage and continue through the interior construction and finishing stage. These activities could require the use of cranes, derricks, exterior hoists, delivery trucks, forklifts, man lifts, and other similar equipment. Cranes would be used to lift structural components, facade elements, large pieces of equipment, etc. Heavy trucks would continue to deliver materials and licensed commercial carters would continue to remove construction debris. Construction of each structure's core and shell would be expected to overlap with interior construction and finishing.

- **Interior Construction and Finishing**

Installation of interior mechanical, electrical, and plumbing systems would continue during this stage and include installation of heating, ventilation, and air conditioning equipment and ducting, installation of electric lines within the buildings, and interior installation of water supply and wastewater piping. Installation and checking of life safety systems would also take place at this time as would construction of interior walls systems and interior finishes (e.g., flooring, painting).

- **Typical Construction Equipment and Scheduling**

Typical construction equipment used for site excavation and pouring the foundation would include excavators, bulldozers, backhoes, tractors, hammers, cranes and concrete pumping trucks. Equipment that would be used in construction would include mobile cranes, hoist complexes, dump trucks and loaders, concrete trucks, backhoes, and other pieces of large equipment. Trucks would arrive at the site with pre-mixed concrete and other building materials, and would remove any excavated material and construction debris. Typical equipment used during construction of the superstructure and framing would include cranes, compressors, hoists, and welding machines. During roof construction, hoists and cranes would continue to be used. Trucks would remain in use for material supply and construction waste removal.

Staging areas would be needed for all aspects of the construction phase and would be located within the site. While placement of individual equipment would not be determined until a detailed development program has been outlined, it is anticipated that all of the construction activity can be accommodated on-site, with no off-site staging.

Construction-related impacts to air quality are generally limited to fugitive dust emissions that would occur in and around the selected project site resulting from site preparation and construction operations. Fugitive dust emissions typically occur during ground clearing and preparation, site grading, the stockpiling of materials, on-site movements of construction equipment, and the transportation of construction materials to and from the site. Actual quantities of fugitive dust emissions depend on the extent and nature of the clearing operations, the type of equipment employed, the physical

characteristics of the underlying soil, the speed at which construction vehicles are operated, and the type of fugitive dust control methods employed. Much of the fugitive dust generated by construction activity consists of relatively large-size particles. These particles would settle within a short distance from the construction work areas and, as a result, not significantly impact neighboring properties or residents living in the vicinity of the project site.

The potential for air quality impacts during construction would be temporary, occurring only while construction is in progress and during certain meteorological conditions. Fugitive dust emissions can occur during dry weather periods, periods of maximum construction activity, and high wind conditions. Any such impacts would be short-term and can be minimized if construction equipment is well maintained, operated in well-ventilated areas, and good engineering practices are followed.

d. Recommended Mitigation - Construction Activities

To mitigate potential air quality impacts during construction, best management practices would be incorporated within standard operating procedures for site construction activities. Such practices to limit adverse air quality impacts during construction include using properly maintained equipment, limiting unnecessary idling times on diesel powered engines, using tarp covers on trucks transporting materials to and from the construction site, periodically wetting unpaved surfaces to suppress dust, and prohibiting the open burning of construction wastes on-site. In addition, construction equipment would be maintained and operated in accordance with the manufacturer's specifications to further minimize air emissions. Restoration of the ground surface by the introduction of grass or native ground-cover following completion of construction would further minimize fugitive dust emissions.

e. Potential Impacts – FCI/FPC Operation

The following provides an overview of the potential air quality impacts associated with operation of a typical federal correctional facility. Systems for heat and hot water would be installed at the central utility plant and distributed to the proposed FCI/FPC and would be the primary stationary source of potential air quality impact. The final choice of fuel would be determined by fuel availability, costs, and other considerations. However, it is not anticipated that the volume of combustion emission by-products from the selected fuel would have a significant impact on air quality.

The proposed FCI/FPC would also be equipped with one or more standby generators to produce electrical energy in the event of a power failure. The standby generators would be installed at the central utility plant in conformance with all applicable regulations for use on a contingency basis. Emissions from maintenance, periodic testing, and emergency operation of the generators are not expected to exceed New Source Review requirements or result in a significant increase in CO or NO_x levels.

f. Recommended Mitigation – FCI/FPC Operation

Other than selection of energy-efficient equipment that meets all applicable permitting and emission control standards, no mitigation measures are warranted. Potential air quality impacts during facility operation would be minimized by designing and constructing new facilities to be energy-efficient, thereby minimizing the use of fossil fuels and the potential emission of air pollutants.

g. Potential Impacts – Transportation-Related Activities

Motor vehicle operations represent an additional potential source of project-related air quality impacts. For air quality assessments of motor vehicle emissions, the major issues are microscale impacts (localized areas immediately adjacent to the roadways) and mesoscale impacts (the area comprising the entire region). The predominant air quality impact associated with motor vehicle-related emissions is CO, HC, and NO_x with HC and NO_x emissions precursors for the formation of ozone.

Once the FCI/FPC are activated, inmates housed at the USP and FPC will be transferred to the new facilities at which time the USP and prison camp will permanently cease housing inmates. By maintaining an equivalent inmate population and staff, there would be no significant change in the numbers or types of vehicles traveling to and from the new facilities. Approximately 310 employee vehicle trips (arrivals and departures) would continue to occur during the PM peak hour during weekday operation of the FCI/FPC, with most visitor, inmate transports, and service delivery vehicle traffic continuing to occur during off-peak hours. With no change to the total volume of traffic arriving and departing the USP property each day, the volume of motor vehicle emissions anticipated is not expected to change. Microscale modeling of vehicular emissions was not conducted because of the already low volumes of traffic along principal access routes leading to the USP Leavenworth property.

Reductions in vehicular emissions resulting from continually improving emissions-control technology and the growing acceptance of electric vehicles further preclude the likelihood of any significant transportation-related air quality impacts. Motor vehicle traffic associated with the proposed project is not expected to pose local or regionally significant adverse impacts to air quality.

h. Recommended Mitigation – Transportation-Related Activities

Agencies of the federal government, including the BOP, encourage the formation of carpools and vanpools and, where available, the use of public transit to minimize the potential for air quality impacts from motor vehicle operations. Encouraging the use of carpools and vanpools offers a particularly viable option given the exclusive reliance on private auto use for accessing the project site and the large pool of workers traveling daily to the USP Leavenworth property. The analysis of potential air quality impacts has indicated that no mitigation beyond these actions would be warranted.

i. Potential Impacts – Greenhouse Gases

CEQ provided guidance regarding the consideration of GHGs in NEPA documents for federal actions in August 2016 (CEQ 2016), however, the agency withdrew the final guidance on April 25, 2017 pursuant to U.S. Presidential Executive Order 13783. CEQ released new draft guidance on June 26, 2019, which, if finalized, would replace the previously withdrawn August 2016 guidance (84 Fed. Reg. 30097). The June 2019 guidance directs federal agencies to analyze the direct and reasonably foreseeable indirect GHG emissions when doing so is practicable and not overly speculative.

Nonetheless, during preparation of this document the potential for the proposed project to influence global climatic change has been considered. This includes the potential for increased emissions of chlorofluorocarbons (CFRs), halons, or greenhouse gases and the potential for global climate changes to affect the proposed project. The proposed action addressed by this document is expected to result in no significant emission of CFRs, halons, or greenhouse gases. In addition, the USP property is not located in a coastal environment and, therefore, would not be affected by changes in sea levels.

During normal operations, GHG emissions would result from commuting workers, delivery trucks, visitors, energy consumption, and the use of emergency generators for backup power and during regular testing. Climate change is a long-term phenomenon that may result in an increase in extreme weather; however, the facility and surrounding public infrastructure (e.g., electrical power grid, water supply, wastewater treatment, etc.) is expected to continue providing the necessary services despite the possible impacts.

j. Recommended Mitigation – Greenhouse Gases

The USP Leavenworth property and proposed FCI/FPC sites are not located in an area that is considered particularly vulnerable to climate change and associated weather or other physical impacts. The proposed project sites are located outside the 100- and 500-year floodplains and are not likely to be vulnerable to hydrologic changes resulting from climate change. Furthermore, the facility is located in Kansas, well inland from the Atlantic and Pacific coastlines and, therefore, not vulnerable to sea level rise. The impacts on Leavenworth County from climate change have not been specifically determined, and the actual implications within the lifespan of the proposed FCI/FPC are unknown.

k. Potential Impacts - Radon

Radon is a colorless, odorless, tasteless gas produced by the natural breakdown of uranium in soil and rocks. Decay of radon, which has a half-life of 3.8 days, results in such by-products as polonium, bismuth, astatine, and lead. When inhaled over a long period of time, these radioactive by-products can cause lung cancer. Radon is the second most frequent cause of lung cancer with between 15,000 and 22,000 lung cancer deaths attributed to radon each year in the U.S.

Because radon is a gas, it can migrate through rocks and soils, escaping into fractures and openings in rocks and into groundwater. Radon migrates more readily through permeable soils such as sand and gravel and through fractures in rocks. Radon moving through soil near the ground surface usually escapes into the atmosphere. However, radon gas may migrate into buildings through construction joints, foundation cracks, etc. Even if soil air contains only moderate levels of radon, concentrations within buildings may be high.

The USEPA action level (the level at which measures should be taken to reduce radon concentrations) is four picocuries per liter of air (pCi/L) and about seven percent of homes in the U.S. have radon levels exceeding the recommended action level. As shown in Exhibit III-12, parts of northeastern Kansas (including the City of Leavenworth and eastern Leavenworth County) exhibit high potential for radon (screening levels averaging over 4 pCi/L) while much of western Leavenworth County and southeastern Kansas has moderate potential (between 2 and 4 pCi/L).

j. Recommended Mitigation - Radon

While most radon escapes harmlessly into the atmosphere, it can migrate through rocks and soil into buildings through openings such as construction joints and foundation cracks. In response, the BOP intends to:

- Develop the proposed project on slab foundations with none of the structures expected to incorporate basements where radon can collect in concentrations that could exceed the USEPA action level.
- Retain a team of architects, engineers and construction contractors with knowledge of local conditions (northeastern Kansas) and experience developing public institutions in similar environments to ensure building designs minimize the potential for radon to accumulate in concentrations exceeding the USEPA action level.
- Inform facility operating personnel of the potential for radon to occur in Leavenworth County and the availability and use of testing equipment to ensure concentrations do not exceed the USEPA action level.

k. Conformity Applicability Analysis

In order to ensure that federal activities do not hamper local efforts to control air pollution, Section 176(c) of the Clean Air Act prohibits federal agencies, departments, or instrumentalities from engaging in, supporting, licensing, or approving any action which does not conform to an approved state or federal implementation plan. With the proposed development of a new correctional facility at USP Leavenworth (to replace the existing USP), compliance with federal regulations is necessary.

The USEPA developed two major rules for determining conformity of federal activities: conformity requirements for transportation plans, programs and projects (“transportation conformity” C40 CFR, Part 51); and all other federal actions (“general conformity” C40 CFR, Part 93). These rules apply to projects located within NAAQS non-attainment areas. The Leavenworth area, within which the project site is located, is designated in attainment for NAAQS pollutants. In an attainment area, the conformity regulations do not apply.

I. Federal Operating Permit (Title V)

All new and existing facilities are required pursuant to the CAA to obtain a Federal Operating Permit, also known as a Title V permit, if potential and/or actual emissions of air contaminants exceed designated “major source” thresholds. Major source thresholds are determined based upon the attainment status of the area where the facility is located. For Kansas, major source thresholds are set at 100 tons per year (tpy) of any regulated pollutants and 25 tpy of any combination of hazardous air pollutants (HAPs) or 10 tpy of any individual HAP. Additionally, pollutants designated as non-attainment may have more stringent thresholds based upon the designation. If the potential and actual emissions from the FCI/FPC were to exceed the Title V thresholds, then the institution would be required to file a Title V application with the State of Kansas.

A review of emissions from similar BOP facilities has revealed that proposed project emissions would fall below these limits. As such, the proposed facility would not be a major Title V source and would not be required to file a Title V permit. The BOP would be, however, required to file applications for authority to construct and operate for all individual sources as required by state and local regulations.

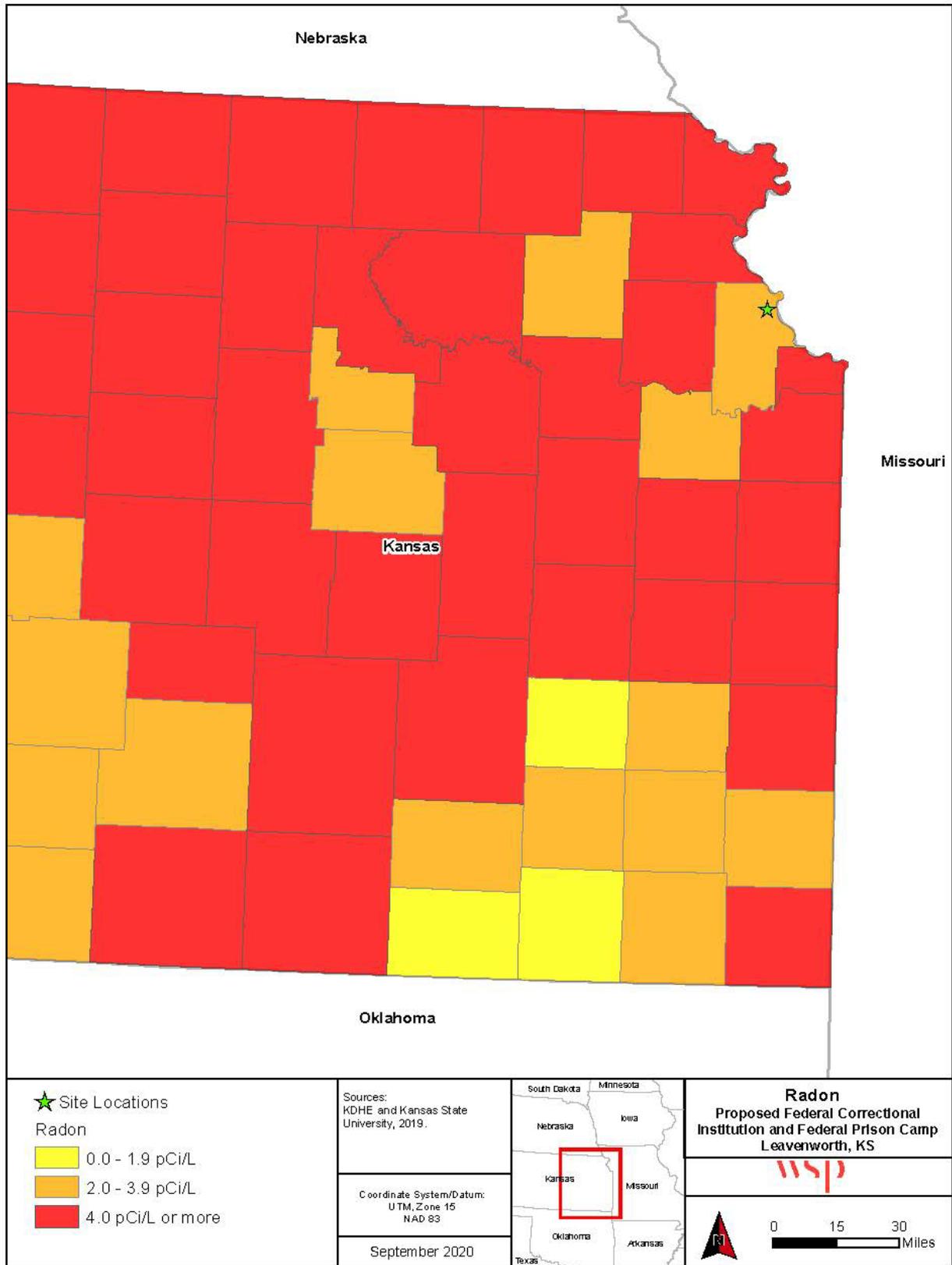


Exhibit III-12: Kansas Radon Zones

T. NOISE

1. Existing Conditions

Noise is traditionally defined as any unwanted sound. It is emitted from many sources including aircraft, industrial facilities, railroads, power generating stations, and motor vehicles. Among the most common, motor vehicle noise is usually a composite of noises from engine, exhaust and tire-roadway interaction. The magnitude of sound, whether wanted or unwanted, is usually described by sound pressure, i.e., a dynamic variation in atmospheric pressure. The human auditory system is sensitive to fluctuations in air pressure above and below the barometric static pressure. These fluctuations are defined as sound when the human ear is able to detect pressure changes within the audible frequency range.

Since the sound pressure varies greatly, a logarithmic scale is used to relate sound pressures to a common reference level and is represented as the decibel (dB). The decibel is the standard unit for sound measurement and represents acoustical energy present in the environment. Humans are capable of hearing only a limited frequency range of sound. Generally, humans can hear frequencies ranging from 20 hertz (Hz, cycle per sound) to 20,000 Hz; however, they do not hear all frequencies equally well. As a result, a frequency weighting, known as A-weighting, is commonly applied to the sound pressure level, which approximates the frequency response of the human ear by replacing most emphasis on the frequency range of 1,000-6,000 Hz. Because this A-weighting scale closely describes the response of the human ear to sound, it is most commonly used in noise measurements. Table III-23 provides examples of common sounds and noise levels expressed on the A-weighting decibel scale.

Most individuals in urbanized areas are exposed to fairly high noise levels from many sources as they go about their daily activities. The degree of disturbance or annoyance of unwanted sound depends upon several key factors: the amount and nature of the intruding noise; the relationship between background noise and the intruding noise; and the type of activity occurring where the noise is heard. In considering the first of these factors (the amount and nature of the intruding noise), it is important to note that individuals have different sensitivities to noise. Loud noises bother some individuals more than others and some patterns of noise also enter into an individual's judgment of whether or not a noise is offensive. For example, noises occurring during sleeping hours are usually considered to be more of a nuisance than the same noises during the daytime hours.

With regard to the second factor (the relationship between background noise and the intruding noise), individuals tend to judge the annoyance of an unwanted noise in terms of its relationship to noise from other sources (background noise). For instance, the blowing of a car horn at night when background noise levels are typically about 45 dBA, would generally be more objectionable than the blowing of a car horn in the afternoon when background noises are likely to be 60 dBA or higher.

The third factor (the type of activity occurring where the noise is heard) is related to the interference of noises with activities of individuals. In a 60 dBA environment, normal work activities requiring high levels of concentration may be interrupted by loud noises, while activities requiring manual effort may not be interrupted to the same degree.

Table III-23: Common Sounds Expressed in Decibels

A-Weighted Sound Level in Decibels (dBA)		
A-Weighted	Overall Level	Noise Environment
120	Uncomfortably loud (32 times as loud as 70 dBA)	Military jet aircraft takeoff at 50 feet
100	Very loud (8 times as loud as 70 dBA)	Jet flyover at 1,000 feet Locomotive pass-by at 100 feet
80	Loud (2 times as loud as 70 dBA)	Propeller aircraft flyover at 1,000 feet Diesel truck at 40 mph at 50 feet
70	Moderately loud	Freeway at 50 feet from pavement edge at 10:00 AM Vacuum cleaner (indoor)
60	Relatively quiet (½ as loud as 70 dBA)	Air conditioner unit at 100 feet Dishwasher at 10 feet (indoor)
50	Quiet (1/4 as loud as 70 dBA)	Large transformers Small private office (indoor)
40	Very quiet (1/8 as loud as 70 dBA)	Bird calls Lowest limit of urban ambient sound
10	Extremely quiet (1/64 as loud as 70 dBA)	Just audible
0	--	Threshold of hearing

Source: Federal Agency Review of Select Airport Noise Analysis Issues, 1992; Modified by WSP.

Since sound is described in a logarithmic scale, (i.e., dBs), sound levels cannot be added by ordinary arithmetic means. In fact, a doubling of the noise source produces only a three dB increase in the sound pressure (noise) level. Studies have shown that this increase is barely perceptible to the human ear, whereas a change of five dB is readily perceptible. As a general rule, an increase or decrease of 10 dBs in noise level is perceived by an observer to be a doubling or halving of the sound, respectively.

The sound level at a particular instant is not likely to be a good measure of noise levels that vary with time over a wide range, e.g., noise from vehicular movement. To better assess the time varying noise levels typically associated with traffic patterns, a time-averaged, single-number descriptor known as the "Level equivalent" (L_{eq}) is employed. The L_{eq} is expressed in dBA and represents the average energy content of sounds over a specified time period. It includes both steady background sounds and transient, short-term sounds. It represents the level of steady sound which, when averaged over the same sampling period, is equivalent in energy to the time-varying (fluctuating) sound level over the same period of time.

Noise may be more objectionable at certain times. This has led to the development of a measure known as the Day-Night Average Sound Level (L_{dn} or L_{10}). L_{dn} or L_{10} is a 24-hour average sound level that includes a penalty (10dB) to sound levels during the night (10:00 PM to (7:00 AM). This measurement is often used to determine community noise levels and is endorsed by such agencies as the USEPA, the U.S. Department of Transportation, the U.S. Department of Housing and Urban Development, and the U.S. Department of Defense.

Based on field inspections conducted in July and August 2020, lands in commercial and residential use, and the USP, constitute the predominant land uses found in and around the project sites. There are no major noise sources located nearby. Current land uses within the project sites (vacant/pasture land) do not produce noise because of the absence of noise-producing sources. The large land areas comprising the sites and the dense vegetative buffers along the USP Leavenworth's northern and eastern borders also limits noise originating from the sites to be experienced within adjoining properties.

By virtue of this setting, noise sources experienced within the USP property are largely confined to motor vehicle operations along adjacent and nearby roadways, sporadic bird and wildlife calls, and aircraft overflights. The occasional noise from motor vehicle traffic on nearby roadways is not substantial and is barely audible within interior portions of the large property. No sensitive noise receptors are found within the area immediately bordering on or surrounding the proposed sites.

2. Potential Impacts and Mitigation

a. No Action Alternative

Under the No Action Alternative, the proposed FCI/FPC would not be developed. The BOP's Leavenworth property would remain in its current condition with noise levels and conditions unchanged. In the absence of adverse impacts, mitigation measures would not be necessary.

Potential noise impacts resulting from the proposed project may occur from construction activities, routine operation and maintenance, and motor vehicle traffic associated with facility operation. These potential impacts and recommendations for mitigation, are discussed below.

b. Potential Impacts - Construction Activities

Noise impacts would occur in the immediate vicinity of the FCI and FPC building sites as a result of construction activities. (Far lesser noise impacts would occur as a result of substation construction and relocation of overhead power lines and underground pipelines due to the limited nature of construction and the far shorter construction periods.) The magnitude of potential noise impacts depends upon the specific types of equipment to be used, the construction methods employed, the locations within the project site where construction is active, and the scheduling and duration of the construction work. Many of these details are not specified in contract documents, but are at the discretion of the construction contractor. This allows the contractor flexibility in using equipment and personnel in order to accomplish the work, maintain the schedule and control construction costs. However, general conclusions can be drawn based on the nature of construction work anticipated, the types of equipment involved in construction, and their associated range of noise levels.

Noise-generating activities that would take place during construction include site preparation and grading, excavations for footings and foundations, construction of structures, access roadway and

parking area paving, and utility relocations and installations. Construction-related noise will occur only for the duration of the construction period and is usually limited to daylight hours. It is generally intermittent and depends on the type of operation, the location and function of the equipment, and the equipment usage cycle.

Construction noise also attenuates quickly as the distance from the source increases. As shown in Table III-24, construction equipment noise levels at approximately 40 feet from the source diminish significantly at approximately 90 feet from the source. For example, noise levels resulting from use of an excavator during clearing and grubbing yield a L_{eq} of approximately 80 dBA at 50 feet and 74 dBA at approximately 100 feet. Furthermore, these noise levels would continue to decrease by approximately three or four dBA with every doubling of distance and would drop to approximately 62 to 65 dBA at approximately 800 feet.

Table III-24: Typical Noise Levels Generated by Construction Equipment

Equipment Type	Maximum Equipment Noise Level at 15 meters (dBA)	Hourly Equivalent Noise Levels at 15 meters (dBA ¹)	Hourly Equivalent Noise Levels at 30 meters (dBA ¹)
CLEARING AND GRUBBING			
Excavator	83	80	74
Backhoe	75	72	66
Heavy Duty Dump Trucks	73	70	64
	Overall $L_{eq}(h)$	82	76
DEMOLITION			
Front Loader	76	73	67
Hoe Ram	89	86	80
Heavy Duty Dump Trucks	73	70	64
	Overall $L_{eq}(h)$	87	81
RETAINING WALLS			
Backhoe	75	72	66
Concrete Pump	74	71	65
Compressor	68	65	59
Ready Mix Trucks	72	69	63
Medium Duty Dump Trucks	77	74	68
Flatbed Truck	70	67	61
	Overall $L_{eq}(h)$	82	76
PAVING			
Grader	75	72	66
Water Truck	77	74	68
Vibratory Roller	78	75	69
Compactor	76	73	67
Concrete Pump	74	71	65
Ready Mix Trucks	72	69	63
Asphalt Paver	79	76	70
Asphalt Roller	78	75	69

Equipment Type	Maximum Equipment Noise Level at 15 meters (dBA)	Hourly Equivalent Noise Levels at 15 meters (dBA ¹)	Hourly Equivalent Noise Levels at 30 meters (dBA ¹)
Sweeper	79	76	70
Medium Duty Dump Trucks	73	70	64
Flatbed Truck	70	67	61
	Overall L_{eq}(h)	84	78
EARTHWORK			
Excavator	83	80	74
Backhoe	75	72	66
Front Loader	76	73	67
Dozer	85	82	76
Trencher	80	77	71
Heavy Duty Dump Trucks	73	70	64
	Overall L_{eq}(h)	86	80
STRUCTURES			
Excavator	83	80	74
Backhoe	75	72	66
Soil Compactor	80	77	71
Crane	78	75	69
Concrete Pump	74	71	65
Compressor	68	65	59
Front Loader	76	73	67
Flatbed Truck	75	72	66
Medium Duty Dump Trucks	73	70	64
Ready Mix Trucks	81	78	72
	Overall L_{eq}(h)	87	81
MISCELLANEOUS			
Front Loader	76	73	67
Dozer	79	76	70
Medium Duty Dump Trucks	73	70	64
	Overall L_{eq}(h)	79	73

Notes: Calculated construction noise levels assume that all equipment operates for six hours out of an eight-hour day. Calculations also assume that all equipment are operated at full load 70% of the time.

1 - Predicted noise levels are from the center of the construction activity.

Source: WSP, 2020.

Noise resulting from FCI/FPC construction is not anticipated to have a significant adverse effect on land uses surrounding either the East or West Sites. The relatively isolated locations of the sites, the distances to homes, businesses, schools, churches and other sensitive land uses and noise receptors, the vegetative buffers between the development sites and neighboring properties, and background noise from nearby roadways should allow construction to proceed while avoiding significant adverse impacts to adjoining properties. Following completion of construction, noise levels would return to near pre-construction levels.

c. Recommended Mitigation - Construction Activities

Potential noise impacts during construction would be mitigated by confining construction to normal working hours and employing noise-controlled construction equipment to the extent feasible. Measures to mitigate potential construction noise impacts may also include the following provisions:

- **Source Control**
 - Construction equipment would be equipped with appropriate noise attenuation devices, such as mufflers and engine housings.
 - Exhaust systems would be maintained in good working order. Properly designed engine enclosures and intake silencers would be employed.
 - Regular equipment maintenance would be undertaken.
- **Site Control**
 - Stationary equipment would be placed as far away from sensitive receptors as possible (e.g., aggregate crushers, operators).
 - Staging areas and haul routes would be selected to minimize objectionable noise impacts.
- **Time and Activity Constraints**
 - Construction activities would be scheduled to coincide with periods when people would least likely be adversely affected. Workdays would be largely confined to normal business hours.
- **Community Awareness**
 - Public notification of construction operations would incorporate noise considerations and methods to handle complaints would be specified.

d. Potential Impacts – FCI/FPC Operation

Noise occurring during correctional facility operation is not expected to result in a significant adverse impact. The absence of noise-producing equipment and activities should result in post-construction noise conditions similar to pre-construction conditions. Any increase in noise levels resulting from the operation of the proposed FCI/FPC is expected to be slight and virtually imperceptible beyond the boundary of the USP property. Furthermore, the distances between the proposed facility and homes, commercial uses and other land uses adjoining the USP Leavenworth property and the dense vegetative barriers between the development sites and neighboring properties, should go far to attenuate any potential noise impacts.

e. Recommended Mitigation – FCI/FPC Operation

Given the lack of significant noise sources and therefore adverse noise impacts during FCI and FPC operation, the buffer zone to surround the proposed facilities, the distance to sensitive receptors, existing vegetative barriers, and the limited background noise levels generated along adjoining roadways, no mitigation measures to control noise resulting from operation of the proposed project are

warranted. Nonetheless, the BOP is proposing to establish an earthen berm to be located south of the proposed FCI/FPC (East Site) to further shield the BOP staff housing units fronting on Metropolitan Avenue from any noise (and visual intrusion) from use of the FPC's outdoor recreation fields and courts.

While the location of the planned Carousel substation is approximately 800 feet east of the nearest BOP staff housing units, there is a potential for noise resulting from substation operation. Although an earthen berm is already planned to separate the homes from other BOP developments, an additional 8-foot high decorative concrete barrier is proposed to encircle the substation to both eliminate views of the substation and reduce potential noise impacts. No other mitigation measures involving electric power service are planned or warranted.

U. SUMMARY OF ANY SIGNIFICANT IMPACTS AND REQUIRED MITIGATION

For each resource category, the impact analysis conforms to the same general approach. When possible, quantitative information is provided to establish impacts. Qualitatively, these impacts are measured based on the criteria below:

- **None/Negligible:** The resource would not be affected, or changes would be either non-detectable or if detected, would have effects that would be slight and local. Impacts would be well below regulatory standards, as applicable.
- **Minor:** Changes to the resource would be measurable, although the changes would be small and localized. Impacts would be within or below regulatory standards, as applicable. Mitigation measures would reduce any potential adverse effects.
- **Moderate:** Changes to the resource would be measurable and have both localized and regional scale impacts. Impacts would be within or below regulatory standards, but historical conditions are being altered on a short-term basis. Mitigation measures would be necessary to reduce any potential adverse effects.
- **Major:** Changes would be readily measurable and would have substantial consequences on a local and regional level. Impacts would exceed regulatory standards. Mitigation measures to offset the adverse effects would be required to reduce impacts, though long-term changes to the resource would be expected.

Impacts are predicted based on the degree of change or loss of the resource from baseline conditions. Impacts may be direct or indirect. Direct impacts are caused by an action and occur at the same time and place as the action. Indirect impacts are caused by an action and occur later in time or are farther removed from the area, but are still reasonably foreseeable (40 CFR Part 1508).

Construction and operation of the proposed FCI/FPC would result in less than significant impacts to topography, geology, soils, water resources, land use, transportation movements, meteorological conditions, noise levels, and air quality. At the same time, the population, regional economy, and housing market of northeastern Kansas/western Missouri would benefit by virtue of the project development budget of approximately \$356 million, by maintaining the BOP workforce in Leavenworth, and from the annual operating budget of approximately \$40 million.

While construction and operation of the proposed FCI/FPC would cause unavoidable impacts, construction and operation activities would comply with all federal statutes, implementing regulations, Executive Orders, and other consultation, review and permit requirements potentially applicable to the project. Any unavoidable impacts to topography, geology, soils, water resources, land use, transportation movements, meteorological conditions, noise levels, and air quality would follow the mitigation measures identified for each resource to reduce or eliminate impacts. The project would also comply with the National Historic Preservation Act with the BOP consulting with the Kansas Historical Society and the Clean Water Act with the BOP coordinating with the USACE to obtain any required permits involving impacts to jurisdictional wetlands and other waters of the U.S. prior to construction.

Development of the proposed FCI/FPC would result in additional benefits by providing a much-needed new facility to replace the USP and meet future inmate housing needs while contributing to implementation of national criminal justice goals and objectives. The BOP is facing a growing challenge to its mission in that an increasing number of federal correctional facilities, including USP Leavenworth, are aging, resulting in an ongoing need for modern facilities and infrastructure. Development of a new FCI/FPC in Leavenworth will help ensure that the federal criminal justice system in general, and the BOP in particular, continues to function in a quality manner while addressing the need for modern, secure, efficient and cost-effective institutions. Potentially adverse impacts associated with FCI/FPC construction and operation would be controlled, mitigated, or avoided to the extent possible.

Based on the analysis presented in this DSEIS, the proposed action (Preferred Alternative East-1) is not expected to result in significant adverse impacts on environmental, historical, or socioeconomic resources. Table III-25 presents a summary of impacts under the No Action and Preferred Alternative.

Table III-25: Summary of Impacts under No Action and Preferred Alternatives

Resource Area	Impacts: No Action Alternative	Impacts: Preferred Alternative
Topography	The proposed FCI/FPC would not be developed and impacts to topographic conditions would not occur.	FCI/FPC development requires grading/alteration of the current topography; impacts to topographic conditions would be minor.
Geology	The proposed FCI/FPC would not be developed and impacts to geologic resources would not occur.	FCI/FPC development would not result in disturbance or alteration of natural geologic features and conditions; impacts to geologic conditions are considered negligible.
Soils	The proposed FCI/FPC would not be developed and impacts to soils would not occur.	FCI/FPC development requires grading/alteration of the current topography, resulting in minor impacts as soils are disturbed/redistributed across the site.
Water Resources	The proposed FCI/FPC would not be developed and impacts to water resources would not occur.	An increase in impervious surface from FCI/FPC development is expected to increase stormwater runoff, however, post-development runoff is expected to be no greater than pre-development. No adverse impacts to the FEMA designated 100-year floodplain are expected with only minor impacts to water resources anticipated.

Resource Area	Impacts: No Action Alternative	Impacts: Preferred Alternative
Biological Resources	The proposed FCI/FPC would not be developed and impacts to biological resources would not occur.	FCI/FPC development would disturb native vegetation including uplands, drainageways and tree stands. No adverse impacts to wetlands and waters of the US anticipated. Common (non-special status) wildlife species would be displaced due to increase in human activity during construction and operation. Best management practices would be followed during construction to reduce potential impacts to ecologically sensitive areas.
Archaeological and Historic Resources	The proposed FCI/FPC would not be developed and impacts to archaeological and historic resources would not occur.	No adverse impacts to archaeological or historic resources are anticipated as a result of FCI/FPC development. Direct impacts to BOP staff housing units from access road construction will be avoided and a study will be conducted addressing options for possible USP reuse.
Visual and Aesthetic Resources	The proposed FCI/FPC would not be developed and impacts to visual and aesthetic resources would not occur.	Impacts on visual and aesthetic resources would occur as construction alters aesthetic features and characteristics of the development zone. Permanent impacts would occur with the FCI/FPC a new feature on the landscape. However, the FCI/FPC would be generally compatible with its surroundings resulting in only minor impacts.
Hazardous Materials	The proposed FCI/FPC would not be developed and impacts associated with hazardous materials would not occur.	There are waste/hazardous materials disposal sites on the USP Leavenworth property that have been investigated and monitored since 1991 with remedial actions taken and monitoring underway as part of agreement with KDHE. Development of the East-1 alternative includes portions of waste/hazardous materials sites, and therefore any construction activities in such areas would be done in coordination with the KDHE and compliance with applicable regulations.
Fiscal Considerations	The proposed FCI/FPC would not be developed and impacts associated with fiscal considerations would not occur.	USP Leavenworth property has not contributed taxes or similar payments throughout the years of Federal Government ownership. FCI/FPC development would not affect current ownership arrangement and, therefore, pose no adverse fiscal impacts to the State of Kansas, Leavenworth County, or the City of Leavenworth.

Resource Area	Impacts: No Action Alternative	Impacts: Preferred Alternative
Demographic Characteristics	The proposed FCI/FPC would not be developed and impacts to demographic characteristics would not occur.	The proposed FCI/FPC is intended to replace the USP and FPC with little change in the number of inmates and BOP staff thereby posing no significant change (increase or decrease) to the city or county total population. No population groups would be relocated or removed and no sensitive population groups (e.g., children, minorities, seniors, and handicapped) would be adversely affected. No significant adverse demographic impacts are anticipated.
Economic Characteristics	The proposed FCI/FPC would not be developed and impacts to local and regional economies would not occur.	FCI/FPC development would result in construction employment and material purchases which would generate further spending while supporting indirect employment. The increased economic activity resulting from construction spending is considered beneficial to the region's economy and a positive impact. No businesses or other economic activities would be displaced or eliminated by the proposed FCI/FPC.
Housing Characteristics	The proposed FCI/FPC would not be developed and impacts to housing markets would not occur.	The proposed FCI/FPC is intended to replace the USP with little change to the number of BOP staff employed thereby posing no impacts to the region's housing market (i.e., housing availability, supply, and cost).
Environmental Justice	The proposed FCI/FPC would not be developed and environmental justice-related impacts would not occur.	Impacts that would disproportionately and adversely affect minority or low-income populations are not anticipated. The proposed action is expected to result in continued employment and commerce, which would benefit minority and low-income populations within the Leavenworth County region. The proposed action complies with EO 12898, Environmental Justice.
Community Services and Facilities	The proposed FCI/FPC would not be developed and impacts to community services and facilities would not occur.	FCI/FPC development is not expected to adversely affect law enforcement, fire protection, or emergency medical services in the area. Public roadways leading to and from the FCI/FPC would remain open, accessible, and available for normal traffic movements at all times. With no change to the number of BOP staff and school age children, no impact to public schools is anticipated.
Land Use	The proposed FCI/FPC would not be developed and impacts to land use would not occur.	FCI/FPC development would have a direct impact on land use by transforming a vacant area to an institutional use. The self-contained nature of the FCI/FPC would limit potential direct impacts to the development zone only with no adverse impacts on adjoining private and public properties.

Resource Area	Impacts: No Action Alternative	Impacts: Preferred Alternative
Water Supply Service	The proposed FCI/FPC would not be developed and impacts to water supply service would not occur.	At the time the USP and prison camp permanently cease housing inmates, there will be little to no change to the number of inmates and staff. The FCI/FPC will utilize modern water conserving fixtures and equipment with water demands equal to or less than the current operation thereby posing no significant adverse impacts to water supply providers or infrastructure.
Wastewater Service	The proposed FCI/FPC would not be developed and impacts to wastewater collection and treatment services would not occur.	At the time the USP and prison camp permanently cease housing inmates, there would be little to no change to the number of inmates and staff. The FCI/FPC would use modern water conserving fixtures and equipment with the volume of wastewater requiring treatment equal to or less than the current USP operation, thereby posing no significant adverse impacts to wastewater treatment providers or infrastructure.
Electrical Service	The proposed FCI/FPC would not be developed and impacts to electrical service would not occur.	The proposed FCI/FPC will use modern, energy-efficient mechanical and electrical equipment and with the USP and prison camp no longer housing inmates, the proposed action would pose no significant adverse impacts to electric power providers or infrastructure.
Natural Gas Service	The proposed FCI/FPC would not be developed and impacts to natural gas service would not occur.	The proposed FCI/FPC will rely upon natural gas service which has no known limitations in the Leavenworth area. With use of modern, energy-efficient mechanical and other equipment, and with the USP and prison camp no longer housing inmates, the proposed FCI/FPC would pose no significant adverse impacts to natural gas providers or infrastructure.
Telecommunication Services	The proposed FCI/FPC would not be developed and impacts to telecommunication services would not occur.	A wide array of telecommunications services are available in the Leavenworth County area. Telecommunications needs of the FCI/FPC would be accommodated by area telecommunications providers without significant adverse impacts to existing or future customers or infrastructure.
Solid Waste Services	The proposed FCI/FPC would not be developed and impacts to solid waste management services would not occur.	During FCI/FPC construction solid wastes would be generated which would be properly stored, collected, and disposed. With the USP and prison camp no longer housing inmates, there would be little to no net increase in the inmate population and staff with the nature and volume of solid wastes generated during FCI/FPC operation little changed over the current operation. Waste collection and disposal would be accommodated by current waste management providers operating in the area with no significant adverse impacts to services or infrastructure.

Resource Area	Impacts: No Action Alternative	Impacts: Preferred Alternative
Transportation Systems	The proposed FCI/FPC would not be developed and impacts to transportation systems would not occur.	A slight temporary increase in traffic along local roadways is expected from construction worker trips to and from the FCI/FPC development zone and the movement of materials, supplies, and equipment which would end following completion of construction. With the USP and prison camp no longer housing inmates, no significant change (increase or decrease) to the number of staff, visitors, inmate transports or service deliveries to the FCI/FPC would occur with no significant adverse traffic impacts expected. Employees and visitors will be encouraged to carpool when traveling to the facility.
Meteorological Conditions	The proposed FCI/FPC would not be developed and impacts to meteorological conditions would not occur.	Construction and operation of the proposed FCI/FPC is not expected to alter the micro-climatology of wind and temperature. With its small scale relative to its environs, the FCI/FPC would not alter or affect the larger-scale climatology of the area or have a significant adverse impact.
Air Quality	The proposed FCI/FPC would not be developed and impacts to air quality would not occur.	Air quality would potentially be affected temporarily during construction however, with proper measures impacts would be negligible. With use of modern and highly-efficient mechanical and other equipment, no significant adverse air quality impacts are anticipated during FCI/FPC operation.
Noise	The proposed FCI/FPC would not be developed and impacts to noise conditions would not occur.	Construction activities would result in noise impacts in the immediate vicinity of the FCI/FPC development zone. However, any increase in noise levels would be minor and end following construction. FCI/FPC operation is not expected to increase noise levels above current conditions with no significant adverse impacts expected.

V. RELATIONSHIP BETWEEN SHORT-TERM USE OF THE ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

Regulations for the preparation of EISs require such documents to address the relationship between short-term use of the environment and the maintenance of long-term productivity. In this instance, following ground-breaking, a portion of the USP property would be used as a construction site. Construction would involve ground clearing, grading, and excavating, the erection of building and other structures, trenching for utility installations, the paving of internal roadways and parking lots, installation of perimeter security fencing, light fixtures, and signage among other similar activities. Increased noise levels, dust, soil erosion and sedimentation, and similar construction impacts can be

anticipated. These disruptions, however, would be temporary and should be easily controlled to minimize their effects and to avoid significant adverse impacts.

Potential short-term impacts and inconveniences must be contrasted with the economic output and productivity that would result by virtue of the jobs created, payrolls, induced personal income, and the purchases of materials, supplies, and services that would occur during the construction phase. The economic viability of the City of Leavenworth, surrounding communities in Leavenworth County, and the northeastern Kansas/western Missouri region would also benefit on a long-term basis by maintaining a permanent BOP workforce of approximately 338 positions and the estimated \$40 million annual budget for FCI/FPC operation. These productivity gains would be long-term, given the lifespan of the planned facilities.

W. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

Regulations for the preparation of EISs also require such documents to address irreversible and irretrievable commitments of resources associated with the proposed action. Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the effects that use of these resources will have on future generations. Irreversible effects primarily result from use or destruction of a specific resource that cannot be replaced within a reasonable timeframe (e.g., energy and minerals). Irretrievable commitments of resources that could result from implementation of the proposed action involve the continued consumption of energy resources and human labor resources. The use of these resources would be considered to be enduring, lasting throughout the lifespan of the new facilities or approximately 50 or more years.

Construction of the FCI/FPC would result in both direct and indirect commitments of resources. In some cases, the resources committed would be recovered in a relatively short period of time. In other cases, resources would be irreversibly or irretrievably committed by virtue of being consumed or by the apparent limitlessness of the period of their commitment to a specific use. Irreversibly and irretrievable commitments of resources can sometimes be compensated for by the provision of similar resources with substantially the same use or value.

- **Material Resources:** The proposed action would also require the commitment of various construction materials including substantial volumes of cement, aggregate, steel, asphalt, lumber, and other building materials. Resources consumed as a result of FCI/FPC development would be offset by the creation of the correctional facilities and the resulting societal benefits. A portion of the material dedicated to construction may also be recycled at some future date.
- **Biological Habitat:** In this instance, the land comprising the project site would be required for the construction of the FCI/FPC and would be considered irretrievably committed. With development of a currently vacant tract, vegetation and wildlife habitat would also be affected. Mitigation measures to be implemented prior to and during construction would be in accordance with applicable permits and approvals.
- **Energy:** Energy resources would be irretrievably consumed, including petroleum-based products (such as gasoline and diesel fuels), natural gas, and electricity. During routine operation of the proposed FCI/FPC, gasoline would be consumed as employees, visitors, and service vehicles

travel to and from the facility and to maintain facility security by use of patrol vehicles. Natural gas and electricity would also be consumed during operation of the new facilities replacing the energy consumed daily during operation of the 100+ year old USP. Consumption of energy resources would not place a significant demand on their availability in the region, and no significant adverse impacts would be expected.

- **Manpower:** The use of human resources for construction and operation is considered an irretrievable commitment in that it would preclude such personnel from engaging in other productive work activities. However, following development of the FCI/FPC, staff (and inmates) would be transferred from the old to the new facilities with little to no change (increase or decrease) in the use of human resources estimated to be approximately 338 person-years of staff time annually upon operation of the FCI/FPC. Maintaining BOP employment in the Leavenworth region is also considered beneficial.

X. CONSIDERATION OF SECONDARY AND CUMULATIVE IMPACTS

1. Secondary Impacts

Secondary impacts are those that are *“caused by an action and are later in time or farther removed in distance but are still reasonably foreseeable”* (40 CFR 1508.8). Secondary impacts are typically associated with developments that may indirectly result from new construction or improvement of a facility. Secondary impacts differ from those directly associated with the construction and operation of a facility itself and are often caused by what is referred to as induced development. Induced development may include a variety of secondary effects such as changes in land use, water quality, economic vitality and population density. Therefore, the potential for secondary impacts to occur is determined in large part by the individual local planning objectives and the location of a proposed project.

Construction and operation of the proposed FCI/FPC would result in less-than-significant impacts to the immediate project site, USP property and host region. Less-than-significant impacts would be anticipated on utility services, traffic and transportation movements to and from the facility, noise levels, and air quality in the vicinity of the project site. The compact nature of the proposed development coupled with placement within the USP Leavenworth property would not affect local land use patterns and would have no secondary impacts on land use. Extending water supply, wastewater collection, electric power, natural gas, and telecommunications infrastructure within the USP Leavenworth property to serve the proposed facilities is not expected to induce or foster additional development in the area.

With changes in the population of the City of Leavenworth’s population between 1990 and 2020 (-6.0 percent), increased development activity is an intended consequence of the proposed project. Any such potential impact would be considered by Leavenworth City and Leavenworth County officials in the planning and development of community facilities and/or utility system improvements. In addition, such growth would be consistent with the goals of local planning and development officials to secure new and maintain current employment opportunities while stimulating new/expanded economic activities in the area. Local planning and economic development officials are confident in their ability to manage future developments so as to maintain the quality of the natural environment.

The proposed action to construct and operate the FCI/FPC, in concert with other actions, would also contribute to the efficient operation of the national criminal justice system. Beneficial impacts, both direct and secondary, to the region's economy would also be realized by virtue of the substantial construction and operating budgets associated with the FCI/FPC. Secondary and construction-related impacts and other potentially adverse impacts would be controlled, mitigated and avoided to the extent possible. There are no present or foreseeable actions occurring in Leavenworth City or Leavenworth County that are directly attributable to the proposed action.

2. Cumulative Impacts

The intent of the cumulative effects analysis is to determine the magnitude and significance of past, present and reasonably foreseeable future actions, both beneficial and adverse, in terms of context and intensity. The proposed FCI/FPC is not expected to result in cumulative effects, in terms of intensity or context, to any social, cultural or natural features. The incremental rate of growth in the City of Leavenworth and the surrounding Leavenworth County region, the lack of other reasonably foreseeable actions, the current status of resources listed, and the local regulatory framework, all function to offset potentially negative cumulative impacts.

3. Public Involvement/Awareness

In preparing this document, the USFWS, USACE, USEPA, Kansas SHPO, KDHE among many others were notified of the proposed action and the resumption of the NEPA process and asked to provide input regarding potential impacts (Appendix A). Additionally, the interests, comments, and support of local elected and appointed officials as well as the populations at large residing in the City of Leavenworth and Leavenworth County were taken into consideration. USP Leavenworth was developed in the early 1900s and has been operating successfully and with broad public support throughout that time; it is expected the development of the proposed FCI/FPC will experience similar support.

IV. REFERENCES

IV. REFERENCES

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