December 2018

Draft
Environmental Assessment (EA)
Bulk Fuel Storage Facility

Prepared for

St. Louis Lambert International Airport (STL)

Prepared by

TETRA TECH

1634 Eastport Plaza Drive
Collinsville, IL 62234
618-345-0669
www.tetratech.com
Contract P1186

TABLE OF CONTENTS

TABLES

ATTACHMENTS

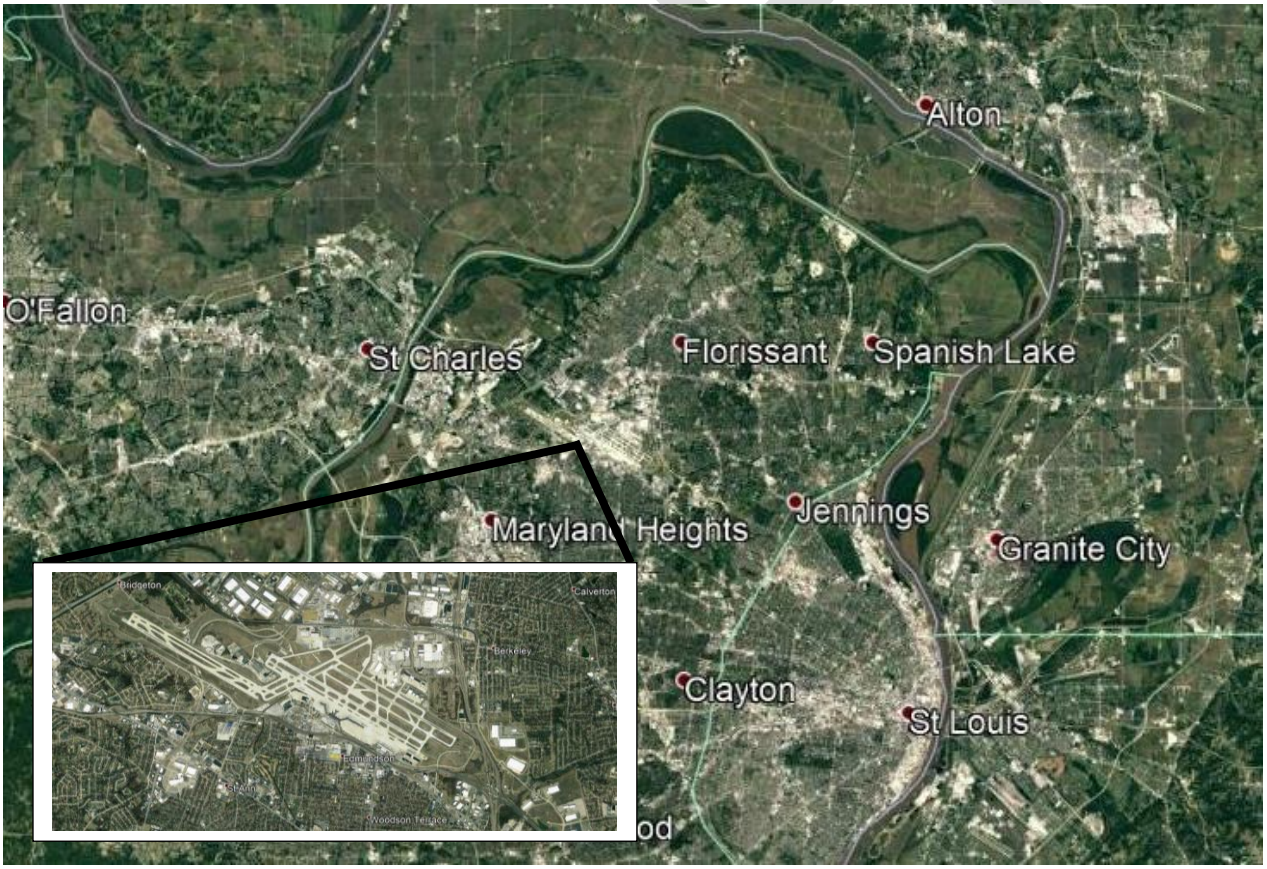
1.0 PURPOSE AND NEED

This Environmental Assessment was prepared per Federal Aviation Administration (FAA) Order 1050.1F Environmental Impacts: Policies and Procedures, and Order 5050.4B National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions.

1.1 Introduction

The St. Louis Lambert International Airport (the Airport) is a medium-hub, commercial service airport owned and operated by the City of St. Louis (MO). The airport is sponsored and operated on behalf of the City by the St. Louis Airport Authority (a City department). The Greater Metropolitan St. Louis Region has a population of 2.8 million people. The Airport is the primarily access point for commercial passenger airlines that serve the metropolitan population and the region. For calendar year 2018, airlines serving St. Louis provide non-stop flights to 73 destinations. The airlines expect to fly 180,000 flights and transport over 15 million passengers by year-end.

St. Louis Lambert International Airport



The Airport has an existing Bulk Fuel Storage Facility (BFSF) that stores jet fuel for the commercial airlines that use the Airport. The BFSF is located south of Terminal 1, adjacent to Super Park Lot A. The BFSF features 41 underground fuel storage tanks of various ages, with some tanks dating back to 1957. Unlike most commercial airports in the United States, the Airport is one of the last to retain a BFSF with underground tanks.

The BFSF connects to the airport fuel hydrant distribution system, which acts much like a fire hydrant system. Fuel flows under pressure through a series of pipes to individual airplane gates where a cart meters the transfer of fuel from hydrant into airplane fuel tanks. The BFSF infrastructure is owned by the City of St. Louis and leased to STL Fuel Company LLC (STL Fuel). In turn, STL Fuel hires a third-party vendor to operate and maintain the storage facility. STL Fuel is a consortium of airlines with each member being responsible for purchasing fuel needed by the individual airline. The fuel is then stored at the BFSF in common use tanks.

Existing Bulk Fuel Storage Location

1.2 Purpose and Need

The existing BFSF is 60-years old and features 41 underground fuel storage tanks of various ages, with some tanks dating back to 1957. Petroleum contamination has been detected in both groundwater and soil at the existing BFSF. The site and petroleum release have been registered with the Missouri Department of Natural Resources. Unlike most commercial airports in the United States, the Airport is one of the last to retain a BFSF with underground tanks. The existing BFSF does not comply with recent changes to U.S. Environmental Protection Agency (EPA) regulation (40 CFR 280) for underground storage tanks. The revised regulations were published in July 2015 and the changes are being implemented in phases through October 2018.

The existing bulk fuel storage facility must be replaced with a modern, above ground facility properly sized for needs of the Airport, which will meet industry-standard operational integrity and reliability criteria, complies with applicable environmental regulatory changes, and does not impinge on aeronautical functions. If the facility is not replaced, or in the alternative re-built the existing BFSF will be unable to comply with EPA regulations. The result will be potential monetary fines and/or mandated closure of the facility.

1.3 Proposed Action

The Airport proposes to replace the BFSF at a site that will support construction of an above ground storage facility in a manner that will satisfy EPA regulations and meet the requirements of a modern storage facility.

For this proposed action STL Fuel will construct a replacement BFSF consisting of three above ground storage tanks (planned total capacity 3,024,000 gallons) and associated support structures, including fuel receipt facilities, support buildings parking lot security fencing, stormwater management structures and an access driveway.

The Proposed Action includes:

1. Construct a replacement BFSF consisting of three above ground storage tanks (planned total capacity 3,024,000 gallons) and,
2. Associated support structures including fuel receiving facilities, support buildings, vehicle parking lot, security fencing, stormwater management structures, and an access driveway

Included with this Proposed Action four connected actions:

1. Construct an underground fuel transfer line connecting the BFSF to an existing hydrant main at Concourse E (length 9,400 linear feet, diameter 16-inch)
2. Extend Department of Transportation governed pipelines to the replacement BFSF
    a. Extend Buckeye Pipeline to the BFSF (200 linear feet)
    b. Abandon-in-place Buckeye Pipeline no longer needed (15,100 linear feet)
    c. Extend St. Louis Pipeline to the BFSF (5,200 linear feet)

   d. Abandon-in-place St. Louis Pipeline no longer needed (16,700 linear feet)

3. Relocate Spire Natural Gas Main (2,500 linear feet)
4. Decommission the existing BFSF
   a. Remove all underground storage tanks
   b. Remove all underground ground fuel pipes, pumps, and oil/water separators
   c. Remove all above ground structures and pipes
   d. Remediate existing BFSF site to environmental standards

Attachment A presents exhibits illustrating the proposed action.

1.4 Agency Actions and Approvals

The Proposed Action is not included on the Sponsor's latest Airport Layout Plan (ALP), which was conditionally approved on February 5, 2013. The FAA actions, determinations, and approvals necessary for the Proposed Action to proceed will include the following:

- Approval to change the ALP and add the proposed action and any connected actions to the drawing.
- A favorable obstruction evaluation with a determination of no objection.

2.0 ALTERNATIVES

In accordance with NEPA, FAA Order 1050.1F, FAA Order 5050.4B, and FAA advisory guidance, reasonable alternatives that could accomplish the Purpose and Need for the Proposed Action were identified and evaluated.

2.1 Site Selection Study

Planning for a replacement Bulk Fuel Storage Facility was not contemplated by the last Airport Master Plan Update, completed in November 2012. Need arose subsequent to completion of the master plan when draft changes to environmental regulations became available to the public.

Consequently, the initial planning for a replacement BSFS was undertaken by the Airport sponsor and completed in late 2014. The study consisted of establishing planning parameters that would guide identification of possible sites. Seven broad criteria framed the investigation and a site selection study ensued.

1. Site similar to the Existing BFSF: on the airport, not reserved for another aeronautical purpose, and outside the Airport Operation Area
2. Size: preferred six (6) acres with expansion potential
3. U.S. Department of Transportation (DOT) pipelines: adjacent to or near one of the two DOT pipelines that serve the airport
4. Utilities: adjacent to or in close proximity
5. Part 77 surfaces and flight procedures: no impact
6. Adjacencies: land uses compatible with BFSF
7. Access: road(s) suitable for heavy trucks

The study focused on six (6) sites that appeared favorable to house a replacement BFSF. The candidate sites include the existing BFSF site.

After initial assessment, three sites were eliminated after failing one or more criteria. Two potential sites, plus the existing BFSF and the no-action alternative, were retained for further evaluation.

1. Alternative A – Existing BFSF
2. Alternative B – Banshee Road Site
3. Alternative C – Airport Road Site

BFSF Alternative Sites

2.2 No-Action Alternative

The No-Action Alternative will not satisfy the project purpose and need statements. However, in addition to a Council on Environmental Quality and a National Environmental Policy Act (CEQ/NEPA) requirement, the no-action alternative serves as a baseline for comparing impacts to the preferred alternative. The alternative is therefore retained for environmental analysis.

2.3 Alternative A – Existing BFS

Rebuilding the existing BFSF in order to attain regulatory compliance is problematic due to age and site limitations, which would make rebuilding the facility cost prohibitive. The existing facility occupies three acres and expansion is constrained by adjacent land uses. To the west is U.S. Government Property and to the east airport parking. With only three acres, the physical size could not accommodate constructing a replacement facility while still maintaining operational

needs of the Airport. To assemble the necessary real estate would require taking six acres of government property or 800 spaces from the adjoining parking lot. The potential for obtaining government property was not considered viable. Vehicle parking at the Airport is in short supply and the loss of parking inventory and resulting customer inconvenience was unacceptable. The lack of space did not meet the second criteria, therefore, not meeting the Purposed and Need. This fact eliminated Alternative A – Existing BFSF from further evaluation.

2.4 Alternative B – Banshee Site

Subsequent to the site selection study, STL Fuel performed preliminary engineering to estimate the required size for above ground storage tanks. It was found that in order to meet the definition of an above ground BFSF the storage capacity would be greater than initially anticipated. Calculations indicated storage tanks heights would be fifty-feet or more above ground level. The 50-foot height would penetrate the approach and departure surfaces to Runway 12L/30R. In addition, the large expanse of structural steel could adversely impact the integrity of runway glide slope and localizer signals. The height of tanks would adversely affect aeronautical functions and violate the fifth selection criterion, therefore, not meeting the Purpose and Need. This fact eliminated the Alternative B – Banshee Site from evaluation.

2.5 Proposed Action – Alternative C Airport Road Site

Of all sites reviewed, only Alternative C – Airport Road Site meets all criteria established for the preferred site. The Airport Road Site is located on-airport, not reserved for other purposes, and outside the Airport Operations Area. The site can provide the required six acres and can be expanded to more than ten acres. One of the two DOT pipelines are adjacent to the site and all utilities are located in nearby utility corridors. Tank heights can be readily accommodated without adversely affecting aeronautical surfaces or other aeronautical functions. The site is compatible to adjacent land uses and surrounding property is largely vacant. The existing road network is suitable for heavy truck traffic.

In all respects, the Proposed Action is only alternative that meets the Purpose and Need statements and is carried forward, along with the No-Action Alternative, for environmental analysis. In this document, the ‘project site’ refers to Alternative C.

3.0 AFFECTED ENVIRONMENT

3.1 Introduction

The project site for the replacement Bulk Fuel Storage Facility (BFSF) is owned by the City of St. Louis. The site occupies approximately 7.86 acres and is within the incorporated municipal boundaries of the City of Berkeley in St. Louis County. The site is bounded on the west by James S McDonnel Blvd. and to the north by Airport Road. Open space also owned by the City lies to the east and south. Stormwater at the project site is currently conveyed to the west via a stormwater sewer system. No surface water features are present at the project site.

Prior to City of St. Louis ownership of the site, a residential neighborhood known as the Brownleigh Subdivision occupied the site. A review of historical topographic maps shows that homes were built on the project site and surrounding area sometime between 1941 and 1954. The 1941 map shows no development in the area and the 1954 map shows residential development, which remained largely unchanged until the 1980's. Starting in the 1980's, parcels in the area were purchased by the Airport as part of its noise mitigation program and by the early 2000's the Airport had completed the purchase of all parcels. The Airport razed all above ground structures after purchase. Currently, the project area is maintained in grass with occasional trees. Photographs of the project site are presented in Attachment B.

The nearest residential area is located approximately 3,000 feet to the east. Interstate highway 170 is between the residential area and the project site.

While the project site is located outside of the Airport Operation Area (AOA), the project site is located on airport owned property, which requires a change to the Airport Layout Plan. Attachment A contains figures showing the planned site lay out, the existing BFSF and connected actions.

As an action connected to the construction of the replacement BFSF, a new underground fuel transfer line connecting the replacement BFSF to the existing hydrant main at Concourse E will be constructed.

An additional connected action will be the construction of new sections of the St. Louis Pipeline and the Buckeye Pipeline, which currently deliver fuel to the existing BFSF.

It is anticipated that the St. Louis Pipeline will be routed south along the Interstate Highway 170 right-of-way. The new segment will be 5,200 feet long. The final route selection will be made by the Missouri Department of Transportation, the City of Berkeley and the pipeline owner, St. Louis Pipeline Operating Co., LLC. The Airport has no role in the final decision.

The current alignment of the Buckeye Pipeline is along James S. McDonnell Blvd. Approximately 200 feet of new pipeline will be required to bring the Buckeye Pipeline into the replacement BFSF.

As part of this connected action approximately 15,100 feet of the existing Buckeye Pipeline and 16,700 feet of the existing St. Louis Pipeline will no longer be needed. The methods by which

these unneeded sections of pipeline will be abandoned will be determined by the owners, Buckeye Pipe Line Co., LLP, and St. Louis Pipeline Operating Co., LLC, respectively.

The relocation of an underground natural gas main owned by Spire Inc. is the third connected action. However, as is the case with the fuel pipelines, the ultimate decision regarding routes and abandonment methods will be determined by Spire Inc.

The decommissioning of the existing BFSF is the fourth connected action. The abandonment of this facility will be performed in accordance with all applicable regulations. It is anticipated that all tanks will be removed along with all piping, oil/water separators and other appurtenances. The Missouri Department of Natural Resources will be the lead regulatory agency for the decommissioning and closure.

3.2 Location Map, Vicinity Map, Airport Diagram, Photographs

See Attachments A and B.

3.3 Existing/Planned Land Uses & Zoning

The bulk fuel storage site is presently vacant. The Airport Layout Plan reserves the property for future aeronautical uses and functions that support Airport operations.

During the mid-1990s, the FAA had a Remote Transmitter/Receiver station (RTR) located on the southern portion of the BFSF project site. The RTR facility remained in use until the Airport Expansion Program relocated the RTR in the early 2000s. The RTR site was decommissioned in 2006. The FAA also installed an underground fiber cable loop (located on the south perimeter of the BFSF project site), which remains today.

Attachment C contains the City of Berkeley Zoning Map. The project site for the replacement BFSF is zoned AD-2 Airport District. This classification recognizes and protects areas devoted to public-use aviation and associated activities.

Bulk fuel storage is not a land use called out in the Berkeley zoning codes. For this reason the City recommended a zoning change for the site to M-1 Industrial District and a special use permit for the fuel facility. The required zoning change was endorsed by the City of Berkeley Zoning Commission and the Board of Adjustment, and recommended favorably to the Berkeley City Council.

The City Council conducted a public hearing and first read of the zoning change on October 15, 2018 (Attachment C). A second and third reads occurred on November 5, 2018, and thereafter the Council voted on the measure and by unanimous vote passed the zoning change.

3.3.1 Industrial/Commercial Activities

Air Cargo facilities and the Boeing Defense Space & Security complex adjoin the site. The cargo facilities are to the west, opposite James S McDonnell Blvd, and the Boeing complex is to the north, across Airport Road. Interstate 170 is east of the site and airport property to the south. The Airport property to the south is vacant and will ultimately be developed for aeronautical activity.

3.3.2 Residential Areas, Schools, Churches, & Hospitals

The nearest residential area is located approximately 3,000 feet east of the project site. Several churches, as well as the nearest medical facility, the John C Murphy Health Center, are also located approximately 3,000 feet east of the project site. The nearest school is Airport Elementary School, located approximately 1 mile east of the project site.

3.3.3 Publicly-owned Parks, Recreational Areas, Wildlife & Waterfowl Refuges

The nearest publicly-owned parks are Edgewood Park and the Berkeley Municipal Pool, both located approximately 4000 feet northeast of the project site. No other recreational areas or refuges are located near the project site.

3.3.4 National/State Forests, Wilderness Areas, Wild & Scenic Rivers, Nationwide Rivers Inventory

No national/state forests, wilderness areas, wild and scenic rivers or rivers enrolled in the Nationwide Rivers Inventory are in St. Louis County. The nearest State Parks are approximately 20 miles west of the project site.

3.3.5 Federally-listed/State-listed Threatened & Endangered Species/Habitat

An Endangered Species Habitat survey was performed for this EA. The survey and its findings are described in Section 4.4.

3.3.6 Wetlands, Floodplains, Floodways, Coastal Zones, & Coastal Barriers

No costal zones or coastal barriers are in Missouri. Wetlands, floodplains and floodways are discussed in Section 1.9.

3.3.7 Historic, Archeological, or Cultural Resources

A preliminary review of the National Park Service Registry of Historic Places (NRHP) and the MDNR State Historic Preservation Officer registries indicate there are no historic places on or near the project site. No archeological sites are known on the project site or vicinity.

3.4 Affected Political Jurisdiction

The project site is in St. Louis County, within the corporate boundary for the City of Berkeley. In 2016, the population of Berkeley was estimated to be 8,981. According to the 2010 U.S. Census, the City's racial composition is predominantly African American with 81.8% of the residents in that classification. In 2015, the U.S. Census Bureau reports that 25.4% of the residents had income in the past 12 months that was below the poverty level. Residential portions of Berkeley are approximately 0.5 miles east of the project site and physically separated from the project site by Interstate 170.

3.5 Past, Present, and Reasonably Foreseeable Future Actions

The project site occupies the north-western portion of a 130 acre tract, which was purchased as part of the Airport noise compatibility program. An airline commissary service occupies eight (8) acres in the southeast corner of the tract and the remainder of the land is vacant.

The Airport Layout Plan reserves the tract for aeronautical and aviation related functions, and services that would support those functions and the employees. No specific plans have been formalized.

An environmental investigation of the project site found no evidence of past activities at the site that caused environmental contamination.

After the existing BFSF is decommissioned and remediated, STL Fuel will return the existing site to the Airport to be used for possible ground transportation facilities that support passenger needs.

4.0 ENVIRONMENTAL CONSEQUENCES & MITIGATION

4.1 Introduction

This section is organized by resource topics, with the impacts of all alternatives combined under resource headings. It provides concise analysis, environmental impacts, and conceptual measures needed to mitigate those impacts for resources affected by at least one of the alternatives.

4.2 Environmental Impact Categories Not Affected

The no action, proposed action, and reasonable alternatives would not affect the Impact Categories listed below:

Table 4-1
Environmental Impact Categories Not Affected

Impact Category	
Costal Resources	The project is located in the State of Missouri, which is not located in a coastal zone.
Section 4(f) Resources	The project site and the potential routes for the new transfer line are owned by STL. The nearest public parks are Edgewood Park and the Berkeley Municipal Pool, both located approximately 4000 feet northeast of the project site. The project site is not visible from these locations and project construction or operation will not impact these facilities.
Farm Lands	The Natural Resource Conservation Service classifies the soils at the project site as 'Urban Land – Harvester Complex'. The project site is not in an area designated as prime farm land. Construction of the replacement BFSF does not convert any farmland to non-agricultural use. The inbound supply and outbound transfer lines will be subsurface. The inbound supply lines are DOT lines that the pipeline companies, not STL Fuel, will be responsible for permitting under the DOT and the Pipeline and Hazardous Materials Safety Administration. The new alignments for the supply lines will not impact farmlands or land used for agricultural purposes. The transfer line will connect the replacement BFSF with the hydrant main at Concourse E. The transfer line will be subsurface for its entire length and will be routed across Airport property.
Climate	The proposed project and connected actions are not anticipated to be affected by forecasted climate change conditions. The proposed project and connected actions will not cause an increase in the consumption of jet fuel and will not increase the greenhouse gas emission rate.
Natural Resources and Energy Supply	This project entails the replacement of an existing facility with a similar facility. As a result, there will be no net change in electricity demands, water usage or sewage disposal caused by this project. No additional demands will be placed on water resources. Fuel

	consumption by the replacement BFSF will be similar to that of the existing BFSF. No scarce or unusual materials will be needed for the construction and operation of the replacement BFSF or for the connected actions.
Noise and Noise-Compatible Land Use	The preferred alternative and connected actions will not cause a change in airfield configuration, runway use, or flight patterns and the project is not within the 65+ DNL noise contour (shown on the figure included in Attachment D). The project will have no impact on the number of annual propeller operations, annual jet operations or daily helicopter operations.

4.3 Air Quality

As of 31 December 2017, St. Louis County is a non-attainment area for 8-hour ozone and PM-2.5. The status for 8-hour ozone is Marginal and the status for PM-2.5 is Moderate (see Attachment E). The existing BFSF emission sources (emergency electrical generator, gasoline underground storage tank and Jet Fuel storage tanks) are not covered under the Airport Intermediate Operating Permit and the facility does not have a stand-alone MDNR Air Operating Permit.

The regulatory necessity of obtaining an Operating Permit for the replacement BFSF is, as of October 2018, unclear and the Airport has requested guidance from MDNR in this matter. All written communication from MDNR on this issue will be forwarded to the FAA and the EA may be revised as necessary. The Airport will comply with MDNR's determination. The St. Louis County Health Department will also require a permit to construct the replacement BFSF.

Air emissions from the replacement BFSF for the following sources were estimated for this EA:

- 3 above ground storage tanks (ASTs) (48 feet tall, 60 feet in diameter, fixed roof), each with a capacity of 1,008,000 gallons,
- 20,000-gallon above ground surge tank, owned and operated by the Buckeye Pipeline Co.,
- 6,000-gallon above ground surge tank, owned and operated by the St. Louis Pipeline Co.,
- 1,000-gallon AST servicing the emergency generator, and
- 1,700 horsepower emergency diesel-fired generator

Using the EPA TANKS program (version 4.09D), the project design engineer Burns and McDonnell has estimated anticipated annual volatile organic compound (VOC) and hazardous air pollutants (HAPs) releases from the three ASTs, the two surge tanks and the emergency generator AST. TANKS 4.09D incorporates the most recent emissions factors provided in AP 42. Data sheets from the TANKS program are provided in Attachment F.

Some of the VOCs emitted from the Jet Fuel storage tanks are also organic HAPs. The TANKS program calculates the emission rate of naphthalene (a HAP). However, it provides no estimate for other HAPs. Emission rates for other HAPs potentially present were conservatively estimated using a mass balance, where the concentrations of organic HAP air emissions are proportional to the individual HAP concentrations contained in the Jet Fuel. For instance, if Jet Fuel contains

0.31% xylenes, and the TANKS program estimate of VOC emissions is 100 pounds, it is assumed that 0.31 pounds of naphthalene are emitted.

The Safety Data Sheet from the primary fuel supplier (Chevron) indicates the only organic HAP present is naphthalene at 3%. However, guidance from South Coast Air Quality Management District (SCAQMD) on calculations from liquid organic storage tanks (February 2017) recommends using the following liquid concentrations of HAPs for emission calculations from Jet Fuel A (Jet kerosene).

- Hexane 0.01%
- Toluene 0.13%
- Ethylbenzene 0.13%
- Xylenes 0.31%

The aggregate data (Safety Data Sheet and SCAQMD Guidance) was used to estimate organic HAP concentrations in Jet Fuel and estimate HAPs as summarized below.

- Naphthalene 3.00 %
- Hexane 0.01%
- Toluene 0.13%
- Ethylbenzene 0.13%
- Xylenes 0.31%

The TANKS software estimates emissions from fixed and floating roof storage tanks. Estimates for annual releases from the ASTs were prepared for two scenarios. The first estimate is based on the current fuel usage rate of approximately 102,000,000 gallons per year and the second is based on a doubling of the fuel usage rate to approximately 204,000,000 gallons per year. The ASTs were assumed to have fixed roofs in both cases. Burns and McDonnell's estimates are shown below.

Table 4-2
Replacement BFSF Emission Rates

	Emission Rate (pounds per year)				
Compound	**De Minimis Level (pounds per year)**	**ASTs at Current Annual Throughput (102,000,000 gallons)**	**ASTs at Future Annual Throughput (205,000,000 gallons)**	**20,000-gallon Surge Tank (servicing Buckeye Pipeline)**	**6,000 gallon Surge Tank (servicing St. Louis Pipeline)**
Jet Kerosene (VOC)	80,000	2,630	3,140	1.13	0.97
Individual HAPs					
Naphthalene	20,000	28.7	34.3	0.01	0.01
Xylenes	20,000	8.2	9.7	0.003	0.003
Toluene	20,000	3.4	4.1	0.001	0.001
Ethylbenzene	20,000	3.4	4.1	0.001	0.001
Hexane	20,000	2.6	3.1	0.001	0.001
Aggregate HAP	50,000	46.3	55.3	.016	.016

Burns and McDonnell estimated the actual and the potential to emit emissions from the diesel-fired generator using fuel consumption rates and emission factors from AP-42. The actual emissions were based on 100 hours of operation per year. The potential to emit emissions were estimated based on 500 hours of operation per year. The emissions calculations for the generator are shown below.

Table 4-3
Backup Generator Emission Rates

Compound	**De Minimis Level (tons/yr)**	**Actual Emissions, tons/year (operation: 100 hr/yr)**	**Potential to Emit Emissions, tons/yr (operation: 500 hr/yr)**
CO	100	0.57	2.83
NO_X	40	2.62	13.12
SO_x	40	0.17	0.86
PM_{10}	15	0.18	0.92

For the existing facility in calendar year 2017, when Jet A use totaled 97,442,376 gallons, it is estimated that the total emissions of Jet Kerosene from the existing BFSF was 1,829 pounds.

Because the quantitative emissions evaluation shows that the emissions rates are below de minimis thresholds, a conformity determination is not required.

The connected actions will not adversely impact air quality.

Because the anticipated staffing for the proposed project is similar to the continued operation of the existing BFSF (the no action alternative) and the project site is located in close proximity to the existing BFSF (the two sites are separated by approximately 1.5 miles), the proposed action will not increase employee vehicle miles required for continued service and operation. The number of future employee vehicle miles will be approximately equal under the proposed project as compared to the no action alternative.

Neither the proposed action nor the no action alternative will impact the level of aircraft operations, the number of passengers per year using the Airport, vehicular traffic in the area or other indirect source of air emissions.

Air emissions generated during the construction of the replacement BFSF will be de minimis, though there is uncertainty associated with the estimate. The current project schedule estimates that 'procurement and construction' will require approximately 10 months, though the duration of actual construction activities is unknown. The sequencing of construction activities on the 7.86-acre site has not yet been determined. Final grades of the site have not yet been designed.

Assuming site soils are 50% silt and have a moisture content of 20%, and using the factors provided in Table 11.9-1 from AP 42, a bulldozer (of unspecified size) is estimated to generating PM-10 emissions of approximately 4 pounds/hour. This estimate assumes no mitigation practices are employed.

The de minimis level for PM-10 is 15 tons/yr. Given the estimated PM-10 emission rate of 4 pounds/hour, approximately 7,500 bulldozer-hours are required before the de minimis level is exceeded. Without a final design and construction schedule it is difficult to estimate actual equipment hours. However, 2,000 hours represents a reasonable upper bound on an estimate of actual hours (two bull dozers, eight hours per day, 25 days per month, for five months), which suggests that the actual PM-10 emissions generated by earth moving construction activity will be below the de minimis level.

Using the soil properties provided above, unimproved haul roads on the site are estimated to generate approximately 13 pounds of PM-10 per vehicle mile traveled. However, given the small size of the size of the site, unimproved haul roads are not expected to be a significant source of PM-10 emissions.

As with all construction projects at the Airport, as a standard practice a water truck will be utilized to moisten site soils to minimize the generation of visible dust.

In summary, the potential emissions from the replacement BFSF are below de minimis levels and are comparable to levels currently emitted by the existing BFSF. No mitigation measures, beyond those required by STL as a matter of standard practice for construction projects, are necessary to implement the proposed action.

4.4 Biological Resources (including fish, wildlife, and plants)

The U.S. Fish and Wildlife Service (USFWS) and Missouri Department of Conservation have provided lists of endangered species that may be present on the project site (see Attachment G). The Gray Bat, Indiana Bat, Northern Long-eared Bat and Decurrent False Aster were listed as threatened or endangered species potentially present at the project site. There are no critical habitats within the project area under the jurisdiction of the USFWS. The Missouri Department of Conservation does not provide listings for critical habitat.

Tetra Tech completed a threatened and endangered species evaluation of the project site and found that suitable habitat (i.e. habitat that has the necessary attributes for a given species' requirements) for the Indiana Bat and Northern Long-eared Bat is present. Tetra Tech's evaluation is presented in Attachment G. The suitable habitat for Indiana bats and Northern Long-eared bats found at the project site consists of potential roost trees.

USFWS regulations prohibit the removal of suitable bat roost trees during the active period for bats, 1 April through 31 October. To mitigate potential disturbance of bats, tree clearing, and disturbance of forested areas will be performed prior to construction, between 1 November and 31 March. Outside the tree roosting period, the USFWS guidance allows the removal of potential roost trees without further consultation with the USFWS. Restricting tree clearing activities as described will prevent the taking, harming or harassing of endangered species, as defined by the Endangered Species Act and will result in no effect to endangered species.

Suitable habitat for the Gray Bat and Decurrent False Aster is not present at the project site and the project will have no effect on these species.

Because the realignment of the pipelines will be within the Interstate 170 right-of-way, no effects to biological resources will occur.

The realignment of the Spire natural gas line will occur on Airport owned property near the project site. The new gas line alignment is anticipated to be exterior to replacement BFSF fence line. The environmental conditions along the proposed realignment are the same as the project site for the replacement BFSF and the same mitigation practices will be implemented.

The site of the existing BFSF is largely paved and the non-paved areas around its periphery are maintained in mowed turf. Decommissioning of the existing BFSF will have no impact on biological resources.

No adverse effects are associated with the No Action alternative. The existing BFSF is in its near entirety paved or covered with impermeable surfaces. A small amount of mowed turf is found around its periphery. No trees or other habitat are present at the site.

4.5 Hazardous Materials, Solid Waste, and Pollution Prevention

It is anticipated that the operation of the replacement BFSF will generates wastes of similar types and rates as those currently generated by the operation of the existing BFSF. The existing BFSF

generates small volumes of solid wastes (chiefly office waste) and petroleum contact wastes (chiefly spent filter socks and related items) and disposal of these items is handled by local vendors. No hazardous wastes are generated by the existing BFSF. From time to time, the existing BFSF handles off-specification fuel. Such fuel is sent off site to a recycling facility. Typically, the recycling facility performs necessary polishing of the off-specification fuel to make it suitable for use as heating oil. After the replacement BFSF is in operation, similar waste streams will be generated at similar rates. It is anticipated that management of those waste streams will be identical to those currently in place at the existing BFSF.

The above-ground storage tanks at the replacement BFSF will be constructed, installed and maintained in accordance will all applicable codes and regulations. Secondary containment will be provided in accordance with applicable regulations. The fuels stored in the tanks are hazardous materials, as defined in 49 CFR 172.101. The operation of the existing BFSF complies with Emergency Planning and Community Right to Know Act and a similar compliance program will be implemented at the replacement BFSF.

An Environmental Site Assessment report of the project site performed in 2017 by Environmental Cost Management (ECM), Inc. concluded "Based on the lack of observed petroleum-related impacts to soil and groundwater, and only limited metals impacts likely reflecting background conditions, ECM recommends no further action regarding the environmental conditions at the subject property." Based on this finding, the construction of the replacement BFSF is not expected to generate hazardous materials. The report identified one nearby site, approximately one mile from the project site of the replacement BFSF, which is on the National Priority List and four sites listed in the Leaking Underground Storage Tank database. However, the report found no indication that environmental contamination has spread from these sites to the project site.

A small amount of solid waste will be generated during construction of the replacement BFSF and the connected actions, but this rate of generation is expected to be small and easily accommodated by local solid waste disposal facilities. The only hazardous material anticipated to be present on the BFSF project site during construction is fuel for the construction equipment. Very small quantities of other hazardous materials may present from time to time for use in construction of the facility. Generation of hazardous waste during the construction and operation of the proposed action and connected actions is not anticipated.

In most circumstances, fuel will be transferred to and from the replacement BFSF via pipeline. These pipelines will be constructed and operated in accordance with all applicable regulations.

Aside from the removal of the tanks at the existing BFSF following commissioning of the replacement BFSF, the proposed alternative and the connected actions will not impact nearby aboveground and underground storage tanks operated by the Airport or others.

The connected action of decommissioning the existing BFSF may generate a significant volume of petroleum impacted soil. Petroleum contamination has been detected in both groundwater and soil at the existing BFSF. The site and release have been registered with the Missouri Department of Natural Resources. Groundwater is currently monitored quarterly and until April 2017 an active groundwater treatment system was operational at the site when, with the concurrence of Missouri Department of Natural Resources (MDNR), the groundwater treatment system was shut down.

It is the Airport intention to obtain regulatory closure of this site after decommissioning. If contaminated soils are removed from the site as part of regulatory closure, the contaminated soil will be shipped as a special waste to a nearby landfill for disposal. While the necessity of off-site disposal has not yet been determined, it is likely that landfills in the area have sufficient capacity to accept the waste stream. All work to obtain regulatory closure of the site will be performed under plans approved by the MDNR.

4.6 Historical, Architectural, Archeological, and Cultural Resources

A review of the National Register of Historic Places (NRHP) and the MDNR State Historical Preservation Office (SHPO) registries indicate there are no historic places on or near the project site. The closest site on the registry is the "Curtiss-Wright Aeroplane Facility" located at 130 Banshee Road, approximately 7,000 feet northwest of the project site. The project site is not visible from the Curtiss-Wright Aero plane Facility.

The first use of the project site was for agriculture. Sometime during the late 1940's and into the early 1950's, the residential subdivision known as Brownleigh Subdivision was developed. The project site was built out in urban land uses by 1955. Historical topographic maps from 1941 and 1954 are presented in Attachment H. Starting in the 1980's, the Airport, as part of a federally sponsored noise compatibility program, began buying the homes and turning the area into open space. Purchase of the housing parcels in the project site was completed by 1986. By the mid 2000's, the Airport had purchased all parcels in the area. The Airport razed all above ground structures after purchase.

Based upon the previous use of the site and the preliminary review of the NRHP database, implementation of the proposed project would not have the potential to adversely affect any historical, architectural, archaeological or cultural resources. The proposed project and connected actions do not have the potential to affect historic properties and, as a result, are not subject to a Section 106 review. Though no significance threshold has been established for this category, no adverse effects have been identified and no mitigation is required. However, the Airport will contact SHPO and FAA if resources are uncovered during construction.

In an effort to determine if any Indian nation or tribal council might attach religious or cultural significance to a resource affected by this project, consultation letters were sent in October 2018, to the Osage Nation, the Kaw Indian Nation of Oklahoma, the Cherokee Nation, the Shawnee Tribe, and the Peoria Tribe of Indians of Oklahoma. To date, there has been no response to any of the consultation correspondence.

Under the no action alternative, the continued use of the existing BFSF, there are no adverse effects to historical, architectural, archeological or cultural resources and no mitigation is required.

4.7 Land Use

As shown on the City of Berkeley Zoning Map (Attachment C), the project site for the replacement BFSF is zoned AD-2 Airport District, a classification that recognizes and protects areas devoted

to public-use aviation and associated activities. The City of Berkeley is the public agency authorized by the state to plan the area that contains the replacement BFSF project site.

Section 400.195(D) of the Berkeley Municipal Code states that the purpose of designating the area as AD-2 is "to recognize and protect those areas devoted to public-use aviation and associated activities from airspace obstructions or hazards, to impose land use controls within the Airport District that will protect airport operations and ensure a compatible relationship between airport operations and other land uses in the vicinity of such airport operations and to ensure comprehensive, uniform development of the Airport District."

Because bulk fuel storage is not a land use called out in the zoning regulation, the City of Berkeley recommended and the Airport has requested a zoning change and special use permit that would allow construction and operation of the replacement BFSF. Action on this subject was initiated in July 2018.

The project has been approved by the Berkeley Planning Zoning Commission and the Board of Adjustment. The City Council convened a public hearing on October 15, 2018, followed by a first read of an ordinance authorizing a special use permit, new site plan, and zoning change. The City Council received a second and third read of the ordinance on November 5, 2018. Thereafter, by unanimous vote, the Council passed the ordinance and approved the zoning change, special use permit and site plan (Attachment C).

Following the City of Berkeley formal approval of the application, the Airport will provide the FAA with the Berkeley letter authorizing the zoning change and special use permit. It is not anticipated that the City of Berkeley will require any mitigation action to issue the special use permit.

4.8 Natural Resources and Energy Supply

No scarce or unusual materials will be needed for the construction and operation of the replacement BFSF or for the connected actions. There are no unusual circumstances associated with the construction of the replacement BFSF and connected actions. Construction of the replacement BFSF and connected actions will require diesel fuel and other consumable resources, but none of these resources are scarce or in short supply and their consumption in support of the construction activities will have no impact on local economies or supplies. Impacts under this category are not significant.

Because the proposed project entails the construction of a replacement facility that is similar to an existing facility, there will be little or no net change in electricity demands, water usage or sewage disposal caused by this project. No additional demands will be placed on water resources. Fuel consumption by the replacement BFSF will be comparable to that of the existing BFSF. More broadly, the impacts to natural resources and energy supplies caused by operation of the replacement BFSF are comparable to the No Action alternative. Though no thresholds have been established for this impact category, no significant impacts to natural resources or energy supplies are associated with either the construction or operation of the replacement BFSF, the connected actions or the no action alternative of continued operation of the existing BFSF. No mitigation measures are required.

4.9 Socioeconomics, Environmental Justice, and Children's Environmental Health and Safety Risks

The proposed project and connected actions will have negligible socioeconomic impacts. It will not induce substantial economic growth in the area and will not disrupt or divide established communities. Because the Airport currently owns the project site and the connected actions occur either on airport property or in existing rights-of-way, no residents or businesses will require relocation. The Uniform Relocation Assistance and Real Property Acquisitions Policy Act of 1970 is not applicable to the proposed project, the connected actions or the no action alternative.

In July 2016, St. Louis County measured the traffic on James S. McDonnell Blvd in the vicinity of the project site. The peak hourly volume was 524 vehicles per hour and the average daily traffic count was 3,830 vehicles. Given the planned staffing level of one or two full time employees and that fuel receipt and issue from the facility will be predominantly via pipeline, the replacement BFSF will have a negligible impact on these traffic counts.

Airport Road, immediately north of the project site, has access to Interstate Highway 170, which in turn provides ready access to the other interstate highways in the region. Because of the proximity of access to interstate highways, the construction of the replacement BFSF, realignment of the interstate pipe lines and construction of the transfer pipeline will have minimal impact on the traffic loads of secondary roads in the area. The existing BFSF is adjacent to Lambert International Blvd with nearby access to Interstate Highway 70. The decommissioning and remediation of the existing BFSF will have minor impact on local traffic.

The proposed project will not cause known adverse impacts to minority and/or low-income populations. The project site is currently owned by the Airport and has been Airport property for approximately 30 years. No public use of the property is allowed. The nearest residential area is approximately 3,000 feet east of the project site and physically separated by Interstate 170. The project site is not visible from the nearest residential area.

No property will be acquired for the project and no persons will be displaced because of the project. The replacement BFSF will not have adverse impact on employment or potential employment in the area. No day-care facilities, hospitals or other facilities housing sensitive populations are located on or near the project site. The nearest day care facility, at 6315 Garfield Avenue, is approximately 3,200 feet northeast of the project site. B&D Adult Daycare is located at 6154 Madison Avenue, approximately 2,700 feet east of the site.

The proposed project and connected actions will not cause adverse socioeconomic impacts and no mitigation is required.

4.10 Visual Effects (including light emissions)

Proposed lighting will blend into the surrounding industrial land uses and be visually consistent with existing airport-related uses. It will also be visually consistent with existing adjacent airport-related uses and therefore will not degrade the existing visual character or quality of the site and surroundings. Additionally, lighting would be shielded and focused to avoid glare and prevent unnecessary light spillover. Therefore, implementation of the proposed project would not have the

potential to create new sources of substantial light or glare which would adversely affect day or nighttime views in the area. No visually protected areas are near the project site. No significant visual effects impacts will occur as a result of the proposed project and connected actions and no mitigation is required.

4.11 Water Resources (including wetlands, floodplains, surface waters, groundwater, and wild and scenic rivers)

No surface water features are found on the site and no rivers in St. Louis County are listed in the Nationwide Rivers Inventory. The project does not result in the control or modification of a stream or body of water and does not directly or indirectly affect any river or area within ¼ mile of its ordinary high-water mark. The Missouri River, located approximately 5 miles west of the project site, is the source for the public water supply in the area. The nearest lake is in January Wabash Park, approximately 1.7 miles east of the site. Storm water runoff in the surrounding area is managed via a system of storm sewers, engineered drainage ways and detention ponds. Stormwater management related to the construction and operation of the project will be governed by federal, state and local requirements.

Stormwater from the project site currently discharges to the west, to the stormwater system on Airport property. After construction of the replacement BFSF, stormwater will continue to be discharged to the west. The preliminary design includes a stormwater management Best Management Practices (BMP). This BMP will be designed in accordance with the requirements of the Metropolitan St. Louis Sewer District.

The national wetlands inventory shows no wetlands on or near the project area. The nearest wetland is located approximately 0.5 miles northwest of the site on property owned by the Boeing Corporation. A copy of the national wetlands inventory map for the proposed project area is shown in Attachment I. A qualified Tetra Tech wetlands scientist has field verified the National Wetlands Inventory map and found no jurisdictional wetlands are present at the site. A 404 permit will not be required for the proposed project. Tetra Tech's field verification is presented in Attachment G.

The project site is not located in a floodplain. The nearest floodplain is approximately one-mile northwest of the project site. A Federal Emergency Management Agency map for the project site and vicinity is shown in Attachment J.

It is anticipated that operation of the replacement BFSF will require a National Pollution Discharge and Elimination System (NPDES) Permit and a Storm Water Pollution Prevention Permit and Plan. Construction of the replacement BFSF will require a Construction Storm Water Pollution Prevention Plan (SWPPP) and Land Disturbance Permits from both the MDNR and the City of Berkeley.

The replacement BFSF will operate under a Spill Prevention, Control and Countermeasure Plan (SPCC), prepared in accordance with 40 CFR 112. Secondary containment will be provided for ASTs in accordance with 40 CFR 112 and accumulated stormwater will be managed in accordance with the governing regulations, the SPCC and the SWPPP.

The connected actions will not affect water resources. None of the connected actions will impact wetlands or will occur in flood plains. The existing BFSF, which occupies approximately three acres, is largely covered with impermeable surfaces. Runoff from the site of the exiting BFSF will not increase following decommissioning and remediation. The decommissioning and remediation of the existing BFSF will be performed under a land disturbance permit issued by MDNR and the City of Berkeley.

The proposed realignment routes for the Buckeye Pipeline, St. Louis Pipeline and the Spire natural gas main do not impinge on wetlands or other surface water features and are not located in a floodplain. Once the realignment routes are determined, the owners will be responsible for obtaining necessary permits and complying with applicable regulations.

Section 404 permits or Section 401 water quality certifications will not be required to implement the proposed project and connected actions.

Groundwater is not used as a source of potable water in the area of the project site. According to the MDNR Well Installation Online Services database, there are no water wells located within two miles of the site. Potable water in St. Louis County is provided by Missouri American Water. Missouri American Water sources are the Missouri River, approximately five miles west from the site, and the Meramec River, approximately 20 miles south from the site.

The existing BFSF operates under a NPDES permit (Permit Number MO-0127329). Under this permit, stormwater is monitored quarterly at two outfalls. A review of quarterly data from the first quarter in 2016 through the third quarter of 2017 found no exceedances above the permit benchmark concentrations.

No significant impacts to water resources have been identified. Stormwater BMPs will be implemented in accordance with the Metropolitan St. Louis Sewer District requirements. No other mitigation beyond required permitting is required.

Table 4-4
Summary of Impact Category Determinations and Mitigation

Environmental Consequences	Proposed Action Alternative		No Action Alternative	
Impact Category	**Impacts**	**Mitigation**	**Impacts**	**Mitigation**
Air Quality	Not significant	Obtain permits to construct from St. Louis County	Not significant	None
Biological Resources	Not significant	Prohibit clearing of potential bat roosting trees during the roosting season, 1 April through 31 October	None	None
Climate	None	None required	None	None
Coastal Resources	None	None required	None	None
Section 4(f)	None	None required	None	None
Farmlands	None	None	None	None
Hazardous Materials, Solid Waste, & Pollution Prevention	None	None required. Closure of existing BFSF to be performed under plans approved by MDNR.	None	None
Historical, Architectural, Archeological, and Cultural Resources	None	Contact SHPO and FAA if resources uncovered during construction.	None	None
Land Use	Not significant	City commitment to Land Use Compatibility Assurance; Establish appropriate Airport zoning/ordinances. Prepare and implement SWPPP and Land Disturbance SWPPP.	None	None
Natural Resources and Energy Supply	None	None required	None	None
Noise and Noise Compatible Land Use	None	None required	None	None
Socioeconomic, Environmental Justice, & Children's Health	None	None required	None	None
Visual Effects	None	None required	None	None
Water Resources				
Wetlands	None	None required	None	None
Floodplains	None	None required	None	None
Surface Water	None	Implement BMPs. Obtain stormwater and land disturbance SWPPPs. Implement SPCC.	None	None
Ground Water	None	None required	None	None
Wild and Scenic Rivers	None	None required	None	None
Cumulative Impacts	None	None required	None	None

5.0 CUMULATIVE IMPACT ANALYSIS

No significant cumulative impacts are anticipated.

After construction of the replacement BFSF is completed, including the implementation of anticipated BMPs, the rate of stormwater runoff from the site will not differ markedly from the current rate of runoff.

Air emissions from the replacement BFSF will be below de minimis levels and will not be markedly different from those rates from the exiting BFSF.

Impacts caused by the replacement BFSF are universally light. Impacts are also mitigated by the fact that the project consists of replacing an aging facility, not creating a new facility. As such, the net change to potential impacts will be negligible.

A review of the Proposed Action and Connect Actions effects on resources, when combined with other past, present, and reasonable foreseeable actions, has determined that there are no significant cumulative impacts.