

A. INTRODUCTION

This chapter assesses the potential for the presence of hazardous materials at the site of the proposed project. The analysis includes updates to the proposed project and background conditions since the 2008 FGEIS and assesses whether any changed background conditions or differences in elements between the proposed project and the development program analyzed in the 2008 FGEIS and subsequent technical memoranda would result in significant adverse impacts related to hazardous materials.

Consistent with the Staged Acquisition Alternative analyzed in the 2008 FGEIS as well as the Adjusted Plan and Updated Plan analyzed in subsequent technical memoranda, the proposed project would phase remediation and redevelopment of the Special Willets Point District. In the proposed project, Phase 1A (2018) would commence with the remediation to standards appropriate for multi-family residences of an approximately 23-acre portion of the District and development of this area with hotel, retail, and interim surface parking/recreational uses. These interim uses would be developed on an impermeable surface. Remediation of areas to be developed in Phase 1A would be completed prior to 2018. In Phase 1B (2028), the interim parking/recreational space created during Phase 1A within the District would be redeveloped with residential, retail, office, hotel, community facility, public school, and public open space uses. Remediation of the portion of the District not already developed in Phases 1A and 1B to standards appropriate for multi-family residences is assumed to be completed prior to 2028, and thus before the commencement of the Phase 2 development.

The analysis provided below considers the Willets West and South Lot portions of the project site, which were not assessed in the 2008 FGEIS, and reassesses the previously-analyzed District, Lot B, and Lot D portions of the project site.

PRINCIPAL CONCLUSIONS

This analysis finds that, consistent with the conclusions of the 2008 FGEIS and subsequent technical memoranda, the proposed project would not result in significant adverse impacts related to hazardous materials.

As described below, Phase I Environmental Site Assessments (ESA) have been performed for the entire project site. These identified the potential for contamination due to current and past usage:

- **Special Willets Point District:** sampling undertaken as part of previous Phase II ESAs confirmed that contamination is present and is expected to be widespread.
- **Lot D:** Tires and apparently empty 35-gallon drums were present on Lot D. Evidence of a potential underground storage tank was observed. However, the Phase I ESA found no registered historical or current petroleum storage tanks, which indicates that the tank may have been installed/operated prior to tank registration requirements or may have been of too small a capacity to require registration. Prior to development, a Phase II ESA would be

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performed for Lot D to assess potential contamination and assist in preparation of any necessary remedial plans and health and safety procedures.

- **Lot B:** Subsurface sampling identified fill material (including cinders, wood, brick, metal, and asphalt) overlying marsh deposits. This was consistent with historical information regarding prior conditions and uses. The soil sampling did not identify significant contamination (the results were consistent with those usually found in historical fill materials in New York City). Similarly, the shallow groundwater sampling identified some levels (generally of metals) above the most stringent (drinking water) standards but these were consistent with the levels of metals found in the soil samples of the fill material. The soil gas sampling found elevated levels of methane (potentially attributable to the marsh deposits).
- **Willets West and South Lot:** The Phase I ESA indicated that these portions of the project site were also part of the much larger “ash dump” in the early part of the 20th century. Around 1950, Willets West was paved and used for parking until 1964, when Shea Stadium opened on the property. The South Lot has been used for parking since the mid 1960s. In 2009, Shea Stadium was demolished and has since been used for parking with multiple small ticketing structures. The Phase I ESA found no evidence of historical or current petroleum storage tanks or other historical uses of concern. Prior to development, a Phase II ESA would be performed for the Willets West and South Lot areas to assess potential contamination and assist in preparation of remedial plans, if necessary, and health and safety procedures to be implemented during construction.

By implementing investigation and remediation measures including appropriate engineering/institutional controls into the development, as well as incorporating health and safety procedures into the construction, it is expected that no potential exposure or significant adverse impacts related to hazardous materials would occur during or after construction of the proposed project. Construction of the proposed project would involve both demolition of all existing structures (some of which are believed to contain asbestos containing materials, lead-based paint, and polychlorinated biphenyls containing electrical components) and a variety of earthmoving/excavating activities that would encounter subsurface contamination (e.g., petroleum, solvents, polychlorinated biphenyls, or other contaminants associated with the area’s historical filling), particularly within the District. To avoid the potential for significant adverse impacts related to hazardous materials the proposed project would include appropriate health and safety (e.g., dust control and air monitoring) and comprehensive investigative/remedial measures (e.g., delineating and excavating contaminated soils and disposing of them off site at an appropriately licensed facility) that would be undertaken in conjunction with the excavation and disturbance of fill material. Understanding that the entire area includes ash fill and that within the project site fill material would remain, residual soil and groundwater contamination would need to be accounted for in any new development. Engineering controls to address the residual contamination can include a variety of measures including but not limited to capping surfaces, groundwater controls to prevent migration, and systems beneath buildings to prevent infiltration of soil vapor.

While development of the District is contemplated to occur in phases, Phase 1A will incorporate a comprehensive site investigation and associated remedial action that will remove areas of significant contamination and prepare the site for development. When subsequent development takes place over or adjacent to these areas, measures will be undertaken to prevent human exposure. These will include stringent measures for dust control, procedures for dewatering, proper handling and disposal or backfill of excavated material and prevention of stormwater pollution from runoff. Additional measures (e.g., the mandatory implementation of appropriate

health and safety procedures) will be undertaken to prevent exposure following development during intrusive work and subsurface utility repairs at developed sites.

Institutional controls would be used to ensure that the various measures outlined above would be implemented, all lots in the project site would have restrictions placed on them. Specifically, for the District, these restrictions include the E designations already placed following the 2008 FGEIS and potentially State of New York Brownfield Cleanup Program (BCP) requirements, should any developments enter into this (voluntary) program. For lots outside of the District, the restrictions would be incorporated into the development agreements and/or amended leases for each lot. These lots are and would remain in City ownership.

B. SUMMARY OF 2008 FGEIS FINDINGS AND SUBSEQUENT MEMORANDA

The 2008 FGEIS and subsequent technical memoranda identified the likelihood of hazardous materials presence at the project site from: placement of historical ash fill (approximately 10 to 12 feet thick), beginning in the mid- to late-1800s, and continuing through the early-20th century; and releases of petroleum products and chemicals from existing and historic commercial and industrial facilities (especially within the District).

In addition to contamination from releases to soil, contamination of groundwater was also identified. Groundwater was encountered at relatively shallow depths of between 4 to 9 feet below grade, generally within the fill material. Although groundwater flow varies and may be tidally influenced in some areas, the overall flow was expected to be toward Flushing Bay and Flushing River to the north and east of the District.

Existing structures at the project site were known or suspected to include asbestos containing materials (ACM), lead-based paint (LBP) and polychlorinated biphenyls (PCB) containing equipment.

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A February 2005 District-wide Phase I ESA (and additional individual Phase I ESAs completed subsequently on selected parcels when access was obtained) assessed the potential for hazardous materials based on: a reconnaissance from public rights-of-way (but generally no access to private property); a review of historical maps; federal and state regulatory records; and topographic and geologic/hydrogeologic data.

Overall, based on the general conditions noted during the public right-of-way evaluation, the majority of the sites operating in the District were believed to contain potential concerns over waste discharge and other issues related to individual site conditions. Historical uses included metal wholesaling, recycling, various automotive body and mechanical repair operations and scrap parts sale and distribution. During the reconnaissance, metal construction debris and other recyclable metal was observed in addition to all types of car parts (e.g., radiators, gas tanks and batteries). Contamination typical for this land use includes automotive wastes (e.g., waste oil, gasoline and radiator fluids), PCB-contaminated wastes and oils, solvents, heavy metals and lead acid batteries. Since there are no municipal sewer systems servicing the area, wastewater discharge to leach fields, septic tanks and underground tanks would represent a potential direct pathway for contaminants to reach the subsurface and shallow groundwater.

The regulatory databases searched as a part of the Phase I ESA identified numerous registered active petroleum storage tanks (and based upon the time period that the site has been occupied by these types of businesses, it is possible that other unregistered tanks are also present), as well

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as a limited number of open-status petroleum spills (though other spills may have occurred and not been reported to the State).

Based on the findings of the District-wide Phase I ESA, a subsurface investigation (Phase II ESA) was conducted. The Phase II investigation included collection and laboratory analysis of soil and groundwater samples, however, similar to the Phase I, sampling and access was limited to public-rights-of-way, along street and sidewalk areas for the area-wide Phase II. Permission was subsequently obtained for access to one private parcel to perform a limited Phase II ESA. The soil sampling within the streets and public rights of way identified detectable concentrations of VOCs in 20 of the 22 soil samples analyzed. Only two of these exceeded the then-used NYSDEC Recommended Soil Cleanup Objectives (RSCOs), specifically for gasoline-related VOCs. Detectable levels of SVOCs were found in all samples, generally below or within one order of magnitude above the RSCOs. The compounds and levels detected were typical of urban fill material though contributions from petroleum or other on-site sources could not be ruled out. The metals analyses showed several metals at concentrations above the RSCOs including samples with arsenic, barium, nickel, copper, and zinc at more than one order of magnitude above the RSCOs. Lead concentrations ranged up to 3,310 parts per million (ppm), but only three samples exceeded 400 ppm (the level typically used in situations where children could be exposed to surface soils). Pesticides were detected in 12 of the samples but none exceeded RSCOs. Eight samples had detectable concentrations of PCBs but none exceeded NYSDEC RSCOs (1 ppm). Ethylene glycol (the most common antifreeze ingredient) was not detected.

Groundwater sampling within the streets and public rights of way showed levels above drinking water standards (results were compared to these standards even though groundwater is not used as a source of drinking water). Four of the seven samples had levels of VOCs typically associated with gasoline above these standards. SVOC levels exceeded the drinking water standards in two samples but the compounds detected could have been petroleum or fill-related.

Soil and groundwater contamination consistent with petroleum was identified at the private parcel. Given these results and the findings of the Phase I ESA, petroleum and other contamination is expected to be widespread on private properties within the District.

To avoid the potential for significant adverse effects, the 2008 FGEIS outlined a variety of presumptive remedial measures as well as accompanying engineering controls that would be implemented prior to and during construction. These included:

- Procedures for pre-demolition removal of asbestos and appropriate management of LBP and PCB-containing equipment.
- Additional subsurface investigation, both of development sites and areas within the current roadways, to further assess and remediate conditions.
- Development of a construction health and safety plan (CHASP), Remedial Action Plan (RAP) and Site Management Plan (SMP) for site remediation, excavation, redevelopment, and post development. These plans will include detailed procedures for managing both known contamination issues (e.g., tank removal, and soil and groundwater remediation of existing petroleum spills, excavation, and removal of existing septic tanks or fields, floor drains, and historic fill) and any unexpectedly encountered contamination issues. The CHASP will also include monitoring necessary to ensure that dust control procedures are effective.
- Requirements for vapor barriers and sub-slab venting systems in new buildings, where remaining subsurface contamination could otherwise lead to unacceptable exposure inside buildings, would also be incorporated into the overall development program.

The E-designations that were previously placed on lots in the District (and, potentially, BCP requirements, should the developer choose to participate in the BCP), would serve as institutional controls to ensure implementation of the above measures and any necessary post-construction measures, e.g., Site Management Plans that describe health and safety procedures during subsurface utility repair.

LOT D AND LOT B

Lot D is a paved parking lot with a small fenced area for trash collection. Tires and empty 35-gallon drums were noted. Evidence of a potential underground storage tank was observed (an apparent fill and vent pipe). The August 2008 Phase I ESA found no historic or current petroleum storage tanks registered on the site. The overall site was not listed on any of the reviewed federal, state or local regulatory databases. Prior to development of Lot D, a Phase II ESA would be performed to assess potential contamination and assist in preparation of any necessary remedial plan and construction health and safety procedures.

Information on Lot B was based on a subsurface investigation conducted in 1998 and on subsequent environmental investigations relating to the development of CitiField. In 2006, two soil borings (retrofitted with groundwater monitoring wells) and 12 soil gas (methane) samples were collected. Fill material included coarse-to-fine sand and gravel, silt, mica, cinders, wood, roots, glass, brick, metal, and asphalt overlying marsh deposits. The soil sampling did not identify significant contamination (the results were consistent with those generally found in historical fill materials in New York City). Similarly, the groundwater sampling identified some levels (generally of metals) above the most stringent (drinking water) standards but these were consistent with the fill. The soil gas sampling found elevated levels of methane (most likely attributable to the marsh deposits and potentially material placed during the filling).

To avoid the potential for significant adverse effects at Lots D and B, the 2008 FGEIS outlined the RAP/CHASP procedures that would be followed prior to and during construction including:

- Proper handling and disposal of all materials requiring off-site disposal, including historic fill materials and any unexpectedly encountered contaminated materials.
- Monitoring of all excavation for the presence of tanks, drums, or soil that shows evidence of potential contamination.
- Air monitoring (for volatile organics, methane, and particulates) during construction.
- Protocols for reporting spills or other concerns to relevant governmental agencies.
- Contingency and emergency response plans.
- Dust control measures would be implemented during all earth-disturbing operations. Water would be available on-site for sprinkling/wetting to suppress dust in dry weather or as necessary. Water would be used to suppress dust on haul roads and to wet equipment and excavation faces if that was found to be an issue. Stockpiled excavated material would be securely covered with tarps or plastic sheeting to prevent dust or run-off.
- SWPPPs to address the control of erosion and stormwater runoff from construction.
- Installation of appropriate systems to prevent the migration of vapors into any newly constructed buildings.

Institutional controls, specifically development agreements and/or modification of the existing leases for these lots, would ensure implementation of the above measures and any necessary

post-construction measures, e.g., Site Management Plans that describe health and safety procedures during subsurface utility repair.

C. METHODOLOGY

The information used in this chapter included the information gathered for the District as part of the 2008 FGEIS, available additional data from one additional subsurface investigation within the District (at Block 1822, Lot 17) and a review of an updated (February 2013) regulatory database for the District. It is anticipated that no substantive changes within the District have occurred since the 2008 FGEIS. Although various businesses have closed since the 2008 FGEIS, no extensive cleanup has occurred, and subsurface conditions are not expected to have changed significantly. In December 2012, a Phase I ESA was prepared by Integral Consulting, Inc. addressing the Willets West and South Lot portions of the project site. A February 2006 *Phase II Subsurface Investigation*, prepared by AKRF Inc. for the Shea Stadium Redevelopment project, included the results of soil analyses and soil gas sampling within the footprint of the Willets West project area. A March 2011 *Site Investigation Findings Report* (related to potential project infrastructure improvements) conducted by Environmental Planning & Management, Inc. (EPM) included three additional locations with soil, groundwater and/or soil gas sampling within the footprint of the Willets West project area.

D. EXISTING CONDITIONS

As noted above, existing conditions at the District, Lot B, and Lot D portions of the project site are not expected to have changed significantly from those summarized in the 2008 FGEIS. Consistent with the earlier findings, the Phase II ESA conducted at Block 1822, Lot 17 identified soil and groundwater contamination in proximity to the location of former underground fuel and gasoline tanks, and consistent with contamination usually found in fill materials. Polychlorinated biphenyls (PCBs) were found in one of the soil samples; these compounds can be associated with automotive wrecking as well as electrical transformers. It is possible that all or some portion of the District would be entered into the BCP. Review of the updated regulatory database for the District identified concerns similar to those noted in the 2005 Phase I ESA, including automotive repair shops, wrecking and salvage facilities, junk yards and waste processing facilities with numerous past or present petroleum storage tanks. One minor active-status spill was reported to NYSDEC within the District in 2012. More than 200 spills were reported to NYSDEC within the District and assigned a closed status. The spill listings noted that some remediation of the individual releases had been conducted, but residual contamination may remain, and that subsurface contamination exists throughout the District.

The December 2012 Phase I ESA performed for the Willets West and South Lot portions of the project site identified that these properties were part of the much larger “ash dump” in the early part of the 20th century. As described above, the Willets West area was paved around 1950 and used for parking until 1964, when Shea Stadium opened on the property. The South Lot has been used as for parking since the mid 1960s. In 2009, Shea Stadium was demolished, the site was paved, and the Willets West area has since been used for parking with multiple small ticketing structures. The Phase I ESA found no evidence of historical or current petroleum storage tanks or other on-site historical uses of concern. Nearby uses include an MTA rail yard. The February 2006 Phase II Subsurface Investigation included four soil borings and five soil gas samples within the Willets West footprint. The eight foot deep soil borings all encountered fill material throughout their depth. Laboratory results of soil samples were consistent with historical fill

materials, with no evidence of petroleum contamination. Three out of the five soil gas samples had elevated methane levels. The March 2011 Site Investigation Findings Report indicated similar soil results. The one soil gas sample showed both elevated levels of methane and some low levels of volatile organic compounds. Groundwater laboratory analysis results were consistent with typical urban fill sites with no evidence of petroleum contamination; however, the groundwater at one location was noted to have a petroleum sheen and odor.

E. FUTURE WITHOUT THE PROPOSED PROJECT

Without the proposed project, neither the District nor the other properties comprising the project site are anticipated to experience substantial change. In the event that projects independent of the proposed project were to occur, such development would not be expected to result in significant adverse impacts with respect to hazardous materials. In the No Action scenario, the Special Willets Point District portion of the project site would have both continued New York State Department of Environmental Conservation (NYSDEC) involvement (related to spill cleanup and enforcement actions) and NYC Office of Environmental Remediation (OER) involvement related to the existing E designations. For portions of the sites outside of the District, any future development would be subject to new City leases and/or disposition agreements which would set forth hazardous materials requirements, similar to those associated with the proposed project (see Section F, “Probable Impacts of The Proposed Project”), but tailored to the development (e.g., extent of proposed soil disturbance and land use).

F. PROBABLE IMPACTS OF THE PROPOSED PROJECT

Construction of the proposed project would involve demolition of all existing structures on the project site (some of which are believed to contain LBP, ACMs, and PCB-containing electrical components) and a variety of earthmoving/excavating activities that would encounter subsurface contamination (e.g., petroleum, solvents or PCBs), particularly within the District. The project site is within the Federal Emergency Management Agency (FEMA) 100-year floodplain, and thus in some locations, particularly within the District, new fill would be required to grade and raise the project site structures above the 100-year floodplain level, consistent with the New York City Building Code. Changes to the grade elevation are expected to occur in phases. During Phase 1A the majority of the project site will remain at the existing grade and only the hotel and commercial spaces would be built at a higher grade above the floodplain elevation. The remainder of the extent of Phase 1A and 1B would be raised above the floodplain elevation prior to completion of the development of Phase 1B in 2028. Those grade changes will either occur through new fill and retaining walls or by building atop basements that raise the finished floor height above the floodplain elevation. Grade transitions would be created between the new streets in Phase 1B and the existing street grades that would remain in the Phase 2 area until that area is raised prior to completion of Phase 2 development in 2032.

To avoid the potential for significant adverse impacts related to hazardous materials, the proposed project would include appropriate health and safety (e.g., dust control and air monitoring) and investigative/remedial (e.g., delineating and excavating contaminated soils and disposing of them off site at an appropriately licensed facility) measures that would precede or govern both demolition and soil disturbance activities. These measures would be conducted in compliance with all applicable laws and regulations and would conform to appropriate engineering practices. Also, given that some subsurface contamination would likely remain after completion of construction (e.g., historical fill materials underlying the development area) and in

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nearby areas that would not be cleaned up until a subsequent phase of development, new development would require engineering controls, which could include capping to prevent exposure to underlying soils, groundwater controls at construction site boundaries (pile driving for new construction would not be anticipated to significantly change the overall groundwater flow regime), and vapor barriers with active or passive sub-slab depressurization systems beneath enclosed or occupied buildings (e.g., not open parking structures). As development of the District is contemplated to occur in phases, excavation and cleanup during Phase 1B and Phase 2 would occur near already developed buildings and uses, requiring stringent controls on construction dust and other potential sources of contaminant migration. The same issues were addressed (albeit for a slightly smaller initial development area) and the same conclusions reached (i.e., significant adverse impacts would be avoided) in Technical Memorandum #4 which assumed an undeveloped “buffer area” adjacent to the initial development area. Institutional controls would be used to ensure the investigations and remedial measures would be implemented along with requirements to prevent future exposure during intrusive work and subsurface utility repairs at developed sites. Specifically, these institutional controls would be the existing E designations (possibly supplemented by additional requirements should the developer choose to participate in the BCP for any lots) for the District, and restrictions added to the proposed lease amendment for the remainder of the project site.

The institutional controls would require the project sponsor, prior to seeking or obtaining DOB permits associated with redevelopment, conduct Phase I and Phase II ESAs (to the extent they have not already been conducted), necessary remediation (with appropriate construction-related HASPs) either prior to or as a part of site development, to the satisfaction of (for the District) the New York City Office of Environmental Remediation (OER) or (for lots outside of the District) the New York City Department of Environmental Protection (DEP)¹. A Phase II Subsurface Investigation Work Plan and a Health and Safety Plan (HASP) have been prepared for the Willets West portion of the project site and submitted to DEP for review and approval. Should all or portions of the District be entered into the BCP, this State program would entail similar requirements to OER’s (which would not be superseded). The BCP is a voluntary program in which a property owner/developer enters into an agreement with the State to conduct investigation and remediation in accordance with a variety of requirements, including public participation. Following the cleanup, with, if required, the implementation of deed restrictions to ensure the performance of institutional and engineering controls, the State issues a Certificate of Completion indicating cleanup has been achieved consistent with the proposed site use. It is not anticipated that cleanup requirements of the State and City would differ substantively. Likely components of site remediation and other measures to avoid impacts are essentially unchanged from those described in Chapter 12 of the 2008 FGEIS, i.e., they may include:

- Procedures for pre-demolition removal of asbestos and appropriate management of LBP and PCB-containing equipment.
- Additional subsurface investigation, both within the District and of areas not yet investigated, to better characterize soils to be removed for excavation.
- Development of a CHASP and SMP for site remediation, excavation, and redevelopment that would include detailed procedures for managing both known contamination issues (e.g.,

¹ The project sponsor does not currently have site control of Willets West and South Lot; prior to commencement of construction, project sponsor will perform appropriate testing on these sites as required.

tank removal, and soil and groundwater remediation of existing petroleum spills, excavation, and removal of existing septic tanks or fields, floor drains, and historic fill) and any unexpectedly encountered contamination issues. The CHASP would also include procedures for avoiding the generation of dust that could affect the surrounding community (especially at later-phase sites neighboring already developed sites), as well as the monitoring necessary to ensure that no such impacts occur.

- Prevention of contaminant migration to a particular development site from other properties might entail the use of various forms of groundwater flow controls at construction site boundaries and/or vapor barriers and sub-slab venting systems could be incorporated into the foundations of new buildings to prevent remaining subsurface contaminated vapors from entering buildings. Procedures that are instituted would be consistent with applicable laws and regulations.
- A cap of imported clean soil may be placed uppermost in landscaped areas and other areas not covered by buildings, paving or other impermeable surfaces.

Institutional controls (specifically, E designations, restrictions added to leases, or BCP requirements, should the developer choose to enroll in the BCP) would be used to ensure required post-development procedures (e.g., implementation of health and safety procedures during subsurface utility repair) would be implemented. Methods for guaranteeing the continued effectiveness of these controls would include periodic (e.g., annual) certification and reporting requirements.

CONCLUSIONS

Contamination in the subsurface (including petroleum contamination) within the District has been identified through limited Phase II ESAs. This contamination is likely related primarily to the District's current and historical automotive-related businesses. Although detailed investigations have not yet been performed at the other portions of the project site, less extensive contamination has been found and is anticipated to be encountered, with levels (including elevated methane levels) expected to be consistent with the area's historical ash filling. In addition to subsurface contamination, asbestos-, LBP-, and PCB-containing equipment are likely to be present inside existing buildings.

With the implementation of the variety of measures described above, not only would no significant adverse impacts related to hazardous materials be expected to occur as a result of construction or operation of the proposed project, but the proposed project, with its associated extensive cleanup which would otherwise likely not occur at all or only much more slowly, would result in significant potential benefits to public health and the environment. To ensure the various required measures would be implemented, they would be made binding on all site developers through E designations and conditions in the development agreements and/or amended leases. The provisions of the development agreements and/or amended lease agreements, relating to the substance and enforceability of these commitments, would be subject to approval by the lead agency in consultation with DEP. Although some hazardous materials would likely remain in the subsurface following construction of the proposed project, with the building vapor control measures outlined above, there would be no exposure pathways and thus no further potential for significant adverse impacts. Thus, consistent with the conclusions of the 2008 FGEIS and subsequent technical memoranda, the proposed project would not result in significant adverse impacts related to hazardous materials. *