HAMILTON UNIFIED SCHOOL DISTRICT

HAMILTON HIGH SCHOOL SITE EXPANSION

GEOLOGICAL AND OTHER ENVIRONMENTAL HAZARDS STUDY

PREPARED BY:

Educational Facilities Program Management, LLC

HAMILTON UNIFIED
SCHOOL DISTRICT

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Jeremy Powell, Ed. D.
Superintendent

August 12, 2020

Jennifer Schwinn, Facilities Consultant

California Department of Education

School Facilities & Transportation Services Division

1430 N Street, Suite 1201

Sacramento, CA 95814

Dear Ms. Schwinn:

Attached please find a geological & environmental Hazards Study prepared for the Hamilton High School Site Expansion Project. This project is intended to be a 45-acre purchase of property immediately adjacent to the existing Hamilton High School, and will allow the District to reconfigure and expand the High School to meet near-future enrollment and program needs.

The District believes that it has sufficient geological and other environmental hazards information contained in its current CEQA, PEA and Title 5 reports to meet the requirements of Educational Code 17212.5, and therefore is submitting this report in conformance with Education Code Sections 17212, 17212.5 and CDE guidance contained in the CDE School Site Selection & Approval Guide (2000 Edition), Appendix H – Factors to be Included in a Geological and Environmental Hazards Report.

All referenced studies and documents may be found on the District's website at https://www.husdschools.org/Page/1952 . If you have any questions or need any additional information, please contact either me of the District's Facilities Consultant, Michael Cannon of EFPM/LLC at (916) 825-0000 or mscannon_efpm@msn.com

Sincerely,

Jeremy Powell, Ed, D.

Superintendent

Hamilton Unified School District

HAMILTON USD – HAMILTON HIGH SCHOOL SITE EXPANSION

GEOLOGICAL AND OTHER ENVIRONMENTAL HAZARDS

The Hamilton Unified School District is in the process of purchasing and permitting property adjacent to the current Hamilton High School in order to expand the current school to meet enrollment and program requirements. The District, as of July 21, 2020, has completed a Preliminary Environmental Analysis for the site, reviewed and approved by the Department of Toxic Substances Control. The District has also completed Pipeline Hazard, Railroad Hazard and Dam Inundation studies pursuant to Title 5 requirements. A CEQA Initial Study/Mitigated Negative Declaration Report has been completed and formally adopted by the Board at its Board meeting on August 26, 2020. Finally, the District has adopting determinations and findings related to Education Code Section 17213 at its August 2020 meeting. All these documents may be found on the District's website at https://www.husdschools.org/Page/1952

The District believes that it has sufficient geological and other environmental hazards information contained in its current CEQA, PEA and Title 5 reports to meet the requirements of Educational Code 17212.5, and therefore is submitting this report in conformance with Education Code sections 17212, 17212.5 and CDE guidance contained in the CDE School Site Selection & Approval Guide (2000 Edition), Appendix H – Factors to be Included in a Geological and Environmental Hazards Report (***Appendix 1***).

SUMMARY OF GEOLOGICAL/ENVIRONMENTAL INFORMATION TO DATE

SITE DESCRIPTION – From: CEQA MITIGATED NEGATIVE DECLARATION

1.1 PROJECT LOCATION

The project site includes the existing Hamilton High School, located at 620 Canal Road in Hamilton City, California, identified by Glenn County Assessor Parcel Number (APN) 032-230-002, and a 48-acre portion of a parcel directly north of the school (APN 032-230-015). The additional 48 acres would be acquired and developed as part of the project (see Figures 1-1 and 1-2) (***Appendix 2***). The project site is in southwest Glenn County.

The site is accessed from the south via State Route (SR) 32/Sixth Street and from the west via SR 45/Canal Road.

1.2 EXISTING SETTING

1.2.1 Project Site

The project site includes the existing Hamilton High School and an adjacent 48-acre property. As shown in Figure 1-3, the high school currently contains eight buildings, including 2 multipurpose buildings, a

classroom & administration building, a classroom & library building, 3 portable structures and a classroom & woodshop building. A small parking area with 25 parking stalls is located between the existing buildings. A large area of turfed playing fields dominates the northeastern portion of the school. The school has a student body of approximately 280.

The property that the District would acquire as part of the project is currently dedicated to drip-irrigated agriculture uses. It contains a single agricultural water well and minimal electric service infrastructure, including a pole-mounted transformer.

1.2.2 Surrounding Conditions

The project site is in a predominantly agricultural community. Active farmland borders the site to the north. As shown in Figure 1-2, State Route 45/Canal Road and the Glenn-Colusa Canal border the site to the west, with active farmland beyond those features. The Southern Pacific Railroad and additional farmland lie east of the site. A primarily residential neighborhood that includes Hamilton Elementary/ Middle School and few commercial/light industrial properties is located across West 6th Street to the south.

GEOLOGICAL ISSUES: SEISMIC & FAULT HAZARD; LIQUIFACTION, SUBSIDENCE & EXPANSIVE POTENTIAL; SLOPE STABILITY

CEQA MITIGATED NEGATIVE DECLARATION – SECTION 3.VII – GEOLOGY AND SOILS

VII. GEOLOGY AND SOILS

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
GEOLOGY AND SOILS. Would the project:				
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map, issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☑	☐
ii) Strong seismic ground shaking?	☐	☐	☑	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☑	☐
iv) Landslides?	☐	☐	☑	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☑	☐

		Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant	No Impact
c)	Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☑	☐
d)	Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial director indirect risks to life or property?	☐	☐	☑	☐
e)	Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☑
f)	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☑	☐	☐

DISCUSSION

Criterion a. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

Criterion a.i Rupture of a known earthquake fault as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map, issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42

Less Than Significant Impact. Seismically induced ground rupture is defined as the physical displacement of surface deposits in response to an earthquake's seismic waves. The magnitude, sense, and nature of fault rupture can vary for different faults or even along different strands of the same fault. Ground rupture is considered more likely along active faults.

No Alquist-Priolo Fault Rupture Hazard Zone, as designated through the Alquist-Priolo Earthquake Fault Zoning Act, intersects the project site. Nor is the project site within an Earthquake fault Zone.[1] Moreover, the proposed improvements would be required to adhere to the current safety standards established in the 2019 California Building Code (CBC) and Title V of the California Code of Regulations (CCR). As such, project construction and modernization would be an improvement over original site constriction and would reduce the already low potential for direct or indirect bodily harm involving fault rupture. As such, the impact would be *less-than-significant*.

Criterion a.ii Strong Seismic Groundshaking

Less Than Significant Impact. Due to lack of proximate active faults, the project site is not in what is considered a seismically active region. Per the California Geological Survey's *2003 Earthquake Shaking Potential for California* map, the entire eastern portion of Glenn County is within a region "distant from

[1] California Department of Conservation. California Geological Survey, Earthquake Zones of Required Investigation interactive map, https://maps.conservation.ca.gov/cgs/EQZApp/app/, accessed July 23, 2019.

known, active faults and [that] will experience lower levels of shaking less frequently. In most cases only weaker, masonry buildings would be damaged."[2]

Moreover, as noted under Criteria a.i, above, proposed improvements would be required to adhere to the current safety standards established in the 2019 CBC and Title V of the CCR. The proposed project would be characterized as stick-built wood construction. As such, project construction and modernization would be an improvement over original site construction and would reduce the potential for direct or indirect bodily harm involving fault rupture. As such, the impact would be *less-than-significant*.

Criterion a.iii Seismic Related Ground Failure/Liquefaction

Less Than Significant Impact. Liquefaction is the sudden loss of soil strength resulting from shaking during an earthquake. The effect on structures and buildings can be significant. Liquefaction and is a major contributor to urban seismic risk. Areas most susceptible to liquefaction are underlain by non-cohesive soils, such as sand and silt, that are saturated by groundwater typically between 0 and 30 feet below the surface.

The project site is in area for which no liquefaction hazard maps have been issued by the State of California. The presence of site-specific liquefiable soils can only be determined through analysis of onsite soils during a targeted geotechnical investigation, as required by the CBC. All structures would be built to adhere to the 2019 CBC which provides minimum standards to protect property and public welfare by regulating design and construction to mitigate the effects of adverse soil conditions. In the event that potentially liquefiable soils are identified on site, adherence to these building code requirements, including industry standard measures of minimizing the potential for liquefaction through foundation design, treatment of site soils and/or replacement of liquefiable soils with engineered fills, would ensure that seismically induced ground failure is a *less than significant* impact.

Criterion a.iv Landslides

Less Than Significant Impact. The project site is in area for which no landslide hazard maps have been issued by the State of California. The county is divided into two geographically distinct areas--the western portion in the Coast Ranges and the eastern portion in the Sacramento Valley. Elevations range from 7,450 feet in the western part of the county to a low of 65 feet in the Sacramento Valley.

The project site and surrounding areas are within the flat agricultural area of eastern Glenn County. As noted in the technical papers submitted as part of the County's General Plan, this level, low relief eastern area has nearly no potential for landslides, while the mountainous western portion has a higher landslide potential.[3] The project site is nearly level, and proposed project components do not include grading of any slopes that would to exacerbate landslide conditions. Furthermore, all structures on the site would comply with the 2019 CBC which provides minimum standards to protect property and public welfare by regulating design and construction to mitigate the effects of adverse soil conditions.

As such, the impact would be *less than significant*.

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[2] State of California Geologic Survey, Spring 2003, Earthquake Potential for California, https://ssc.ca.gov/forms_pubs/shaking_18x23.pdf, accessed January 7, 2020.

[3] Glenn County, 1993, Environmental Setting Technical Paper, Glenn County General Plan, Volume II, page 37, June.

Criterion b. Would the project result in substantial soil erosion or the loss of topsoil?

Less Than Significant Impact. Erosion is a normal and inevitable geologic process whereby earthen materials are loosened, worn away, decomposed or dissolved, and removed from one place and transported to another. Precipitation, running water, waves, and wind are all agents of erosion. Ordinarily, erosion proceeds so slowly as to be imperceptible, but when the natural equilibrium of the environment is changed, the rate of erosion can be greatly accelerated. Accelerated erosion within an urban area can cause damage by undermining structures, blocking storm sewers, and depositing silt, sand, or mud in roads and tunnels. Eroded materials are eventually deposited into coastal and local waters where the carried silt remains suspended in the water for some time, constituting a pollutant and altering the normal balance of plant and animal life.

The project would include trenching for installation and connection of underground utilities, and other subsurface disturbances. These site preparation activities would result in the disruption of on-site soils and exposure of uncovered soils to potential erosion impacts. However, site preparation activities would be short-term, occurring for only a brief period during the preliminary stages of project development.

Although minimal erosion would result from grading and construction operations, the proposed project would not result in significant soil erosion or loss of topsoil. Soils of the project site are identified in Table 3-6, below, alongside their key characteristics. The soils composition is typical of former flood basin soils of the Sacramento River Valley.

Table 3-6 Project Site Soils Characteristics

Soil	Percent of Site	Drainage	Flooding Frequency Class	Erosion Hazard	Runoff Potential	Linear Extensibility (Shrink-Swell)	Frost Action
Wyo Loam, deep over gravel	86%	Well Drained	None	Slight	B (low)	1.5%	None
Orland Loam	10%	Well Drained	Occasional	Slight	A (low)	1,5%	None
Cortina, loamy	4%	Somewhat Excessively Drained	Occasional	Slight	B (low)	1.5%	None

Source: United States Department of Agriculture, Natural Resources Conservation Service

As identified in Table 3-6, 86 percent of site soils are classified as Wg—Wyo loam, deep over gravel. Per the United States Department of Agriculture, Natural Resources Conservation Service (NRCS), this soil classification has an erosion potential rating of “slight”, indicating that erosion is unlikely under normal climatic conditions. The two other soils of the overall site composition are also rated “slight”. The flat topography of the site would further reduce the potential for substantial erosion.

Finally, because the site encompasses an area of more than 1 acre, the proposed project would be subject to the National Pollutant Discharge Elimination System (NPDES) permit requirements. As part of the permit requirements, a Storm Water Pollution Prevention Plan (SWPPP) and Monitoring Program would be prepared. The SWPPP would serve to help identify the sources of pollution that may affect the quality of stormwater discharges and to describe and ensure implementation of practices to reduce the pollutants in construction stormwater discharges. The SWPPP would specify, along with permanent or

post-construction measures, BMPs for temporary erosion control. The BMPs typically include the use of vegetation and mulch to stabilize disturbed areas, and sandbags and temporary catch basins to direct runoff away from disturbed areas and trap sediments on-site. Mandatory compliance with the requirements set forth by the NPDES permit, combined with soils that are not susceptible to erosion, would ensure that erosion impacts resulting from the project would be *less than significant*.

Criterion c. We the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

Less Than Significant Impact. Unstable geologic units are not known to be present on the project site. As noted under Criteria a.iv, potential for landslide is low to the flat topography of the site.

Lateral spreading is a form of horizontal displacement of soil toward an open channel or other "free" face, such as an excavation boundary. Lateral spreading can result from either the slump of low cohesion and unconsolidated material or liquefaction of either the soil layer or a subsurface layer underlying soil material on a slope. One indicator of potential lateral expansion is frost action, defined as the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave) and the subsequent collapse of the soil and loss of strength on thawing (NRCS 2018). As indicated in Table 3-6, all project site soils are rated as having have no frost action potential. As such, the potential for impacts due to lateral spreading would be *less than significant*.

Ground subsidence often results from the withdrawal of large amounts of oil and/or groundwater from a region. Oil withdrawal has occurred in an around Hamilton City. According to the California division of Oil, Gas & Geothermal Resources (DOGGR),[4] there is a single, inactive oil well on the project site. It is a plugged, dry-hole well, meaning it has been permanently sealed with cement to isolate the oil- and gas-bearing geologic formation from water. The well has not been in production since at least 1979 and would not significantly impact the stability of site geology.

There is also a single water well at the approximate center of the project site, drilled in 1973.[5] The well is currently active and less than 1 foot in diameter. This is not a high-volume extraction well would not result in compromised site stability.

Soil collapse occurs when water is introduced to poorly cemented soils, resulting in the dissolution of the soil cementation and volumetric collapse. In most cases, the soils are cemented with weak clay sediments or soluble precipitates. This phenomenon generally occurs in granular sediments situated within arid environments. Collapsible soils will settle without any additional applied pressure when enough water becomes available to the soil. Water weakens or destroys bonding material between particles that can severely reduce the bearing capacity of the original soil resulting in damage to buildings and foundations.

The 2019 CBC may require detailed soils and/or geotechnical studies in areas of suspected geological hazards such as unstable geologic units that may be subject to collapse, subsidence, landsliding, or

[4] California Division of Oil, Gas & Geothermal Resources – Well Finder, https://maps.conservation.ca.gov/doggr/wellfinder/#close/-122.01644/39.74939/15, accessed August 3, 2019.

[5] Hamilton Unified School District, September 13, 2018, Phase I Environmental Site Assessment, Hamilton Union High School Expansion, page 14.

lateral spreading. The required geotechnical investigation, in accordance with county and state requirements, would also determine the susceptibility of the project site to settlement, and prescribe appropriate engineering techniques for reducing any potential settlement related effects. Where settlement and/or differential settlement is predicted, site preparation measures—such as use of engineered fill, surcharging, wick drains, deep foundations, structural slabs, hinged slabs, flexible utility connections, and utility hangers—would be deployed as warranted. Upon submission to the Division of the State Architect (DSA), the project would be reviewed for compliance with these standards.

Implementation of standard geotechnical engineering practices, including completion and adherence to a geotechnical investigation containing recommendations that would be specific to the project site, as well as adherence to building code requirements, would reduce potential impacts from unstable soils and other adverse soil properties to less-than-significant levels. Therefore, the project would result in *less-than-significant* impacts related to potential lateral spreading, settlement, collapse, subsidence, and liquefaction.

Criterion d. Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial director indirect risks to life or property?

Less Than Significant Impact. Expansive soils are characterized by a high clay content, which swell with increased moisture content and contracts during dry periods. This change in volume, usually associated with seasonal changes, can damage building foundations, roads, and concrete pavement. Expansive soils can be determined by a soil's linear extensibility, or "shrink-swell" potential. There is a direct relationship between linear extensibility of a soil and the potential for expansive behavior, with expansive soil generally having a high linear extensibility. Thus, granular soils typically have a low potential to be expansive, whereas clay-rich soils can have a low to high potential to be expansive.

According to the NRCS, the linear extensibility value of all soils of the project site is 1.5 percent (see Table 3-6, above). Linear extensibility values below 3 percent correlate to low expansion and shrink-swell potential. The potential of this hazard is moderate if values are 3 to 6 percent, high if values are 6 to 9 percent, and very high if values are more than 9 percent. If the linear extensibility value is more than 3 percent, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Given the linear extensibility of the project site soils, this would be a *less-than-significant* impact.

Criterion e. Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

No Impact. Th proposed project includes modernization and new construction at an existing high school campus that is fully supported by an existing sewer system. As explained in Chapter 3, project Description, the project would include annexation of the site to the Hamilton City Community Services District (CSD) which would provide wastewater services. No septic tanks or alternative wastewater disposal systems would be required. There would be *no impact*.

Criterion f. Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less Than Significant with Mitigation. Paleontological resources have not been identified on the project site, a previously disturbed urban area. However, because the proposed project requires ground disturbing activities, there could be fossils of potential scientific significance and other unique geologic features that are not recorded. Such ground-disturbing construction associated with development permitted under the proposed project could cause damage to, or destruction of, paleontological resources or unique geologic features. Adherence to Mitigation Measure GEO-1, would reduce potential impacts from expansive soils to a *less-than-significant* level.

Impact GEO-1 Ground disturbing activities associated with construction of the proposed project could disturb paleontological resources or unique geological features.

Mitigation Measure GEO-1. In the event that fossils or fossil-bearing deposits are discovered during construction, excavations within 50 feet of the find shall be temporarily halted or diverted. The contractor shall notify a qualified paleontologist to examine the discovery. The paleontologist shall document the discovery, as needed, in accordance with Society of Vertebrate Paleontology standards, evaluate the potential resource, and assess the significance of the finding under the criteria set forth in CEQA Guidelines Section 15064.5. The paleontologist shall notify the appropriate agencies to determine procedures that would be followed before construction is allowed to resume at the location of the find. If the project proponent determines that avoidance is not feasible, the paleontologist shall prepare an excavation plan for mitigating the effect of the project based on the qualities that make the resource important. The plan shall be submitted to the District for review and approval prior to implementation.

Significance after Mitigation. Less than Significant.

DAM OR FLOOD INUNDATION

FLOOD HAZARD – From: CEQA MITIGATED NEGATIVE DECLARATION

SECTION X – HYDROLOGY & WATER QUALITY

Criterion d. In flood hazard, tsunami, or seiche zones, would the project risk release of pollutants due to project inundation?

Less Than Significant Impact. The project site is not located in a FEMA-designated 100-year floodplain or Special Flood Hazard Area but is located within the dam inundation zones of Black Butte Lake and Shasta Lake and Reservoir. However, the probability of dam failure is very low, and Glenn County, Tehama County, and Shasta County have never been impacted by a dam failure. In addition, public high school uses are not considered a use which would risk release of pollutants due to project inundation. A dam inundation study was prepared for this project in compliance with the California Code of Regulations, Title 5 requirements and provides additional details on evacuation procedures and flooding risks.[6] It is

[6] PlaceWorks, 2019. Dam Inundation Study for Hamilton High School Expansion, prepared for Hamilton Unified School District. Dated June 2019.

highly unlikely that either the Black Butte Dam or Shasta Dam would experience a catastrophic failure, and impacts relating to the project release pollutants due to inundation are considered *less than significant*.

A seiche is a surface wave created when a body of water is shaken, usually by earthquake activity. The project site is approximately 130 feet east of the Glenn-Colusa Canal and approximately 0.55 mile southwest of the Sacramento River. The Glenn-Colusa Canal is an open channel with non-pressurized (gravity) flow in this area, and there is no credible mechanism for catastrophic failure unless there is an external event, such as an earthquake.[7] The maximum water elevation is 143.5 feet (National Geodetic Vertical Datum of 1929 or NGVD29) which is approximately 10 feet below the existing school site elevation of 153 feet above mean sea level (msl). As the water level within the canal is controlled to maintain a constant flow rate, there is minimal potential for a rise in water elevations or flooding to occur.

The project site also is located outside of the 100-year flood zone for the Sacramento River to the northeast and is beyond the river's setback levee.[8] Therefore, the project site would not be at risk from flooding due to seiches from either the Glenn-Colusa Canal or the Sacramento River due to distance from the school site and the school's higher elevation. Therefore, impacts due to a seiche are considered *less than significant*.

A tsunami is a series of ocean waves caused by a sudden displacement of the ocean floor, most often due to earthquakes. As Hamilton City is located approximately 95 miles inland from the Pacific Ocean, the project site is not in an area subject to inundation by tsunamis and there would be no impact.

Therefore, *less than significant impacts* would occur with respect to the release of pollutants from these three potential types of natural hazard events.

DAM INUNDATION STUDY (PlaceWorks) June 2019

3. Summary and Recommendations

The school site is within the inundation zones of Black Butte Dam and Shasta Dam. Black Butte Dam is located 17.4 miles to the west of the site in Tehama County. According to the inundation map prepared by the USACE for Black Butte Dam, flood water resulting from dam failure would reach the school site in approximately 7 hours. Shasta Dam is located 69.6 miles to the north of the site in Shasta County. According to the inundation map prepared by the USBR for Shasta Dam in 1976, flood water resulting from dam failure would reach the school site in approximately 22 hours with a maximum depth of 12 feet. The probability of dam failure is very low, and Glenn County, Tehama County, and Shasta County have never been impacted by a dam failure. Dams are continually monitored by various government

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[7] PlaceWorks, 2019.Pipeline Safety Hazard Assessment for Hamilton High School Expansion, prepared for Hamilton Unified School District. Dated June 2019.

[8] Glenn Local Agency Formation Commission, 2014. Hamilton City Community Services District, Municipal Service Review and Sphere of Influence, adopted December 8, 2014.

agencies, including the DSOD. Dam owners are required to maintain EAPs that include procedures for damage assessment and emergency warnings. In addition, municipalities and counties address the possibility of dam failure in the Safety Elements of General Plans and the Local Hazard Mitigation Plans. The Hamilton City Fire Protection District coordinates the County of Glenn Emergency Preparedness section within the Sheriff/Office of Emergency Services. The County of Glenn maintains the EOP in accordance with the State of California's SEMS. It is highly unlikely that either the Black Butte Dam or Shasta Dam would experience a catastrophic failure, even in the case of a maximum credible earthquake. As flood depths would not reach the school site for 7 hours at the earliest, there would be adequate time for the safe evacuation of students and staff at Hamilton High School in the unlikely event of a dam failure. However, because the school site is located within the inundation zones for two dams, it is recommended that the District coordinate with the Glenn County Sheriff/Office of Emergency Services to ensure that they are notified via the SEMS and CodeRED in the case of an imminent dam failure or other natural disaster.

HAZARDOUS MATERIALS MITIGATION

HAZARDOUS MATERIALS – From: CEQA MITIGATED NEGATIVE DECLARATION

SECTION IX – HAZARDS AND HAZARDOUS MATERIALS

DISCUSSION

The analysis in this section is based in part on the Phase I Environmental Site Assessment, Hamilton Union High School Expansion, September 13, 2018 (Phase I ESA). This document is included as Appendix C of this IS/MND.

Criterion b. Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Less than Significant Impact. As described in Chapter 3, Project Description, the proposed project would not include the full demolition of any existing structures, only renovation of one classroom building. As a result, the likelihood of encountering or upsetting existing ACMs and/or lead is minimal. Moreover, as discussed below, the existing regulatory framework would preclude a significant impact resulting from ACMs.

Construction projects typically maintain supplies onsite for containing and cleaning small spills of hazardous materials. However, construction activities would not involve a significant amount of hazardous materials, and their use would be temporary. Furthermore, project construction workers would be trained on the proper use, storage, and disposal of hazardous materials. Operation of the site would continue as existing conditions and would not warrant use of hazardous materials in quantities that could result in conditions.

Asbestos

Asbestos is the name of a group of silicate minerals that are heat resistant, and thus were commonly used as insulation and fire retardant. Inhaling asbestos fibers has been shown to cause lung disease (asbestosis) and lung cancer (mesothelioma). Per the SCAQMD, the demolition, renovation, or removal of asbestos-containing materials is subject to the limitations of the National Emissions Standards for Hazardous Air Pollutants (NESHAP) regulations as listed in the Code of Federal Regulations requiring notification and inspection. The Environmental Protection Agency (EPA) Region IX office has authority to implement the asbestos NESHAP in Shasta County, and notification of the District and EPA Region IX is required for all projects involving the handling of asbestos-containing materials. In addition to new construction, the proposed project would renovate one classroom structure. No external demolition activities would occur at the project site. In addition, as concluded in the Phase I Environmental Site Assessment (ESA) performed for the proposed project, the site is not in an area mapped as likely to contain naturally occurring asbestos.[9] The presence of ultramafic rock outcrops (typically associated with the occurrence of NOA) was not detected during field visits performed a part of the Phase I ESA.[10]

Regardless, removal of any structural or naturally-occurring asbestos would comply with State and federal regulations, including adherence to EPA Region IX. Asbestos waste would be transported to a facility permitted for direct land filling of asbestos-containing waste, both friable and nonfriable, into a fully lined, Resource Conservation and Recovery Act (RCRA) Subpart D landfill unit. Additionally, soils contaminated by asbestos would be removed, if warranted. Compliance with existing regulations is sufficient to reduce potential impacts associated with ACM to a *less-than-significant* level, and no mitigation is necessary.

Lead

Lead was formerly used as an ingredient in paint and as a gasoline additive; both of these uses have been banned. Lead is listed as a reproductive toxin and a cancer-causing substance; it also impairs the development of the nervous system and blood cells in children.

The determination of the presence of lead-based paint and its removal would comply with state and federal regulations, including OSHA rule 29, Code of Federal Regulations Part 1926, which establishes standards for occupational health and environmental controls for lead exposure. The standard also includes requirements addressing exposure assessment, methods of compliance, respiratory protection, protective clothing and equipment, hygiene facilities and practices, medical surveillance, medical removal protection, employee information and training, signs, recordkeeping, and observation of monitoring. Title 17, California Code of Regulations, Section 36100 specifically sets forth requirements for lead-based paint abatement in public and residential buildings.

If any building materials containing lead-based paint were to be found, the removal of lead-based paint would also need to comply with Title 22, Division 4.5 of the California Code of Regulations. Title 22 sets forth the requirements with which hazardous-waste generators, transporters, and owners or operators of treatment, storage, or disposal facilities must comply. These regulations include the requirements for

[9] Hamilton Unified School District, 2018, Phase I Environmental Site Assessment, Hamilton Union High School Expansion, page 10.

[10] Hamilton Unified School District, 2018, Phase I Environmental Site Assessment, Hamilton Union High School Expansion, page 10.

packaging, storage, labeling, reporting, and general management of hazardous waste prior to shipment. In addition, the regulations identify standards applicable to transporters of hazardous waste. These regulations specify the requirements for transporting shipments of hazardous waste, including manifesting, vehicle registration, and emergency accidental discharges during transportation.

Soils contaminated by lead-based paint would be removed, as needed. Removed lead waste would be transported to a Comprehensive Environmental Response, Compensation, and Liability Act approved, Toxic Substances Control Act and RCRA permitted, Class I, II, and III landfill. Compliance with existing regulations would reduce hazards related to lead-based paint to less than significant, and no mitigation is needed.

Overall, compliance with State and federal regulations would reduce construction-related impacts associated with the accidental release of hazardous materials into the environment. Impacts would be *less than significant*, and no mitigation is necessary.

Pesticides and Polychlorinated Biphenyls

The Phase I ESA concluded that there is evidence of known Recognized Environmental Conditions (RECs) at the project site, in the form of past agricultural uses that may have left residual pesticides and herbicides in site soils. The Phase I ESA includes documentation of pesticide treatment at the site, and reveals that pesticides have been used at the site since at least 2011, when the County permitting program began.[11] Groundwater may also contain residual agricultural chemicals, and therefore is also considered a REC at the site.

The pole-mounted electrical transformer in the parcel to be acquired was also identified as an REC in the Phase I ESA, due to concern that leakage from the transformer could contaminate surrounding soils with Polychlorinated biphenyls (PCBs).[12] PCBs are a group of man-made organic chemicals known to cause cancer and impact the immune, reproductive, nervous, and endocrine systems.

The above results of the Phase I ESA resulted in the required completion of a State-approved Preliminary Endangerment Assessment (PEA). The PEA included a detailed soil sampling workplan developed per DTSC guidelines and requiring approval by the DTSC. The PEA was also subject to a required 30-public review process and final DTSC report approval. The PEA determined that soils at the site are safe and that no further action is necessary. The conclusion of the PEA was approved by the DTSC on April 29, 2020. Based on these analyses, the site of the proposed project would result in a *less-than-significant* impact regarding upset of hazardous materials.

[11] Hamilton Unified School District, 2018, Phase I Environmental Site Assessment, Hamilton Union High School Expansion, page 9, September.

[12] Hamilton Unified School District, 2018, Phase I Environmental Site Assessment, Hamilton Union High School Expansion, page 15, September.

Criterion c. Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Less Than Significant. As noted in Chapter 3, project Description, the project site is adjacent Ella Barkley High School, a 10th through 12th grade alternative education facility. The next nearest school is Hamilton Elementary/Middle School located approximately 0.6 miles to the south.

The Phase I ESA identified Recognized Environmental Conditions (RECs) on of the subject property in connection with past agricultural land use and the existing electrical transformer. These REC's prompted the completion of a PEA, As noted above, the PEA concluded that no further action on the site was required previous to project implementation. Construction of the proposed project would not emit hazardous emissions that would impact the health of students and staff at Ella Barkley High School.

Furthermore, operation of the proposed high school would not emit hazardous emissions or handle hazardous materials or substances. The impact would be *less than significant*.

HAZARDS AND HAZARDOUS MATERIALS

From: PRELIMINARY ENVIRONMENTAL ASSESSMENT (NV5) April 2020

3.1.3 Naturally Occurring Asbestos

NV5 reviewed geologic literature regarding the distribution and occurrence of NOA in California. The site is not in an area mapped as likely to contain NOA, and NV5's field geologist did not observe the presence of ultramafic rock outcrops (typically associated with the occurrence of NOA) at the site. According to A General Location Guide for Ultramafic Rocks in California - Areas Likely to Contain Naturally Occurring Asbestos (California Department of Conservation, Division of Mines and Geology; August 2000) ultramafic rock is mapped approximately 21 miles west of the site. The Jennings and Strand 1960 geologic map shows a Mesozoic aged ultramafic rock unit mapped approximately 21 miles west of the site and within the Upper Stony Creek Watershed. Surface water draining from the Upper Stony Creek Watershed flows into Black Butte Lake where the sediment load is likely deposited, then flows southwest across the valley and ultimately to the Sacramento River approximately 5.5 miles south of the subject property. The site is not within the Upper Stony Creek Watershed and is protected from inundation and deposition of NOA by the Glenn-Colusa Canal levee. Therefore, naturally occurring asbestos is not a REC for the subject property.

3.1.4 Radon

Radon gas concentrations are often compared to a regulatory screening level of 4 picoCuries per liter (pCi/L). Based on review of the California Department of Health Services (CDHS) report Geologic Controls on the Distribution of Radon in California (Ronald Churchill, Associate Geochemist, California Geological Survey, dated January 25, 1991), Glenn County is not underlain by geologic deposits that increase the chance of elevated radon gas. Glenn County is in Radon Zone 3 as defined by the United States Environmental Protection Agency Map of Radon Zones for California (viewed August 21, 2018 at:

http://www.city-data.com/radon-zones/California/California.html). This zone consists of counties with a predicted average indoor radon screening level less than 2 pCi/L. Furthermore, the California Indoor Radon Test Results (Department of Health Services, last updated February 2016) database summary indicates that, in the 95951 zip code for Glenn County, radon concentrations were less than the California Department of Health Services recommended action level of 4 pCi/L in four of four indoor air tests. Therefore, based on the published literature reviewed radon is not expected to be present at levels exceeding the screening levels. Sampling and analysis of indoor air would be required to determine actual radon levels at the site.

5.7 SUMMARY OF EVALUATION

Pursuant to guidelines set forth in HERO HHRA Note No. 4 (DTSC, 2019c) hazard and risk are calculated on a site-wide basis, considering the hazard and risk associated with exposure to all detected chemicals including those that are determined to be consistent with background or ambient concentrations. This information is intended to be useful for risk management decisions and to foster public transparency. The hazard index (hazard or HI; 1.7E+01) and excess lifetime cancer risk (risk; 6.2E-05) are driven by ambient arsenic concentrations in soil. Excluding arsenic, which was detected at concentrations similar to accepted background values, the hazard is 6.6E-01 and the risk is 3.8E-08.

7.0 CONCLUSIONS AND RECOMMENDATIONS

The following conclusions are based on the findings of site characterization and risk assessment. Arsenic concentrations detected in surface soil range from 4.1 to 6.7 mg/kg and have an average value of 5.3 mg/kg. These concentrations exceed the DTSC-SL for residential soil (unrestricted land use). However, the concentrations are similar to accepted background values and are considered to be representative of background conditions. OCPs were not detected in soil within the former agricultural area in exceedance of DTSC-SLs and were not detected in groundwater sampled from the onsite agricultural well. PCBs were not detected in soil adjacent to the onsite pole mounted transformer. Except for arsenic (discussed above), Title 22 metals were not detected in soil within the former agricultural area or drainage ditch in exceedance of DTSC-SLs. Total petroleum hydrocarbons were not detected in soil in the drainage ditch in exceedance of RWQCB ESLs. Based on the findings of site characterization presented herein, it is NV5's opinion that the site is a candidate for a no further action determination regarding the characterization of Title 22 metals (including arsenic), OCPs, TPH and PCBs. The findings and conclusions presented herein are subject to review and approval by DTSC.

HIGH PRESSURE PIPELINES AND ELECTRIC TRANSMISSION LINES

HIGH PRESSURE PIPELINES-Pipeline Safety Hazard Assessment (PlaceWorks) June 2019

As part of the Title 5 studies done for this site, the District completed a Pipeline Risk Assessment Study in June 2019, authored by PlaceWorks, Inc. The study identified two PG&E gas transmission line located within 1500 feet of the proposed school site (**Appendix 3**), and analyzed pipeline failure consequences based on CDE guidelines and standards. The study found:

3. Summary and Recommendations

The results of the Stage 2 screening analysis indicate that the total individual risk is 8.3 x 10-10 for the PG&E natural gas transmission pipelines, which is much less than the CDE significance threshold of one in a million (1.0 x 10-6). Therefore, the risk to staff and students at the school site is not considered to be significant and no mitigation measures are required. Additionally, damage to the Glenn-Colusa Irrigation District Main Canal as the result of a maximum credible earthquake would not result in significant flooding at the school site or pose a risk to students and staff.

Even though the impact of pipeline releases was found to be less than significant, it is recommended that the school's emergency response and evacuation plan address the possibility of natural gas or water releases and identify potential evacuation routes. Also, contact names and numbers for the pipeline and water agencies (Pacific Gas & Electric Company, Glenn-Colusa Irrigation District, and the California Water Service) should be maintained with the emergency response plan in case the school needs to report pipeline releases or damage to the Glenn-Colusa Irrigation District Main Canal. A map of the pipeline and canal locations and emergency contact information should be kept with the school's emergency response plan.

ELECTRICAL TRANSMISSION LINES

A review of the California Energy Commission (CEC) website, as well as field verification, shows two 60kv overhead power transmission lines within 1.500 feet of the proposed school site (**Appendix 4**). One line is within the railway right-of way to the east/northeast of the site (as is one of the two gas lines); the other electrical line parallels Hwy. 45/County Road 203/Canal Street on the west side of the site. There is also a PG&E substation outside the 1,500 ft. boundary, at the intersection of Hwy. 32 and Shasta Street in Hamilton City.

According to the CDE Power Line Setback Exemption Guidance, May 2006, the District may request an exemption as follows:

Exemption Process Guidance

Title 5 Setbacks - All Power Transmission Lines Rated 50kV and Above

Without a CDE approved exemption request, all proposed school sites shall meet at least the following Title 5 Section 14010(c) setbacks as measured from the edge of easement of overhead transmission lines to the usable portions of the school site (including usable joint-use areas, but excluding gross acreage not available for school uses):

Overhead transmission line easement setbacks
100 feet for 50-133kV line (interpreted by CDE up to <200kV)
150 feet for 220-230 kV line
350 feet for 500-550 kV line

The District anticipates meeting the 100-foot easement setback for the proposed school expansion as part of the school design, as noted in the conceptual site drawing from the CEQA IS/MNG. As needed,

the District may also request an exemption as noted in the Guidance Memo prior to final submission of the site approval documentation noted in SFPD 4.01

As noted in the opening paragraphs of this analysis, original documents for all CEQA, DTSC and Title 5 studies may be found at:

https://www.husdschools.org/Page/1952

If you have any questions or require any additional information, please contact Michael Cannon, EFPM/LLC, at (916) 825-0000 or mscannon_efpm@msn.com

APPENDICES

1). CDE School Site Selection & Approval Guide (2000 Edition), Appendix H – Factors to be Included in a Geological and Environmental Hazards Report

2). Hamilton High School Site Expansion-Conceptual Drawing; Phases 1 & 2 Site Development
From: Hamilton High School Site Expansion-Initial Study/Mitigated Negative Declaration

3). Hamilton High School Site Expansion-Gas Pipelines
From: Hamilton High School Site Expansion-Pipeline Safety Hazard Assessment

4). Hamilton High School Site Expansion-Electrical Transmission Lines

From: California Energy Commission Link https://cecgis-caenergy.opendata.arcgis.com/app/ad8323410d9b47c1b1a9f751d62fe495

CALIFORNIA DEPARTMENT OF EDUCATION

SCHOL SITE SELECTION & APROVAL GUIDE (2000 Edition)

GEOLOGICAL AND OTHER ENVIRONMENTAL HAZARDS REPORT

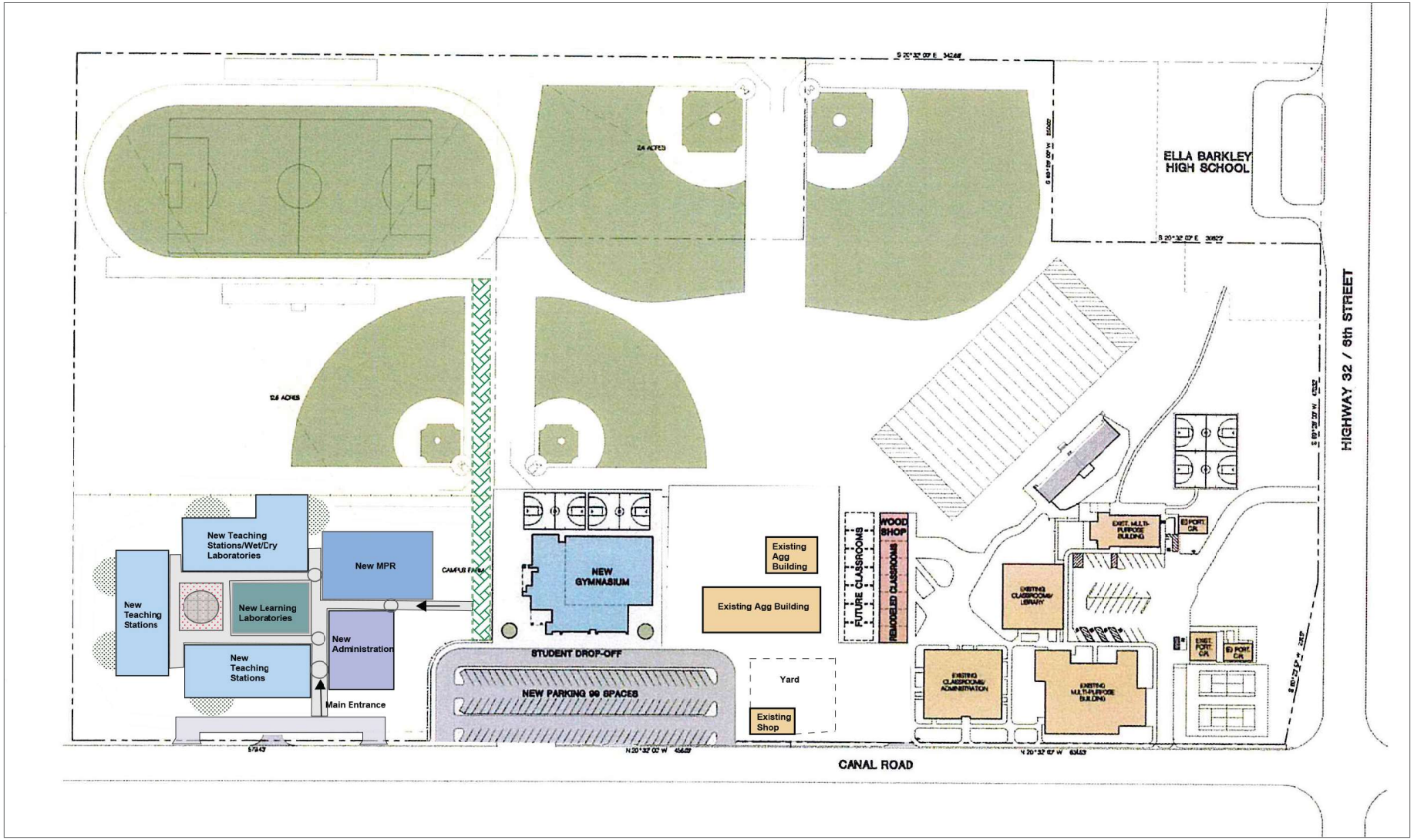
Appendix H
Factors to Be Included in a Geological and Environmental Hazards Report

- **I. Site Description**
  - **A. Location of site identified by street name, lot number(s), or other descriptors that are site specific.**
  - **B. Description of site reconnaissance, including the vegetation (describe type), and previous site usage.**
- **II. Geological**
  - **A. Seismic and Fault Hazard**
    1. **Whether the site is in Alquist-Priolo zone; whether it is situated on or near a pressure ridge, geological fault, or fault trace that may rupture during the life of the school building; and what the student risk factor is.**
    2. **Locations and potential for ground shaking of nearby faults or fault traces. Discussion of field inspection and reconnaissance.**
    3. **Subsurface conditions determined by exploration and literature review.**
  - **B. Liquefaction Subsidence or Expansive Potential**
    1. **Discussion of subsoil condition relative to ground water and the potential for liquefaction.**
    2. **Mitigating factors.**
  - **C. Dam or Flood Inundation and Street Flooding**
    1. **Location of the site in relation to flood zones and dam inundation areas.**
    2. **If the site is in a flood zone, give year, type, and potential hazard.**
    3. **Potential for sheet flooding, street flooding, and dam or flood inundation.**
  - **D. Slope Stability**
    1. **If located on or near a slope.**
    2. **Discuss potential for instability and landslides.**
  - **E. Mitigations**
    1. **Discuss mitigations and potential development of the site as it relates to student safety and staff use.**
- **III. Environmental (Where applicable)**
  - **A. Health Hazards**

1. **Describe the mitigation, if on or near a hazardous or solid waste disposal, to ensure that the wastes have been removed before acquisition.**
2. **Discuss soils sample and underground water sample test results and, if toxics are present, the cleanup procedures.**
3. **Address the presence of asbestos if serpentine rock is present.**
4. **Identify facilities within one-quarter mile of the site that may emit hazardous air emissions. Provide air emissions test results and an analysis of the potential hazard to students and staff (written findings required).**

B. High-Pressure Pipelines and Electric Transmission Lines

1. **Identify proximity to all high-pressure gas lines, fuel transmission lines, pressurized sewer lines, and high-pressure water pipelines within 1,500 feet of the proposed site; and identify supply lines other than gas lines to the site or neighborhood.**
2. **Identify all utility easements on or adjacent to the site and the kV capacity of the easement.**



Source: Nichols, Melburg & Rossetto Architects.

Figure 1-5
Phase II Conceptual Site Plan

Source: ESRI, 2019

0 1,000
Scale (Feet)

Project Boundary

1,500-ft Radius

Figure 1
Site Location and Pipeline Map