Appendix F Paleontological Assessment Memorandum

August 22, 2023

Jared Critchfield
Amador County Unified School District
217 Rex Ave
Jackson, California 95642
Email: jcritchfield@acusd.org

RE: Paleontological Assessment Memorandum for the Amador County Unified School District Project, Amador County, California

Dear Mr. Critchfield:

ECORP Consulting, Inc. completed a thorough investigation on the potential to directly impact paleontological resources during the construction of the Amador County Unified School District Project (Project). This investigation included a paleontological record search through the Sierra College Natural History Museum in Rocklin, California, an online record search through the University of California Museum of Paleontology (UCMP), Berkeley, California, and a desktop study of the geology and paleontology of the Project Area.

The Project site is located within multiple cities and unincorporated county within Amador County (Figure 1). Approximate locations include but are not limited to Latitude: 38.395007 and Longitude: -120.801066, Latitude: 38.349872 and Longitude: -120.931149, Latitude: 38.398178 and Longitude: -120.810744, Latitude: 38.355873 and Longitude: -120.791500, Latitude: 38.348877 and Longitude: -120.935050, and Latitude: 38.352764 and Longitude: -120.778695 (Sheya 2023).

The Project consists of the consolidation of eight schools onto six campuses within the Amador County Unified School District (ACUSD). Sutter Creek Primary School and Ione Elementary School will be closed for later disposition. ACUSD proposes to combine Amador High School (HS) and Argonaut HS at Argonaut HS, combine Ione Junior HS and Jackson Junior HS at Amador HS, relocate Ione Elementary School to Ione Junior HS, convert Jackson Junior HS into the County Preschool Center, add 6th grade to Jackson Elementary School, and expand the Sutter Creek Elementary School campus (Critchfield 2023). This study focused on the impact to potential paleontological resources that may be encountered during ground-disturbance activities associated with Argonaut HS (northwest of Jackson, California), Sutter Creek Elementary (northwest of Sutter Creek, California), and Ione Junior High School (Ione, California).

GEOLOGIC UNITS

Amador County is located in the Sierra Nevada geomorphic province, between the Sierra Nevada foothills and the Sacramento Valley. Amador County, along with the rest of the Sierra foothills, is underlain by folded and faulted metasedimentary and metavolcanic rocks of Paleozoic and Mesozoic ages (Duffield and Sharp 1975; Sutter Creek General Plan 2019). Underlying geologic formations within the Project areas consists predominantly of the Logtown Ridge Formation of the Amador Group (Argonaut High School and Sutter Creek) and Ione Formation (Ione Junior High) (City of Ione General Plan 2009). The Amador Group is Middle and Upper Jurassic in age and consists of metamorphosed volcanic rocks, basic schist, metaandesite and conglomerate, as evident at Argonaut

High School and Sutter Creek (Figure 2). The area surrounding Ione Junior High School is characterized by the Ione Basin, a geophysical province 30 miles long and 4 to 7 miles wide whose primary surface exposures include sedimentary rocks of the Eocene Ione Formation (approximately 49 to 45 million years old) (Fossil Plants Of The Ione Basin, California (coffeecup.com)). The latter is found within the Ione Basin that lies within Amador County and Calaveras County in the western foothills. The Ione Formation is of importance due to its depositional environment. The formation was deposited in floodplain, estuaries, lagoons, deltas, marshy-swamps, and marine waters. Due to the predominantly nearshore environments defined by the sedimentary rocks of the Ione Formation, it has been found to contain well preserved fossil plants, fossil logs, lignite, and fossil peat.

RECORD SEARCH RESULTS

A paleontological record search was conducted by ECORP through the Sierra College Natural History Museum in Rocklin, California. A single record was located. Seven *Pinus* sp. scale fragments (SCNHM TC 4 a-g) from a cone were found in the Eocene Ione Formation. The Ione Formation has also produced fossil flora outside of Amador County (Pers. Comm. G. Bromm 2023). An additional search was conducted through the UCMP database. The database produced 24 fossils from Amador County including a partial skull fragment and humeri from a Pleistocene bear (*Ursus*) and invertebrates including cephalopod, bivalve, and gastropods from the Eocene. These fossils, however, were recovered north of Pine Grove, California northeast of the Project areas. In addition to the record search results, ECORP conducted reviews of published and unpublished literature. The Ione Formation, as discussed earlier, has produced numerous fossil plants form the Ione Basin (Fossil Plants Of The Ione Basin, California (coffeecup.com)). It is recognized as one of the great fossil leaf-bearing districts in California.

RECOMMENDATIONS

Given that the Project site is in a well-developed area, a pedestrian survey is not recommended. A spot check of construction activities should be conducted once ground disturbance begins at Argonaut High School and Sutter Creek Elementary locations to determine the subsurface geology. Due to the presence of a fossil plant bearing district in the vicinity of Ione Junior High School, full-time paleontological monitoring is recommended at this school site. If fossils are found, a paleontological mitigation plan should be implemented to inform the school district and Project personnel of monitoring and mitigation protocols to be followed during any ground disturbance.

Sincerely,

Niranjala Kottachchi
Paleontological Resources Manager

REFERENCES

City of Ione General Plan Update. 2009. Draft Environmental Impact Report, 50p.

Critchfield, J. 2023. Notice of Preparation: School Closure/Consolidation Program Project, 10p.

Duffield, W.A. and R.V. Sharp. 1975. Geology of the Sierra Foothills Melange and Adjacent Areas, Amador County, California, Geological Survey Professional Paper 827, 34p.

Fossil Plants of the Ione Basin, California. Fossil Plants Of The Ione Basin, California (coffeecup.com).

Sheya, T. 2023. School Closure/Consolidation Program Project – Draft Environmental Impact Report (DEIR), 13p.

Sutter Creek General Plan. 2019. General Plan, Volume III Setting and Background Reports, 311p.

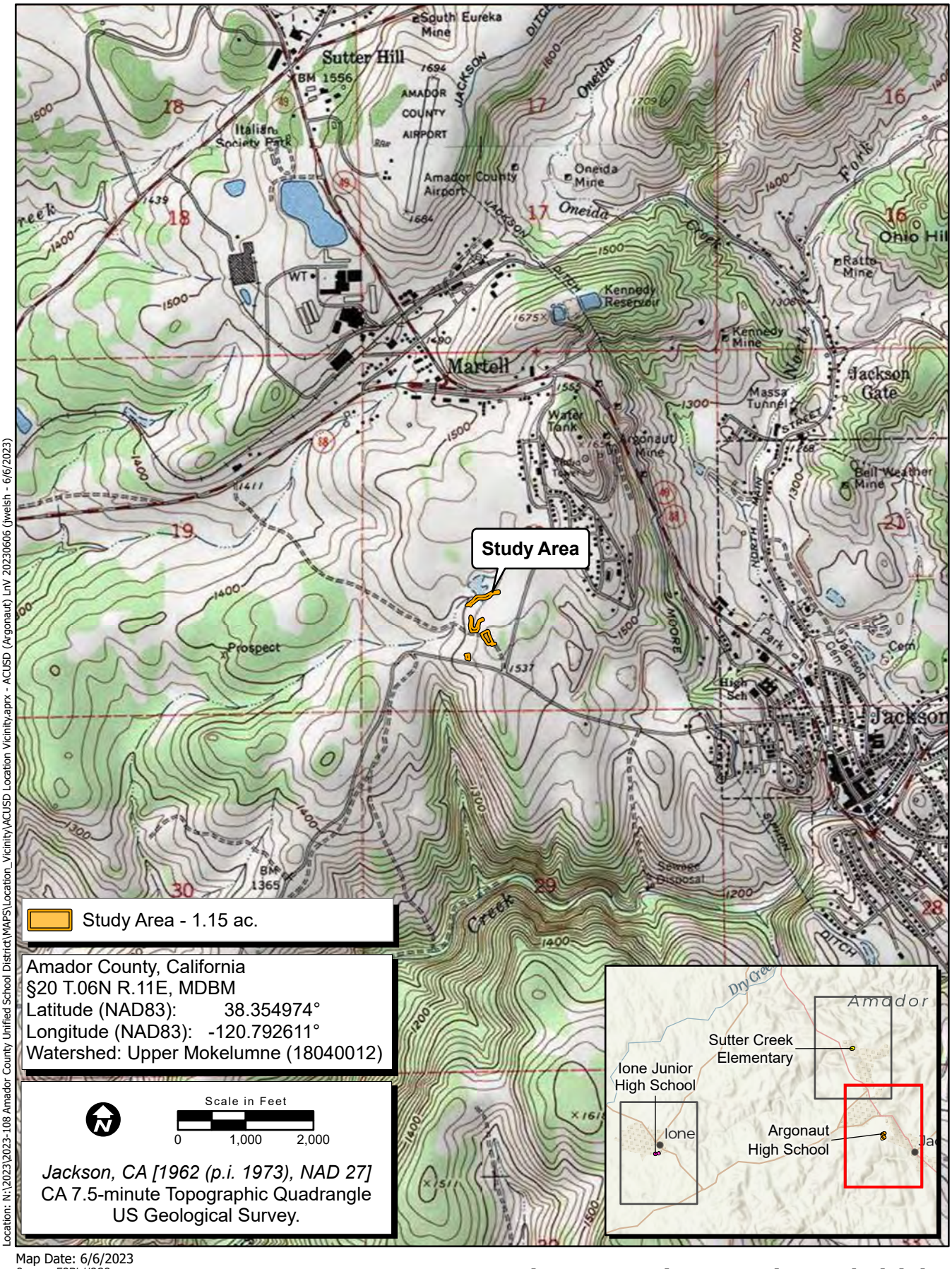
PERSONAL COMMUNICATION

Email from George Bromm. August 3, 2023. Paleontological Record Search Sierra College Natural History Museum.

LIST OF FIGURES

Figure 1. Project Location and Vicinity

Figure 2. Geology



Location: N:\2023\2023-108 Amador County Unified School District\MAPS\Location_Vicinity\ACUSD Location Vicinity.aprx - ACUSD (Argonaut) LnV 20230606 (jwelsh - 6/6/2023)

Map Date: 6/6/2023
Sources: ESRI, USGS

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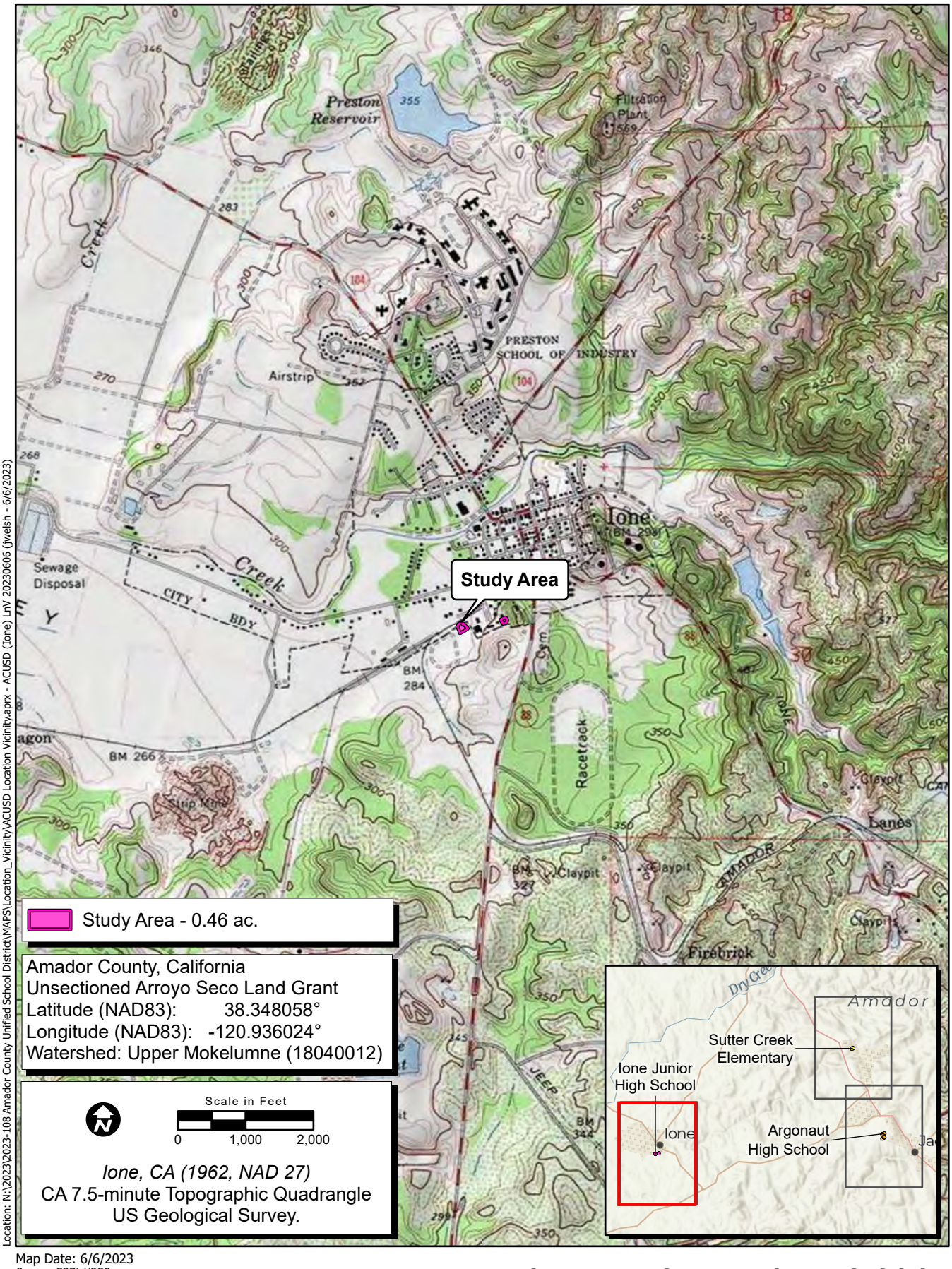
Figure 1. Project Location and Vicinity (Argonaut High School)
2023-108 Amador County Unified School District



Map Date: 6/6/2023
Sources: ESRI, USGS

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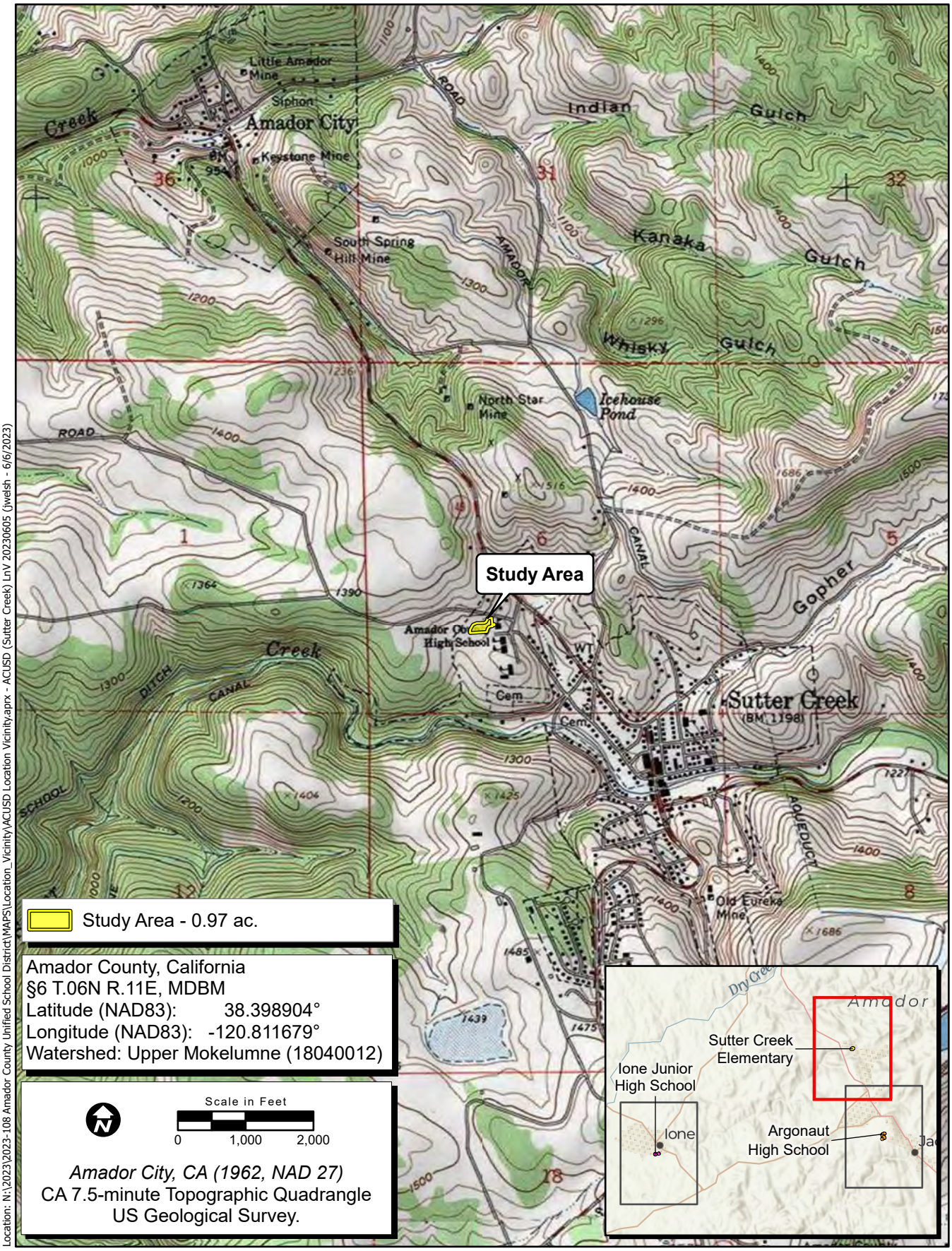
Figure 1. Project Location and Vicinity (Ione Junior High School)
2023-108 Amador County Unified School District



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Map Date: 6/6/2023
Sources: ESRI, USGS

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Figure 1. Project Location and Vicinity (Sutter Creek Elementary)
2023-108 Amador County Unified School District

Map Contents

Study Area

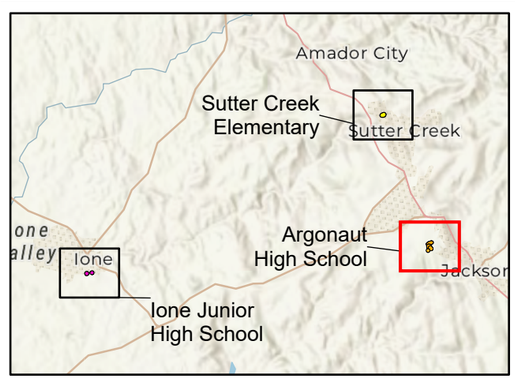
Argonaut High School - 1.15 ac.

Geology Type within Study Area

Metavolcanic rocks (Mesozoic)

Mzv - Undivided Mesozoic volcanic and metavolcanic rocks. Andesite and rhyolite flow rocks, greenstone, volcanic breccia and other pyroclastic rocks; in part strongly metamorphosed. Includes volcanic rocks of Franciscan Complex: basaltic pillow lava, diabase, greenstone, and minor pyroclastic rocks.

Sources: Amador County, California Department of Conservation Geologic Atlas of California, ESRI, Maxar (2022)



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Map Date: 8/14/2023

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Scale in Feet
0 300 600

Figure 2. Geology

2023-108 Amador County Unified School District

Map Contents

Study Area

Ione Junior High School - 0.46 ac.

Geology Type within Study Area

Nonmarine (continental) sedimentary rocks (Eocene)

Ec - Sandstone, shale, conglomerate; moderately to well consolidated.

Sources: Amador County, California Department of Conservation Geologic Atlas of California, ESRI, Maxar (2022)

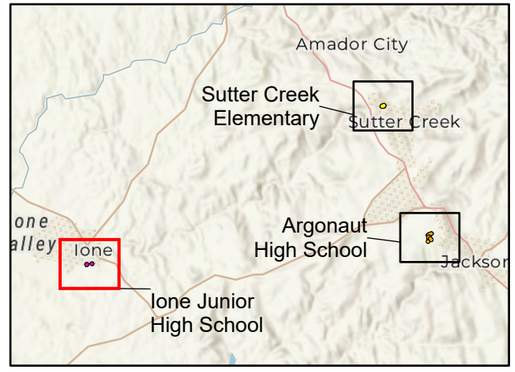

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Figure 2. Geology
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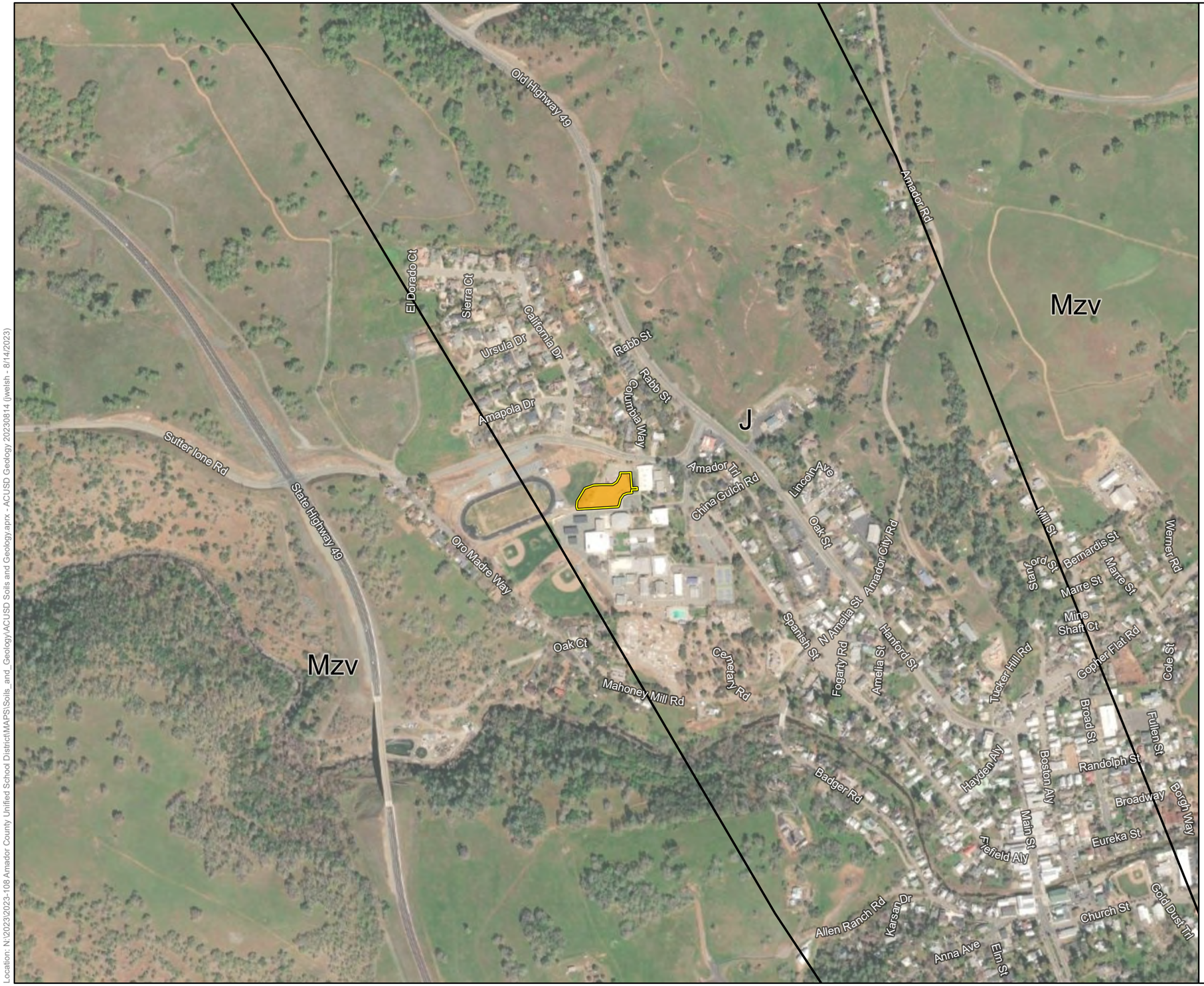


Map Contents

Study Area

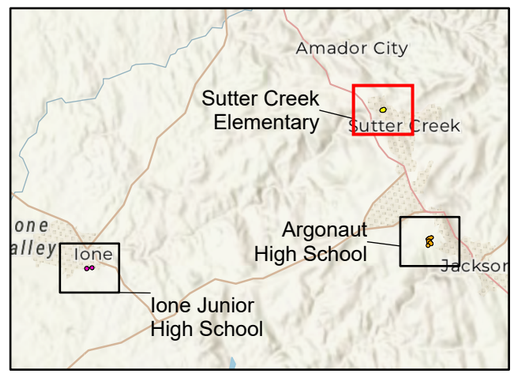
Sutter Creek Elementary - 0.97 ac.

Geology Type within Study Area

Marine sedimentary and metasedimentary rocks (Jurassic)

J - Shale, sandstone, minor conglomerate, chert, slate, limestone; minor pyroclastic rocks.

Sources: Amador County, California Department of Conservation Geologic Atlas of California, ESRI, Maxar (2022)



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Scale in Feet
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Figure 2. Geology

2023-108 Amador County Unified School District

Appendices

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