Liquefaction and liquefaction-induced ground failure are major causes of earthquake damage (Keller and Blodgett, 2006). During liquefaction, soils lose their ability to support loads and structural integrity erodes. Liquefaction can occur within a few seconds in areas with shallow deposits of fine-grained soils. It is not the shaking of the ground that causes liquefaction, but the ground motion that generates sediment flow. Liquefaction issues are considered in the engineering process through a factor of safety. A factor of safety of 1.0 or greater, for example, indicates that liquefaction is not a concern. However, a factor of safety less than 1.0 indicates that liquefaction may occur under certain conditions. Design codes provide guidelines for determining liquefaction potential and for evaluating the susceptibility of soils to liquefaction.

INTERPRETATION
Liquefaction and liquefaction-induced ground failure are major causes of earthquake damage (Keller and Blodgett, 2006). During liquefaction, soils lose their ability to support loads and structural integrity erodes. Liquefaction can occur within a few seconds in areas with shallow deposits of fine-grained soils. It is not the shaking of the ground that causes liquefaction, but the ground motion that generates sediment flow. Liquefaction issues are considered in the engineering process through a factor of safety. A factor of safety of 1.0 or greater, for example, indicates that liquefaction is not a concern. However, a factor of safety less than 1.0 indicates that liquefaction may occur under certain conditions. Design codes provide guidelines for determining liquefaction potential and for evaluating the susceptibility of soils to liquefaction.

REFERENCES

Hazard map showing the potential for liquefaction in the study area. The map is limited to areas within the study area itself. To view other maps, visit the Utah Geological Survey website.

Using this map, engineers and architects can design structures that are less likely to fail during earthquakes. The map provides information on the potential for liquefaction, which is one of the most common types of earthquake damage. By considering liquefaction potential, engineers can design buildings that are more resilient during earthquakes. The map also provides information on the potential for other types of earthquake damage, such as surface faulting and landslides. This information can be used to design structures that are more resilient to a variety of earthquake hazards.

Although potentially costly when not recognized and properly accommodated in project design, liquefaction effects can be isolated and mitigated with proper planning and design. Various mitigation strategies exist, such as using lower-strength building materials, constructing buildings on piles, or using other types of foundations that are less susceptible to liquefaction. The map can be used to identify areas where these strategies may be necessary.

Visit our website for more information on earthquake hazards and mitigation strategies. Our website also provides information on other types of earthquake hazards, such as surface faulting and landslides. We offer a variety of resources, including reports, publications, and interactive maps, to help engineers and architects design buildings that are more resilient to earthquake hazards.