

Relevant Geographic Information System (GIS) Experience

Subsurface Geologic Mapping, Northern San Francisco Bay Area, California

- Mapped the distribution, thickness, and age of geologic and artificial fill deposits, to assess potential susceptibility to seismically-induced liquefaction
- Compiled subsurface borehole data into a geo-referenced GIS database
- Used GIS analysis to characterize the three dimensional spatial distribution and extent of deposits; output included contoured surface and thickness maps

Hazard Mapping and Analysis for Natural Gas Pipeline, Central Valley, California

- Produced 100+ mile GIS hazard strip map along the pipeline corridor for fault rupture, liquefaction, landslide, flooding, soil and erosion hazards
- Developed a regional flood frequency curve to estimate stream discharge at ungaged streams for erosion analysis
- Calculated relative potential channel scour depth for over 100 drainage crossings, based on terrain and stream scour models
- Used GIS analysis of the pipeline and mapped hazards to provide a prioritized relative hazard ranking of erosion mitigation sites
- Provided a fully compatible GIS database, for future pipeline monitoring and mitigation tracking

Storm Drain Mapping and Analysis, South San Francisco Bay Area, California

- Delineated 1500+ catchments for storm drain outfalls to streams, and compiled the mapped catchments and outfalls in GIS, creating a linked database of spatial attributes
- Effort included acquisition and incorporation of county, municipality (13), and water district GIS files and file formats
- Computed percent impervious surface area per catchment, using high-resolution remotely-sensed land cover data
- Results of calculations to be used as baseline conditions for hydrologic modeling of runoff and sediment transport models

Surficial Geologic Mapping, Central New Mexico

- Created GIS map layers and databases for geologic units and vegetation types
- Database can be used to analyze changes in sedimentation and vegetation cover in the system through time

Fault Hazard Mapping, LPG Tank, Israel

- Digitized field-based fault maps to create overlay with site engineering and topographic maps
- Established database for attributing fault activity characteristics
- Data used to assess surface rupture hazard to existing LPG tank near Jakare, Israel