

## Outline – Lecture 8

Freewrite – Archaeological Resources

New assignment: presentations and final initial study next week

Resource Areas:

Cultural  
Water  
Geology

### Freewrite:

- What service site are you working at?
- How will the site benefit from the knowledge you bring from this class?

### New assignment

- return papers
- Revisions/ND and Presentations
  - See handout

### Assessment Substance

- LAND USE/ PLANNING ✓
- POPULATION/ HOUSING ✓
- SERVICES ✓
- BIOTICS ✓
- AGRICULTURE ✓
- ARCHAEOLOGY ✓
- HISTORIC RESOURCES
- WATER
- GEOLOGY
- TRAFFIC
- AIR
- NOISE
- HAZARDS
- ENVIRONMENTAL JUSTICE
- ENERGY

### Water Resources:

Setting - on and near site

- Stream flows/water quality
- Flood control/levees
- Aquifers
- Water table depth
- Storm drains
- Pervious surfaces/recharge sites
- Water treatment/sewage facilities

### Water Resources: Thresholds

- a) Violate water quality standards or waste discharge requirements?
  - State and Regional Water Quality Control Boards
    - ✦ Total Maximum Daily Loads for all waterways in CA:  
[http://www.swrcb.ca.gov/tmdl/303d\\_lists.html](http://www.swrcb.ca.gov/tmdl/303d_lists.html)
    - ✦ Nonpoint source pollution control:

### b) Deplete water...

- Substantially deplete groundwater supplies or
- interfere with recharge such that there would be a
- net deficit in aquifer volume or
- a lowering of the local groundwater table?

### Substantially alter existing drainage pattern of site ...

- c) result in substantial erosion or siltation
- d) substantially increase surface runoff and result in on- or offsite flooding

### Pollute water

- e) Create runoff that would
  - ✦ exceed storm drain capacity
  - ✦ provide substantial polluted runoff
  - ✦ <http://www.swrcb.ca.gov/nps/index.html>
- f) Substantially degrade water quality

### Flooding

- g) Place housing w/in mapped 100 year flood plain
- h) Impede or redirect 100 year flood flows  
Expose people to significant risk of
- i) levee failure
- j) inundation by tsunami  
<http://quake.abag.ca.gov>

### See also water-related Utilities and Service Systems (XVI):

- a) Exceed wastewater treatment requirements (Regional Water Quality Control Boards)
  - <http://www.swrcb.ca.gov/regions.html>
- Require new or expanded
- b) water treatment plant?
- c) storm drains?
- d) water supply?
- <http://www.waterrights.ca.gov/>

### Exercise

- Describe hydrologic impacts of
  - ✦ construction activities
  - ✦ new housing
  - ✦ a chip factory
  - ✦ a power plant
- What are potential mitigations for these impacts?

- Geology
  - Engineer project to avoid failure
  - Avoid landslide/liquefaction areas
- Erosion (very common)
  - for erosion control info
    - ✦ <http://www.abag.ca.gov/bayarea/enviro/erosion/erosion.html>

**Resource Area:  
Geology**

- Geology
  - Expose people to substantial adverse effects including loss, injury or death due to:
    - ✦ fault rupture
      - **California Department of Conservation:**
      - Alquist Priolo Earthquake Fault Zone maps
      - [http://www.consrv.ca.gov/CGS/rghm/ap/Map\\_index/F4B.htm#SE](http://www.consrv.ca.gov/CGS/rghm/ap/Map_index/F4B.htm#SE)
    - ✦ ground shaking
      - <http://www.consrv.ca.gov/CGS/smip/index.htm>

**Shaking in CA  
What's Shaking in San Jose  
More geologic thresholds**

- Seismic Ground Failure
  - sink holes
  - liquefaction: solid turns to liquid
- landslides
  - US Geological Survey (USGS)
    - <http://walrus.wr.usgs.gov/hazards/offquake.html>
  - Association of Bay Area Governments:
    - <http://quake.abag.ca.gov>
  - <http://www.scec.org/resources/catalog/hazardmitigation.html>

**Earthquake-induced landslide**

- Northridge, CA
- Photo: USGS

**Santa Clara County landslide risk**

**Geology thresholds continued**

- Substantial soil erosion or loss of topsoil?
  - Natural Resource Conservation Service has definitions and maps
- Located on expansive or unstable soil?
  - Most cities have maps in general plans, not online yet

**Some mitigations**

**Questions:**

*What was the muddiest part of today's lecture?*

*What one question would you like to be answered?*

*What was the most interesting part of today's class?*