

GEOG3600 – Geography of Utah
A-05 Wasatch fault – land use patterns and plans
DUE FEBRUARY 25, 2010

Your name:

After this exercise you should:

Know what is meant by:

- slope, gentle slope, moderate slope, steep slope
- scarp, fault, fault scarp, ground failure, ground shaking, surface rupture; fault segmentation
- landform, surface, incision (as in stream incision), sediments, bedrock

Understand how Salt Lake Valley, the Oquirrh Mountains, and the Wasatch Range relate to the Wasatch fault and extension of the Basin and Range province.

Understand why Great Salt Lake is where it is. Understand why closed basins can result from extensional tectonics. Understand why Salt Lake Valley and similar valleys of the Basin and Range trap sediments.

Location: map a portion of the Salt Lake segment of the Wasatch fault.

Interaction: analyze housing and campus patterns (anthrosphere) with conditions of the geosphere.

Movement: analyze location of a few major transportation arteries of Salt Lake City, specifically the jog of 400 South to 500 South at 10th East.

You'll need at least two contrasting colored pencils (okay to borrow a couple of mine).

Sensible shoes

Bright eyes

UofU policy... you must sign the waiver before the excursion. If you haven't signed the waiver, can't join us. We have 80 minutes for the excursion. It takes me about 55 minutes to walk the route with no stops, so we'll be moving right along. As of Wednesday, February 10, there is only one slick, bad patch of ice on 200 South. There may be others. SAFETY FIRST. Air quality should be okay. However, if you are concerned about your health or stamina, email me and we'll work out special arrangements.

Buddy system: everybody has a buddy. Okay to work together. However this handout is individual work.

ROUTE:

From Room 111 OSH – walk southeast and then southwest along the corridor, pass my office OSH172, exit the building, and stop at the top of the stairs to the plaza between OSH and Marriott Library. Locate yourself on MAP 1 – Field trip locations and profiles.

STOP #1. STEEPNESS OF THE PLAZA AND CAMPUS

Look around you. Take a mental picture. This is a gentle slope. Note “cut and fill” versus natural slope. Think land use thoughts: why does this terrain make a good place for a campus? What are its failings?

Walk west down the steps on the south side of Marriott Library. Go west keeping Marriott Library to the north. Go down series of steps. Our route continues along Marriott’s southwest wall. Cross the road. Stay on the north side of South Campus Drive, walking west along the south side of the old field house.

STOP #2 – UTA bus stop at approximately 1450 East 400 South.

Look across the street. Take a mental picture. Think land use thoughts. Some developers want to create a center of activity here. Why would developers find this site attractive? Note cemetery further south. Why would early settlers find that area a good place for a cemetery?

Continue west along 400 South. Cross 1300 East. Cross 1200 East. Cross 1100 East. Observe changes in slope and changes in housing / land use. Why was this area developed for houses? and for apartments?

STOP #3 – FAULT LINE PARK – brief lecture.

Discuss how the valley DROPS.

Why is Great Salt Lake where it is? California is moving west faster than Alta and Park City. Valleys of the Basin and Range province DROP along fault lines, meaning, they get lower in absolute elevation as well as relative height due to tectonics. They partially fill with sediments. Great Salt Lake is the lowest place in the Bonneville Basin due to extensional tectonics. Picture the wooden blocks!

BEGIN THE EXERCISE OF coloring the squares on the areal photo (page 3) that shows the city block with Fault Line Park. We will walk around most of the block. Color squares on the down-side of the fault one color; color the squares on the up-side another color. AFTER you’ve colored all the squares, draw a relatively smooth line AT THE BASE OF the fault scarp. Congratulations. You’ve mapped part of the Salt Lake segment of the Wasatch fault. Write in bold letters “up-side” and “down-side.” Draw cross-hatches along the scarp.

Route from Fault Line Park back to campus. Buddy system.

From Fault Line Park, walk west to 1000 East and 400 South.

Walk north to Linden Ave (1000 East and 330? South).

Walk east on Linden Ave and wend your way through parking areas and roadways to 300 East and about 1070 East (we’ve always had permission to walk through here).

Walk east to the corner of 1100 East and 300 South.

Cross to the north side of 300 South and walk east to 1140 East (Elizabeth Street).

Walk north on Elizabeth Street to 200 South.

Walk east on 200 South toward campus. CAREFUL!!!! An icy stretch through here.

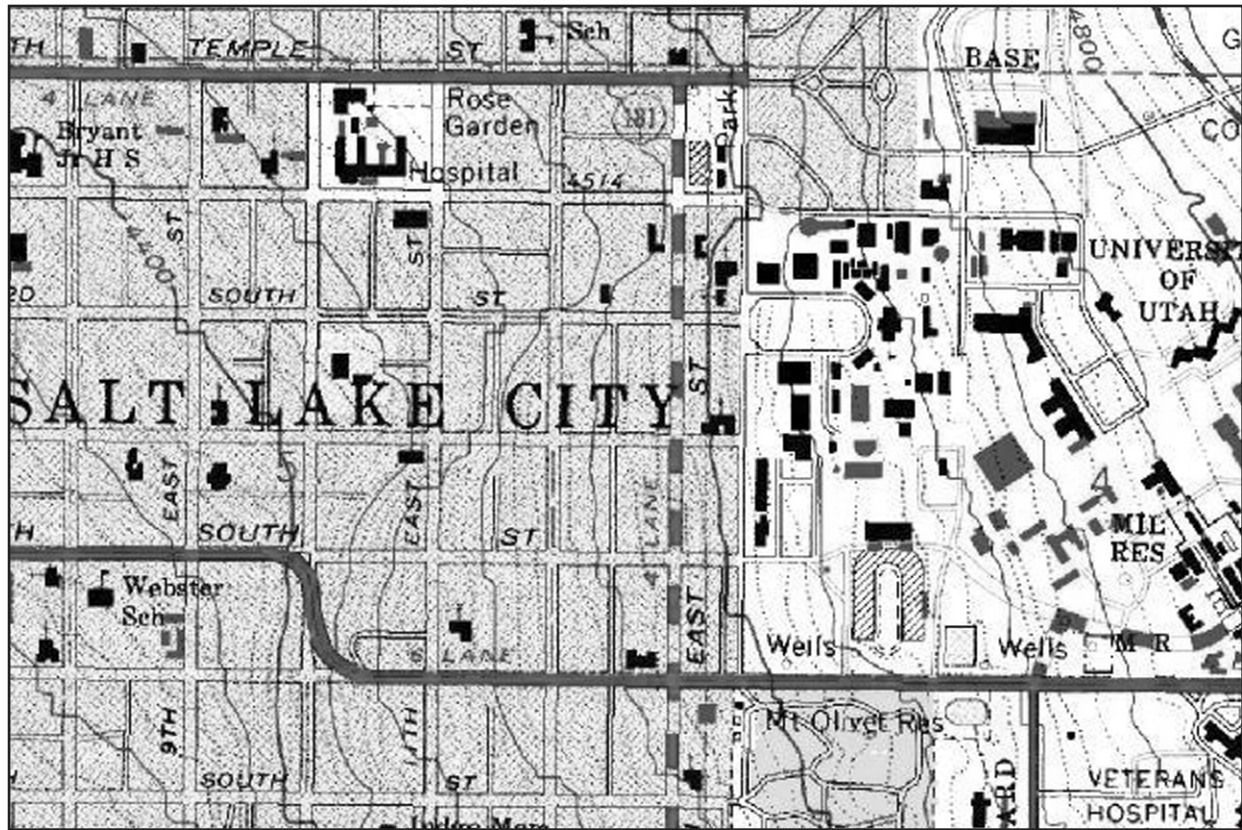
STOP at about 1220 East on 200 South, take a mental picture. The Wasatch Fault was exposed in the foundation of the University Heights apartment building to the north east (red brick condos). It also was exposed and paved as a road in the relatively new complex between 13th East and University Avenue on 100 South, but we haven’t time to walk there.

Continue east to campus. Finish page 4- 5 of the assignment after the field trip.



Image: Google Earth

Use bright, bold colors. (1) Show our route. (2) Mark places we saw good evidence of the fault with a bold, short, solid line. (3) Look for pattern in this image and draw a relatively straight line from the south side of the image to the north side. Add north arrow.



Draw the fault line on the map (above). Use a bright color and draw a smooth line.

Think about land use and terrain. Remember your mental snapshots at the UTA bus stop, along 400 South east of the fault scarp, the fault scarp, the land west of the fault scarp, and the return trip to campus.

Make 5 observations / interpretations that relate terrain and land use, such as:

The cemetery is on flat terrain, on sediments that drain readily and that can be excavated easily.

1. The Uof U campus is on

2.

3.

4.

5.

What will you remember about this field trip in a couple years?