

***How and what* should we
teach novice geoscientists
about geoethics?**

Vince Cronin

International Association for Promoting
Geoethics (www.geoethics.org)
and Baylor University

Your Homework



[Vince's projects](#)

[Cindy's projects](#)

[Kelly's projects](#)

[Connor's projects](#)

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CroninProjects.org



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click on "Vince's projects"



Portage Lake with the end of the Portage Glacier just barely visible as a thin blue sliver in the center of the photo, above and beyond the far end of the lake. Photo taken April 29, 2014, by Vince Cronin in Chugach National Forest near Whittier, Alaska.

Contact	Activities/Calendar	Codes	Courses	Credentials
Cronin's Students	Earthquakes	Geodesy	GeoEthics	Physical Geology Labs
Physical Models	Plate Kinematics	Service	SLAM	Advice on thesis writing, proposals, defenses
Student pages, projects, et cetera	Vince's average weekly schedule	Useful Links		

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click on "GeoEthics"

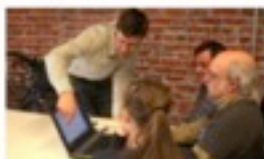
GeoEthics Resources



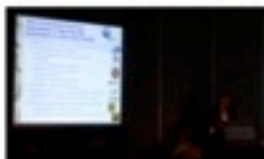
[Codes of Ethics and Professional Practice](#)



[Ethics Organizations, Centers and Institutes](#)



[Ethics Resources Online](#)



[Presentations About Ethics](#)



[Writings About Ethics](#)



[Textbooks and References About Ethics](#)

This is not a static resource, so please send your suggestions for additional resources to Vince Cronin via Vince_Cronin@CroninProjects.org.

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AAPG

Advancing the World of Petroleum Geosciences.

AAPG CODE OF ETHICS

General Principles

1. Geology is a profession, and the privilege of professional practice requires professional morality and professional responsibility.
2. Honesty, integrity, loyalty, fairness, impartiality, candor, fidelity to trust, and inviolability of confidence are incumbent upon every member as professional obligations.
3. Each member shall be guided by high standards of business ethics, personal honor, and professional conduct. The word "member" as used throughout this code includes all classes of membership.

conflicts of interest that may arise from information gained during geological investigations.

Relation of Members to One Another

1. Members shall not falsely or maliciously attempt to injure the reputation or business of others.
2. Members shall freely recognize the work done by others, avoid plagiarism, and avoid the acceptance of credit due others.
3. Members shall endeavor to cooperate with others in the profession and shall encourage the ethical dissemination of geological



hypocrites

sanctimonious
hypocrites

useless ignorant
sanctimonious hypocrites

useless ignorant
sanctimonious hypocrites
and scolds



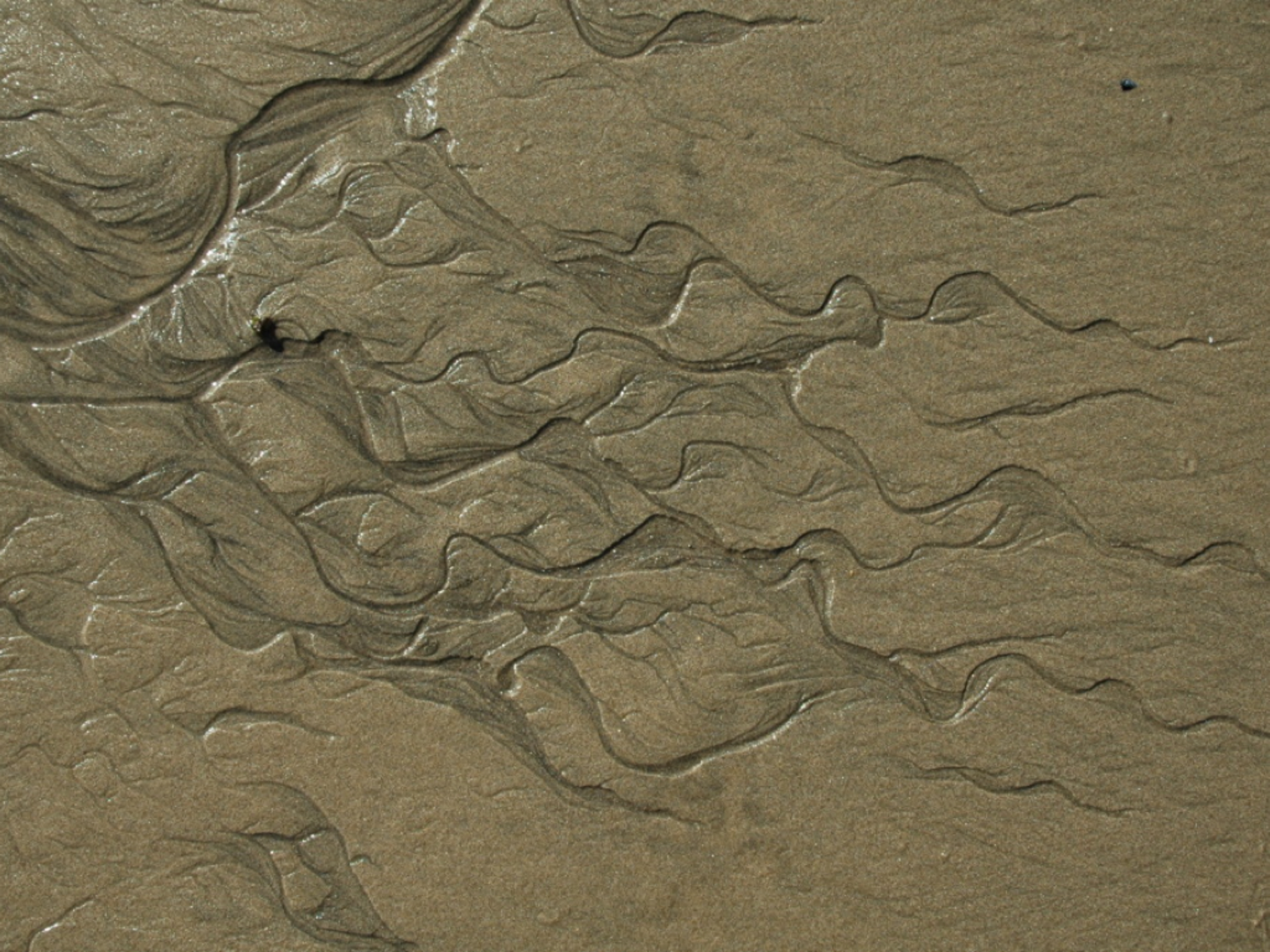
about being
judgmental






A close-up photograph of a lush green rice field. The rice stalks are tall and slender, with some showing developing panicles. The lighting is bright, creating a vibrant green color. The word "humility" is written in a bold, yellow, sans-serif font across the center of the image.

humility





Avoid judging another person

Ethics is related to the need to seek happiness, to avoid suffering, and to be mindful of the needs of others

Ethics asks us to pay
attention to something
beyond ourselves

Anthony Weston

Ethics asks us to pay attention to something beyond ourselves

To think and act ethically is to take care for the basic needs and legitimate expectations of others, as well as our own.

Anthony Weston



Society depends on professional geoscientists to provide reliable information and unbiased expert advice about the natural world.

- Golden Rule
- Tell the truth
- Do good work



A photograph of a river with rapids. The water is white and turbulent as it flows over numerous large, dark grey and brown rocks. The surrounding area is a dense forest of evergreen trees. The sky is overcast and grey. The text "Teach yourself about professional geoethics" is overlaid on the upper left portion of the image in a yellow, serif font with a drop shadow.

Teach yourself about professional
geoethics

A photograph of a river with white water rapids flowing over large, dark rocks in a forested area. The water is turbulent and white with foam as it cascades over the rocks. The surrounding environment is lush with green trees and foliage. The overall scene is dynamic and powerful.

Teach yourself about professional
geoethics

Act in light of facts



Teach yourself about professional
geoethics

Act in light of facts

Be mindful of the consequences of
your words and actions

Integrity involves...

- [1] *discerning* what is right and what is wrong,
- [2] *acting* on what you have discerned, even at personal cost, and
- [3] *saying openly* that you are acting on your understanding of right and wrong.





07/03/2010





A scenic view of a grassy cliffside overlooking a rocky coastline and the ocean. The foreground is dominated by tall, green grass. A wooden fence runs along the edge of the cliff. In the middle ground, a rocky coastline with a prominent rock formation is visible. The ocean is a deep blue, with white waves crashing against the rocks. The sky is not visible in the image.

What does “*professional ethics*” mean to a professional geoscientist?





A case study with an
ethical dimension



San Fernando earthquake 1971

USGS photo by R. Kachadoorian



Oakland

San Francisco

**San Andreas
Fault Zone**

Google Earth image



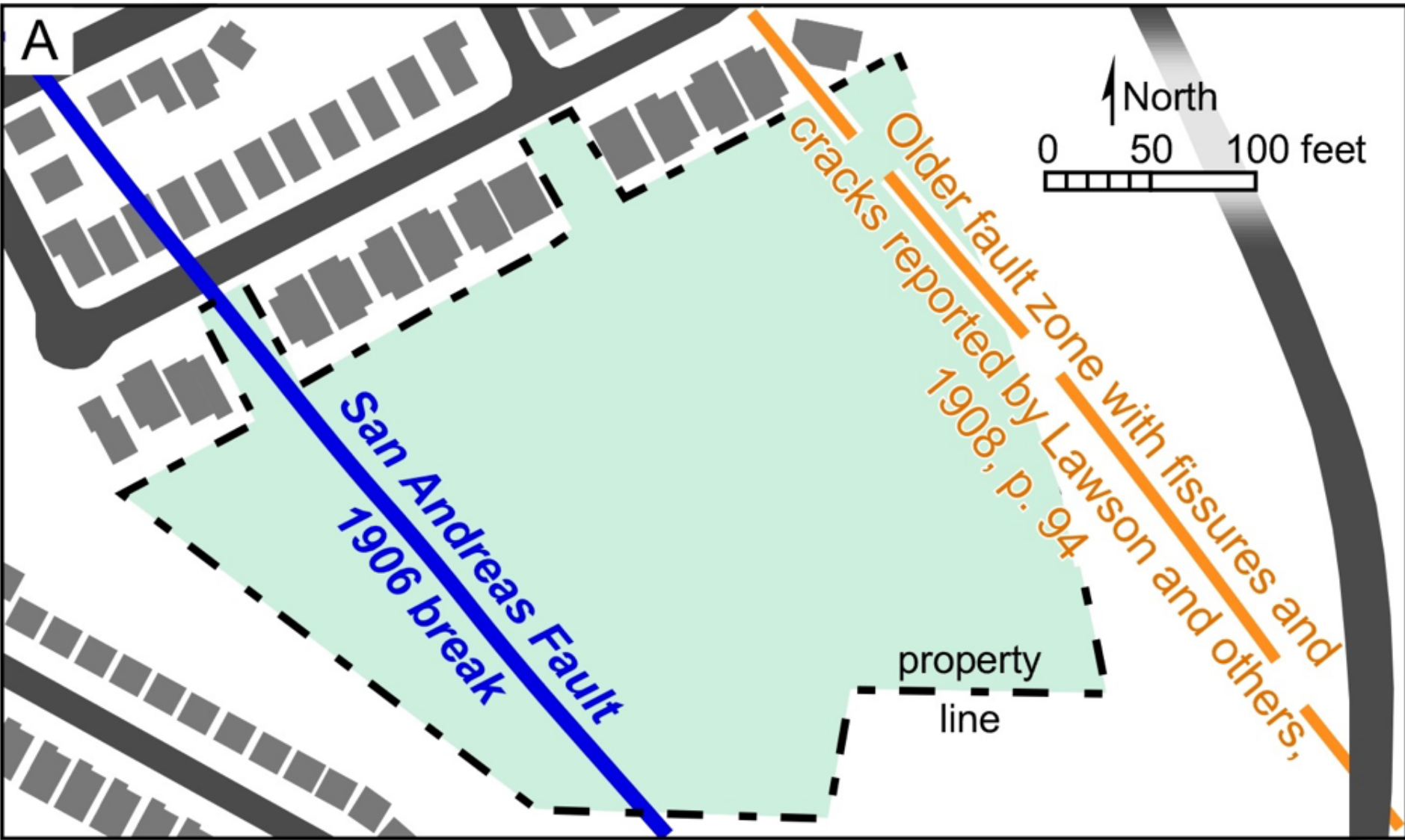
**San Andreas
Fault Zone**

Google Earth image

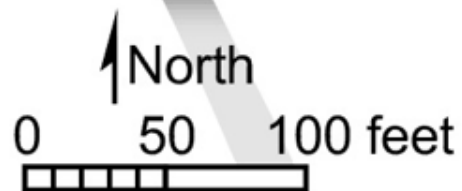


Google Earth image

July, 1993



B

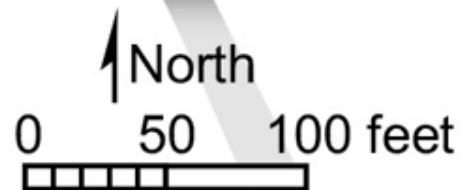


property
line

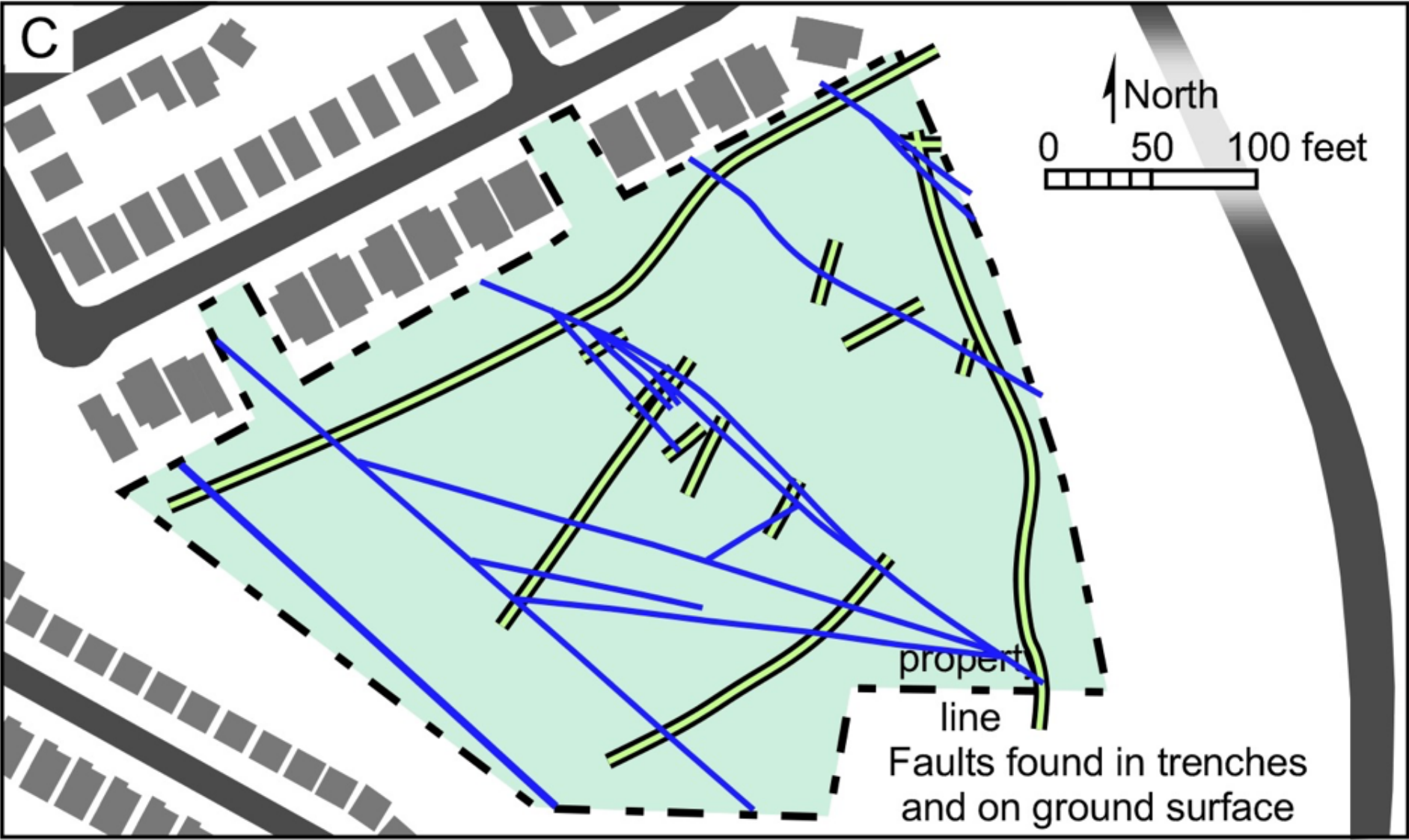
Paleoseismic trenches



C



property
line
Faults found in trenches
and on ground surface

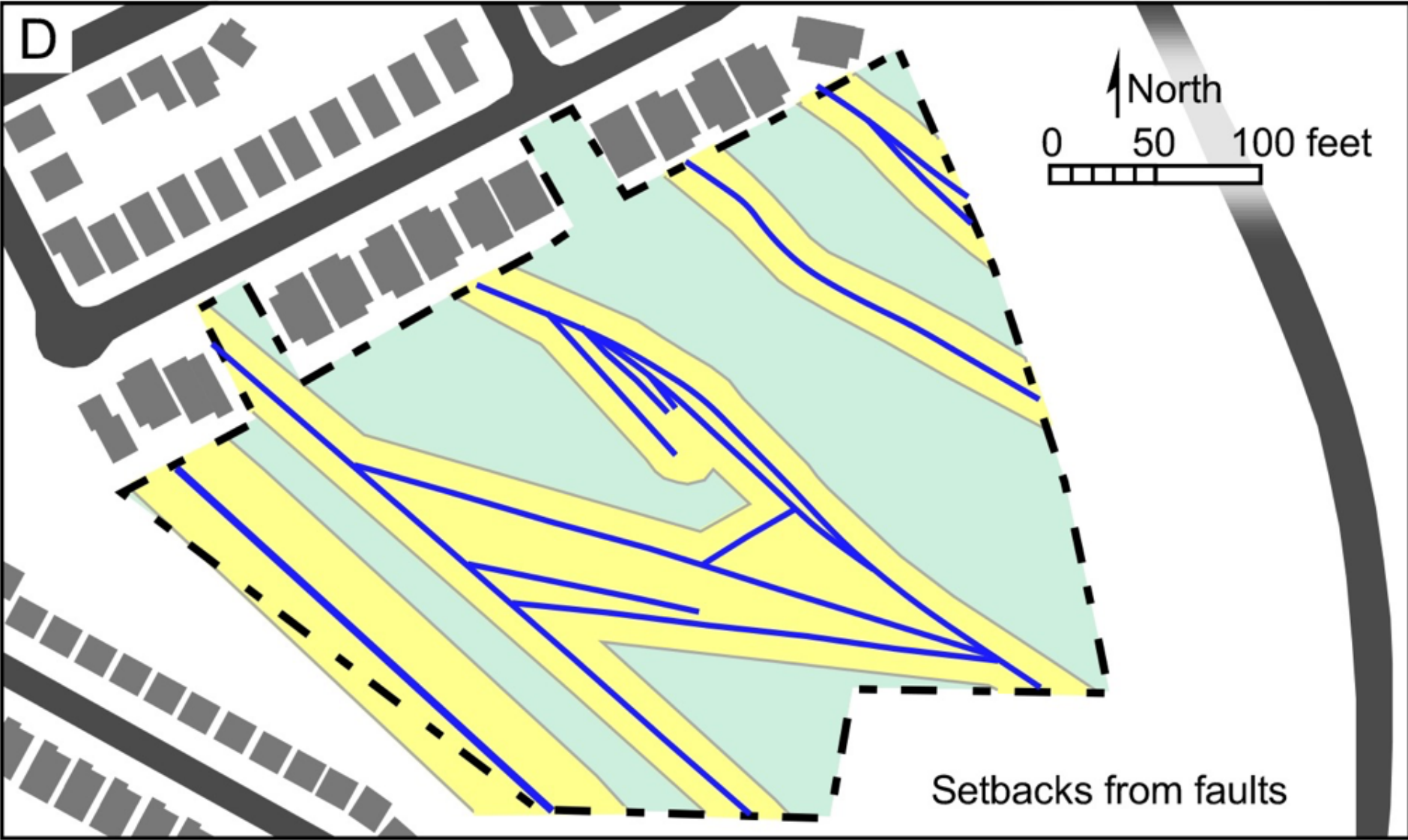


D

North

0 50 100 feet

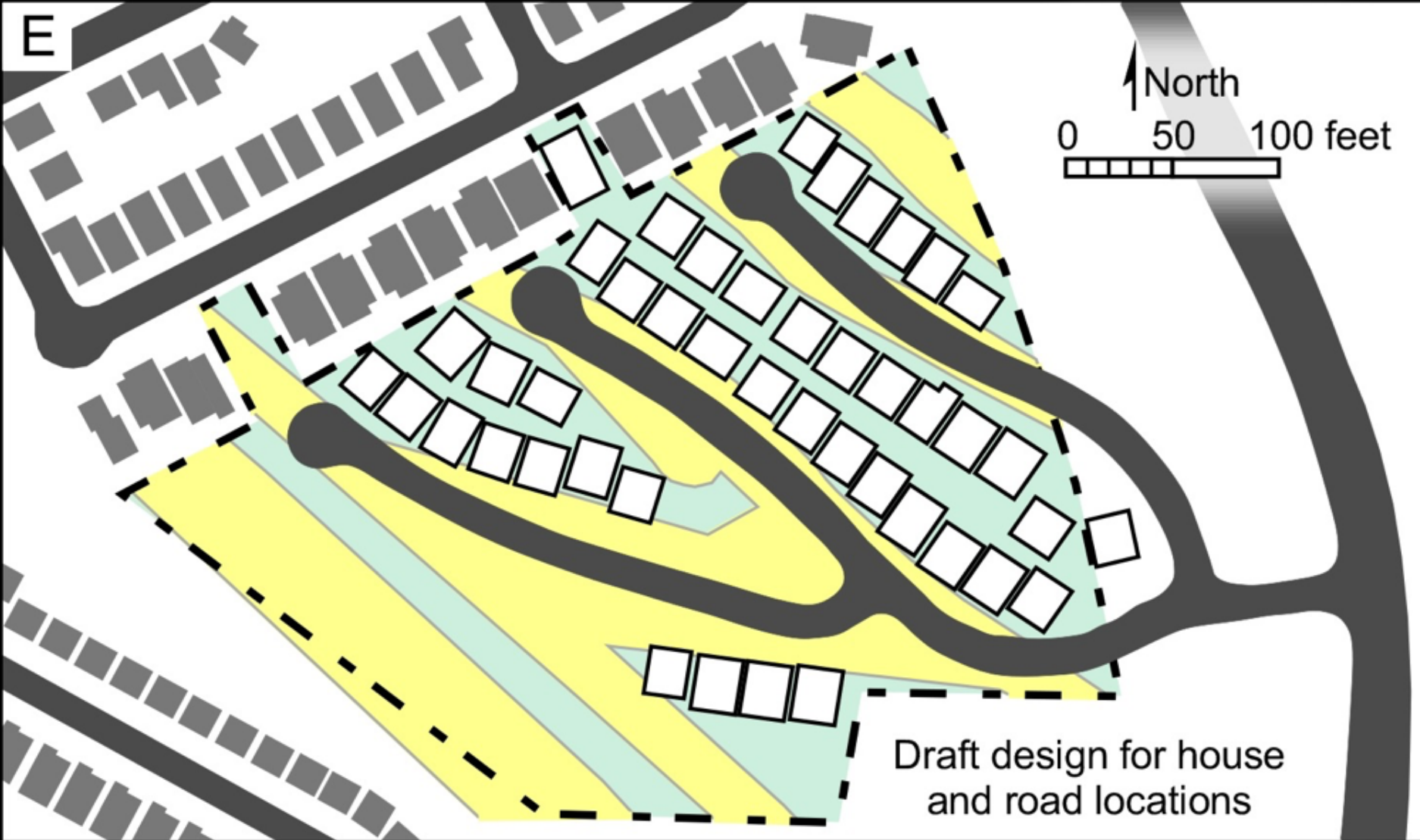
Setbacks from faults



E

North

0 50 100 feet



Draft design for house and road locations

2014 Napa earthquake,
M 6, \$400 million damage



1-100

501

1518







CITY OF
WATER

2014 Nepal earthquake,
M 7.8, >4,200 deaths,
~\$10 billion damage



Golden Gate Guest House

Bhaktapur, Nepal, 2015

1906 San Francisco earthquake

M 7.8, ~3,000 deaths

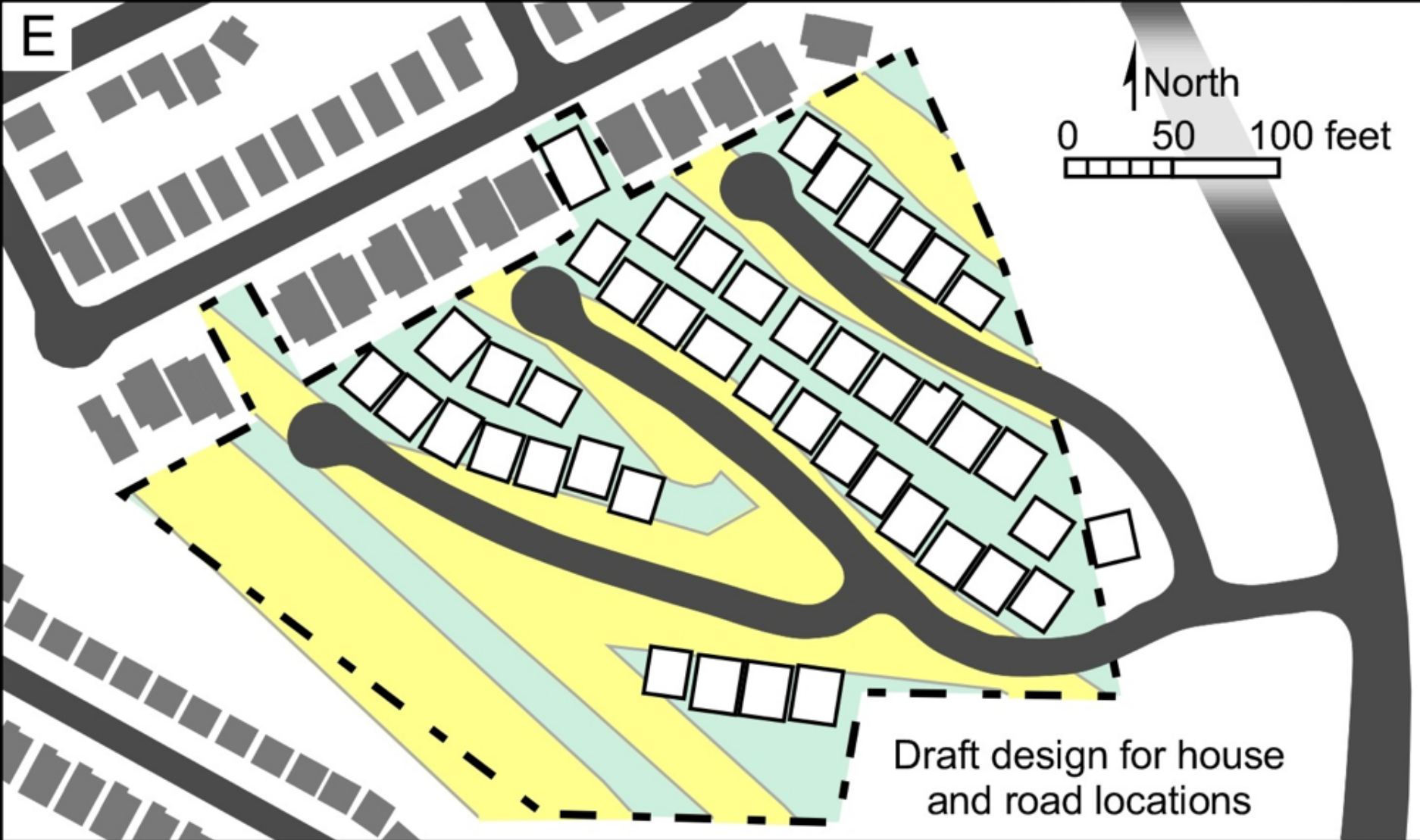
~\$10.5 billion damage (2015 \$)

**~12 feet of right-lateral offset
near development site**

E

North

0 50 100 feet



Draft design for house and road locations



Google Earth image

March, 2015









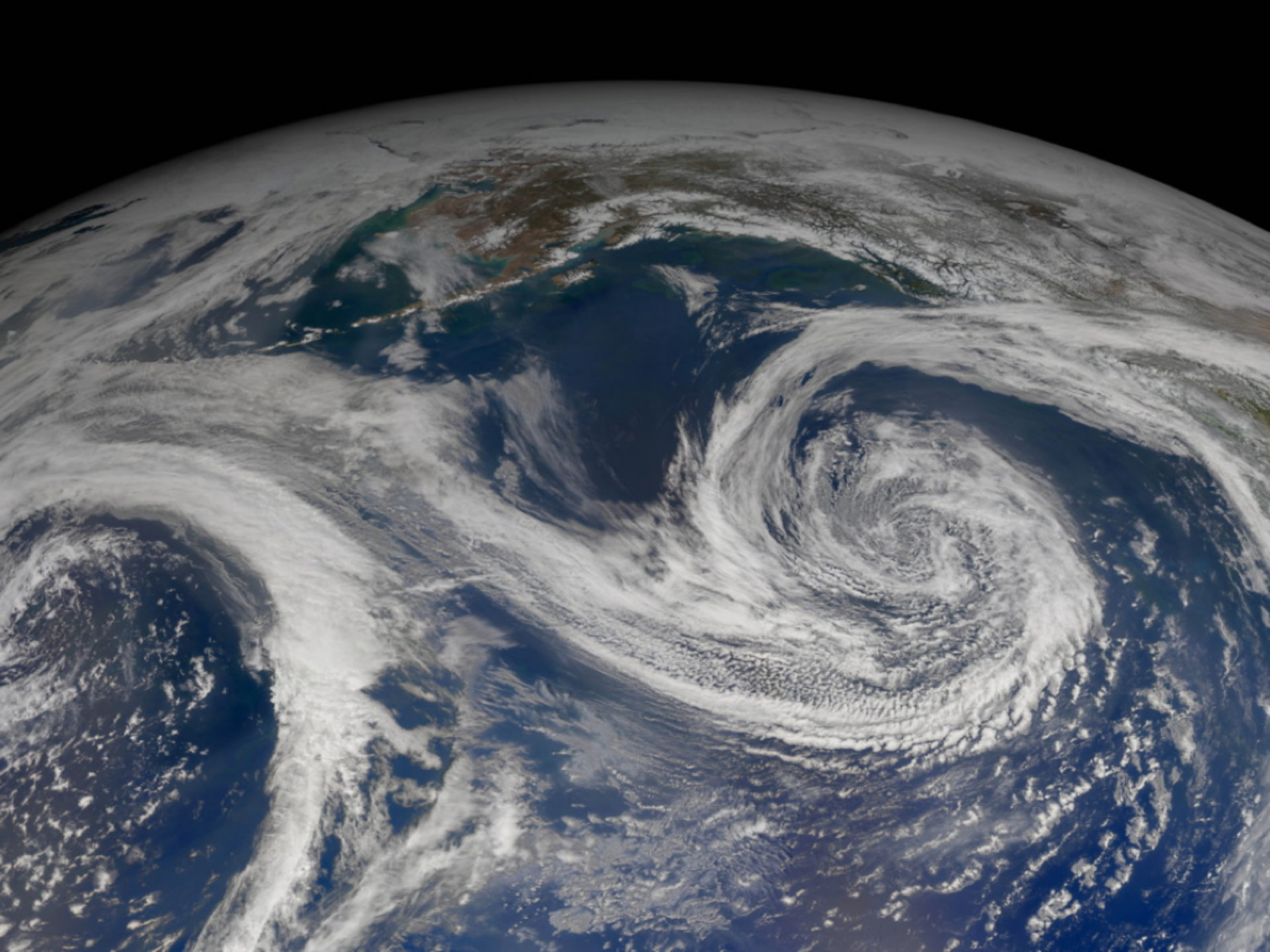
Google Earth image

March, 2015





What ethical problems or issues should we introduce to geoscience students...?



The ultimate domain of GeoEthics



Geoscientists have a unique responsibility for the stewardship of our home.

The ultimate domain of GeoEthics



Geoscientists have a unique responsibility for the stewardship of our home.

We bear our special knowledge in trust for all of humanity.

The ultimate domain of GeoEthics



Geoscientists are the intellectual interface between humanity and Earth's resources, hazards, and vulnerabilities.



JAMES HUTTON

M.D., F.R.S.E.,

1726 - 1797.

**THE FOUNDER OF MODERN
GEOLOGY**

American Geosciences Institute Guidelines for Ethical Professional Conduct



These guidelines address common ethical topics across the geoscience community; the ethics statements of individual societies may expand beyond these guidelines.

Geoscientists play a critical role in ethical decision making about stewardship of the Earth, the use of its resources, and the interactions between humankind and the planet on which we live. Geoscientists must earn the public's trust and maintain confidence in the work of individual geoscientists and the geosciences as a profession. The American Geosciences Institute (AGI) expects those in the profession to adhere to the highest ethical standards in all professional activities. Geoscientists should engage responsibly in the conduct and reporting of their work, acknowledging the uncertainties and limits of current understanding inherent in studies of natural systems. Geoscientists should respect the work of colleagues and those who use and rely upon the products of their work.

In day-to-day activities geoscientists should:

- » Be honest.
- » Act responsibly and with integrity, acknowledge limitations to knowledge and understanding, and be accountable for their errors.
- » Present professional work and reports without falsification or fabrication of data, misleading statements

As members of a professional and scientific community, geoscientists should:

- » Promote greater understanding of the geosciences by other technical groups, students, the general public, news media, and policy makers through effective communication and education.
- » Conduct their work recognizing the complexities and uncertainties of the Earth system

As members of a professional and scientific community, geoscientists should promote greater understanding of the geosciences by other technical groups, students, the general public, news media, and policy makers through effective communication and education.



Fault Damage Seismology

8-223

EXIT

A wooden table with a black top, used as a workstation. It has a metal stand with a horizontal bar. On the table are various items including a yellow box, a black container, and some papers. A red bucket is on the floor under the table.

A long wooden table with a black top, used as a workstation. It has a metal stand with a horizontal bar. On the table are various items including papers, a black container, and some papers. A red bucket is on the floor under the table.

A group of people, including students and a teacher, are seated at the tables. They are looking towards the projector screen. The room has a whiteboard, a door with an exit sign, and a speaker on the wall.

As members of a professional and scientific community, geoscientists should use their technical knowledge and skills to protect public health, safety, and welfare, and enhance the sustainability of society.



As members of a professional and scientific community, geoscientists should responsibly inform the public about natural resources, hazards, and other geoscience phenomena with clarity and accuracy.



ONE LANE
ROAD
AHEAD

As members of a professional and scientific community, geoscientists should support responsible stewardship through an improved understanding and interpretation of the Earth, and by communicating known and potential impacts of human activities and natural processes.






PLACET NATURA REGI TERRAM



INTERNATIONAL
ASSOCIATION for
PPROMOTING
GGEOETHICS

www.geoethics.org



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