Where Water Goes

Use geographic sources to examine a flood-control decision.

OKH.P.2.3 "Demonstrate a mastery of geographic concepts and the use of geographic tools to understand the impact of geography on the past and present. Actively engage in asking and answering geographic questions by acquiring, organizing..."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline details about where water moved, circle the geographic sources researchers could use, and number the benefits and costs of the 2011 decision. Use your marks to explain how location shaped the decision's effects.

A Floodway Near Cairo

1 At Cairo, Illinois, the Ohio River meets the Mississippi River. Both rivers can rise after heavy rain far upstream, sending floodwater toward the low fields of southeastern Missouri. Levees hold back ordinary high water, but they can also keep water from spreading across the floodplain. After the destructive Mississippi flood of 1927, Congress authorized a system of levees and floodways to manage future floods. One part, the Birds Point-New Madrid Floodway, provides a place for water to spread on the Missouri side. Its location makes a geographic trade-off possible: less pressure near Cairo, but more flooding across farmland.

2 In 2011, the Mississippi rose near Cairo. The U.S. Army Corps of Engineers opened part of the floodway levee to send water into the designated floodway. To study this event, a researcher could compare a historical land-survey map showing older roads and fields with satellite images showing the 2011 water's reach. A current road map could reveal which travel routes cross the low ground. A geographic information system, or GIS, can place these sources in separate layers, but old and new maps may not line up perfectly. That mismatch matters when estimating whether a particular road flooded.

3 The 2011 opening helped lower the river level at Cairo, while water covered Missouri farmland and affected homes and roads in the floodway. The choice reflected a political decision about where floodwater would go and an economic choice about which property to protect. River channels, elevation, and land use all shaped the result. Satellite images show where water spread, but they cannot show every household's loss or prove that one group was treated fairly. A careful judgment would combine mapped flood extent with elevation data, property records, and accounts from residents on both sides of the river.

2 ANSWER WITH EVIDENCE

Use the passage

1. How could a historical land-survey map and 2011 satellite images help you study the floodway? What makes an exact comparison difficult?

2. Why did the floodway's location allow its opening to affect Cairo and Missouri farmland differently?

3. What could a current road map add to satellite images when you study the 2011 flood?

4. What was one benefit and one cost of opening the floodway in 2011? Name one additional source you would use to judge whether the decision was fair.

3 YOUR TURN

Your own words

A town plans a new emergency supply center near Cairo. Recommend either higher ground outside the floodway or low farmland inside it, then explain how two sources named in the passage would test your choice, predict one effect during a flood, and identify one limit of your evidence.

ANSWER KEY

Where Water Goes

HIGH SCHOOL · OKH.P.2.3

PART 1 · READ AND MARK

Underline details about where water moved, circle the geographic sources researchers could use, and number the benefits and costs of the 2011 decision. Use your marks to explain how location shaped the decision's effects. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	How could a historical land-survey map and 2011 satellite images help you study the floodway? What makes an exact comparison difficult?	**The map shows older roads and fields, while the images show where water reached in 2011. Old and new maps may not line up perfectly.**
2	Why did the floodway's location allow its opening to affect Cairo and Missouri farmland differently?	**Water spread into the floodway on the Missouri side, helping lower the river level near Cairo while flooding farmland.**
3	What could a current road map add to satellite images when you study the 2011 flood?	**It could show which travel routes cross low ground so a researcher could compare their locations with the flooded area.**
4	What was one benefit and one cost of opening the floodway in 2011? Name one additional source you would use to judge whether the decision was fair.	**The opening helped lower the river level at Cairo, but it flooded Missouri farmland and affected homes and roads. Residents' accounts could help assess fairness.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

I would put the emergency supply center on higher ground outside the floodway, even if the land costs more. I would compare elevation data with satellite images of the 2011 flood to check whether the site is above areas that filled with water. This location could keep supplies dry during a flood. The images show only one flood, so they cannot guarantee that the center will stay dry in every future flood.

Accept either site if the student uses two sources named in the passage, predicts a plausible effect, and states a meaningful limit. Do not require students to claim that a past flood shows exactly where a future flood will reach.