Questions for Follow-up Quiz, 'Tale of Two Cities: New Orleans'

by Tom Juster

1. Notice that the entire city has subsided, but not equally. What material underlies the areas that have sunk the most?
2. Estimate the maximum subsidence that had occurred in New Orleans by 2005 by assuming the lowest areas on Slide 8 were originally slightly above sea level.
3. Look at your calculated subsidence in 2010 due to all factors. Does this calculated subsidence make sense compared to your answer in question 2? Explain your answer.
4. How much do your calculations suggest the Mississippi levees have subsided since 1900? HINT: think about which factors will have caused this subsidence. You'll have to modify the values in your spreadsheet to do this calculation.
5. A new study by Prof. Tim Dixon of USF suggests that actual tectonic subsidence rates in the three years prior to Katrina were actually much higher than previously thought, approximately 17 mm/year. How much would New Orleans subside in the next 40 years if this subsidence rate were to continue? Give your answer in feet. Again, you'll have to modify the values in your spreadsheet to do this calculation.
6. Comment on the uncertainties inherent in predicting the amount of future subsidence. What could you do to reduce these uncertainties?