

HighWater Inc. has decided to pump groundwater from its land holdings to cities around the region in want of water. Suppose that the Cities of Dust and Bonedry have each made offers to HighWater. Dust is willing to pay \$130 per delivered acre-foot, plus half of the initial investment cost of building the pipeline. Bonedry offers \$160/acre-foot (delivered) but no assistance in building the pipeline. Each city wants to have 100,000 acre-feet diverted annually over a 20-year horizon. Suppose also that it will cost HighWater Inc. an initial investment of \$100 million for a pipeline, regardless of which city is involved. Additionally, it will cost HighWater \$5.00 per acre-foot to deliver water to Dust, or \$6.50/acre-foot for water sent to Bonedry. These per-unit costs are expected to rise at a real rate of 1% per year due to rising energy and pumping costs.

- a. If there is only enough water available in the aquifer for HighWater to satisfy one of these contracts, whose should they take? Either contract would obligate each party for 20 years. Analyze the situation assuming a discount rate of 4%.
- b. What if Bonedry negotiates a new contract where they agree to a price of \$160/acre-foot for the first year, and will increase this price by 1% annually for the remainder of the contract. Now which contract would HighWater prefer?