Much of the demand will be driven by agriculture, which already accounts for 70 percent of global freshwater use, according to the Food and Agriculture Organization of the United Nations. The World Resources Institute says food production must grow by 69 percent by 2035 to feed the growing population, which will expand agricultural water needs.

By 2035, the World Bank says the Earth’s energy consumption will increase by 35 percent. This will increase water consumption by 85 percent, according to the International Energy Agency.

Residential water and wastewater bills have steadily increased by 9.7 percent annually over the past five years, outpacing average annual income growth (five percent) and inflation (3.9 percent), and magnifying the financial challenges facing municipal water utilities. Analysis of the 50 largest metropolitan areas in the U.S. show combined monthly water and wastewater bills averaging US $31.94, based on an estimated household consumption by geographic according to a new U.S. Municipal Water and Wastewater Utility Bill Index from Bluefield Research.

The cost of water is overwhelmingly a capital cost, much more than electricity or gas of transportation. If you supply a little more or a lot less, the total cost hardly changes. Operating costs account for more than half the total cost of electricity supply, one third the total cost for natural gas, but only about one tenth of the cost for an urban water network.

— Hanemann

The economics ought to be simple. Water is not a man-made commodity. It falls from the sky. — Hanemann

“The but, in fact, the economics of water is surprisingly complex,” explains Hanemann. “From an economic perspective, water is a difficult commodity. It is free and yet costly. It is simultaneously a private good and a public good. It has a clear financial component but not to the financial burden. While water comes from nature at no charge, and three quarters of the earth’s surface is water, people don’t always live where water is located — in Phoenix, for example. And they need water year-round, not just when it rains. The cost of water is the cost of making it available at the right time, the right location, and the right quality — it is the cost of collecting, storing, transporting, and treating the water.”

— Hanemann

The U.S. Environmental Protection Agency regulates 155,000 drinking water systems across the United States.

There are more than 900,000 miles of public sewage pipes in the U.S.

There are 500,000 miles of private lateral sewers.

Over the next 20 years, 58 million new users will be connected to centralized treatment systems.

Over the next 20 years, the cost to replace urban pipe networks may reach about $1 trillion nationally, says Hanemann. Water agencies will have to spend three or four times as much on replacing pipes as they do today. If anything, the cost will be lower rather than rise property values.

Via Bluefield Research

Water demand is projected to increase

According to the U.S. Department of Energy, 55% of water demand is projected to increase by 2050.