

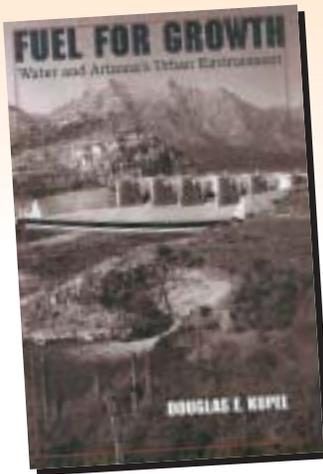
Fuel for Growth: Water and Arizona's Urban Environment

by Douglas E. Kupel. University of Arizona Press. Tucson AZ.
294 pages. \$39.95.

Reviewed by Barbara Tellman

In *Fuel for Growth: Water and Arizona's Urban Environment*, Douglas E. Kupel weaves the history of water infrastructure in Arizona into the general context of Arizona history, using Tucson, Phoenix, and Flagstaff as case studies. He shows how the history of water development in each of the three cities differs because of their different environments and physical circumstances. Kupel challenges some widely held beliefs about how and why water development in the West happened and stresses the significant roles of municipal population growth and increased water demand.

The book is divided into chapters by era, with developments in each of the three cities discussed in every chapter, emphasizing municipal and quasi-municipal providers. It begins with a discussion of water infrastructure in prehistoric times followed by a discussion of the Spanish period. Kupel relates the



development of Arizona water law and political issues to the necessity of providing a water supply. In addition to describing infrastructure such as dams and wells, Kupel discusses economic aspects, such as the transition from private ownership to municipal ownership of much of the infrastructure of water supply systems in Tucson. In his chapter on the Depression Era, for example, he discusses the financial impacts of the time as they relate to lower demands for water and reduced funds for construction. In Phoenix, he relates, the Depression began after a general failure of older redwood pipelines that needed replacement. Kupel says, "Faced with an ample water supply

and a stagnant economy, Phoenix officials looked for ways to market the resource to keep revenues flowing into the general fund and pay off the debt incurred by the construction of the pipeline" (p. 112). This may partially help to explain the difference in water-use ethics over the years in Phoenix and in Tucson. Other chapters include discussions of the post-war boom period, the Central Arizona Project (including Tucson's CAP fiasco), Indian water rights, and many other topics, in historic context.

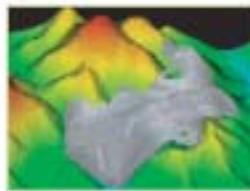
This book is well-researched and thorough, but not intimidating to the general reader. Kupel has done an admirable job of condensing a large amount of information into a readable volume. Matters that Kupel discusses only marginally and that should be the subject of other works are:

- Water quality and the development of wastewater infrastructure in the cities.
- The role of non-municipal water providers in regional water management or lack thereof.
- The impacts of urban water infrastructure on the environment, such as loss of surface flow in the Santa Cruz River and the Salt River.
- Provision of water and wastewater infrastructure in rural areas.

Twenty interesting historical photos nicely illustrate dam building, reservoirs, pipelines, wells, and urban growth. Nine maps provide geographic context. An extensive reference section cites source material, including consultant reports, newspaper articles, official documents, and books.

This is an excellent contribution to a much-neglected field – the role of infrastructure in shaping history and how historical events, in turn, shape infrastructure. While water politics are sometimes included in histories of Arizona or of individual cities, infrastructure is usually taken for granted. This book is a fine start toward filling that gap.

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