

# Uncertainty and Water-Use Behavior in the WRMA

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## Goal

- Model the existing system of day-to-day water use behavior in the Wasatch Range Metropolitan Area (WRMA).
- Examine the effects of socioeconomic and ecological uncertainty on day-to-day water use, as well as on longer-term investments in water infrastructure in the region.

## Research Methodology

A structured two-tiered approach using empirical models :

- A conceptual agent-based model (ABM) is employed in the description of short-term water use decisions and interactions.
- A real-options approach is taken to measure the impacts of ecological and socioeconomic uncertainty on the decision to invest in water-saving infrastructure.

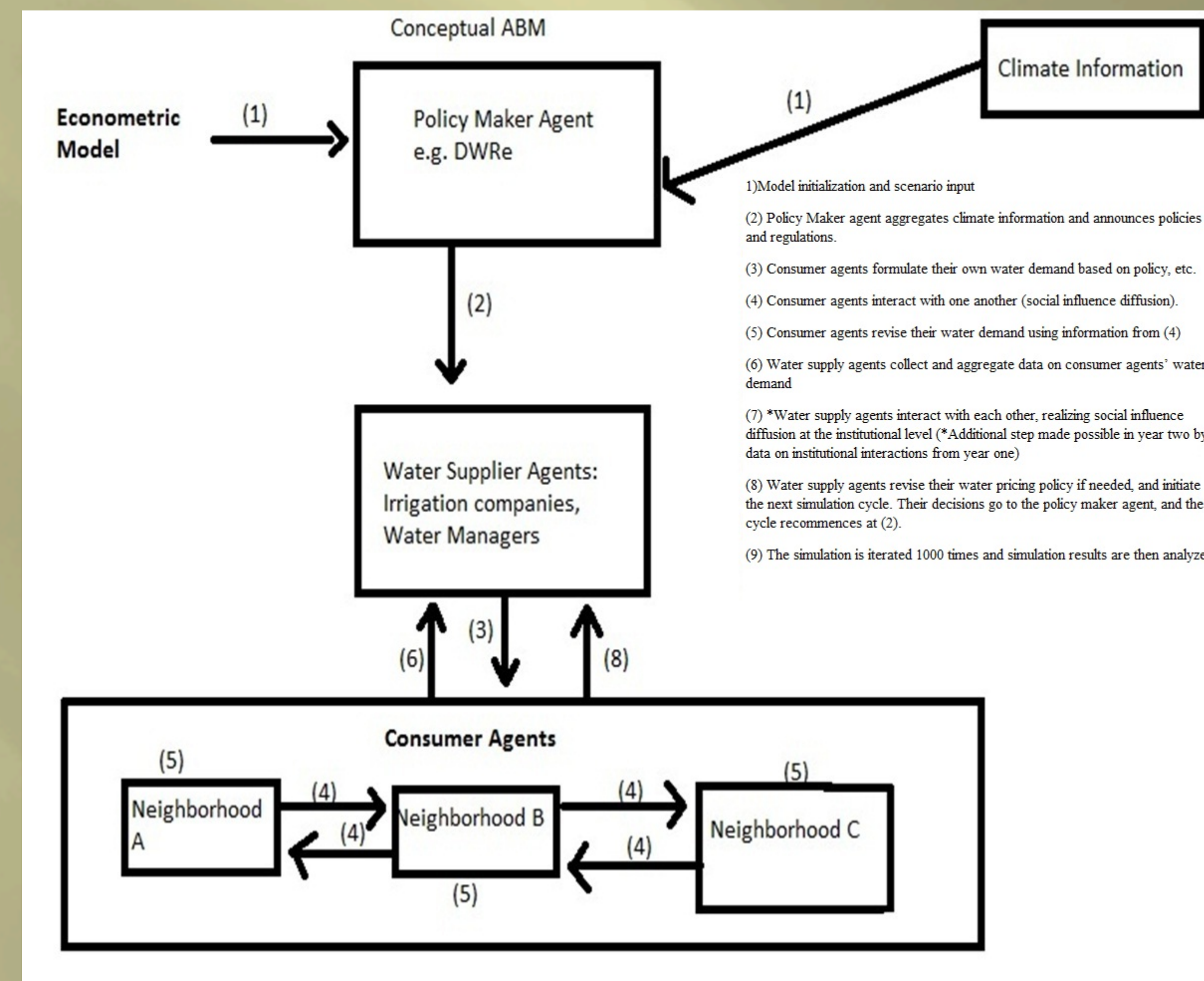


Figure 2: A Conceptual ABM of Sort-Term Water Use in the WRMA

## Results

- Climate induced-trends and volatilities in water supply impact the value of water savings on the water market and thus, investment in water-saving technology .
- Uncertainty surrounding the timing of conservation policies may cause delays in technology adoption

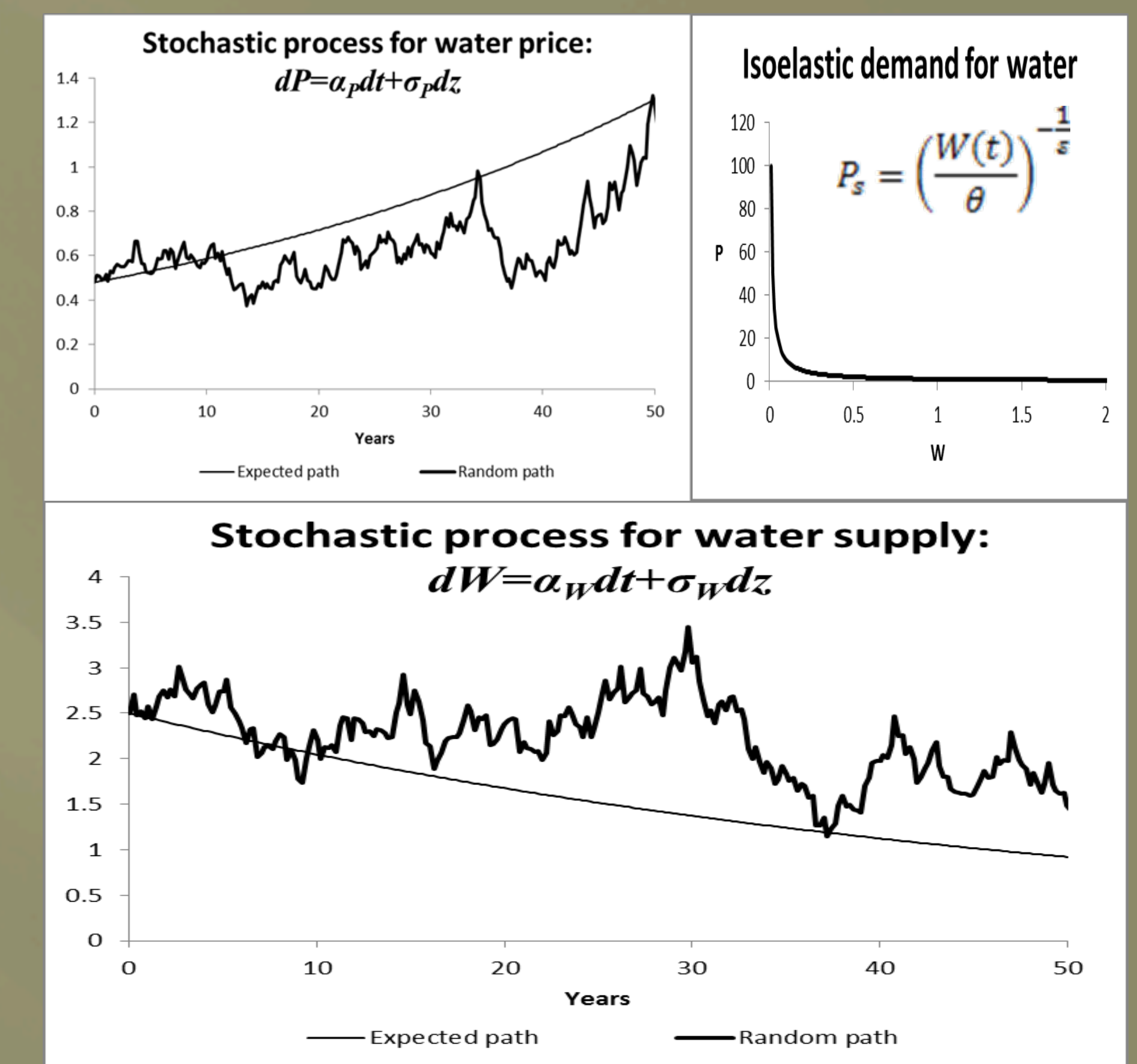


Figure 3: Evolution of Water Supply and Price Processes



Figure 1: Canal Lining to mitigate seepage losses



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