

THE ECONOMIC CONSEQUENCES OF WATER UTILITY DISRUPTIONS

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ABSTRACT

This research produces an economic impact analysis of short duration water utility disruptions to evaluate the consequences of alternative restoration decisions. The study constructs a continuous dynamic disequilibrium demand driven social accounting matrix with supply constraints that incorporates short-run resilience and other strategies employed by businesses, government institutions and households. It is constructed using the IMPLAN database and survey responses of recent water disruption events. The utility of the model is demonstrated by simulating three alternative water service restoration schemes of hypothetical water outages. The results demonstrate that different restoration strategies produce different total output and value added losses. It also shows that, in addition to total valued added losses, time costs, and the additional losses of households and government institutions are important components of total losses and should be considered when comparing restoration strategies. Finally, it highlights the importance of resilience in reducing the overall economic consequences of disruptions. It is expected that this model will help policy makers assess post-alternative recovery and restoration strategies when this type of event occurs. The model can also be used to identify the most critical industries when evaluating precautionary measures and mitigation strategies in order to minimize economic losses.