

# A Current State Analysis of the Water Consumption Impact for Large Residential and Commercial Structures within the City of Tempe

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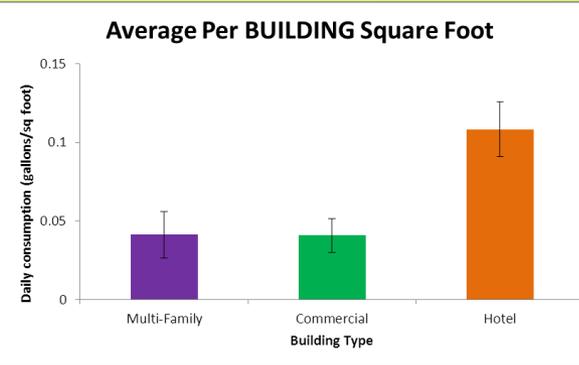


## City of Tempe is assessing the current state of water usage for larger buildings around Tempe Town Lake.

- Previous studies show that more population dense buildings use less water per capita.
- The City of Tempe is landlocked, thus the current trend is to construct higher buildings to allow for new growth.



## Hotels use considerably more water per square foot of floor in their buildings.



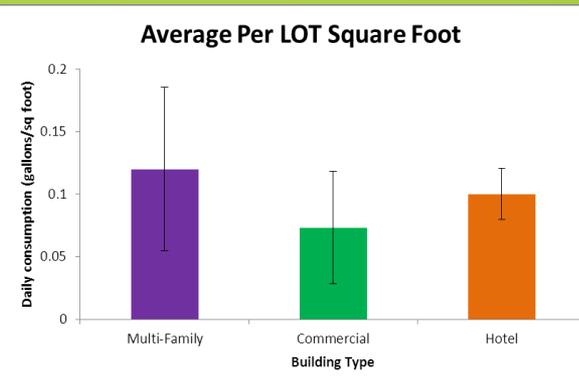
## Hotels use more than twice as much water per BUILDING square foot, yet multi-family residential uses the most per LOT square foot.

- Hotels use a lot of water per BUILDING square foot, but less per LOT square foot.
- Commercial buildings vary greatly in their structure and purpose, but appear not to show as significant a difference in LOT versus BUILDING usage per square foot.
- Multi-family residential buildings are less efficient per LOT square foot, possibly due to high landscaping usage or higher story buildings.

## Billing data was retrieved from City of Tempe Water Utilities Database, and building information was found on Maricopa County Assessor's Parcel Database.

- The City of Tempe Water Utilities Department (WUD) uses a billing system which allows someone with the proper clearance to view past water, waste water, and waste meter usage and costs. For the purposes of this research, only water meter data were used.
- The Maricopa County Assessor's Parcel Database provides a view of building type and lot size for buildings around Maricopa County.

## When considering the total area of the lot in relation to water consumption, differences between building types are much less clear.



## The City of Tempe WUD plans to use the findings from this research to begin making predictions for their 2040 Water Plan to most effectively manage water allocation for existing and future developments, such as the one shown below.



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