

Unlocking Water Demand Patterns and Outdoor Consumption Insights for Targeted Conservation Strategies

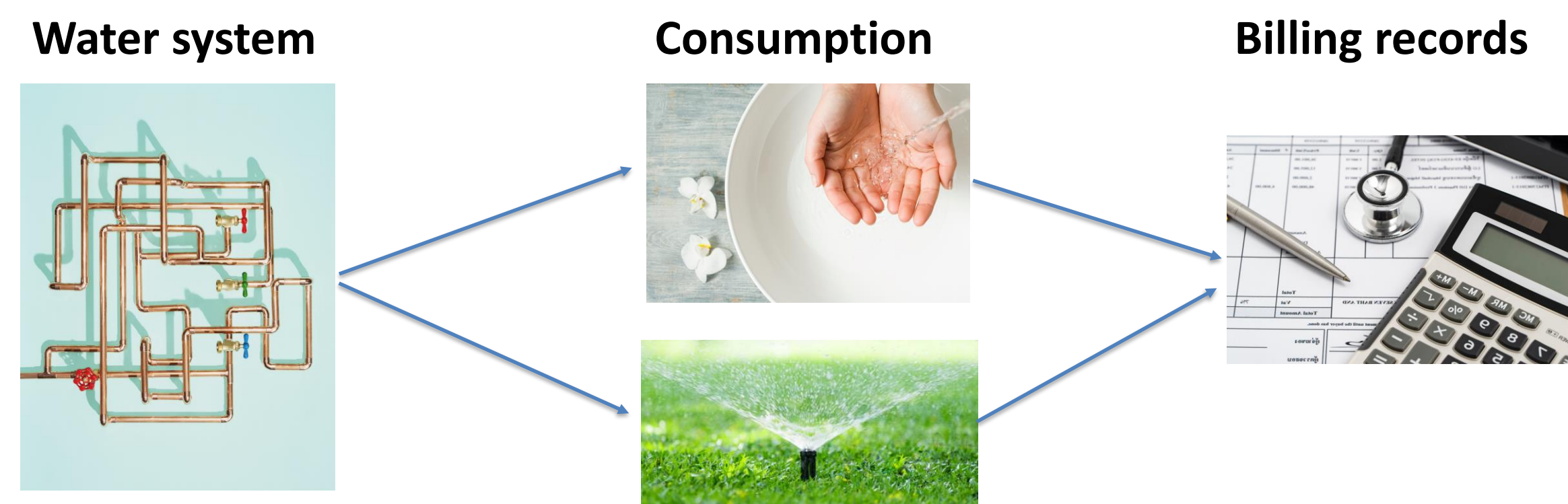
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Introduction

Water Demand Management

Monthly water consumption measurements are the most widely available source for utilities to assess demand, which can be used to:

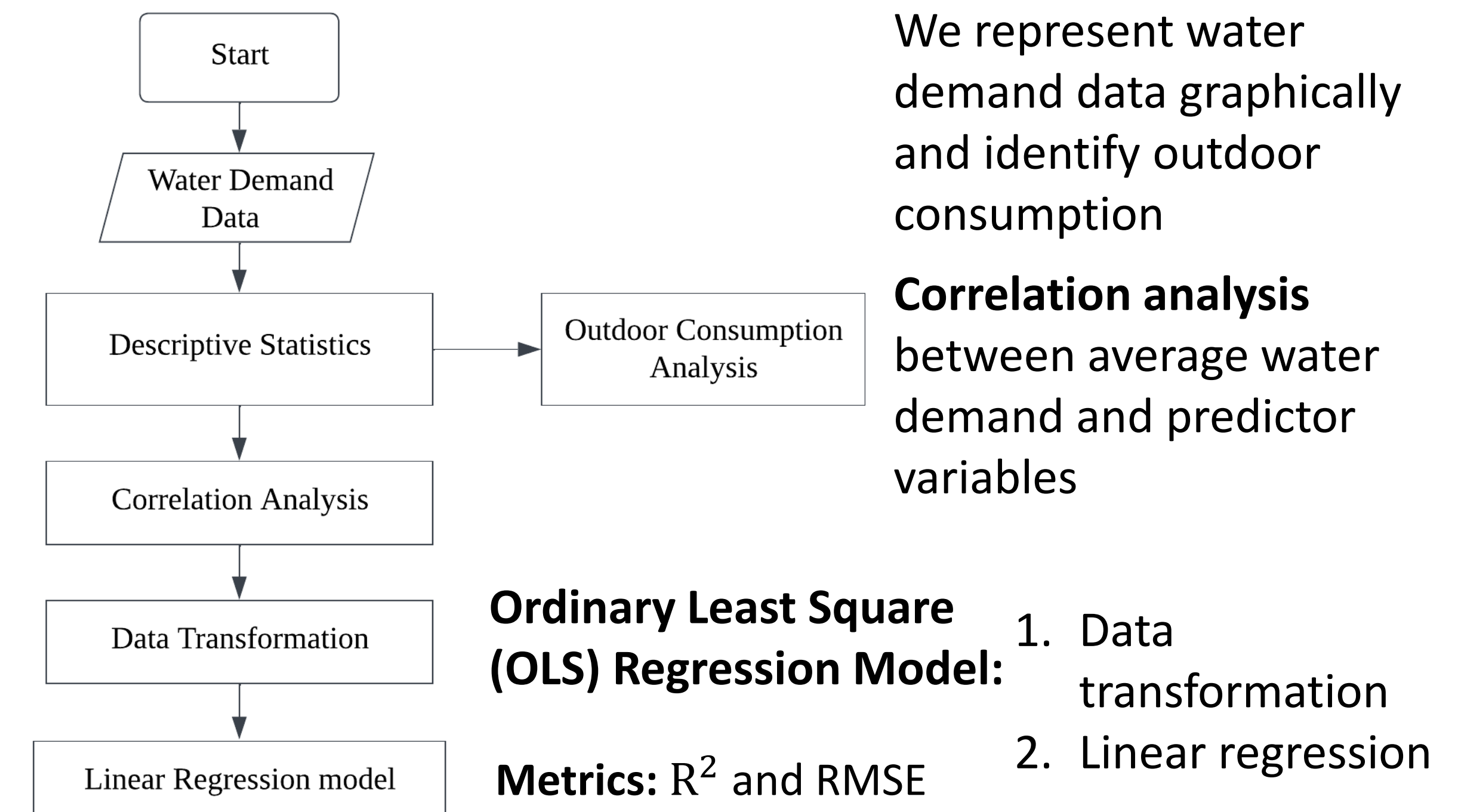
- Explore water demand patterns in monthly and seasonal periods
- Pinpoint high consumers to target for conservation strategies



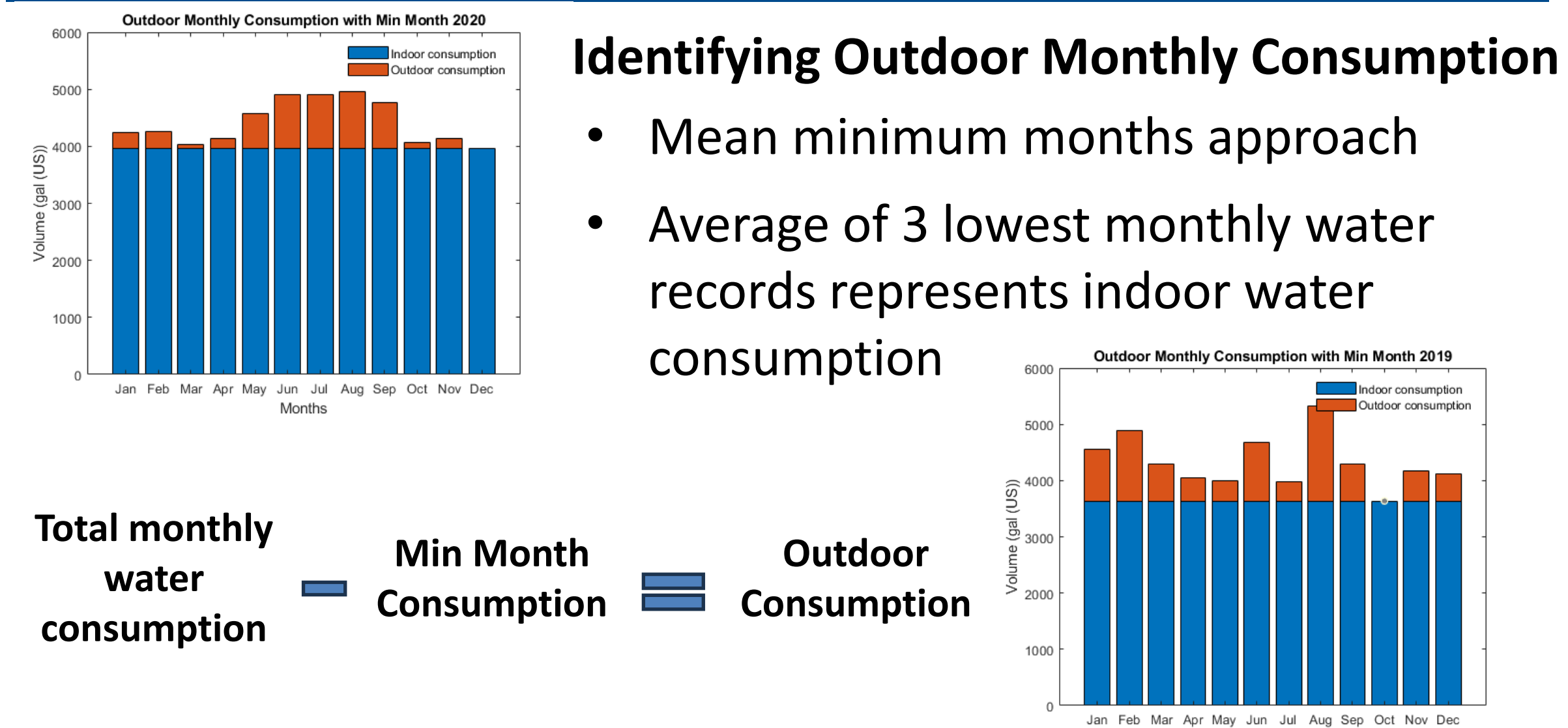
Objectives

- Objective**
- To develop a model to represent monthly water demand using billing records and census data.
- Specific Objectives**
- To identify outdoor consumption and high consumers
 - To assess the correlation between water demand and exogenous predictors

Methodology



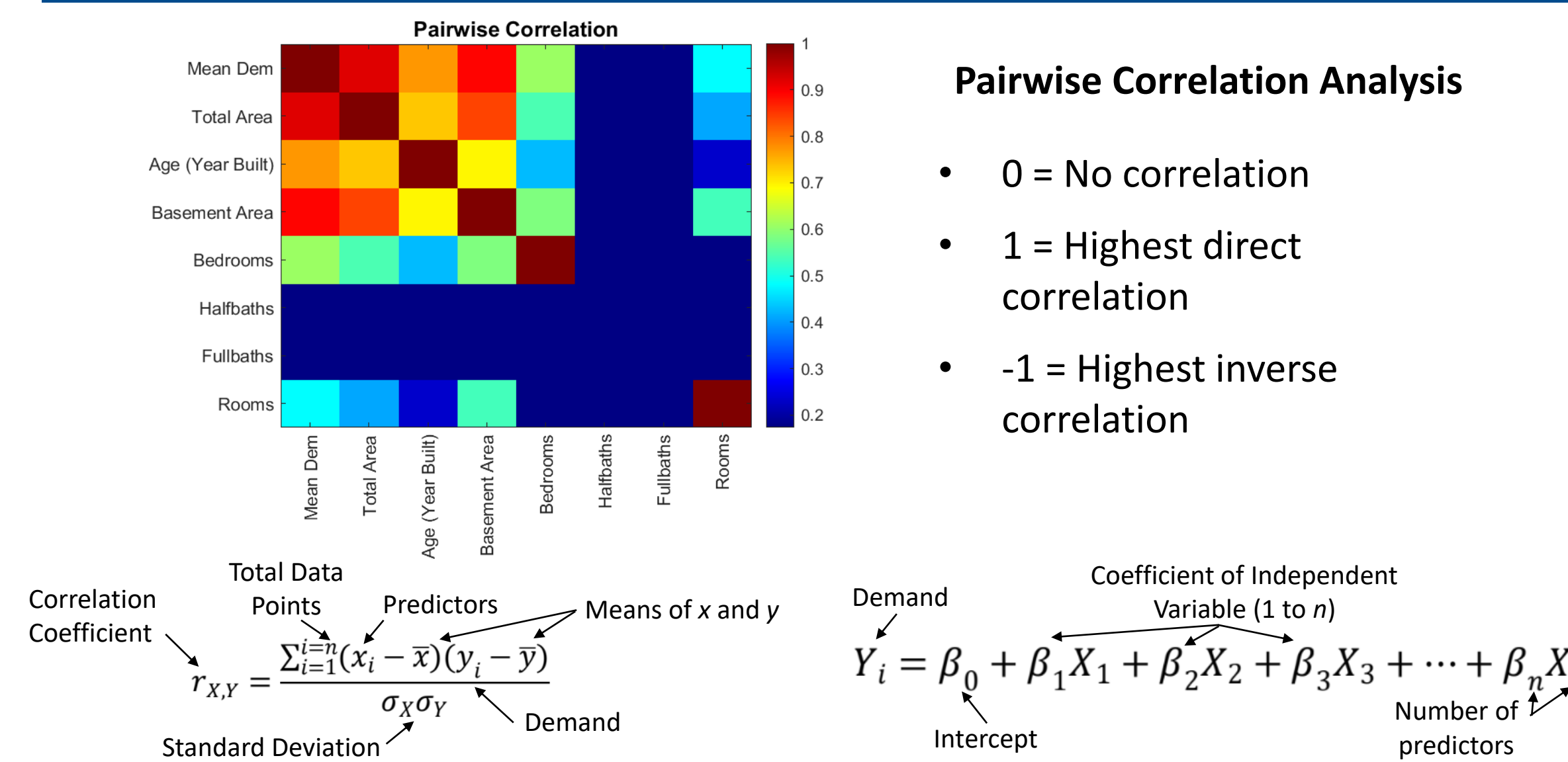
Methodology (contd.)



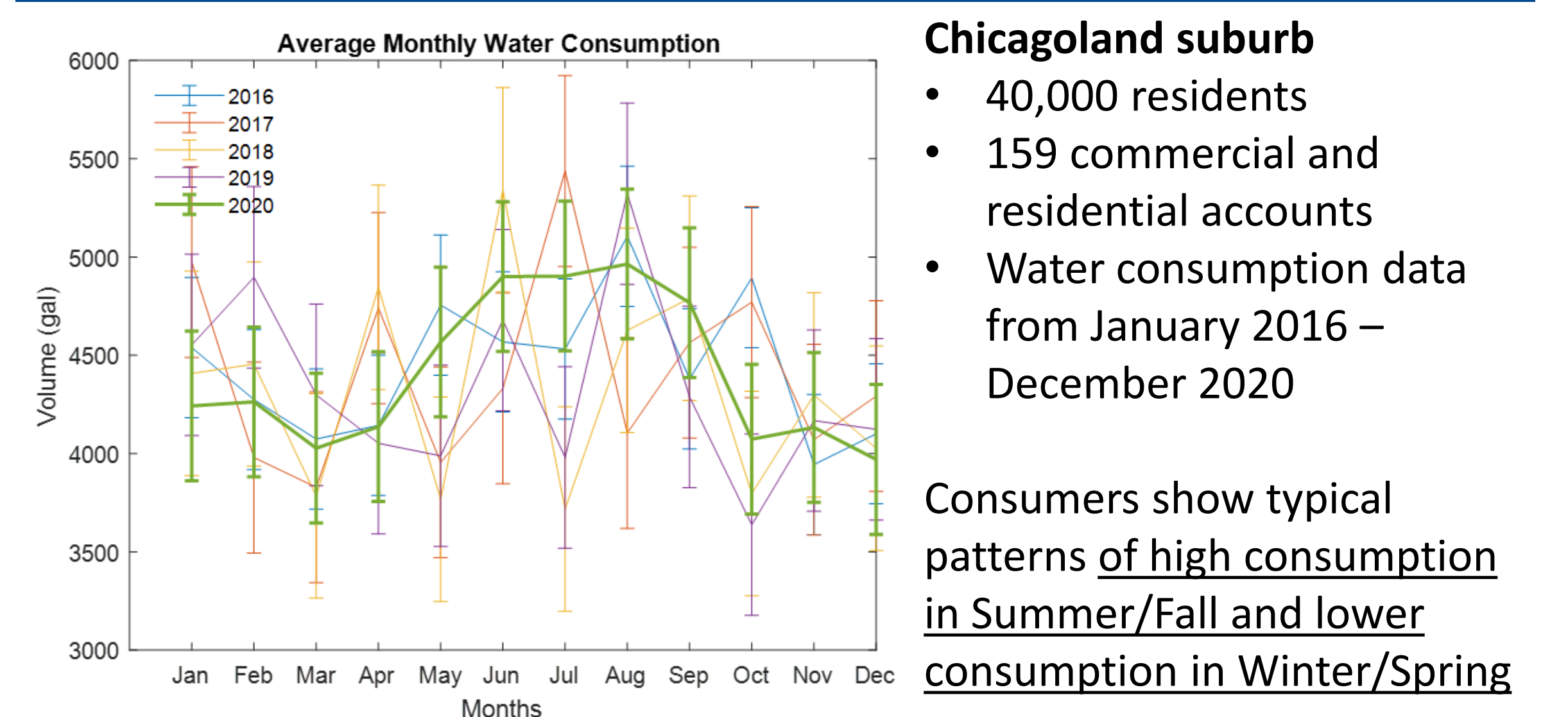
Identifying Outdoor Monthly Consumption

- Mean minimum months approach
- Average of 3 lowest monthly water records represents indoor water consumption

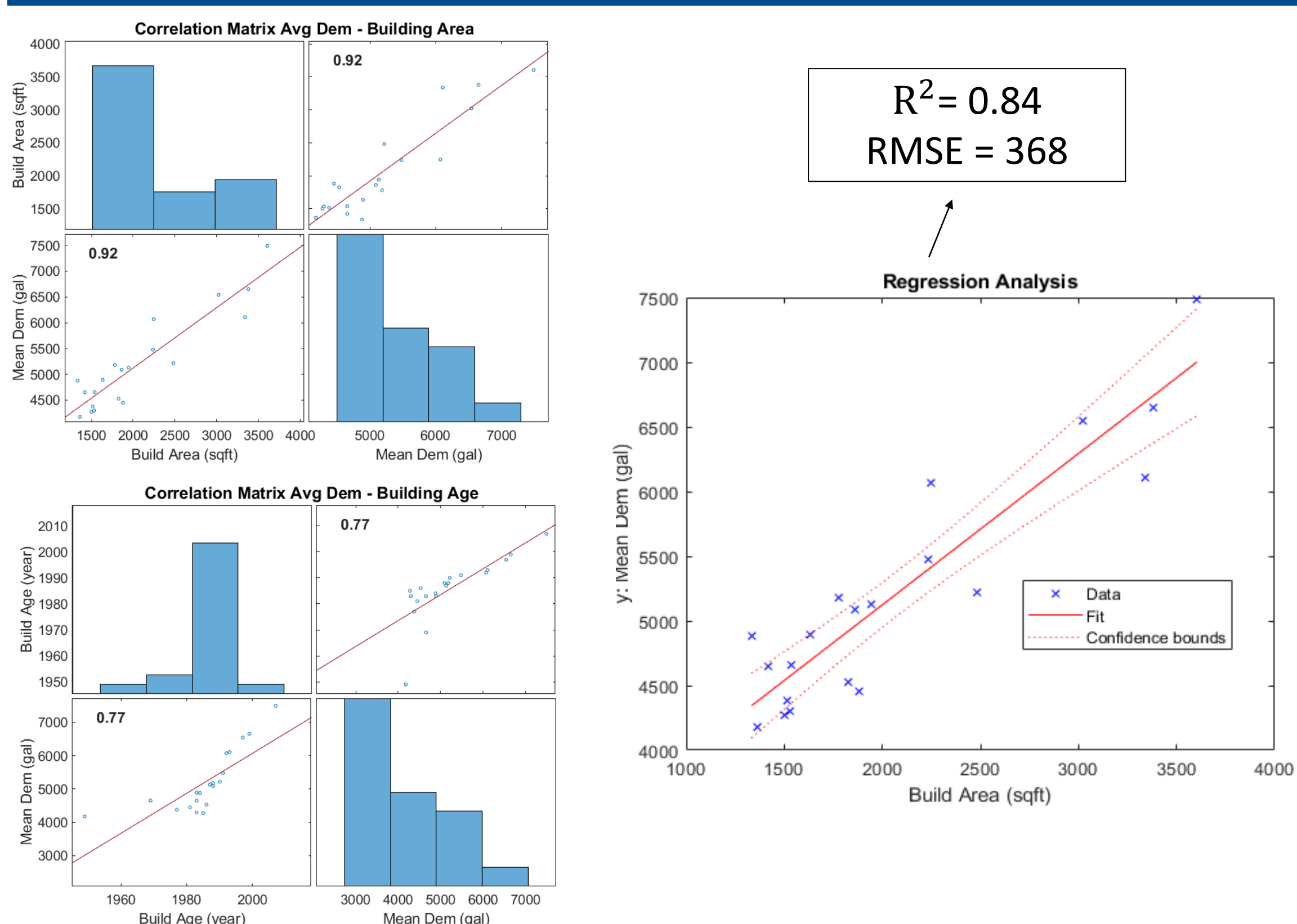
Correlation Analysis



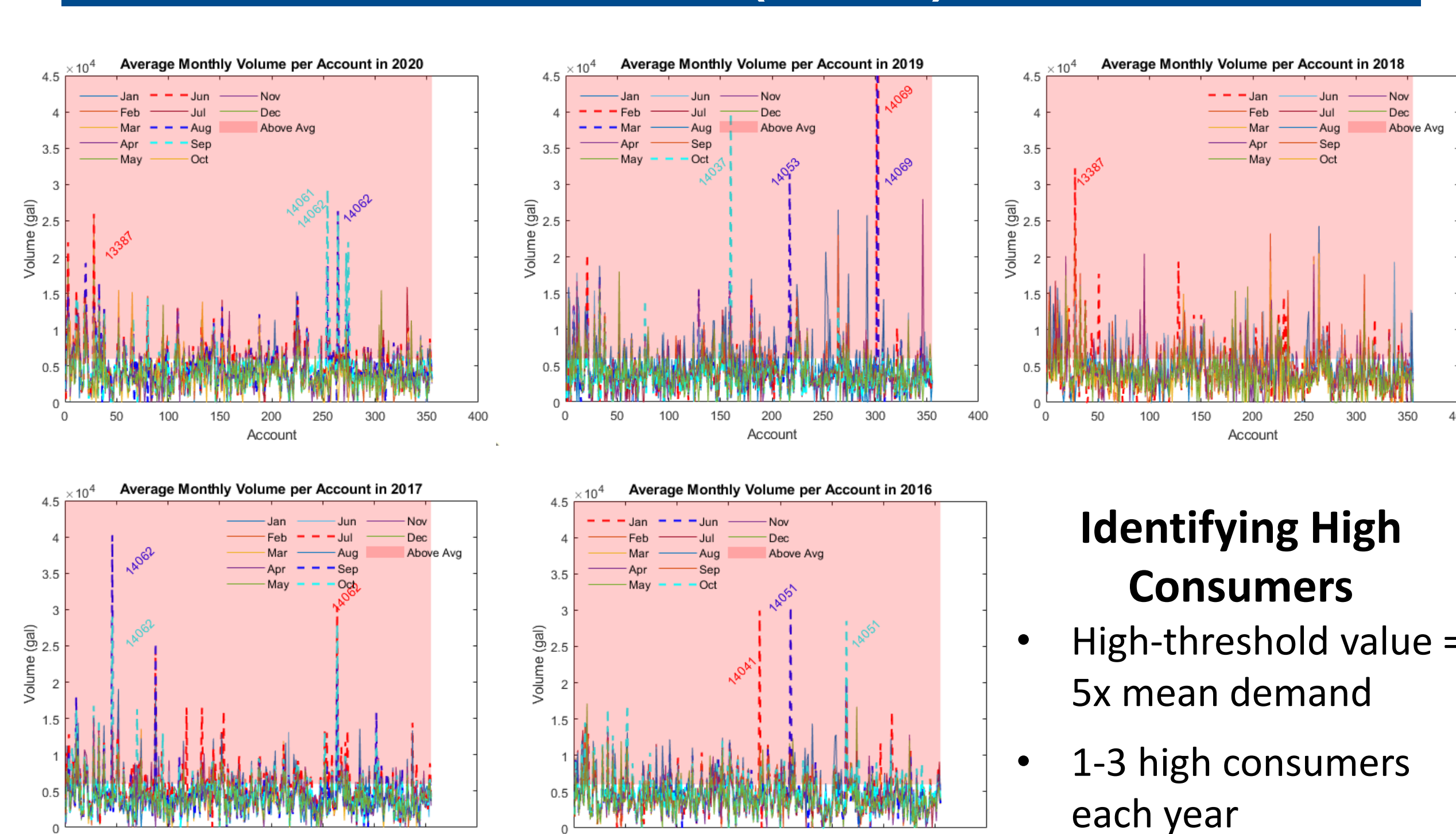
Application



Results



Results (contd.)



Conclusion and Sponsors

- Max Consumption: June to September
- Identifying high consumers can help water utilities pinpoint customers for focused conservation strategies
- Main Predictors: building area and building age
- Model can be enhanced by including more household characteristics as predictors

References

Pesantez, J.E., Maldonado Alfaro, A., Ramesh, S., and Stillwell, A.S. Unlocking Water Demand Patterns and Outdoor Consumption Insights for Targeted Conservation Strategies. *In World Environmental and Water Resources Congress 2024* (in press).