

Water Use Data Analysis Case Study: Ipswich

Water Resources Commission

14 January 2021

MA Division of Ecological Restoration

with data from Town of Ipswich

Context: Town of Ipswich

- Sources in Ipswich and Parker River basins
- 4734 connections in 2018
- 46 RGPCD, 15.9% UAW in 2018
- SMART meters
- Monthly billing
- Seasonal rate structure

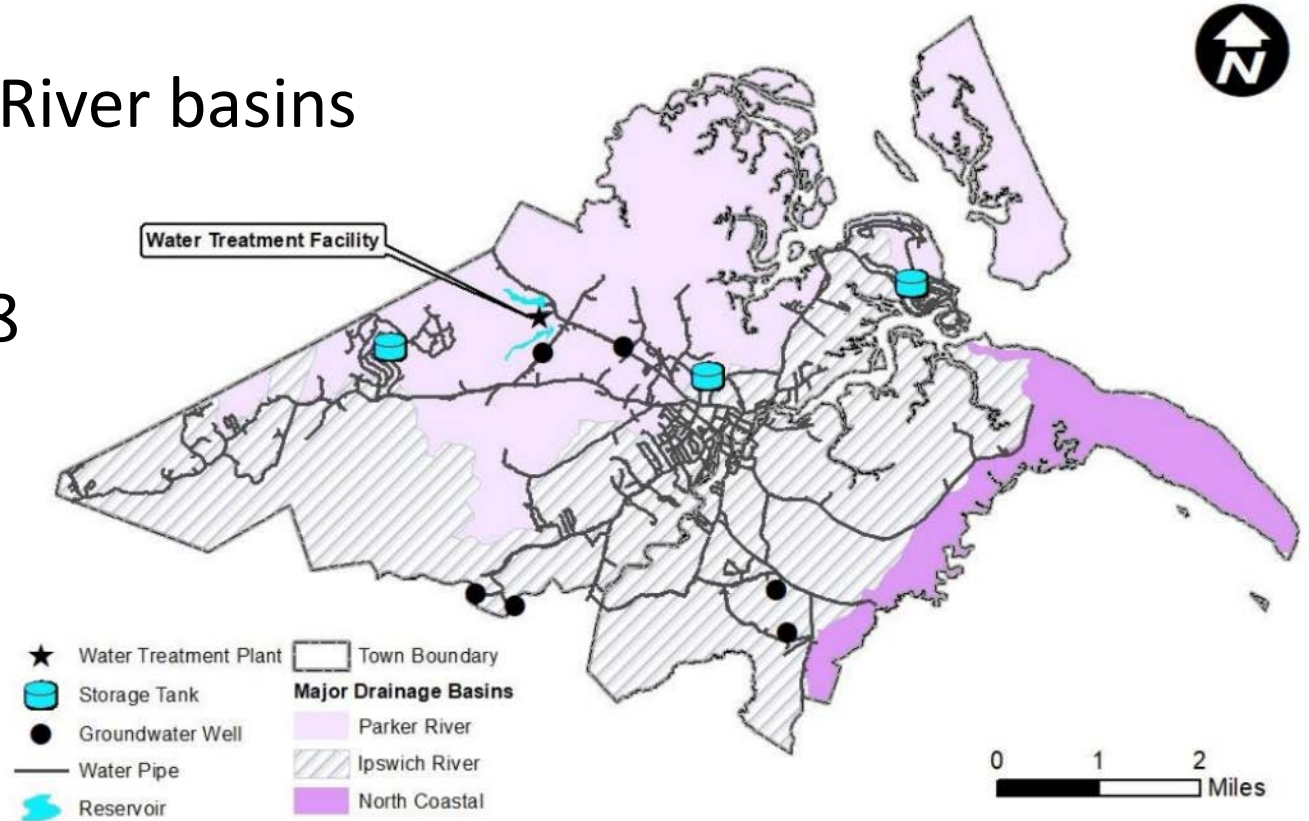


Figure 2: Location of Town of Ipswich Water Supply Sources

Figure from Water Neutral Growth report

Context: Town of Ipswich

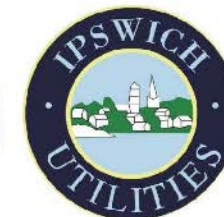
- Metropolitan Area Planning Council (MAPC) Accelerating Climate Resiliency Municipal Mini-Grant Project completed in spring 2020
- Water use profile analysis to inform water conservation strategies

<https://www.ipswichma.gov/877/Water-Neutral-Growth-Plan>

WATER NEUTRAL GROWTH IN THE TOWN OF IPSWICH:

Integrating Land Use Planning and Water
Conservation Strategies to Build Climate Resiliency
for the Future

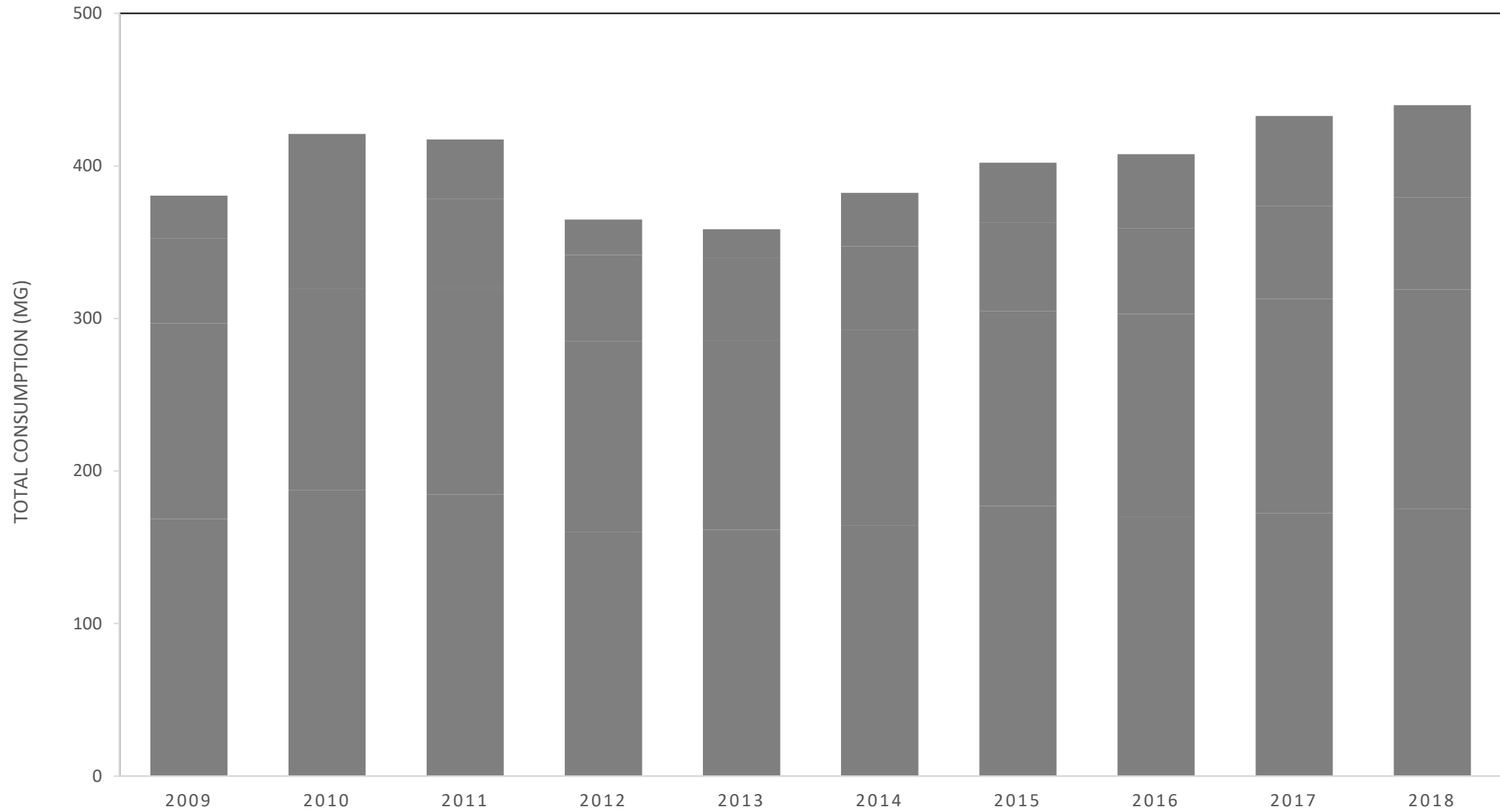
MAPC Accelerating Climate Resiliency Municipal Mini-Grant Project
December 2019
Revised May 2020



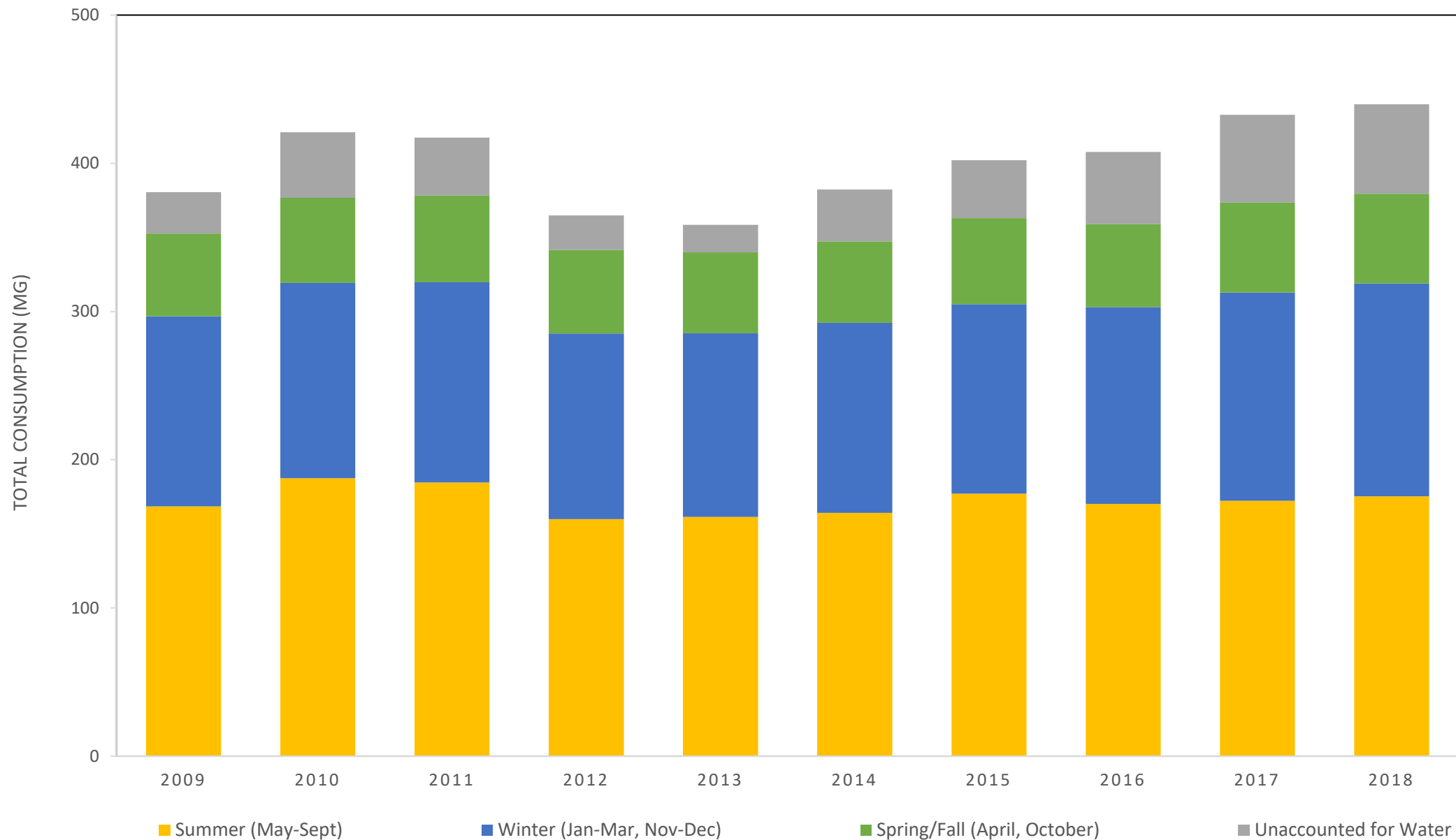
Data analysis

- Summer use was defined as May – September
- Winter use was defined as November – March
- Discretionary use was calculated by subtracting total winter use from total summer use (summer – winter)
- Data presented in later analyses are an average of 2017 and 2018

Total Annual Consumption (from ASR)

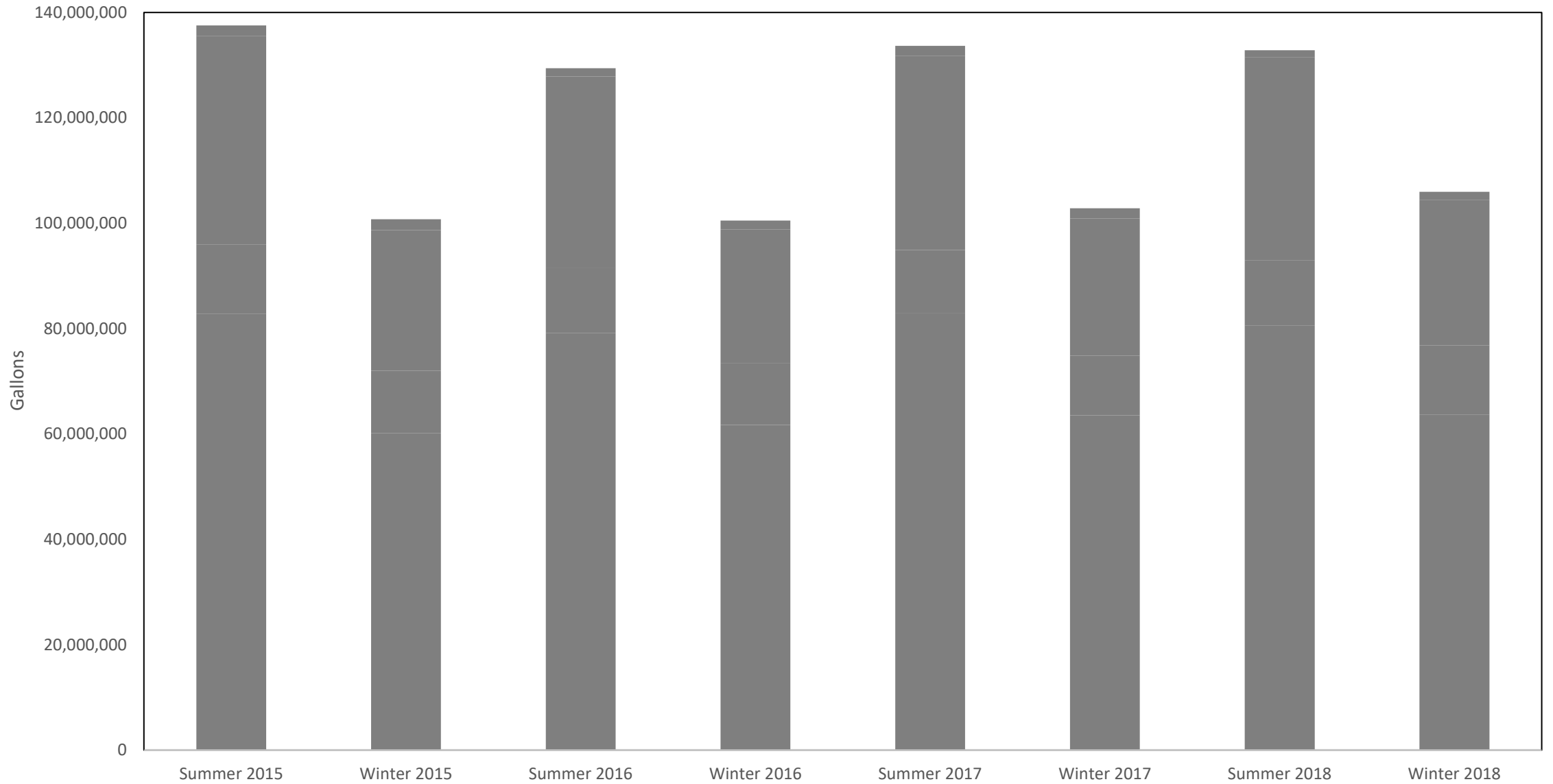


Total Annual Consumption (from ASR)

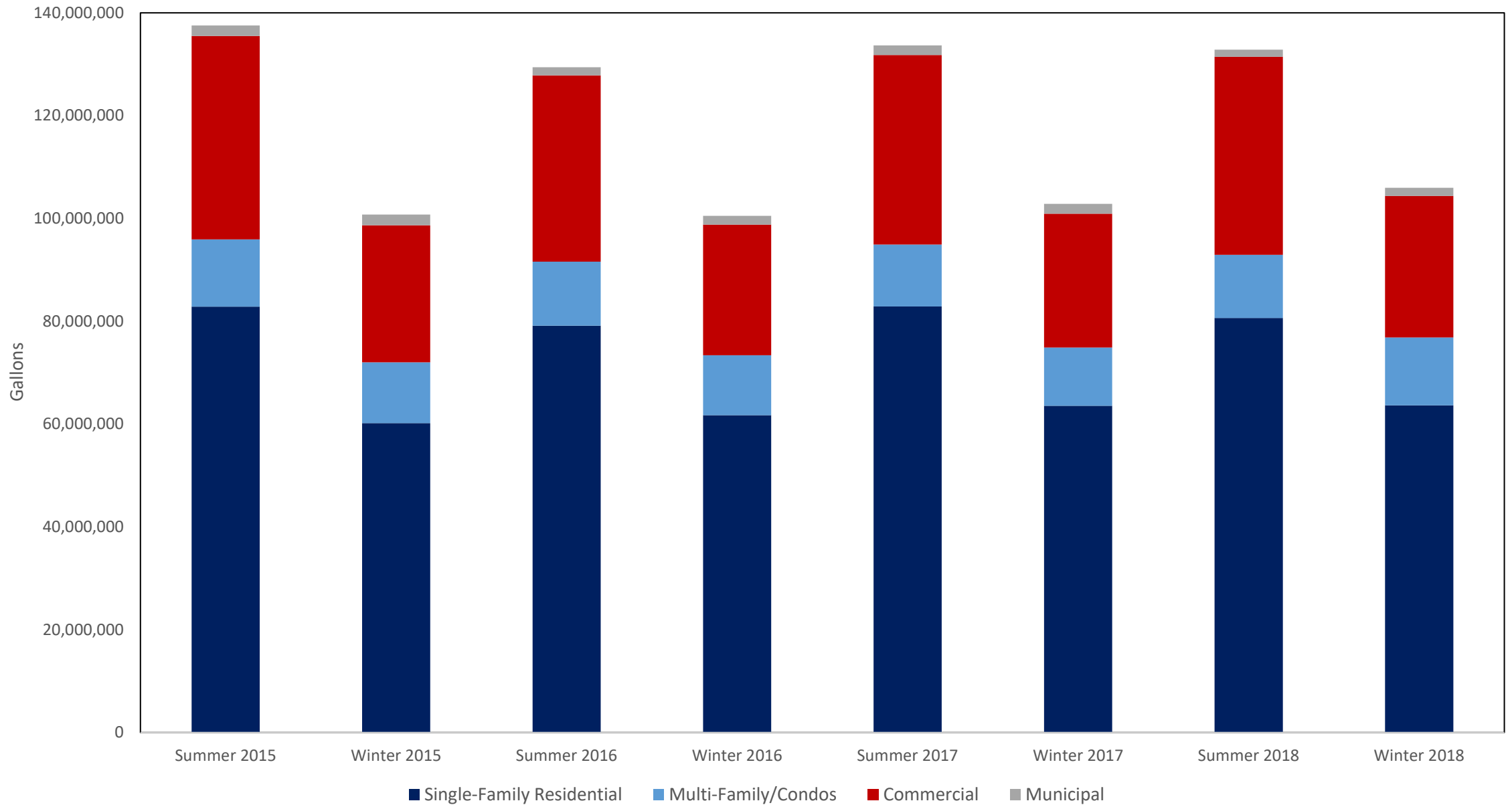


Winter vs Summer Use

2015-2018



Winter vs Summer Use By Account Type 2015-2018

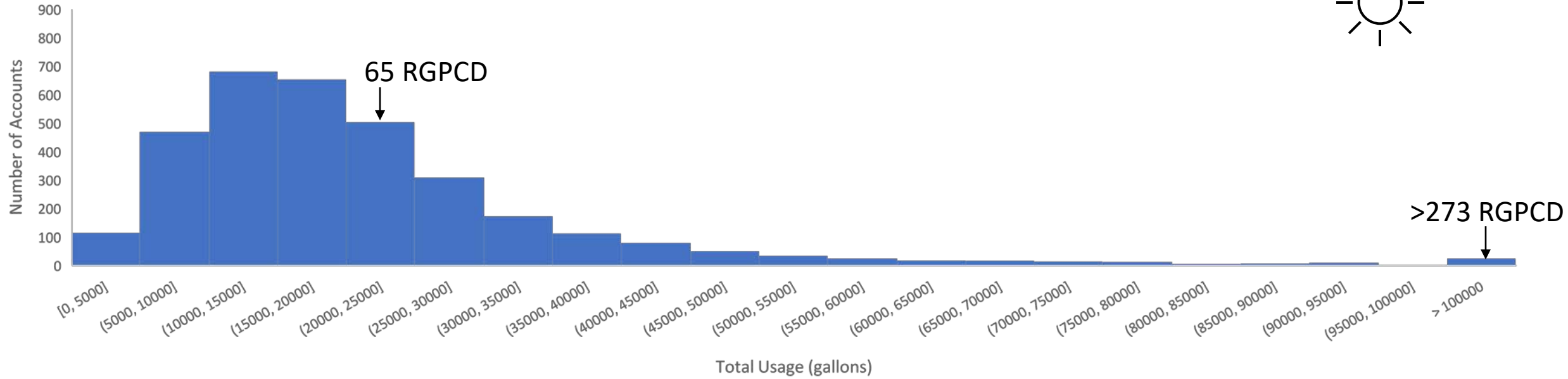
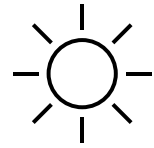


Single-Family Residential use

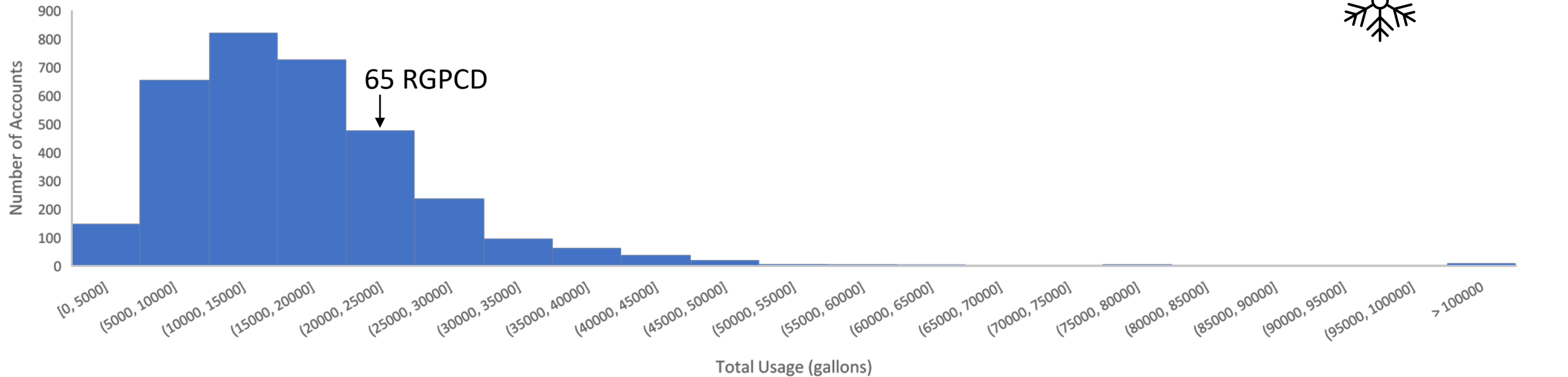
- Used 61% of total water during 2017 and 2018
- Used 60% of discretionary water (summer – winter)
- Seasonal use was evaluated by looking at patterns of zero use and blank data
 - Seasonal accounts used 2% – 3.5% of single-family residential summer use

Single-Family Residential Water Use (2017/2018 Average)

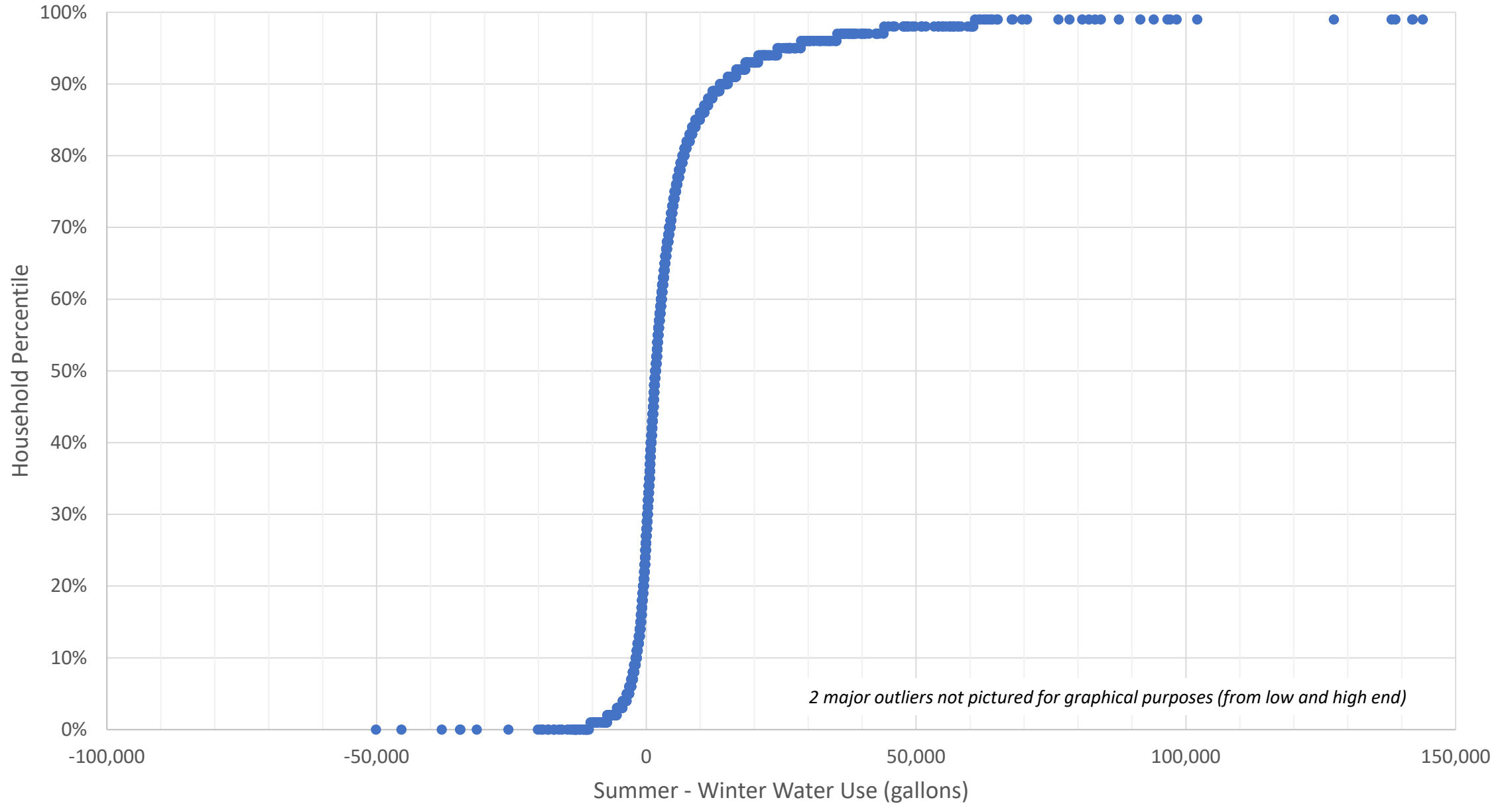
Summer



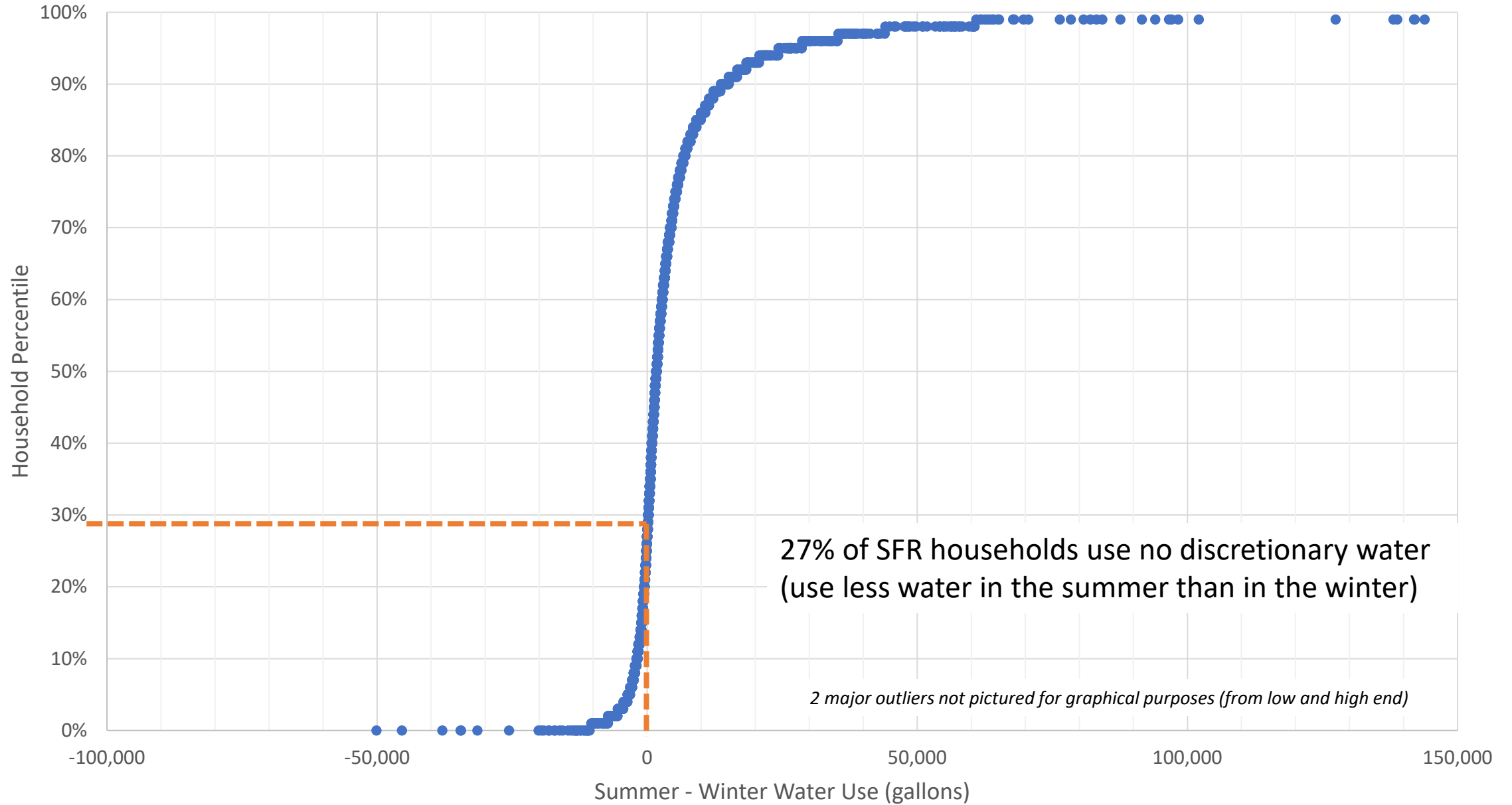
Winter



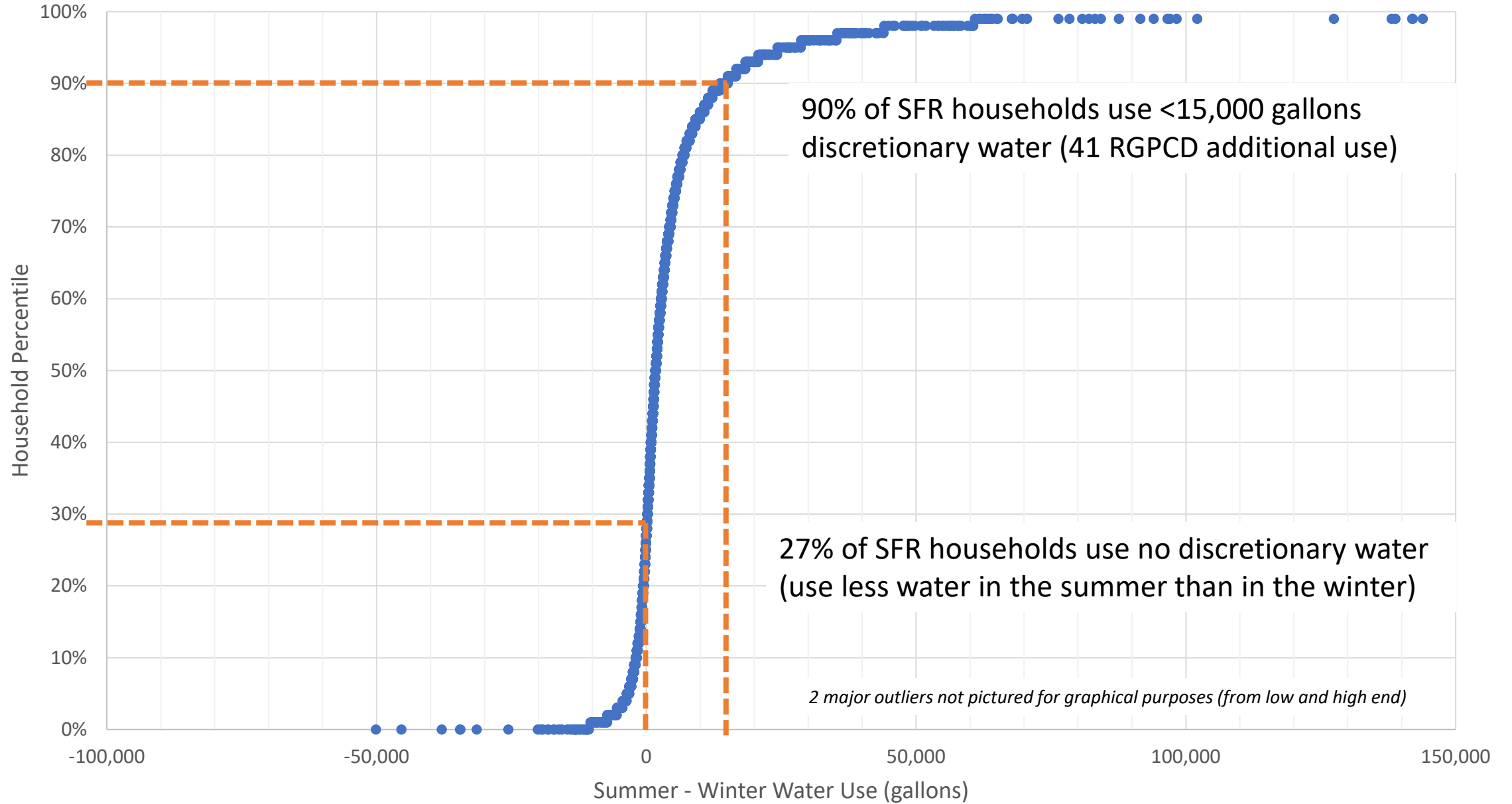
Single-Family Residential Discretionary (Summer - Winter) Water Use (2017/2018 Average)



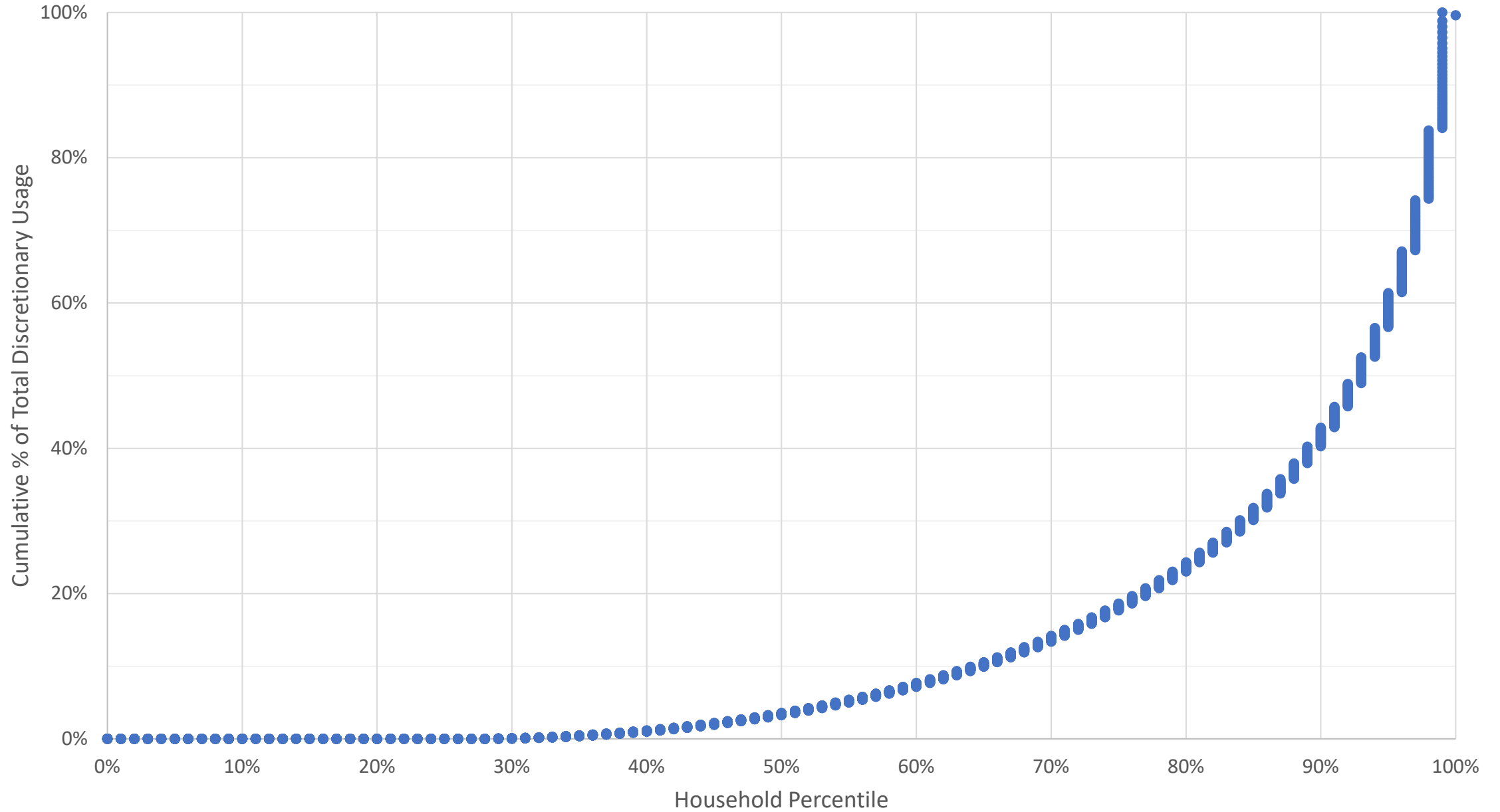
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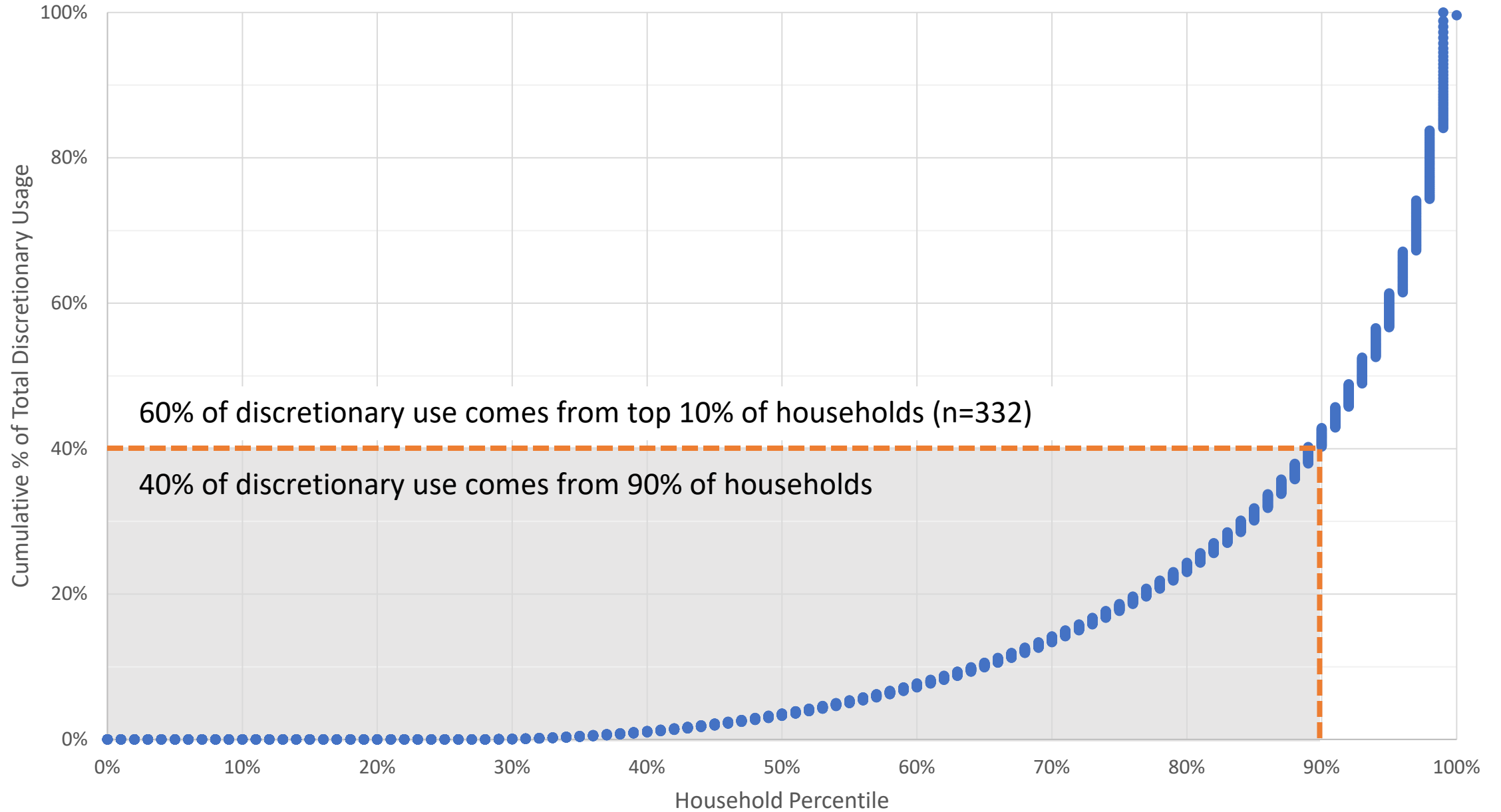
Single-Family Residential Discretionary (Summer - Winter) Water Use (2017/2018 Average)



Cumulative Percent of Single-Family Residential Discretionary Use by Customer Percentile



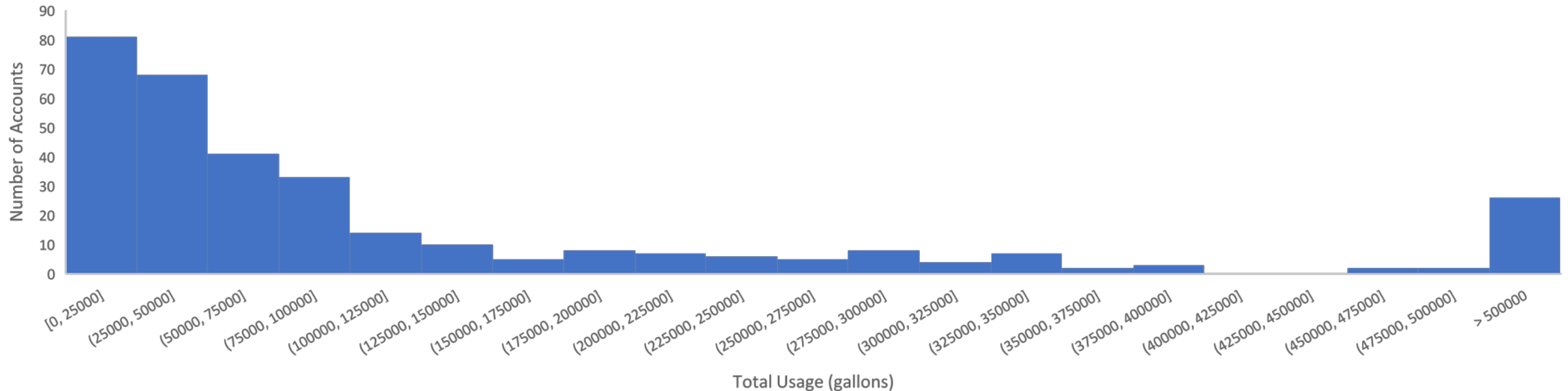
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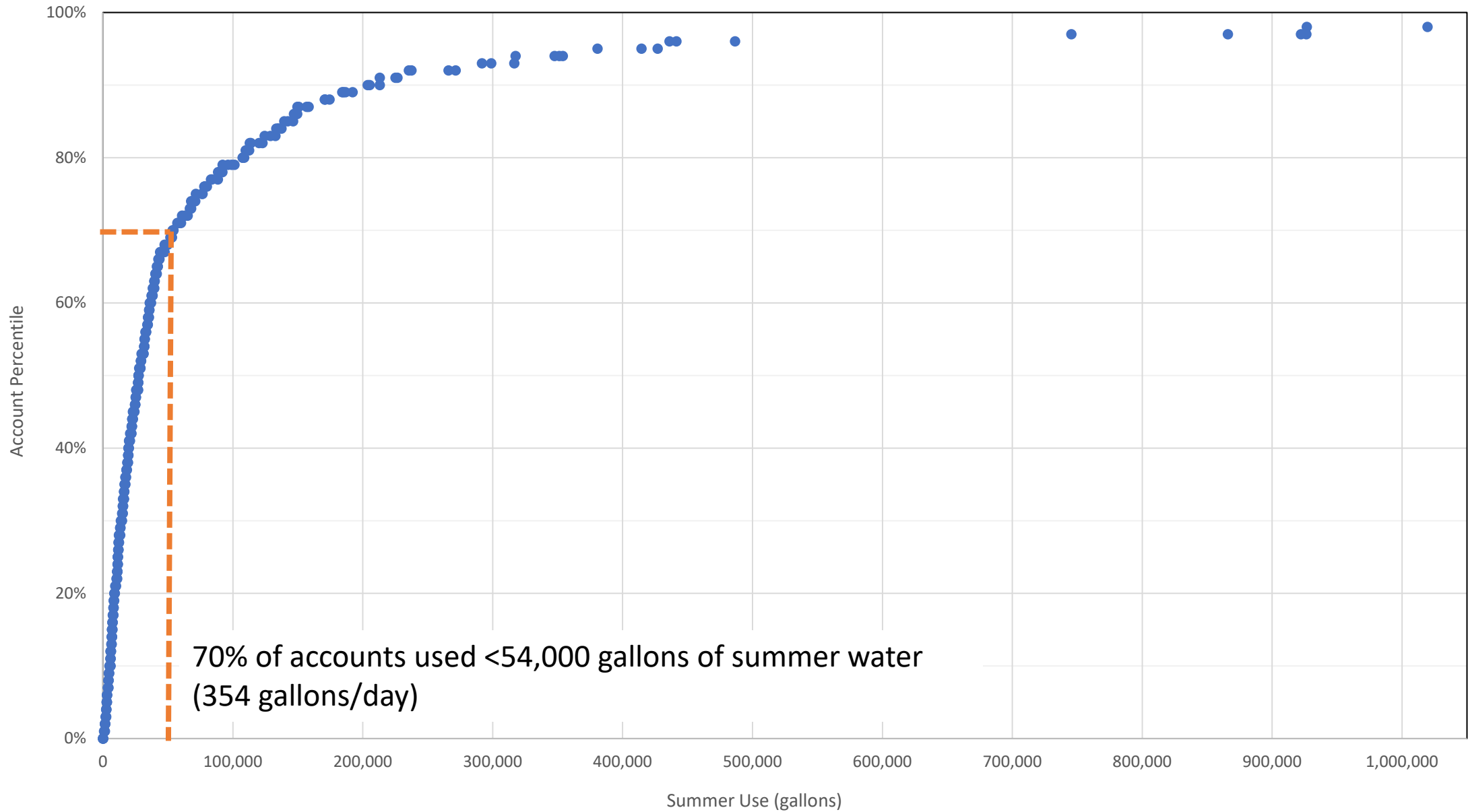
Commercial Accounts

- Used 27% of total water during 2017 and 2018
- Used 39% of additional water in summer compared to winter (summer – winter water)

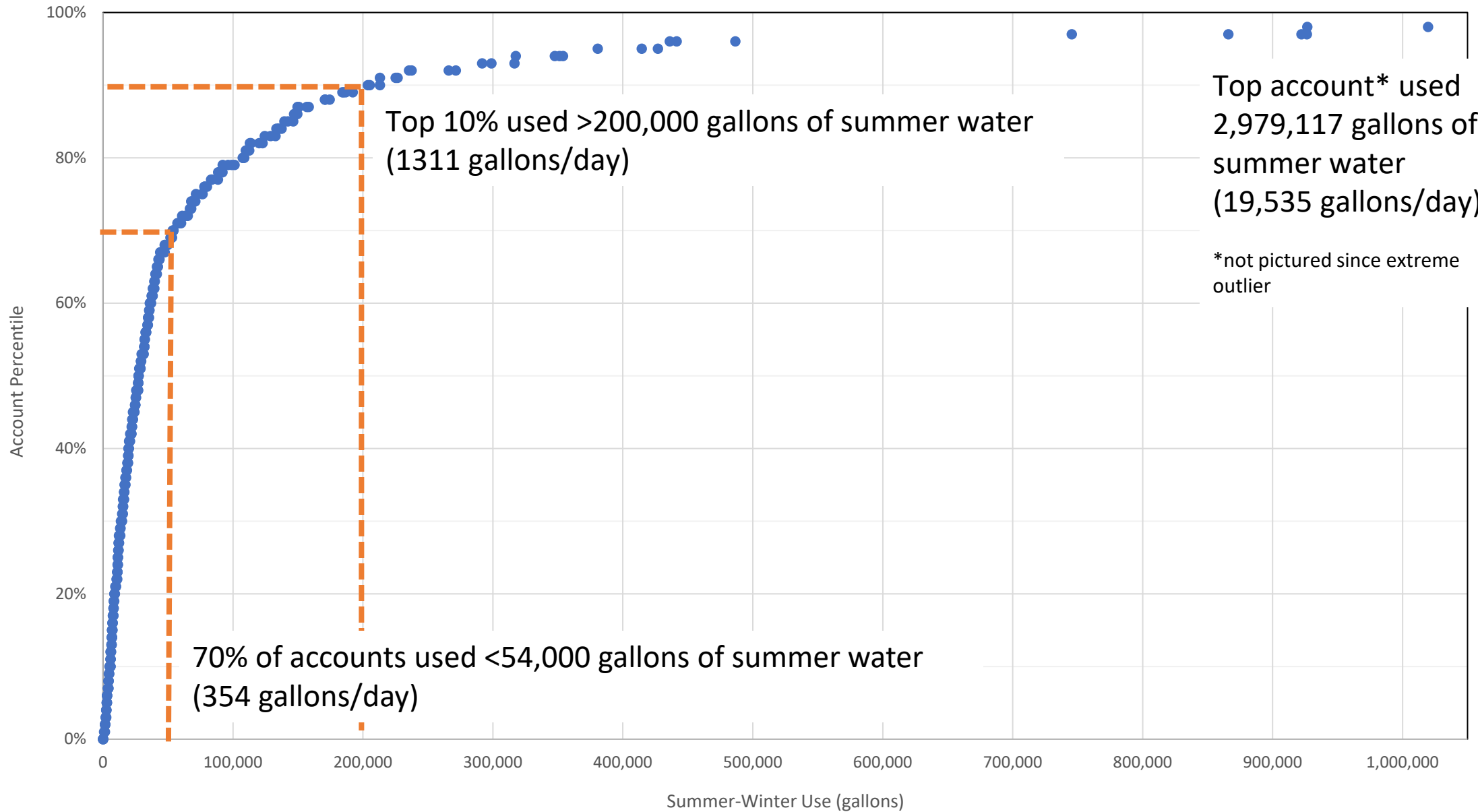
Total Annual Water Use by Commercial Accounts (2017/2018 average)



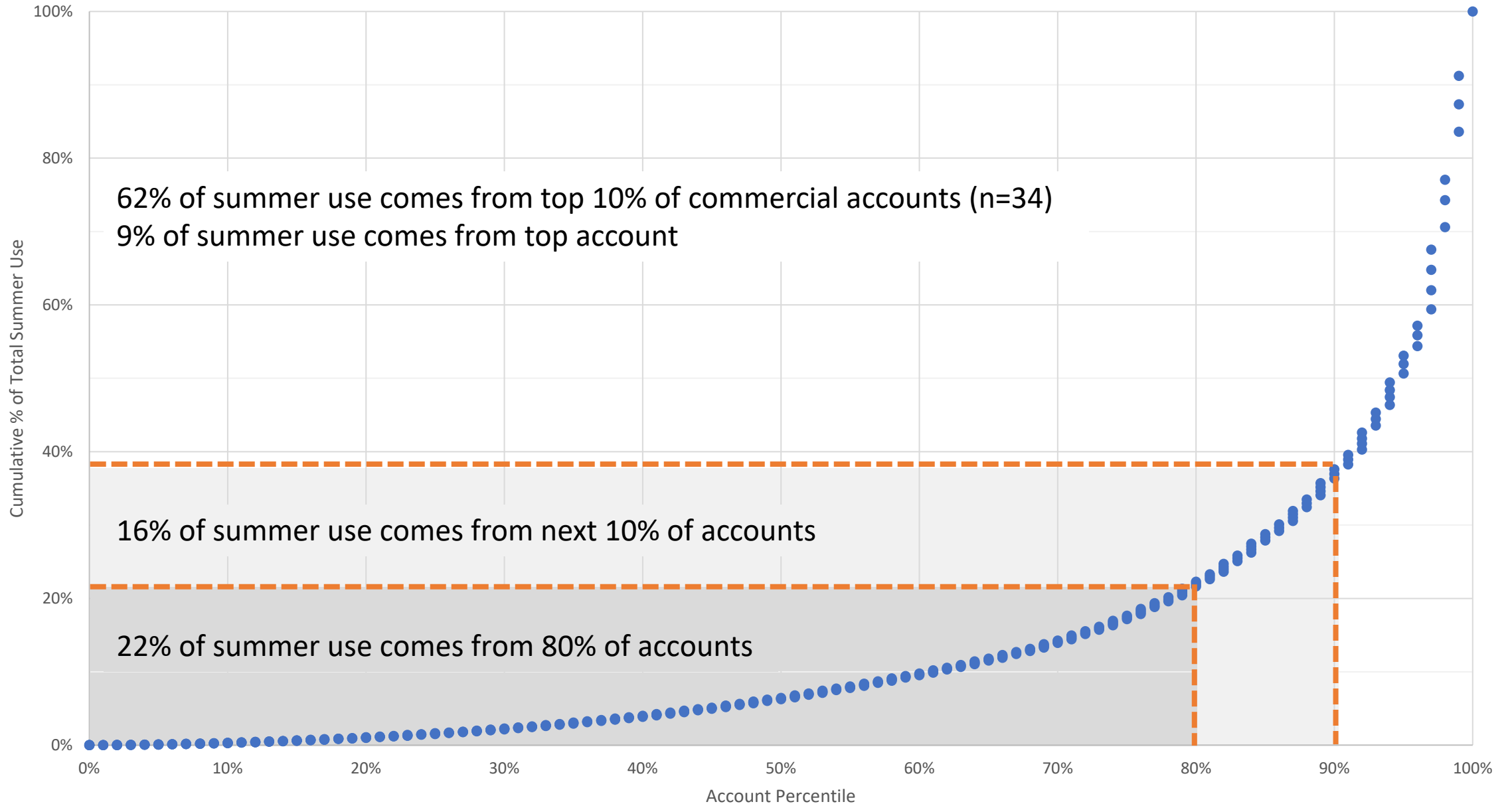
Commercial Summer Water Use (2017/2018 Average)



Commercial Summer Water Use (2017/2018 Average)



Cumulative Percent of Commercial Accounts Total Summer Usage by Account Percentile



Context: Town of Ipswich

- Water use profile analysis to inform water conservation strategies
 - Targeted outreach to high users
- Water use mitigation bank adopted in October 2020
- Cost of service study underway

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