Neighborhood norms and water use in Salt Lake City

## Shannon Williams, University of Utah
Research mentors: Philip Stoker, Martin Buchert, and Sarah Hinners

ABSTRACT

Neighborhood norms are a known mechanism used for predicting behaviors within a specific set of spatial boundaries. We hypothesize that neighborhood norms exist within Salt Lake City, UT, and that those norms might predict water use attitudes and behaviors. To help develop our research methodology, we asked the following research question:

Do neighborhood norms exist? Can we identify them?

METHODOLOGY
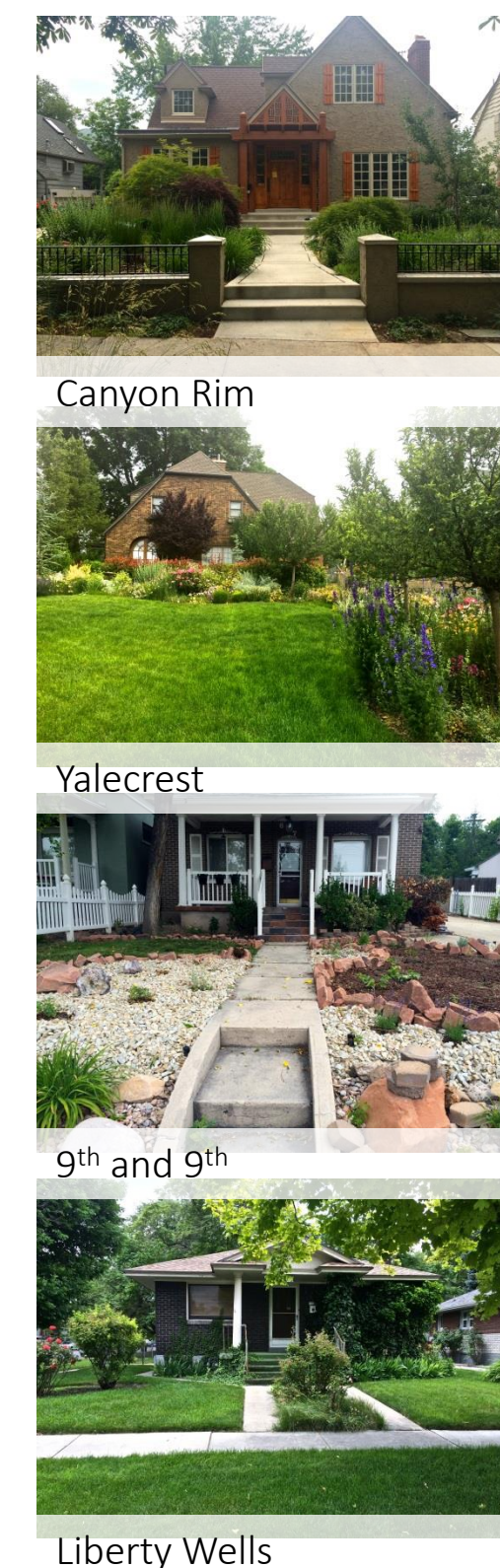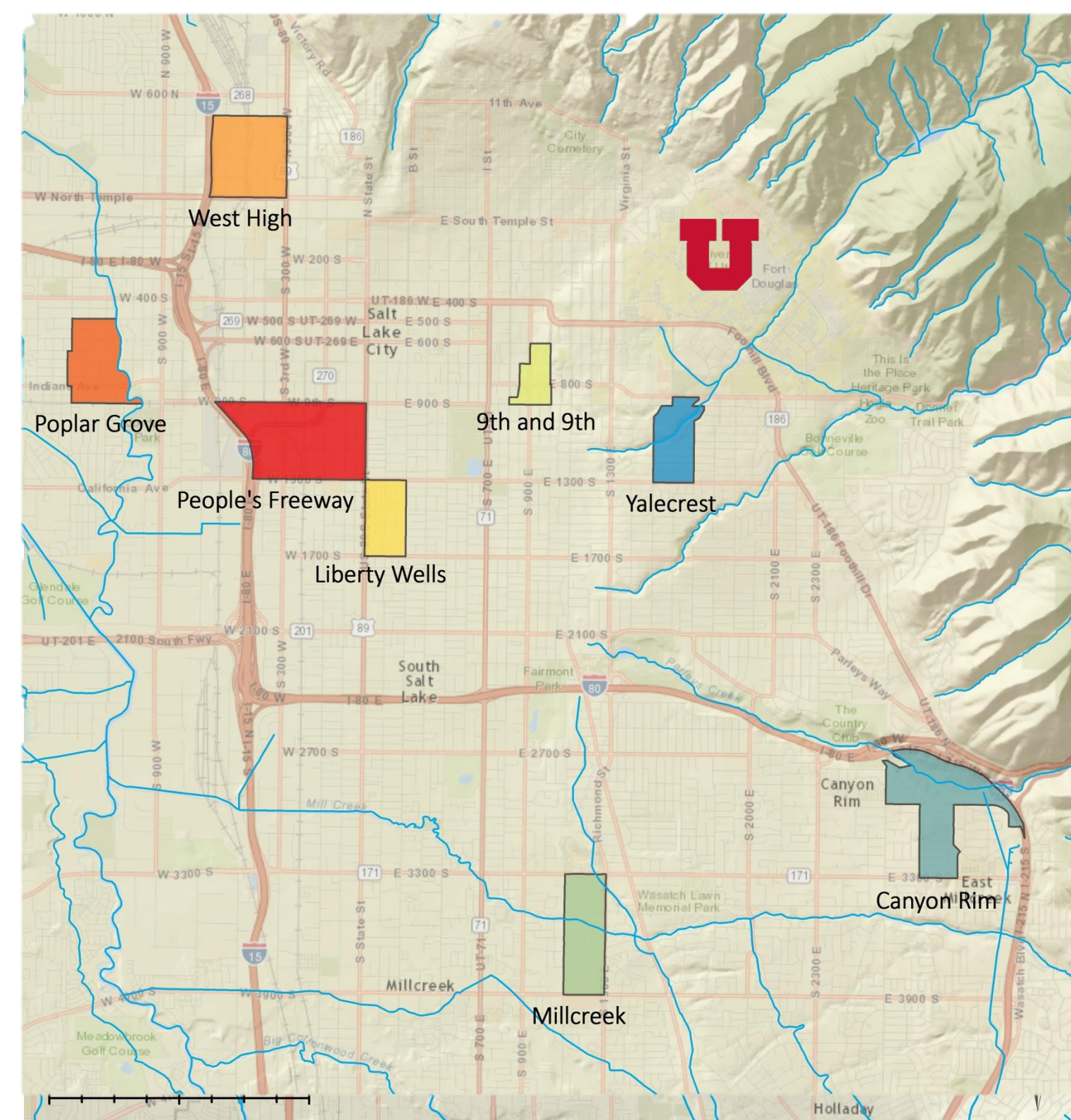
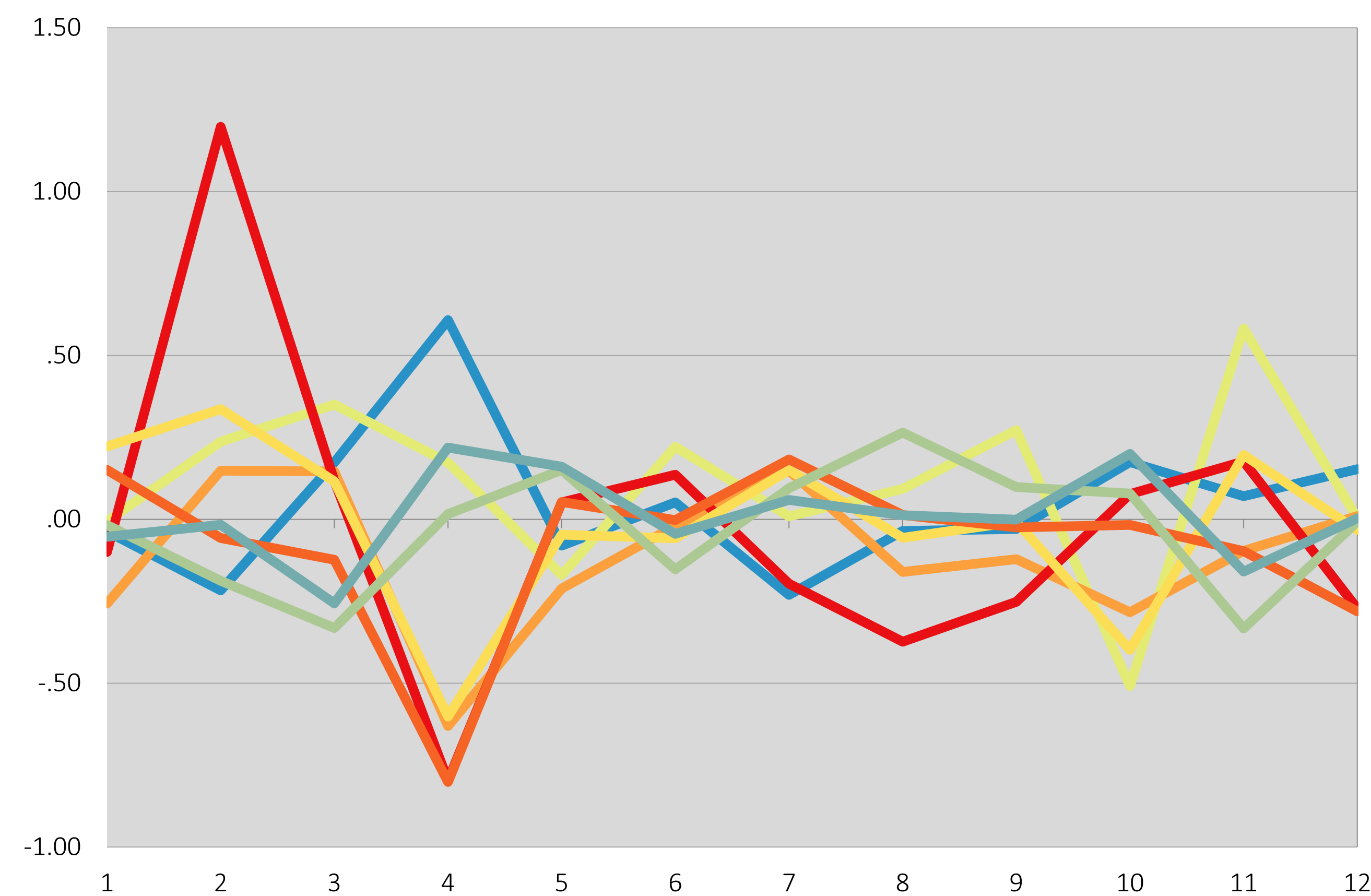|	
Dataset	July 2014 iUTAH Residential Water Issues survey responses
Factor Analysis	Analysis of 54 survey questions resulted in twelve prominent factors
Trends	Neighborhood norms as defined by preliminary research results

RESULTS

The figure above illustrates the twelve factors that were produced from the 54-variable factor analysis of survey response data. Each number along the x-axis corresponds to a named factor, listed below. Each color corresponds to a specific neighborhood; the lines undulate based on the degree to which a neighborhood aligns with a particular factor.

A point of interest is in the difference in loadings for a single factor. The high contrast between neighborhoods signifies that neighborhood norms do exist for at least some factors. Other factor loadings suggest that all eight neighborhoods have a similarly perspective on the topic; a city-wide ethic may be evident for those cases. For example, Factor 4 contains large variation; Yalecrest rates the highest for neighborhood satisfaction, while four other neighborhoods rank quite low. The contrast here can provide insight into the reasons behind neighborhood trends.

Factor Names:
1: Water needs perception
2: Willingness to save water
3: Policy standard in face of shortage
4: Neighborhood satisfaction
5: Construction of new water supply
6: Infrastructure improvement policy
7: Minimize landscape water use
8: Garden preferences
9: Water-related recreational activities
10: Factors in planting decisions
11: Agricultural policy preferences
12: Perception of water use compared to others

Perception of Water Use as Compared to Neighbors
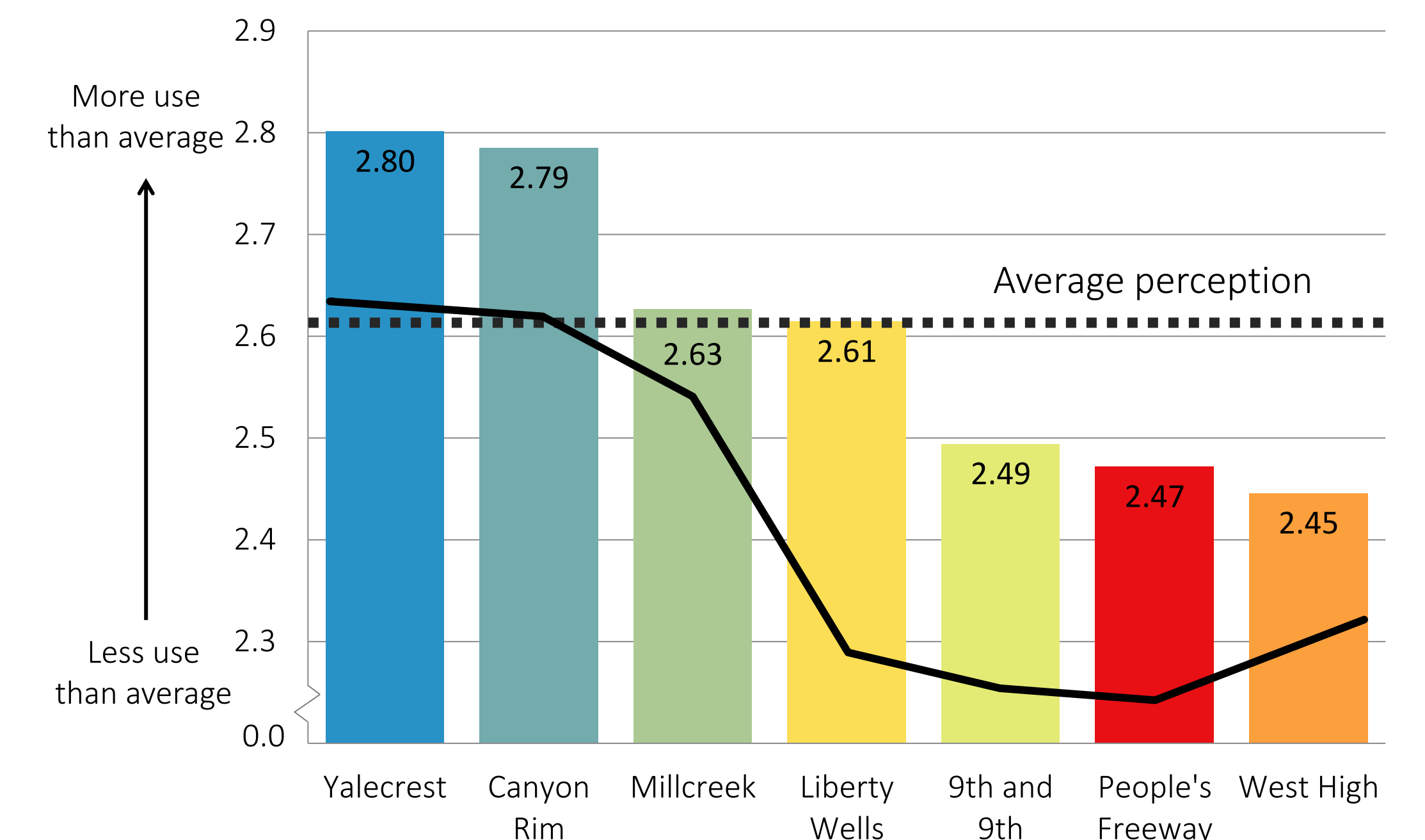
The chart above takes the first step at comparing actual water use data with neighborhood beliefs about water use. Of the three variables that make up Factor 12, one is the survey question above. It contains response data about the perception of household water use compared to neighbors' use. A higher number here indicates an average household perception of higher water use. Response data is contrasted with parcel water use; the average annual water use by neighborhood is demonstrated by the solid line, calibrated to the same scale.

SIGNIFICANCE

Our research fills an important knowledge gap in Salt Lake City concerning attitudes and perceptions towards water use in an arid state. By conducting this research we will have a better understanding of how specific attitudes about water influence or predict water use in the Salt Lake Valley, and if neighborhood norms exist within this watershed. Predictability of water use patterns may be important to the development of sustainable water policy geared at residents who do not voluntarily participate in conservative landscape practices. More research is needed to understand if preferences within neighborhoods can accurately predict water use rates by taking a closer look at parcel water use data from 2014.

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