**Historic Preservation Methodologies: Reconnaissance Survey vs. the Character Score**

**INTRODUCTION**
Historic preservation is an integral part of urban planning which benefits from recent advances in GIS technology. This study compares two methodologies for evaluating historic significance: the Reconnaissance Survey method used in Omaha, Nebraska, and the Character Score method used by the National Trust for Historic Preservation, with the purpose of testing the Character Score for its effectiveness in identifying historically significant resources. Specifically, we use GIS to determine if areas that have high Character Score (CS) correlate with areas identified by Reconnaissance Survey (RS) (Figure 1). Positive results suggest that CS is an economical alternative or complement to RS.

**METHODS**

The geographic boundary of this study is the extraterritorial jurisdiction (ETJ) of Omaha and surrounding towns in Douglas County, which encompasses historic resources that could be identified by this study and preserved. The hexagonal tessellation placed over the study area allows data from the two methods to be spatially joined and analyzed. Hexagons are chosen for better approximation of space as they have less variability than rectangles. A hexagon size of 40,000 m² evaluates areas at a mesoscale between neighborhood and individual building.

To build the analysis model, we use 2018 parcel data and RS data, from the City of Omaha Planning Department. Using ArcGIS Pro, point data for surveyed buildings are spatially joined to hexagons.

**RESULTS**

The Character Score is derived by calculating and adding together the three z-standardized metrics: Building Age, Diversity of Building Age, and Granularity (Figure 3). Granularity is defined as the number of parcels in each hexagon. Z-standardization converts the metrics of each hexagon to a z-score, a measure of standard deviations above or below the city average for the entire dataset. This process was advised by the creators of the Character Score to make the results compatible when comparing different cities. The general formula for z-standardization is $z=(x-\mu)/\sigma$.

The RS variable is the ratio (%) of inventoried buildings to total buildings in a hexagon (Figure 2). The Character Score is used to identify potential historic areas and can provide cost-effective guidance for determining historic significance for areas which have not yet been surveyed.

The positive correlation between hexagons of CS and RS suggests that the CS method may be a good predictor of historic significance. This approach could provide cost-effective guidance for determining significance for areas which have not yet been surveyed. GIS and quantitative models have the potential to identify areas of historic value; however, the specific historical and cultural context should be considered; this is where the RS and CS can be useful in tandem. Future studies using this approach could help inform policy decisions related to preservation and planning in Omaha and other cities.

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**DISCUSSION**

The positive correlation between hexagons of CS and RS supports the hypothesis that the CS will be a good predictor of areas that are known to have historical significance. Setting patterns, ethnic enclaves, and growth along streetcar nodes contributed to clusters of historical significance in the downtown and eastern parts of Omaha. Older, smaller, buildings of diverse vintage are also found in Elkhorn, a small town in the western part of the study area, a recent annexation that scored a high CS.

In contrast, low CS hexagons represent areas of lesser historic significance. These are low-density, relatively new developments, with buildings of similar vintage. For example, strip malls and big box stores, products of urban sprawl associated with widespread automobile ownership, can be found along major thoroughfares of the city, such as West Dodge Road. Creighton University and Joslyn Art Museum represent large spaces bearing historical significance (high CS) but with low CS due to low granularity and/or diversify metrics. Such areas were excluded from analysis because they contained fewer than one commercial parcel within each hexagon.

The findings suggest that the CS method may be a good predictor of historic significance. This approach could provide cost-effective guidance for determining significance for areas which have not yet been surveyed. GIS and quantitative models have the potential to identify areas of historic value; however, the specific historical and cultural context should be considered; this is where the RS and CS can be useful in tandem. Future studies using this approach could help inform policy decisions related to preservation and planning in Omaha and other cities.