Suitable for Spirits: 
Suitability Analysis for a New Craft Distillery in the Boston Metro Area

Introduction
There has been a boom over the last several years in the craft spirits industry, not only as a way to produce uniquely local spirits, but also a way to foster community through alcohol tourism. Many distilleries offer tours of their facilities, host events, and have tasting rooms. Spirits tourism is an major industry, with Kentucky as a prominent example of the trend (Hernandez, & Dekom, 2017). No longer is the Bourbon Trail of rural Kentucky the primary venue for spirits tourism; places like Short Path Distillery or Grand Ten Distilling, both in the Boston area, are distinctive examples of the trend toward a full branding experience, even on a craft scale (<100,000 gallons per year).

While research on the emerging trend of spirits tourism is currently limited, with a far greater focus given to the early and ongoing trend of craft beer tourism, the relationship between urbanity and craft spirits tourism is clear (Dowler, 2013). This study analyzes local spatial data to generate suggestions for optimal siting of a distillery. Proximity to industrial as suggested in the literature (Hernandez, & Dekom, 2017) will likely be indicated in the results. Finding a location conducive to production, distribution, and community engagement allows a distillery to increase their public profile, build a larger following, and establish a stronger relationship with the surrounding community. The high costs associated with opening a distillery necessitate a data-driven approach to locating facilities. This project answers the question of how to locate a new distillery proximate to transportation infrastructure and existing distilleries.

Data
This analysis uses data from ReferenceUSA, the Massachusetts State Assessor’s Office, Analyze Boston, Boston Open Data, the Metro Boston Transit Authority, and the Massachusetts Department of Transportation. All of the data was in raster format, which I used for my spatial analyses, described below. This initial study relies on proximity analysis, so the relevant fields are primarily to locate the records spatially. Further research will make use of the property value fields in the State Assessor’s data.

Methods
The factors measuring suitability in this initial study are proximity to MBTA stops (Figure 1), bus stops (Figure 2), exits to major roads (Figure 3), and proximity to existing distilleries (Figure 4). Euclidean distances were measured from each node of the analysis and were then reclassed to indicate suitability for locating a distillery with five classes within 20 km, with breaks at 1 km, 2 km, 4 km, and 8 km. When the four factors were combined in the final analysis (Figure 5), they were weighted, giving higher value to exit proximity for its role in facilitating production, distribution, and tourism, while lower values were accorded to the public transit factors, which primarily contribute to the touristic aspects of the business. Proximity to existing distilleries was also weighted highly in order to foster community engagement. Finally, data from the State Assessor office was used to generate points, first by joining spatial data with the PID field to tax assessment tables, selecting properties with tax parcels with land use code ‘400’ (Industrial Manufacturing). The properties were converted to points for ease of representation with each point located in the centroid of the feature. These points are displayed on Figure 5, with each point as a potential site for a distillery. All analyses were performed using ArcMap 10.6.1.

Results
Figure 5 shows areas best suited to distillery siting. The clustering of industrial zoned sites (LUC 400) in the south of Boston would be well-suited for siting. Similar clusters in Everett, Newton, and Watertown are well-suited. Conversely, while there is a cluster of eligible sites in Woburn, the distance from key factors makes those sites less desirable for distillery siting.

Discussion and Conclusions
This analysis has provided a crucial first step in understanding the relationship the spirits tourism industry has with a community of customers, colleagues, and commerce. Expanding this study and giving further consideration to new factors will offer deeper insights than those currently measured in the analysis. Further study would be necessary before giving a recommendation to a new distillery regarding where to locate their facilities. For example, the proximity of a site is potentially greater expense, but it brings with it the reward of access to an engaged community and customer base.

The cost of the industrial zoned properties has not been taken into account in this study and that would prove a critical factor when a company is looking for a facility. The current data can be modified to suit the specific needs of a new company and provide new recommendations based on the factors they most value or are concerned about highlighting.

Sources Cited


Cartographer Information:
Cartographer: Elias Kells
Class: GIS-101 Intro to GIS-Spring 2019
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Data Sources: MBTA, MassDOT, Massachusetts State Assessor’s Office, Open Boston, Analyze Boston, ReferenceUSA
Projection: Lambert_Conformal_Conic

Fig 1: Proximity to MBTA T-stations
Fig 2: Proximity to MBTA Bus Stops
Fig 3: Proximity to Major Road Exits
Fig 4: Proximity to existing distilleries
Fig 5: Suitability for Distillery Location