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Bikeshare Expansion Suitability Model Proposal

Description of Overall Overlay Approach

The overlay approach that will be conducted for this feasibility analysis will be a weighted sum. Each of the five submodels will be assigned a percentage weight, which will sum to a cumulative total of 100. The submodels and corresponding weights are given by the table below.

Submodel	**Weight**	**Methodology**
Residence Demand	20	Population density by census block. Census blocks will be assigned scores based on which quartile they are in. Each quartile will be assigned 5, 10, 15, or 20 points, with the 4th quartile receiving 20/20.
Destination Demand - Workplace	30	Census blocks will be grouped into thirds based on the density of employment locations. Each third will be assigned 10, 20, or 30 points, with the top third receiving 30/30.
Proximity to Amenities	15	Locations within ½ mile of amenities will receive 5 points, locations within ¼ mile will receive 10 points, and locations within 1/8 mile will receive 15 points. Amenities include hotels, parks, libraries, etc.
Proximity to Existing Bus Stops	15	Locations within ½ mile of bus stops will receive 5 points, locations within ¼ mile will receive 10 points, and locations within 1/8 mile will receive 15 points.
Proximity to Existing BikeShare Hubs	20	Locations within ¼ mile, ½ mile, 1 mile of BikeShare hubs will receive 5, 10, or 15 points respectively. Locations farther away will receive 20 points.
	= 100	

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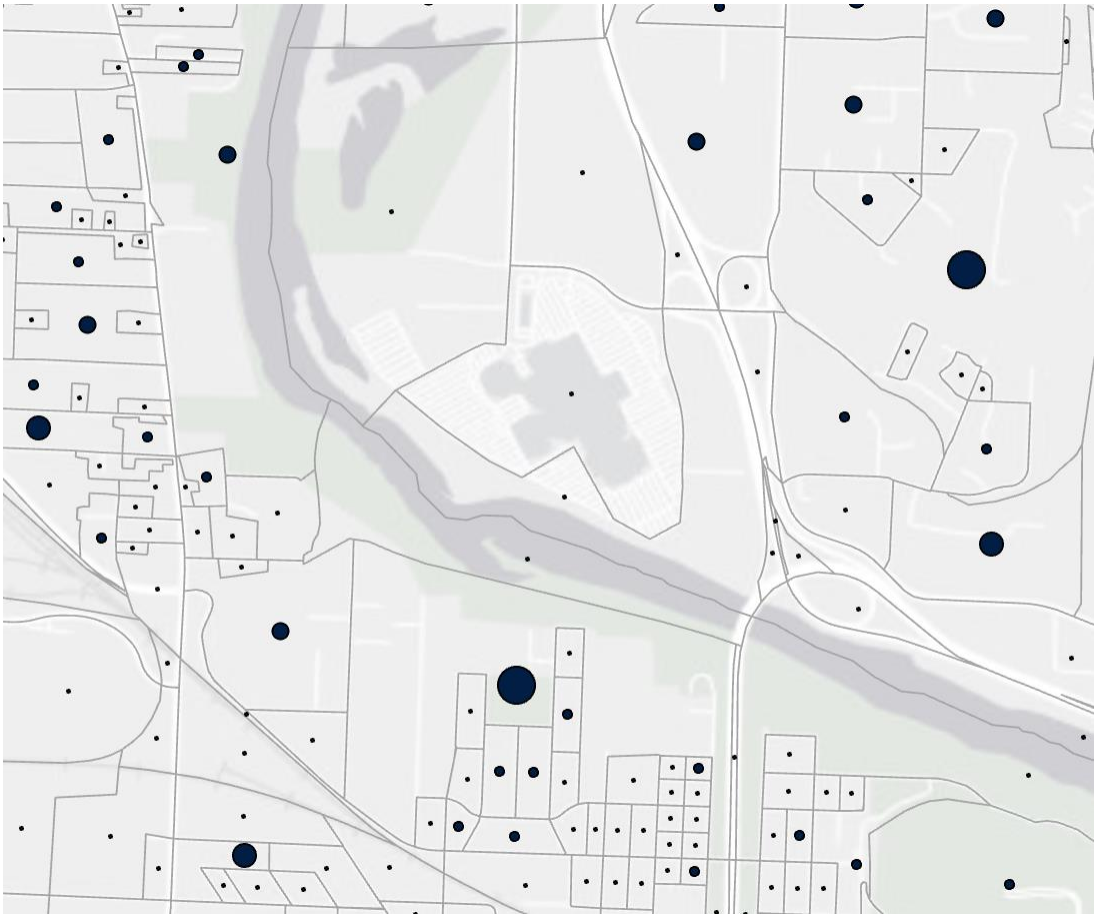
Submodel Input Data

- Residence Demand

  The dataset LaneCountyRAC_2017 will be used for residence demand. The housing density per census block (shown above as centroids) will be classified and used to determine points/percentages per census block.



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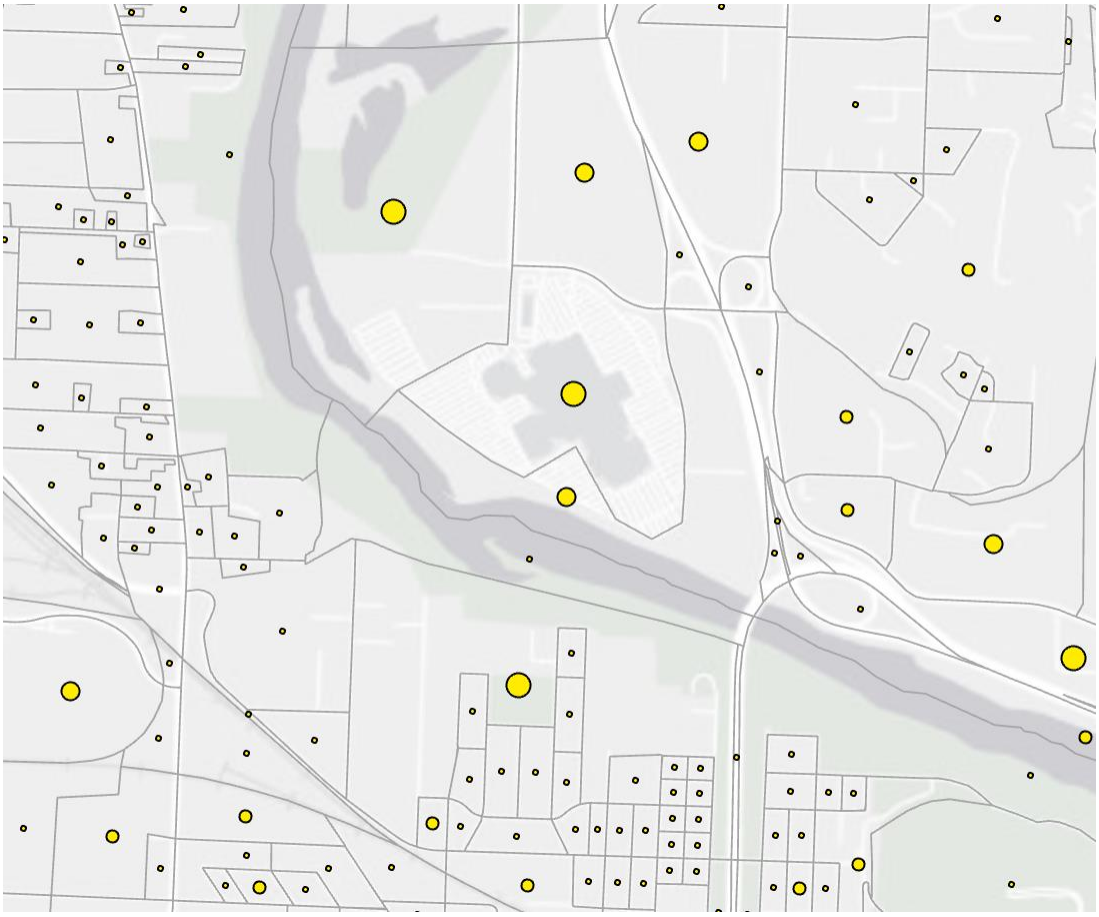
- Destination Demand

  The dataset LaneCountyWAC_2017 will be used for workplace destination demand. The workplace density per census block (shown above as centroids) will be classified and used to determine points/percentages per census block.



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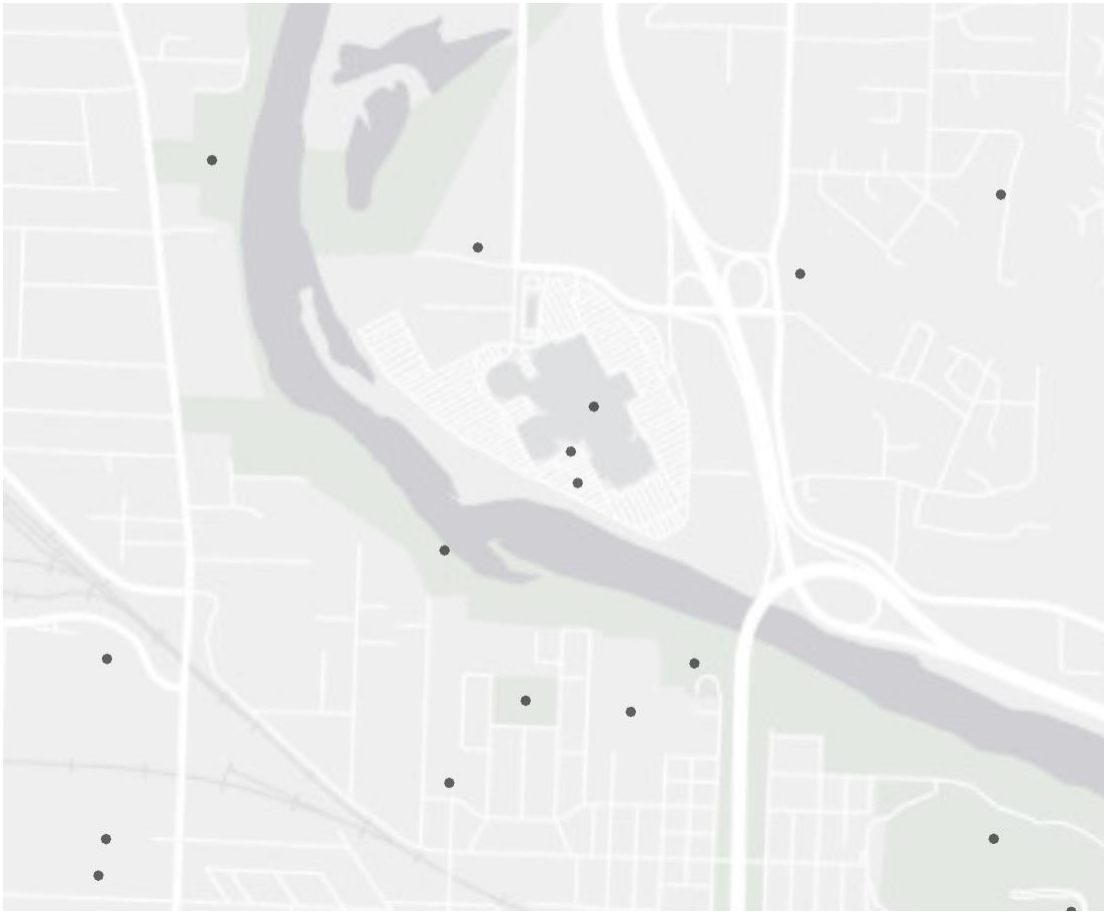
- Proximity to Amenities

  Amenities data will come from the facilities data layer. Proximities to these points will be classified into 3 bins (thirds).



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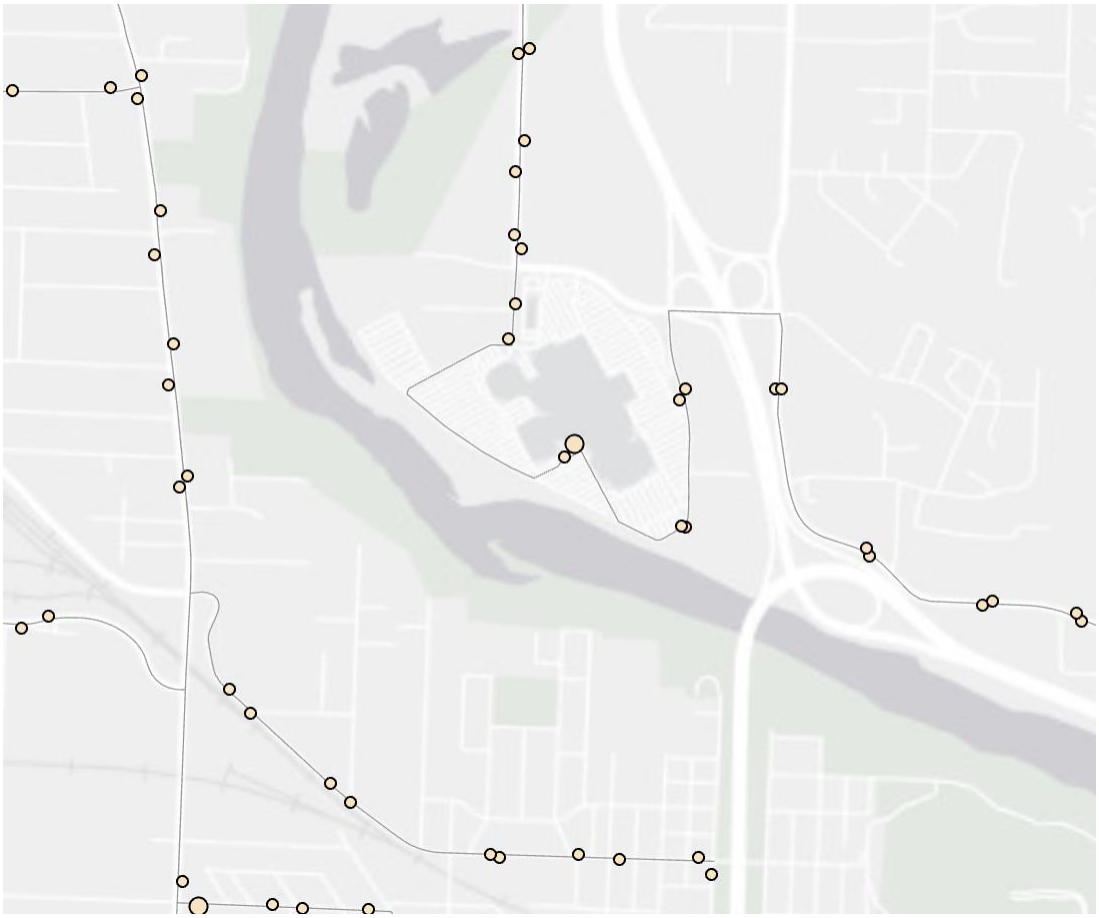
- Proximity to Existing Bus Stops

  LTD_Stops_Fall2019_Boarding will be used to determine proximity to existing bus stops. Buffers will be created around these points.



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- Proximity to Existing BikeShare Hubs

  BikeShare_Hub_Points will be used to determine the proximity to existing BikeShare hubs by creating buffers around each point.