Noah Tigner

GEOG 482

Lab3 – Part 2

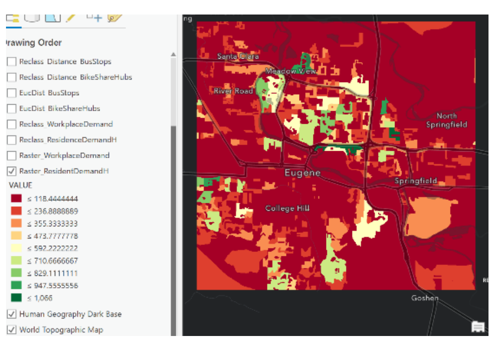
Methods & Results

Methods

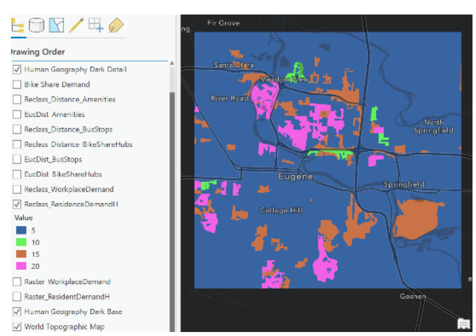
This analysis was conducted by overlaying five submodels. The overlay approach used was a weighted sum. The submodels and weights are as follows:

Submodel	**Weight**
Residence Demand	20
Workplace Demand	30
Proximity to Amenities	15
Proximity to Existing Bus Stops	15
Proximity to Existing BikeShare Hubs	20

Residence Demand information was pulled from LaneCountyRAC_2017. The Feature To Raster function was then performed on the H_units field of this data to produce the Raster_ResidentDemandH layer. This raster was then reclassified into 4 classes of equal size, from the minimum of 0 to the observed maximum of 1066, with classes receiving either 5, 10, 15, or 20 points (in increasing order by class). This reclassified raster was called Reclass_ResidentDemandH.



Raster_ResidentDemandH



Reclass_ResidentDemandH

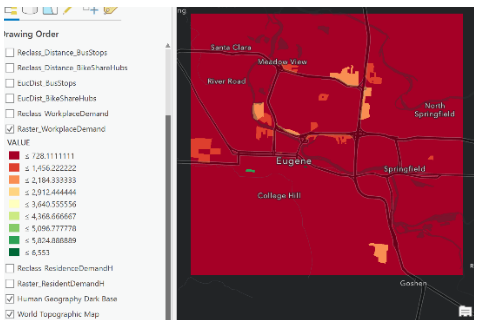
Noah Tigner

GEOG 482

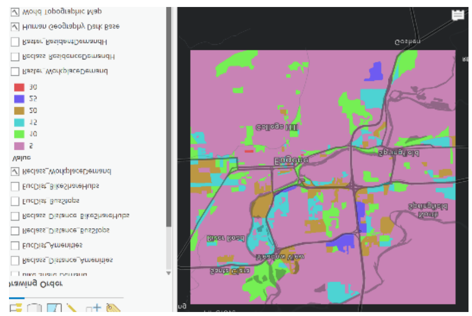
Lab3 – Part 2

Methods & Results

Workplace Demand information was pulled from LaneCountyWAC_2017. The Feature To Raster function was then performed on the C000 field (total number of jobs) of this dataset to produce the Raster_WorkplaceDemand layer. This raster was then reclassified into 6 classes of equal size, each valued at 5 points more than the previous. This reclassified raster was called Reclass_WorkplaceDemand.



Raster_WorkplaceDemand



Reclass_WorkplaceDemand

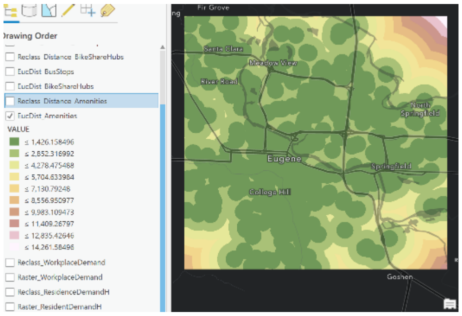
Amenities information was pulled from the Facilities Layer. The Euclidean Distance function was then performed to produce the EucDist_Amenities layer. This raster was then reclassified into 4 classes with ranges 0-500, 500-1000, 1000-1500, and 1500-2000, with each valued at 5 points more than the previous. This reclassified raster was called Reclass_Distance_Amenities.

Noah Tigner

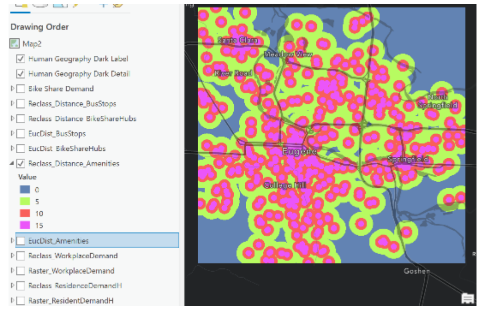
GEOG 482

Lab3 – Part 2

Methods & Results

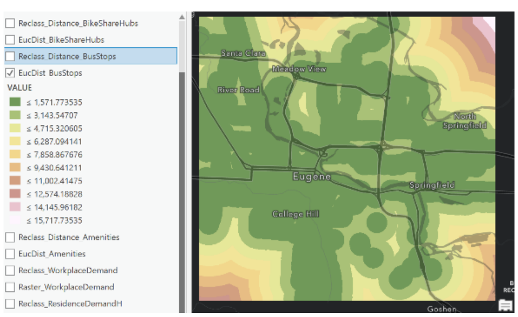


EucDist_Amenities

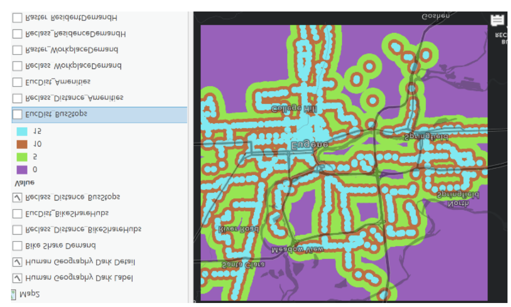


Reclass_Distance_Amenities

Bus Stop information was pulled from LTD_Stops_Fall2019_Boarding. The Euclidean Distance function was then performed to produce the EucDist_BusStops layer. This raster was then reclassified into 3 classes with ranges 0-500, 500-1000, and 1000-2000, with each valued at 5 points less than the previous. This ensured that locations nearer to Bus Stops received more points. This reclassified raster was called Reclass_Distance_BusStops.



EucDist_BusStops



Reclass_Distance_BusStops

BikeShare Hub information was pulled from BikeShare_Hub_Points. The Euclidean Distance function was then performed to produce the EucDist_BikeShareHubs layer. This raster was then reclassified into 3 classes with ranges 0-500, 500-1000, 1000-2000, and 2000-10000, with each

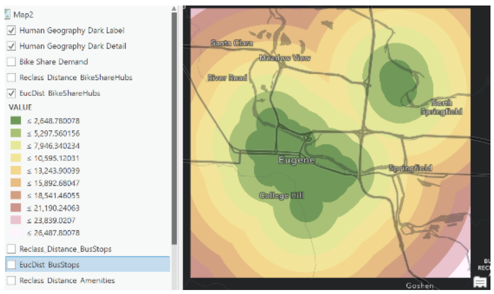
Noah Tigner

GEOG 482

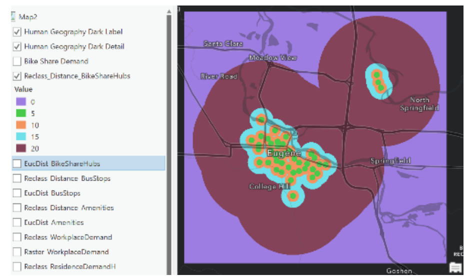
Lab3 – Part 2

Methods & Results

valued at 5 points more than the previous. This ensured that locations farther away from existing hubs were prioritized. This reclassified raster was called Reclass_Distance_BikeShareHubs.

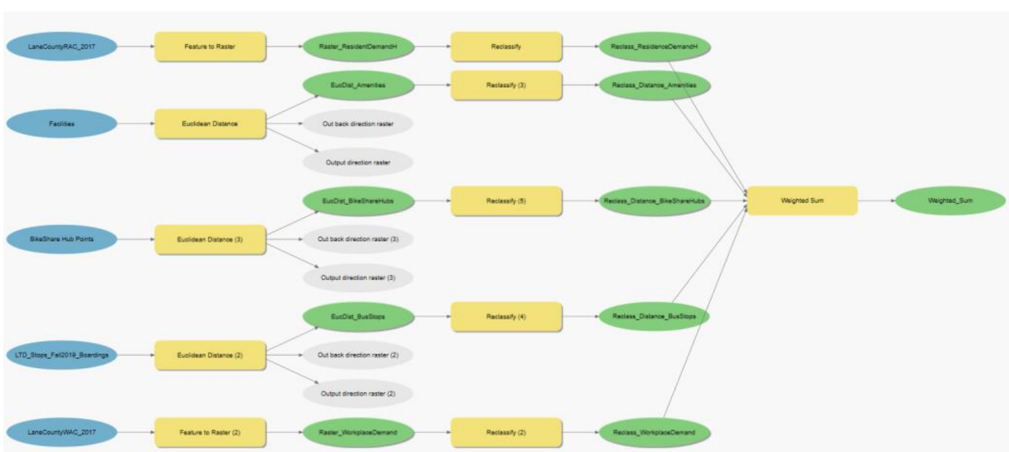


EucDist_BikeShareHubs



Reclass_Distance_BikeShareHubs

Each submodel was then overlayed using the Weighted Sum function. Each submodel's respective weights were applied (page 1). The overall model for this analysis was as follows:



Analysis Model Diagram

Noah Tigner

GEOG 482

Lab3 – Part 2

Methods & Results

Results

The final output raster for this analysis was called Bike Share Demand (named Weighted Sum in the above diagram).

Bike Share Demand

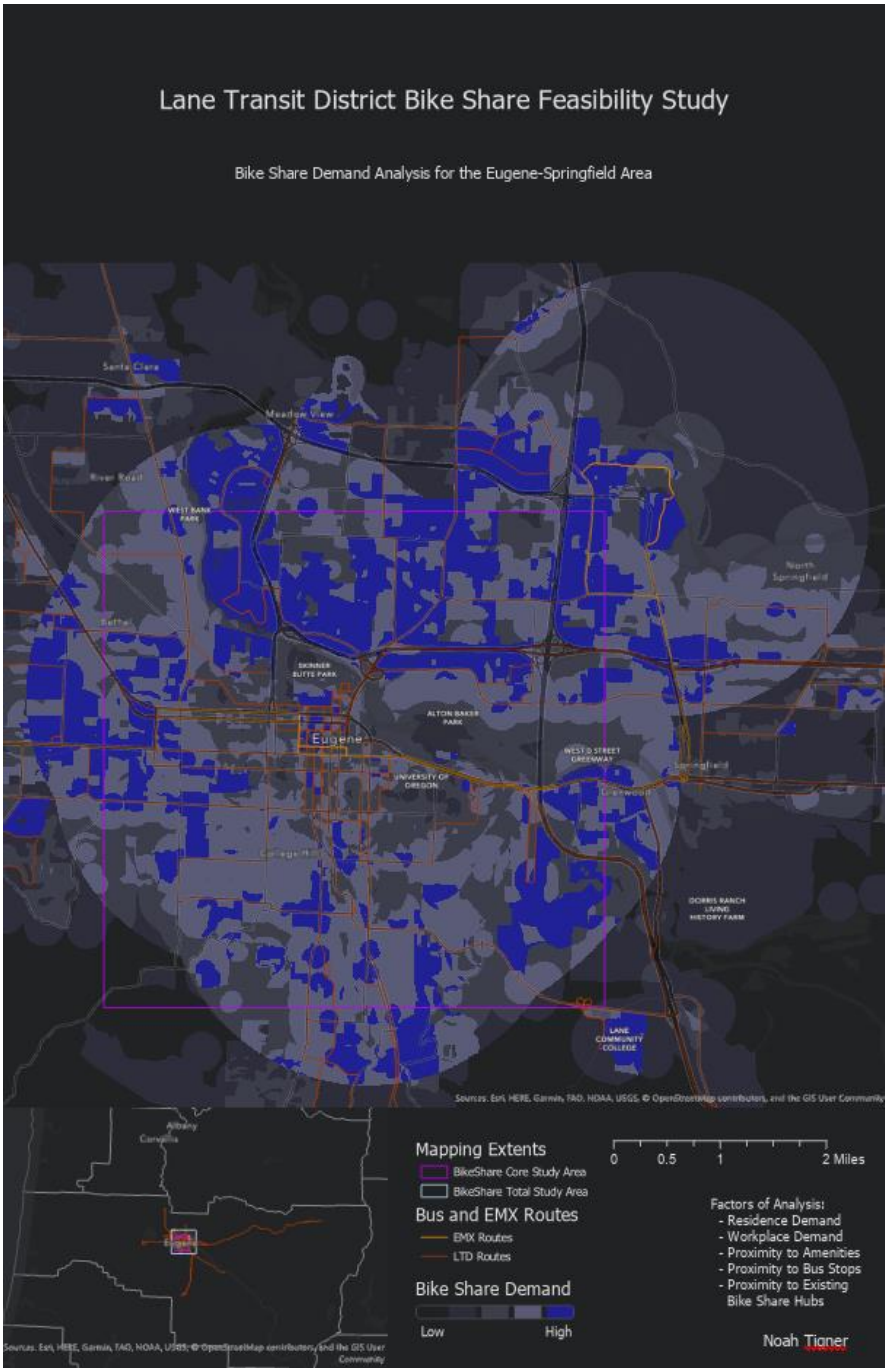
Other information such as the routes of EMX and LTD busses were used for the final map.

Noah Tigner

GEOG 482

Lab3 – Part 2

Methods & Results



Lane Transit District Bike Share Feasibility Study

Noah Tigner

GEOG 482

Lab3 – Part 2

Methods & Results

The purple box outlines the core extent of this study. It is worth noting that there are several areas outside this extent that the analysis deemed as in high demand of a Bike Share Hub, such as the Lane Community College Campus and Santa Clara. Within this extent, there are a number of areas in high demand for BikeShare Hubs, such as north of Alton Baker and Skinner Butte Parks, south of College Hill, and southwest of Glenwood. Some areas not in high demand include parks, College Hill, and land north of Bethel.