
ESTIMATING LOGISTICS ACTIVITY POTENTIAL

Innovations in Freight Data Workshop
Dr. Seckin Ozkul – sozkul@cutr.usf.edu
University of South Florida, CUTR

LAC or “Logistic Activity Center” is a term designated to refer to freight facilities such as larger warehouses, inland ports, intermodal logistics centers (ILCs), etc. The reason for these multiple terminologies is partly because the logistics infrastructure has emerged in diverse geographical settings and serves a wide variety of functions, with multiple actors involved. To help guide the appropriate investments for successful LAC development, this research focused on the determination of optimized location criteria for LAC development potential. The methodology involved generating suitable criteria by using variables such as distance from major freight generators (cargo airports, seaports, intermodal yards, etc.), proximity to major roadways, utility availability, and land cost. Once these criteria to guide LAC investment site location selection were finalized, a GIS database was generated for the study area to depict LAC development potential of sites ranked from very high to minimal on a heat map. Land areas that are designated as undevelopable lands (i.e. state parks, wetlands, etc.) were removed from this map to ensure the accuracy of the LAC development potential. As a validation check, the final heat map obtained through this study was compared to the locations of the existing warehouses in the Tampa Bay region. These included warehouses larger than 25,000 sq. ft. in gross floor area. Per this validation, these warehouses were found to be clustered around the high heat zones for LAC development potential, which was determined by this study. Moreover, analysis results of truck routes obtained using disaggregate level American Transportation Research Institute (ATRI) GPS data were laid over the final heat map and multitudes of truck routes were observed between/over the major heat zones determined by this study.

Furthermore, the land use and current classification of existing vacant lands were analyzed with the heat map to come up with LAC compatible parcels that can be immediately utilized for developing LACs. These heat areas which fell under LAC compatible parcels were analyzed using Google Earth for a 3D birds-eye view depicting most recent aerial imagery of each analysis parcel. Lastly, to help guide freight infrastructure funding allocations for the Florida Department of Transportation (FDOT) District 7 Office, roadway corridors containing clusters of LAC potential spots, determined through this research, were highlighted. In addition to supplying guidance to FDOT’s freight infrastructure funding allocations, the results of this study are intended to be used by major LAC development firms, site selectors, and real estate investors in shaping their freight planning and freight-related investments to yield the highest return on Investment (ROI) for all stakeholders involved.