2.4.2 Park and Ride Demand Estimation

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The purpose of this study and further tool development was to analyze existing Park & Ride (PnR's) demographics, demands, and utilization for Fairfax County as a whole, and to use that information in the creation of a predictive demand model for potential Park & Ride lot locations. Previous studies have been done focusing on individual PnR lots, but a comprehensive countywide study had not been conducted before.

To do so, we conducted a comprehensive survey of all 36 existing PnR's, collecting license plate info and plotting the points of origin for each plate. We then ran coefficients on key demographics (population, households, work trip origins, etc). The resulting values were used in the creation of a dynamic GIS tool. The tool itself sits within ArcGIS as an add-on toolbar and can be run in a step-by-step procedure allowing planners to work with individual results or to complete the analysis using the tool. In this way, planners will be able to compare and validate the tool against previous methodology.

As we worked through the development and began to understand the data better, we recognized limitations and specific trends. We saw that PnR demand is greatly driven by the level of service provided (commuter only, bus, rail, etc), approximately half of all usage comes from within a 5 mile driving radius, and other close-proximity PnR's can greatly effect one another. In addition, we noted that a realistic demand in an area such as Fairfax, VA (a major suburban hub of the DC Metro area) will have a slightly up-stream point of origin; however the methods we used did not fully account for this flow pattern.