

**Bushkill Village  
Park and Ride  
Demand and Site Characteristics Analysis**

**October 2022**

To better understand the demand and site characteristics of park and ride facilities, the AASHTO *Guide for Park and Ride Facilities*, October 2004 (the *Guidebook*) was used as a reference. The original intent of this analysis was to determine the appropriate capacity of a park and ride facility based on numerous factors such as traffic volumes, population densities, as well as origins and destinations in the area that could influence its size. However, after review of the *Guidebook*, it was determined that such a ratio does not exist. What this analysis did discover however, are many of those factors, as well as several others, do influence the location and demand of a successful park and ride facility.

According to the *Guidebook*, park and-ride-facilities are more effective when they are a part of a comprehensive and coordinated land use and multimodal transportation system. The *Guidebook* states:

“It is typically more effective to plan park-and-ride facilities as part of a coordinated and multi-modal transportation and land use system, than to plan individual facilities and try to tie these facilities together after the fact. Park-and-ride facilities cannot function on their own without direct linkages to the surrounding transit and highway infrastructure. It is important to develop a comprehensive system plan inclusive of park-and-ride facilities before developing the individual elements or facilities within the overall system plan. Success of the individual park-and-ride lies in its ability to connect with the regional transportation network and the selection of a site location within the network.”

Post modeling techniques is one method for determining demand forecasts. According to the *Guidebook*, “...the first step in post modeling techniques revolves around identifying the production (home) and attraction (employment) ends of potential trips that might use a proposed park-and-ride facility. Studies from California indicate that the primary home influence area extends between 3-5 miles from the individual park-and-ride facility but is strongly influenced by such factors as the presence of competing lots, the distance to the primary destination activity center, and the existence of unique conditional characteristics such as downstream traffic congestion.”

“Based on the identification of the production and attraction zones, the trip interchange characteristics between the two influence areas can be determined using a regional travel demand model. This destination center should be limited to those areas served directly by the facility (e.g. served by transit service between the lot and the activity center). However, it should be remembered that non-transit HOV’s might also be using the park-and-ride lot as a formation or staging location, this necessitates that other large potential destination zones should not be ignored. However, for modeling and demand purposes, destination zones should be limited to two or three major centers for any given park-and-ride.”

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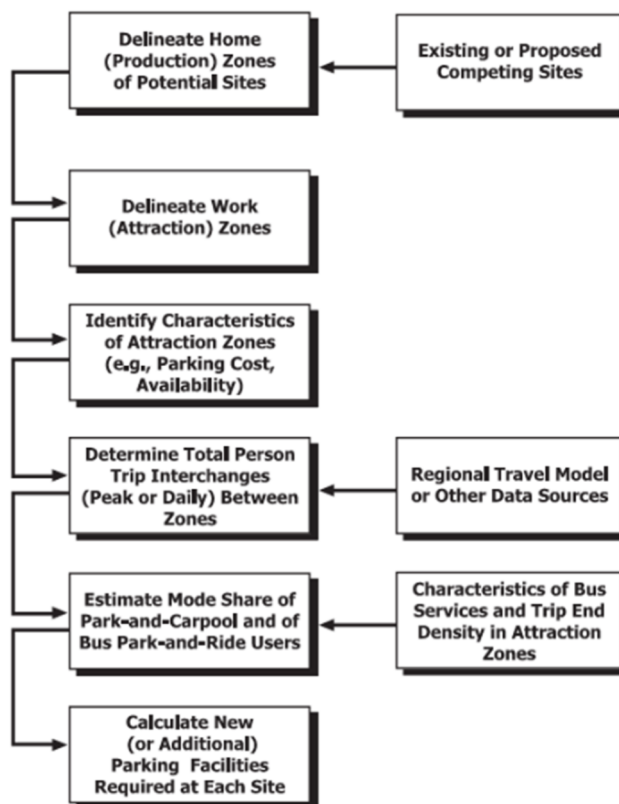
Once modal splits are determined, the resulting park-and ride demand shares can be applied to developed trip interchange tabulations, and the number of parking spaces required for a site can be determined. Placement of individual park-and-ride sites within a service area becomes a task best handled in a comprehensive system planning process.

Regional forecasting is an approach in which the park-and-ride trip is modeled as a chained trip directly within the regional modeling process. According to the *Guidebook*, "...the direct forecasting approach is best illustrated by the Puget Sound Regional Council (PSRC) example. The PSRC uses a direct forecasting methodology based on a transportation modeling platform and provides both highway and transit modeling capabilities. Within this region there are approximately 170 park-and-ride lots with a total of 25,000 spaces. Fifty of these lots can be termed major facilities, having in excess of 150 spaces each."

"...the Puget Sound region is divided into traffic analysis zones. Each zone is connected to the regional centers via a roadway network comprised of approximately 14,000 one-way roadway links."

"Modal splits within the PSRC model are based on utility functions between the various modes available. Utility functions are typically dependent on the travel time and cost characteristics of the competing modes and are employed within a multimodal logit modeling format."

The following chart from the *Guidebook* provides an **Overview of Park-and-Ride Demand Estimation Methodology**.



As described previously, park-and-ride lots typically function more effectively when they are part of a comprehensive multimodal transportation network. The Monroe County Transit Authority provides bus

service along PA 611 with Bus Route 102. The closest bus stop to the proposed Bushkill Park and Ride Lot is located at the Great Wolf Lodge on PA 611 W in E. Scotrun, PA. The distance between this bus stop and the proposed Bushkill Park and Ride Lot is approximately 32 miles. Extension of this service, or additional bus service, to the proposed Bushkill Park and Ride Lot would greatly increase the effectiveness of the proposed facility and is a critical recommended element to the development of the Bushkill Park and Ride Lot.