

Eubanks Road

Park-and-Ride Expansion Feasibility Study

Chapel Hill, North Carolina

SUBMITTED TO

Chapel Hill Transit

SUBMITTED BY



Engineering NC, P.C.

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Acknowledgments

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Technical Appendix

(Available in digital format upon request)

Executive Summary

The Town of Chapel Hill and Chapel Hill Transit (CHT) have commissioned this study to explore the feasibility of expanding the capacity of the Park-and-Ride facility located along Eubanks Road (see Figure ES-1). This expanded facility is intended to accommodate anticipated increased travel demand and transit ridership along the Martin Luther King, Jr. Boulevard corridor. By providing this additional capacity, the Town can help meet the region’s travel needs; increase transit usage; reduce air pollution; and enhance economic development compared to a scenario in which this form of transportation capacity is not provided. This feasibility study assesses the existing site and the possibility of expanding to the adjoining parcels, evaluates possible alternative sites, develops conceptual site layouts, and provides estimates of capital costs and operating cost for the facility.

Park-and-Ride has long been an important component of Chapel Hill’s transportation system. The system is reaching its capacity and additional facilities will be needed to continue reducing auto-based traffic demand, traffic congestion and associated environmental impacts to the community. An important component of the Park-and-Ride system is the facility located on Eubanks Road. The Eubanks Road Park-and-Ride facility currently serves Chapel Hill Transit (CHT) riders, Triangle Transit Authority (TTA) riders and carpoolers.

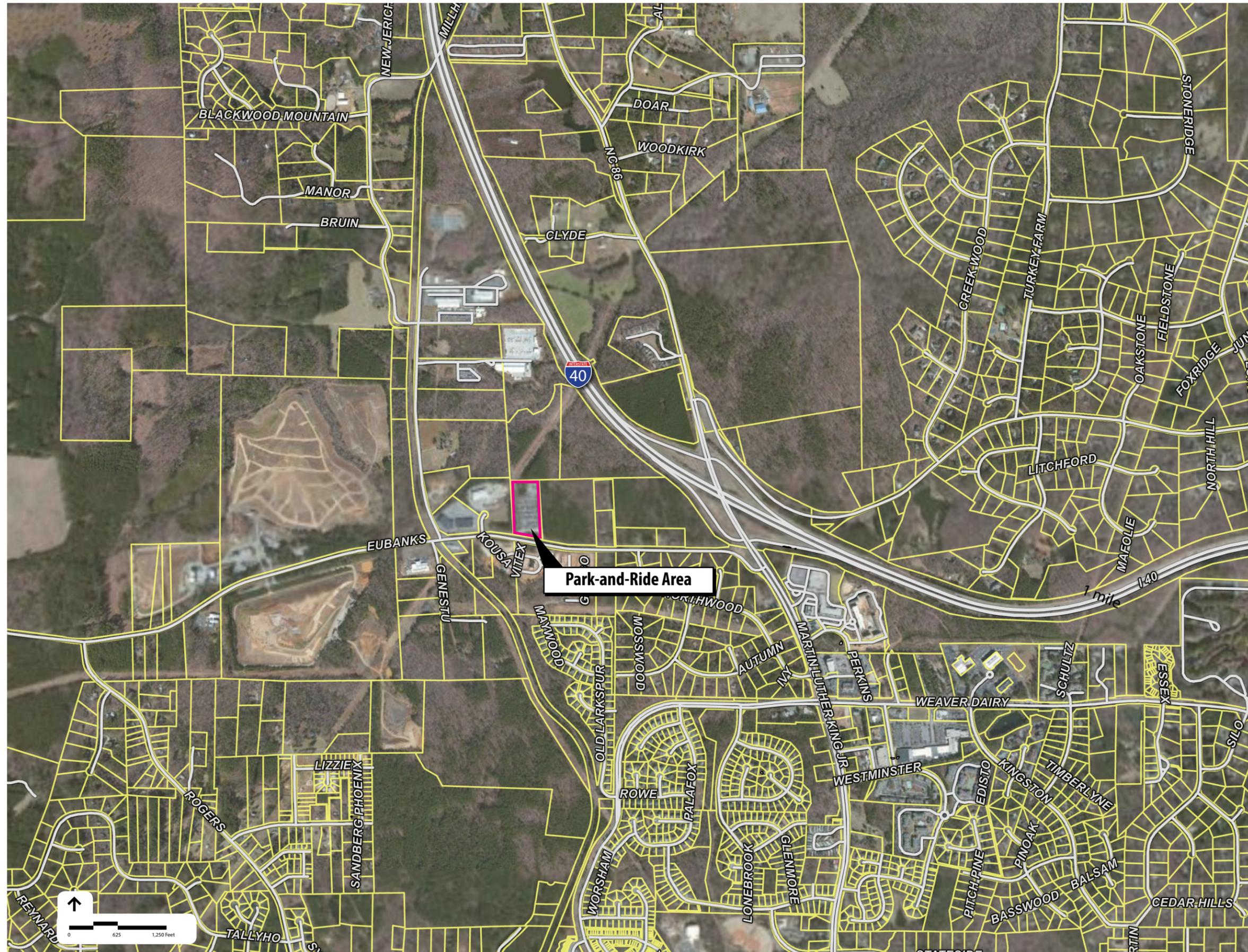
Park-and-Ride demand at the Eubanks Road facility is anticipate to increase over time as the Town of Chapel Hill grows in general, as expanded regional transit service is implemented, and as the Carolina North development takes shape. This anticipated growth is presented below and is independent of adjacent land development. In addition to requiring additional parking, this growth will require improvements to CHT service in the corridor. To meet this demand, the existing 10-minute headways, which provide 240 seats per hour, will need to increase to 5-minute headways to provide 480-960 seats per hour.

Table ES-1: Park-and-Ride Facility Demand

Parking Space Demand	2011	Annual Growth	2015	2020	2035
Existing P&R Lot	350	1.5%	371	375	505
TTA Expanded Service			135	135	180
Carolina North ^{1,2}			160	460	1,515
Total Demand			666	970	2,200
Supply	400		740	1200	2,400

¹ Contingent upon development implementation

² Assumes 260,000 SF of Research space



**Eubanks Road Expansion Park-and-Ride
Feasibility Study**
Chapel Hill, North Carolina

Figure ES-1
Vicinity Map

Chapel Hill, North Carolina

The existing park-and-ride is on a seven acre parcel owned by the Town on the north side of Eubanks Road providing 400 parking spaces on a 300' x 420' asphalt lot. If reconfigured at a cost of \$450,000, the existing property could accommodate 497 parking spaces, plus 30 additional spaces if a site design exception is granted. Reconfiguration of the existing lot allows for immediate construction and meets the short-term demands, 2015 demands less Carolina North. Expansion on a surface lot to meet the demand of 1,200 spaces, the parking lot footprint would replace the existing lot while extending into adjacent properties with one sized approximately to 615' x 615', and then 615' x 955' for 2,400 spaces. A surface lot expansion has the following advantages:

- Lower capital and operations and maintenance costs
- Construction which is easier and has a shorter-duration

The results of this study suggest expanding in two phases by providing capacity of 1200 parking spaces, with a 240' x 480' footprint garage, including a new intermodal center in the near-term; followed by a second garage of 1,200 spaces in the long-term. The advantages of building a garage facility versus a surface lot are:

- Reduces property acquisition requirements
- Reduces site coverage and impervious surface, reducing storm water runoff and improving storm water quality
- Reduces walk distances from parking to transit
- Preserves forested areas and limits disturbance to habitat
- Provides shelter from the elements (excessive heat, sun, rain, snow, etc) for transit passengers

A 2015 traffic impact analysis was performed as a part of the adjacent land development concept. The results are provided for planning the early stages of expansion. Although specific timeframes are identified for this expansion, the pace of growth in the Town and the rate of development of Carolina North are not absolutely linked to these horizons. As such, the pace of growth and development will correspond to the pace at which implementation of expanded parking is needed.

Eleven different sites were processed through a feasibility assessment and ranking based on a variety of criteria including: Access, requirement of Railroad Crossings, Connection to Existing Development, Transit Service Plan requirements, Availability of Land, Zoning/Land Use, Structured Parking Restrictions, Ownership, Topography, Wetland/Floodplain Constraints, Tree Coverage, Zoning and potential for Hazardous Materials discovery.

The recommended alternative is arranged for easy parking access and fluid bus service. Access on Eubanks Road is envisioned to be through two driveways with one under traffic signal control. The results indicate that the existing site shows the most potential for supporting the expansion of the Park-and-Ride facility, either with or without use of adjacent land. Additional development at this site has also been discussed in some detail. If the Park-and-Ride expansion is accompanied by large-scale development, the existing access will require extensive off-site roadway construction in order to provide adequate capacity to the site.

Phased infrastructure improvements were considered and tested for capacity to serve the 2015 and long-range (2035) forecasted demand. The figures below present two concept for potentially phased improvements; although, further evaluation with the Federal Highway Administration (FHWA) and

the North Carolina Department of Transportation (NCDOT) is necessary for both alternatives. Figure ES-2 shows a series of traffic signal and turning lane additions needed to accommodate the Park-and-

Ride 2015 demand in conjunction with adjacent land development. The improvements are identified and labeled in segments which directly correspond to the cost estimates presented in Table 6-8. The naming convention references the associated year and sequential alphanumeric assignments. The alternative 2035 concept includes an “alt” in the label.

Figure ES-2: 2015: Conceptual Roadway Improvements with Transit-Supportive Development



Figures ES-3 and ES-4 present potential long-range solutions which address the buildout of the Park-and-Ride facility and the adjacent land development. Additional concepts were prepared and discussed to address the demand through the I-40 Interchange; however, advancement of the alternatives will include NCDOT and FHWA participation and are beyond the scope of this study.

Figure ES-3: 2035: Conceptual Roadway Improvements with Transit-Supportive Development



Figure ES-4: 2035: Alternate Conceptual Roadway Improvements with Development

