

KFH GROUP, INC.

City of Fayetteville Transit Development Plan

Technical Memorandum #1: Background, Goals, Objectives, Service Standards, Peer Analysis, and External Issues

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Prepared for the:



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INTRODUCTION

A Transportation Development Plan (TDP) is a planning tool used to analyze the need for transit in a defined area, evaluate the services that are provided, and develop strategies to match the service to the identified transit needs. The Fayetteville Area System of Transit (FAST) has hired KFH Group to conduct a TDP for the transit system. Technical Memorandum #1 is the first report prepared for the TDP. This first technical memorandum provides background information concerning the need for a TDP, discusses FAST in the context of the City, the County, and other transportation providers in the area, develops goals and objectives (for the study and for the system), and provides a peer group analysis.

BACKGROUND

FAST is a City department that provides fixed-route public transit services on 12 routes and Americans with Disabilities Act (ADA) complementary paratransit. Services are offered Monday through Friday from 5:30 a.m. to 7:30 p.m. and on Saturdays from 7:30 a.m. to 7:30 p.m. FAST is configured as a hub-and-spoke system, with many of the routes meeting for transfer opportunities at a downtown transfer center and at the Cross Creek Mall.

In 2007, in response to a number of issues related to the operation of the transit system, the City hired KFH Group to conduct a Management Performance Review (MPR). One section of the MPR addressed service planning, specifically recommending that FAST conduct a TDP for the following primary reasons:

- The City recently added significant land area and population through annexations, and the need for transit services in these new City areas has not been studied;
- There is not a TDP currently in place to provide guidance for the growth and development of public transit in the City;
- There are identified service problems with the current route network that need to be addressed in a comprehensive manner; and
- There are unmet transit needs in the service area that need to be evaluated and addressed.

OBJECTIVES FOR THE TDP

The following objectives for the TDP have been articulated by City staff and/or stakeholders:

- Propose a public transit system that will accommodate the footprint of the City of Fayetteville, including the newly annexed areas.
- Propose a system that will be efficient and effective for the citizens of Fayetteville by restructuring routes to meet changing community needs.
- Consider the needs of various different user groups, such as college students, employees, people with disabilities, and senior citizens.
- Look at opportunities for funding partners within the community.
- Increase productivity and operate within the fiscal constraints for FAST.
- Meet all applicable ADA requirements for ADA.
- Develop recommendations for three, five, and ten-year planning horizons.
- Develop estimates of the funding levels required to operate the “ideal” bus system for Fayetteville.

MISSION STATEMENT AND GOALS

The mission statement for FAST is “To provide safe, effective, reliable, courteous, and innovative public transportation to the citizens of Fayetteville.” FAST has had various goals over the years, but does not have an adopted set of goals for the program. It is important that FAST have specific goals, objectives, and service standards to help guide the system and objectively measure if the system is accomplishing its mission.

Draft Goals

Goals are broad and general, providing policy guidance as to how the mission of FAST should be accomplished. The following goals have been drafted for FAST and were discussed with the Transportation Advisory Committee. They are not presented in priority order.

1. Provide access to employment opportunities for City residents.
2. Help ensure that the City’s senior citizens can continue to participate fully in the community without driving a car.
3. Provide transportation options for city residents with disabilities.
4. Offer convenient transit access to City medical facilities, employment areas, shopping centers, schools, and community agencies.
5. Develop, maintain, and encourage the use of viable alternatives to the single occupant vehicle.
6. Strengthen coordination and explore partnerships between the City, the County, Fort Bragg, major employers, educational facilities, and other private entities to ensure effective service delivery in the community.
7. Manage, maintain, and enhance the existing public transit system.

These goals will be considered throughout the development of this plan to ensure that alternatives considered for implementation reflect these goals. Specific objectives to help meet these goals will also be developed over the course of the planning process, as direction is provided by the City Council, public input is considered, and data are fully analyzed.

SERVICE STANDARDS

Service standards are benchmarks by which service performance is evaluated. Service standards are typically developed in several categories of service, such as service coverage, passenger convenience, fiscal condition, and passenger comfort. The most effective service standards are straightforward, and relatively easy to calculate and understand.

Table 1-1 presents the service standards suggested for FAST. Some of the standards are policy-oriented and will need to be discussed with the City Council. Other measures are more data-driven and were calculated for Technical Memorandum #2 as part of the detailed analyses of the routes and services.

Table 1-1: Service Standards

Category	Standard
<p>Availability</p> <p><i>Service availability is a direct reflection of the level of financial resources available for the transit program. Service coverage, frequency, and span of service are considered under the category of "availability."</i></p>	<p>Service Coverage:</p> <ul style="list-style-type: none"> • Residential areas: <ul style="list-style-type: none"> ○ Areas with population densities of 2,000 people + • Major activity centers: <ul style="list-style-type: none"> ○ Employers or employment concentrations of 200+ ○ Health centers ○ Middle and high schools ○ Colleges/ universities ○ Shopping centers of over 25 stores or 100,000 sf ○ Social service/ government centers
<p><i>Of the 12 fixed routes, 10 currently operate hourly and two operate every 30 minutes.</i></p>	<p>Frequency:</p> <ul style="list-style-type: none"> ○ ___ min on weekdays ○ ___ min on Saturdays ○ ___ min for trunk routes ○ ___ min for neighborhood routes
<p><i>The current span of service is 5:30 am to 7:30 pm on weekdays and 7:30 am to 7:30 pm on Saturdays.</i></p>	<p>Span:</p> <p>___ a.m. to ___ p.m. on weekdays</p> <p>___ a.m. to ___ p.m. on Saturdays</p>
<p>Directness</p>	<p>Establish a standard for a maximum transfer rate. It is currently 67%, which is high</p>

Patron Convenience

Loading	25% standees for short periods acceptable
Bus Stop Spacing	5 to 7 stops per mile in core Fringe: 4 to 5 per mile, as needed based on land uses
Dependability	No missed trips 95% on-time service (0 to 5 minutes late) No trips leaving early
Road Call Ratio	➤ 20,000 miles between road calls.

This refers the number of miles in between vehicle breakdowns that result in a mechanic having to come to the bus to fix it or switch it out during service.

Fiscal Condition

Farebox Recovery	Significantly alter routes less than 60% of average Average is currently 10% Review and modify routes between 60% and 80% of average
Productivity (Pass./rev. hour)	Significantly alter routes less than 60% of average Average is currently 15.1 trips per revenue hour Review and modify routes between 60% and 80% of average

Passenger Comfort

Waiting Shelters	25 or more boardings per day
Bus Stop Signs	Should have the system name, contact information, and route
Public Information	Timetable, maps, advertising
Revenue Equipment	Clean and good condition

PEER ANALYSIS

While it is most relevant for a transit agency to examine its own performance over time, it is valuable to know the operating statistics for transit programs that could be considered “peers,” either by virtue of location, service area characteristics, or size. Operating statistics from five North Carolina urban systems are presented in Table 1-2, along with data from Metra in Columbus, Georgia. Metra was chosen as a peer because the service area is similar in size to FAST and there is a major military presence in the community (Fort Benning). These data were compiled from the 2007 National Transit Database (NTD). Five of the peers are in the same Federal Transit Administration funding category as FAST (urbanized areas of over 200,000 people). This is relevant as these systems typically need more local operating funds than those in smaller urbanized areas as they are not permitted to use their federal funding for operating (other than specific “capitalized” categories including preventive maintenance, ADA paratransit, and planning). The WAVE in Wilmington was included as a peer because it is nearby and of a similar size (though it is in an urbanized area of under 200,000 people). Greensboro and Durham have much larger transit programs, though they operate in urbanized areas of similar populations. Mean values including and excluding these two systems are presented in Table 1-2, as the programs are so much larger in scope.

As the mean values show, FAST is a smaller program than the mean with a third fewer annual revenue miles and four fewer vehicles in peak service. The productivity data for FAST, in terms of passenger trips per revenue hour is very close to the mean (17.26- FAST; 17.69- mean). The passenger trips per revenue mile for FAST are also close to the mean (1.22- FAST; 1.25- mean). The total budget for FAST is lower than the mean, while the cost per revenue hour and the cost per passenger trip are higher. The farebox recovery for FAST was 13 percent and the mean among the peers was 18 percent. The actual farebox revenue for FAST is the lowest among the peer systems. The local funds expended per capita for the 2007 NTD reporting year were \$8.90, with the mean among the peers at \$17.09 (again excluding the very large programs). These data are from the 2007 NTD report and do not reflect current values, which have changed for FAST and likely for the other systems as well. Current FAST data are fully analyzed in Technical Memorandum #2.

FAST is the only program among the peers that does not have evening transit service (defined as operating after 7:30 p.m.), while only three of the peer systems offer Sunday service.

**Table 1-2: OPERATING STATISTICS FOR FAST AND SELECTED PEERS
2007 NATIONAL TRANSIT DATABASE**

	<i>Selected North Carolina Cities</i>							MEAN Values for systems under \$10m	MEAN Values all systems
	Fayetteville FAST	Winston Salem WSTA	Greensboro GTA	Wilmington WAVE (*)	Asheville ATS	Durham DATA	Columbus Georgia (Ft. Benning) Metra		
UZA Population	276,368	299,290	267,884	161,149	221,570	287,796	242,324	240,140	250,912
UZA Square Miles	167	251	135	119	207	157	136	176	167
Service Area Population	174,900	199,500	235,262	55,530	72,789	187,000	230,208	146,585	165,027
Service Area Sq. Miles	92	108	118	32	45	93	132	82	89
Service Area Density	1,901	1,847	1,994	1,735	1,618	2,011	1,744	1,769	1,836
Annual Passenger Trips	1,180,679	2,899,678	4,004,588	1,553,712	1,509,629	4,766,421	1,102,498	1,649,239	2,431,029
Annual Revenue Hours	68,419	157,208	211,650	92,954	80,558	210,738	72,064	94,241	127,656
Annual Revenue Miles	970,307	1,947,253	3,073,390	1,400,173	1,098,714	2,966,468	1,046,677	1,292,625	1,786,140
Total Operating Expenses	\$4,256,931	\$9,761,194	\$16,006,122	\$4,683,043	\$4,289,874	\$15,876,780	\$3,795,402	\$ 5,357,289	\$ 8,381,335
Fare Revenues	\$546,482	\$2,396,613	\$1,549,802	\$753,920	\$585,915	\$2,765,183	\$867,767	\$ 1,030,139	\$ 1,352,240
Local Funds Expended	\$1,556,122	\$3,309,226	\$8,135,036	\$1,325,359	\$1,691,802	\$8,353,323	\$2,960,135	\$ 2,168,529	\$ 3,904,429
Local Funds Per Capita	\$8.90	\$16.59	\$34.58	\$23.87	\$23.24	\$44.67	\$12.86	\$ 17.09	\$ 23.53
# Vehicles Peak Service	26	52	70	31	22	70	20	30.2	41.6
Trips/Hour	17.26	18.44	18.92	16.71	18.74	22.62	15.30	17.29	18.28
Trips/Mile	1.22	1.49	1.30	1.11	1.37	1.61	1.05	1.25	1.31
Cost Per Trip	\$3.61	\$3.37	\$4.00	\$3.01	\$2.84	\$3.33	\$3.44	\$ 3.25	\$ 3.37
Cost Per Hour	\$62.22	\$62.09	\$75.63	\$50.38	\$53.25	\$75.34	\$52.67	\$ 56.12	\$ 61.65
Cost Per mile	\$4.39	\$5.01	\$5.21	\$3.34	\$3.90	\$5.35	\$3.63	\$ 4.06	\$ 4.41
Fare Recovery	13%	25%	10%	16%	14%	17%	23%	18%	17%
Current Base Fare	\$1.00	\$1.00	\$1.20	\$1.50	\$1.00	\$1.00	\$1.25	\$ 1.15	1.14
Night Service	no	yes	yes	yes	yes	yes	yes		
Sunday Service	no	no	yes	yes	no	yes	no		

(*) This system is permitted to use federal funds for operating expenses (UZA under 200,000 pop.)

Source: Federal Transit Administration, 2007 National Transit Database

EXTERNAL ISSUES FOR THE STUDY

There are a number of issues external to the transit program that will need to be acknowledged and considered during the course of developing recommendations for the transit program. These issues include transit regionalization; City annexations; other growth and development in the City; and Fort Bragg growth and development.

Regionalization of Transit

The travel patterns of area residents are not defined by City and County borders. The Fayetteville area functions as a region, with County residents from Spring Lake, Hope Mills, Eastover, Falcon, Godwin, Linden, Stedman, and Wade traveling to Fayetteville for work, shopping, medical, and other services. While the focus of this TDP is the City, our preliminary survey results do include a number of requests for service to areas outside of the City.

Public and community transportation in the region has historically been operated separately, with FAST serving the City, and the Cumberland County Community Transportation Program serving areas outside of the City. The programs have worked together in the past for the provision of human service transportation, and FAST currently operates the Spring Lake route with funding from the County-based program (State operating assistance funds) and from the Town.

There is currently an ongoing study that is examining the potential for consolidating and/or further coordinating city and county transportation services. This study, "Consolidated Transportation Development Plan for the Cumberland County Area" is further discussed in Technical Memorandum #3.

The final outcome of the consolidation study may affect the organizational structure of FAST, as well as the provision of paratransit services. The fixed-route public transit network (including any changes that may be recommended as a result of this TDP) will likely continue to serve as the core base of public transportation services in the region under any scenario.

City Annexations

In 1983 the North Carolina General Assembly amended State annexation law in a manner that provided the City of Fayetteville with the authority to annex adjacent urban areas into the City and extend urban services.¹ The change to the annexation law

¹ Annexation Report and Plan of Services. City of Fayetteville, North Carolina. Phase 5 Annexation, Areas 1,2,5,6,8,9,10.

was brought about primarily because of the development of serious septic tank problems in the urbanized area of Cumberland County.

The City began an annexation program in 1983 and in 1994 the City, Cumberland County, and the Public Works Commission (PWC) agreed upon a ten-year plan for annexing the urban areas closest to the City. The largest of the annexations, Phase 5, occurred in 2006 and included 28 square miles and over 43,000 residents. The Annexation Plan of Services listed the following City services to be extended to the newly annexed areas:

1. Police protection;
2. Fire protection and emergency rescue services;
3. Solid waste and fleet maintenance;
4. Engineering, maintenance, and recreation;
5. Planning and inspection services;
6. Administrative services;
7. Street lighting; and
8. Water and sewer services.

While these annexations have added to the City's tax base and extended City infrastructure to many people, the additional geographic areas have been difficult for the transit program to address for the following reasons:

- Extended transit services were not discussed, addressed, or budgeted for in the Annexation Report and Plan of Services for the 2006 Annexations.
- The newly annexed areas are developed with a land use pattern that is more dispersed and therefore more difficult to serve in an efficient manner.
- Connecting some of the newly annexed areas to major destinations requires developing routes that are either very long or require multiple transfers.

These issues are apparent when examining the productivity of the transit routes that serve the western areas of Fayetteville. They are significantly less productive than the routes that serve the older areas of the City, as will be further discussed in Technical Memorandum #2.

The latest round of annexations includes an area called, "Gates Four," located in an area that is surrounded by land annexed in 2006 in the southwest quadrant of the City. The annexation is in process and is expected to be completed in November 2009.

Other Growth and Development in the City

While there is not a current City of Fayetteville Comprehensive Plan in place, Cumberland County and its municipalities have been working on a 2030 Growth Vision Plan. A draft of this plan (August 2008) recommends the development of a balanced, multi-modal transportation system. The following policies in support of a balanced transportation system are listed in the draft plan:

“Policy 4.1: Opportunities to enhance regional transportation connections between Fayetteville and other parts of the state and region shall be supported; such opportunities may include not only roadways, but also commuter rail passenger service between Cumberland County and other metropolitan areas within the state.

Policy 4.2: The completion of the outer loop around Fayetteville shall be supported as the highest priority highway improvement project in Cumberland County.

Policy 4.3: Pedestrian and bikeway facilities shall be encouraged as energy-efficient, healthful, and environmentally sound alternatives to the automobile. All future road construction and expansion within the region shall consider opportunities for bikeways and pedestrian ways within the project.

Policy 4.4: Local communities shall strive to make areas under their jurisdiction pedestrian-friendly through development standards and public improvements.

Policy 4.5: As new neighborhoods are developed, at least two points of access/egress should be provided. The secondary access/egress may be gated with a breakaway wall, but should allow for passage of pedestrians and bicyclists.

Policy 4.6: The mobility needs of all citizens shall be recognized through the provision of transportation alternatives to the automobile. Local communities shall lobby the state and federal governments for pedestrian, bikeway, and transit improvements proportionate to the large number of people benefited.

Policy 4.7: An area-wide bikeway system should be tied into the All-American trail.

Policy 4.8: The operational success of area-wide mass transit services shall be supported through the encouragement of compact, transit-sensitive development patterns. Higher intensity development shall be encouraged along prospective transit corridors, between municipalities and employment centers, Fort Bragg, and other population centers.

Policy 4.9: Access to the area’s major roadways shall be managed so as to preserve the intended purpose of the highway and to protect the investment of taxpayer dollars used to build the facility. Methods may include, for example, limited driveway access, minimum lot frontages, the use of service roads and parallel access roads, connections between adjoining parking lots, etc.

Policy 4.10: Opportunities to enhance air passenger service at Fayetteville Regional Airport shall be supported. Land uses such as industrial development, warehousing and distribution shall be the preferred development activities on lands influenced by airport impacts (e.g. noise and safety issues).”²

The following draft actions were developed in the plan, in support of the policies:

“Action 4.1: Re-examine the regional transportation plan in light of the impending dramatic growth of Fort Bragg due to BRAC and Army Modular Force. (The latest information on growth includes a net increase of 7,064 military, an associated 12,716 family member, 1,795 civilians, and another 351 contract employees. For the past 26 years, Fort Bragg has been essentially a stable population with no growth.)

Action 4.2: Continue to support the currently adopted area-wide Bicycle and Pedestrian Plan.

Action 4.3: In keeping with currently adopted Bicycle and Pedestrian Plan, include bike lanes as part of street construction standards. Apply these standards when appropriate and as may be consistent with the Bicycle and Pedestrian Plan.

Action 4.4: Reexamine area development standards to evaluate the need for improved pedestrian systems (sidewalks, greenways, etc.) in new residential developments.

Action 4.5: Seek funding sources, such as Enhancement Grants, to provide sidewalks and street furniture, lighting, etc. to improve pedestrian-oriented areas.

Action 4.6: Reexamine area development standards to require bus shelters or, at a minimum, bus pull offs in new higher density residential and commercial developments served by two or more bus routes.

² 2030 Growth Vision Plan, Draft, August 2008, prepared jointly by Cumberland County and its municipalities guided by the Growth Vision Task Force with consulting assistance by Glenn Harbeck Associates.

Action 4.7: Seek funding sources to establish commuter-rail passenger service.

Action 4.8: Continue to support development standards that require parking lot connections and shared driveway access for commercial developments whenever possible.”³

The vision of a balanced transportation system is supportive of the mission of FAST and will be referenced throughout the development of this TDP.

Fort Bragg Growth and Development

The 2005 Defense Base Closure and Realignment Commission (BRAC) Report included a series of recommendations to streamline and consolidate military facilities, where feasible. The extensive report details facilities that are to be closed or downsized and where units based at those facilities are to be re-located. As a result of the BRAC recommendations, Fort Bragg is planning a major expansion of military and civilian personnel. The “Comprehensive Regional Growth Plan for the Fort Bragg Region,” indicated that over 40,000 new residents will arrive to the region by 2013 as a result of the realignment. It is expected that the majority of these new residents will live off-base in Cumberland County and the surrounding counties. The report further indicates that about 9,000 residents will live in military housing, either on base, in rental housing, in the Linden Oaks community, or in other privatized housing.⁴

These additional personnel are expected to exacerbate the already congested traffic conditions at the six primary access points to Fort Bragg. Chapter 4 of the Comprehensive Regional Growth Plan addressed the need to improve transportation infrastructure in the region by recommending the following actions with regard to surface transportation:

1. Initiate a sub-area transportation planning and traffic study for the area adjacent to the perimeter of Fort Bragg (including portions of Cumberland, Hoke, Moore, and Harnett Counties).

³ 2030 Growth Vision Plan

⁴ Comprehensive Regional Growth Plan for the Fort Bragg Region: Assessment and Recommendations, Chapter 4, Transportation, prepared for the Fort Bragg and Pope AFB BRAC Regional Task Force, by TDA, Inc., et al, September 2008.

2. Improve access to and integration of FAST and the on-base shuttle service. Specific improvements cited are:
 - a. Expand and develop express bus service along the NC24 Corridor to Stedman; I-95 by way of I-295 to Godwin, Falcon, and Wade; and I-95 by way of Ramsey Street to the Linden Community Growth areas.
 - b. Adjust the Route 17 to accommodate an additional transfer opportunity with the on-base shuttle at the Reilly Road access point.
 - c. Reduce the on-base shuttle's current headway from 30 minutes to 15 minutes; and
 - d. Conduct a survey of the residents of Heritage Village (Hoke County) to determine the type of shuttle service that may be provided off-base.
3. Close Bragg Boulevard and Widen/Improve Murchison Road
4. Hire a base Travel Demand Management (TDM) Coordinator to oversee the development and implementation of TDM Programs (carpool, vanpool, priority parking, transit interface at the access points, etc.)
5. Support Transportation Improvement Program (TIP) projects identified for the region.
6. Support proposed passenger rail initiatives.
 - a. Raleigh- Wilmington via Fayetteville
 - b. Fayetteville- Raleigh Commuter Rail
 - c. Southeast High Speed Rail Corridor
7. Identify the needs of the military and civilian business community that are moving to the region and develop a plan to enhance intercity passenger service between Fayetteville and the Washington D.C. area and the Northeast Corridor.

Clearly the expansion of personnel assigned to Fort Bragg will affect traffic and circulation in the City and the region, as well as directly impacting FAST services. The Task Force has included a number of suggested improvements for FAST and these will be considered in the context of this current TDP.

SUMMARY

This first technical memorandum has provided an introduction to the TDP process, as well as background information concerning the need for a TDP. Goals,

objectives, and service standards were discussed, with specific goals and service standards drafted for review. Peer data has been presented to give some context to the magnitude of the transit program with regard to other transit programs in the State, and elsewhere, as well as to show typical statistical values. Finally, external issues pertinent to the provision of transit in the City were presented and discussed. The next two technical memoranda will document and analyze the transit services currently provided in the City (Technical Memorandum #2) and present a transit needs analysis (Technical Memorandum #3). These three reports will provide the necessary background and data analysis needed to develop meaningful alternatives for the City to consider for the future growth and development of FAST.