Chapter 5: Service Area Needs and Ridership

One can drive between cities in the region, ride a bike on the greenway or even walk between the cities, but one often cannot take transit to get there.

**NEED - THE KEY ISSUE**

The Northwest Arkansas urban area has a distinct shortage of transit service with much of that shortage centered on the lack of connectivity between cities. Unfortunately, this shortage is all too common in urban areas like Northwest Arkansas. That is, urban areas without a “transit dominant city.” This vagary of geography puts Ozark Regional Transit (ORT) and the region at a significant disadvantage in funding and the provision of service, while ratcheting up the need for service.

To illustrate this point, when comparing the Northwest Arkansas service area to similar sized urban areas and considering the presence of a major university, this region is underserved with 15 full time peak fixed route public transit vehicles.

Looking at similar sized urban areas with dominant cities (according to the latest National Transportation Database) demonstrates this point (Figure 5-1):

**Figure 5-1: Peer Vehicle Comparison**
• Wichita has 38 peak fixed route vehicles (not including Wichita State’s fleet).
• Knoxville, with a major university, has 59 peak buses
• Des Moines, without a major university, has 108 peak buses

The comparison of per capita ridership tells a similar story (Figure 5-2).

**Figure 5-2: Peer Per Capita Ridership Comparison**

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**Northwest Arkansas - Dynamic and Fast Growing: This is Exactly the Type of Community and Type of People that are Attracted to Smart Transit**

Northwest Arkansas is one of the fastest growing regions in the nation. To make another point: the area attracts people from all around the world and is a dynamic region driven by major corporations and a major university. The region also has some very significant employment densities throughout the service area. These are all substantial positives for transit usage.

**DETERMINING POTENTIAL RIDERSHIP**

The service area sees a multi-directional commute as the largest destinations are at each end of the service area with multiple large destinations spread from Bentonville to Fayetteville (Figure 4-11). This by itself gives ORT the advantage of a two way commute.
Potential Ridership

The KFH Group has been conducting these types of analyses for over 22 years. We rely on a number of estimation models/methodologies combined together. Unfortunately, reliance on traditional transportation models is typically ineffective in areas such as Northwest Arkansas. According to the authors of the - Northwest Arkansas Transportation Alternatives Analysis (Pg. 2):

“While the model has served the area well for automobile-based planning of the regional street and highway plan, it is extremely limited in its ability to estimate demand for alternative transit facilities.”

Determining needs for an area such as Northwest Arkansas cannot rely on a traditional model and in fact there are a number of other methodologies that can accurately measure need and potential ridership.

Multiple Approaches to Ridership Estimation

It can be reasonably established that region has service levels far below its potential when:

- Looking at peers
- Considering the dynamic community
- Generating high employment densities

Ridership estimation assumes the level of service selected for this plan:

1. A high level of BRT service: 10 minute peak and 30 minute off peak headways
2. 6 a.m. to 10 p.m. service hours, Monday through Friday
3. Revisions to existing service to complement BRT
4. Signal prioritization
5. Enhanced stations with some elevated platforms
6. Comfortable reliable buses
7. Well trained staff
8. Fare free for 6 – 12 months

The KFH Group used three approaches to ridership estimation. For those interested in the detailed analysis it can be found in Technical Memorandum No. 3. These estimates are most likely to be accomplished over a 2 – 3 year horizon as the service matures. The processes included:

- Mode Split – Using mode split, the study team looks at the overall number of one way trips taken in the region on a daily basis. Using a mode split consistent with much of the nation, this would result in 4,200 daily intercity trips daily (using a 2 percent mode
split for intercity trips) and 1,100 daily intra-city trips (using a one-quarter percent mode split). The total ridership in this scenario is **5,300** daily trips and **1.35 Million** one way trips annually.

- **Service Elasticities** – How service type and levels affect ridership. Elasticities allow us to estimate the effect of improvements on the service. Estimates yield a productivity of over 35 one way trips per hour, or **5,880** one way trips per day and almost **1.45 million** trips annually (weekdays).

- **Per Capita Ridership** – a look at the overall level of transit (Figure 5-2). Increasing per capita ridership to the next lowest systems in our peer group from 1 trip per capita to 6 trips per capita yields about 1.8 Million annual trips system wide. Subtracting out the existing 300,000 annual trips yields **1.5 million** trips annually or **6,000** daily trips.

These three approaches converge in their estimates that the Smart BRT can generate **1.3 Million to 1.5 Million** trips annually and **5 -6,000** one way trips per day and possibly boost service levels on the feeder routes.