

5. Evaluation Matrices

Two evaluation matrices were prepared for the eight corridors assessed: one for both quantitative and qualitative issues. Those matrices are shown in Tables 5-1 and 5-2, respectively. The matrices summarize the relative merits of the corridors examined.

Based on this preliminary analysis, the Cumberland Avenue/Kingston Pike Corridor seems to have the greatest potential for enhanced transit service to facilitate transit oriented development, particularly in the area of the corridor east of Alcoa Highway. The corridor connects directly to downtown Knoxville, serves the densely populated University of Tennessee area and could facilitate further transit-oriented development in that corridor. The Cumberland corridor has fewer obstacles to service development than many of the other corridors and has high transit ridership on existing routes. However, the current development plan for the corridor proposed to reconstruct the roadway to eliminate a lane in each direction to allow for on-street parking and curb extensions. While these changes would improve the quality of streetscape in the corridor, they would essentially preclude development of premium transit service. Another challenge is presented by the residential areas west of Alcoa Highway which have been developed at densities that are not high enough to support premium transit service.

Magnolia Avenue has high existing transit ridership, high residential and employment densities, and a relatively flat alignment in the part of the corridor nearest to downtown. Magnolia Avenue's connection to downtown is indirect, but an adequate connection to the new downtown transit center could be made. Perhaps most importantly, the wide right-of-way on Magnolia Avenue would make implementation of premium transit service in the corridor relatively simple. Martin Luther King Jr. Avenue, which runs approximately parallel to Magnolia, is also a viable option and would allow for significant redevelopment of under-utilized property in that corridor.

Western Avenue also has relatively high transit ridership and higher than average population and employment densities. The connection to downtown via Summit Hill Drive is good, but the terrain of some of the surrounding areas could pose a problem for development and/or redevelopment in the corridor.

Most of the other corridors that were examined have multiple flaws or issues that would make them less desirable choices for development of premium transit service. Most of the other corridors have significantly lower population and employment densities and existing transit ridership. Several of the corridors – particularly the rail corridors to the south – are not served by existing transit service, making it difficult to determine the potential market for upgraded transit service. In these corridors, implementation of express or local bus service would be an important first step in developing the corridors as potential sites for premium bus or rail transit. A number of the other corridors have issues related to the rugged terrain that surrounds downtown Knoxville that would make it difficult to develop rail lines or the critical higher-density housing, commercial and mixed-use development that would be necessary to support a major investment in a premium transit system.

**Table 5-1
Quantitative Evaluation Matrix**

Corridor	Guideway Miles	Existing Annual Ridership	Average Population Density (people per square mile)	Average Employment Density (jobs per square mile)	Capital Cost Estimate	Annual Operations and Maintenance Cost Estimate
1. Cumberland Avenue/Kingston Pike	15	Route 10 - 19,013 Route 11 A/B - 216,617 Route 50C - 143,671 Route 90 A/B 165,296	1,610	2,300	BRT Low - \$84.3 million BRT High - \$384.3 million LRT - \$711.5 million	BRT - \$1.9 million LRT - \$3.7 million
2. Norfolk Southern Rail Corridor	N/A	Route 10 - 19,013 Route 11 A/B - 216,617 Route 50C - 143,671 Route 90 A/B 165,296	1,404	1,000	Commuter Rail - \$12 million	Commuter Rail - \$2.3 million
3. Western Avenue	16.6	Route 11 A - 216,617 Route 15 - 3,133 Route 101x - 11,371 Route 102x - 19,960	2,200	2,100	BRT Low - \$93.7 million BRT High - \$425.7 million LRT - \$730 million	BRT - \$2.0 million LRT - \$4.9 million
4. North Broadway Street	15.4	Route 22 - 172,591	1,830	2,100	BRT Low - \$86.6 million BRT High - \$394.6 million LRT - \$399.1 million	BRT - \$1.9 million LRT - \$4.7 million
5. Martin Luther King Jr. Avenue	8.4	Route 31 - 194,166 Route 90 A/B - 165,296	2,680	3,300	BRT Low - \$47.5 million BRT High - \$215.5 million LRT - \$399.1 million	BRT - \$1.0 million LRT - \$2.5 million
6. Magnolia Avenue	9	Route 31 - 78,971 Route 90 A/B - 92,555	2,600	2,400	BRT Low - \$75.3 million BRT High - \$343.3 million LRT - \$634.8 million	BRT - \$1.5 million LRT - \$3.7 million
7. Chapman Highway/James White Parkway	13.4	Route 40 A/B - 78,971 Route 41 - 92,555	1,000	1,400	BRT Low - \$95.7 million BRT High - \$435.7 million LRT - \$806.6 million	BRT - \$2.0 million LRT - \$4.9 million
8. Alcoa-Knoxville Rail Corridor	N/A	Route 40 A/B - 78,971	1,275	1,550	Commuter Rail - \$24.3 million	Commuter Rail - \$4.2 million

Table 5-2
Qualitative Evaluation Matrix

Corridor	Land Use	Pedestrian Conditions	Connectivity to Downtown	Connectivity to South Waterfront Development	Connectivity to Cumberland Avenue Corridor	TOD Potential
1. Cumberland Avenue/ Kingston Pike	Medium to high density mixed use downtown and along Cumberland Avenue. Lower-to-mid density residential and commercial/retail along Kingston Pike.	Sidewalks available in downtown and near downtown. Sidewalks intermittent or non-existent along outer portions of the corridor.	Excellent, connects directly to downtown via Cumberland/Main	None	Yes	East of Alcoa Hwy has highest potential for TOD. Some redevelopment and infill opportunities west of Cherokee Country Club.
2. Norfolk Southern Rail Corridor	Light to medium industrial uses between downtown and Third Creek. Low to medium density commercial between Third Creek and Morrell Road.	Rail corridor has low pedestrian access. Corridor is isolated, with wooded areas or industrial uses along most of its length.	Fair to poor, connects north of downtown, approximately 0.5 miles from CBD.	None	Operates parallel to Cumberland, approximately 0.4 miles from the corridor	Some potential around downtown terminal. Some redevelopment potential between Kingston Pike and Royal Crown Drive.
3. Western Avenue	Industrial, public housing, cemetery near downtown. Underutilized retail section mid-corridor. Lower density beyond Hinton Road.	Sidewalks available in downtown and near downtown. Sidewalks intermittent or non-existent along outer portions of the corridor.	Good, connects via Summit Hill Drive	None	None	Some redevelopment of public housing has occurred near downtown. Some potential for redevelopment of older commercial/retail centers or infill development mid-corridor. Topography could limit redevelopment opportunities.
4. North Broadway Street	Industrial, institutional, cemetery and small-scale commercial near downtown - some infill occurring. Lower density commercial/retail further north, with lower density housing behind retail. Higher density areas between I-40 and I-640.	Sidewalks available in downtown and near downtown. Sidewalks intermittent or non-existent along outer portions of the corridor.	Excellent to good, connects via Broadway	None	None	Some redevelopment potential in older neighborhoods, particularly just north of downtown. Possible redevelopment or infill development north of I-640. Topography could limit development potential in northern portion of corridor.
5. Martin Luther King Jr. Avenue	Light industrial and medium density residential, including public housing, near downtown. Small single family homes, institutional and commercial uses further east. Ripe for redevelopment. Density somewhat higher and more varied along Magnolia Ave.	Sidewalks available throughout most of the corridor, intermittent or non-existent in short segment at northeastern end.	Good, connects via Summit Hill Drive	None	None	Significant redevelopment potential throughout corridor.
6. Magnolia Avenue	Light industrial and medium density residential, including public housing, near downtown. Transitions to mixed use corridor of single family homes and commercial development from Summit Hill to end of corridor.	Sidewalks generally available throughout corridor.	Good, connects via Church Avenue	None	None	Some redevelopment potential at commercial sites throughout corridor.
7. Chapman Highway/ James White Parkway	Suburban commercial corridor, with lower density commercial development to Sevier Hwy. Transitions to mostly rural development south of Sevier Hwy.	Sidewalks present only along east side of Chapman between Tennessee River and Moody Avenue. Few barriers between pedestrians and traffic.	Excellent to good, connects via James White Parkway	None	None	Some redevelopment potential, particularly between downtown and Sevier Hwy. Topography may limit development in some areas.
8. Alcoa-Knoxville Rail Corridor	Lower density suburban and rural residential development. Land use intensity is greater at southern end of corridor in Alcoa.	Little or no pedestrian facilities/access.	Good to fair, possible connection via rail alignment near World's Fair Park	Possible	None	TOD would require development of new towns around rail stations in corridor.

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