

Technical Memorandum

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LRK

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RE: Transportation Strategies for Haywood County

Haywood County is updating its Future Land Use map with the assistance of LRK in response to the construction and 2025 opening of Ford's Blue Oval City in the southwest area of the County, just north of the I-40/TN 222 interchange and just south of Stanton. Blue Oval City consists of a vehicle manufacturing plant and a battery plant, totaling approximately ten million square feet and employing 6,000 staff. The County has commissioned this study to assist in planning for an influx of new population and the subsequent need for new housing and services. As the County grows, it will need to develop a transportation system that serves its population without degrading the character of what makes this part of Western Tennessee so special: the scenic vistas, small towns, and rural byways. Hearing clearly from stakeholders that these attributes are important to residents, this high level look at transportation strategies seeks to balance the provision for safe and efficient mobility for current and future residents while not sacrificing the very essence of what makes this area a treasured place. Too often in Tennessee and elsewhere are scenic vistas and small towns spoiled by highway widenings; this set of strategies presented seeks to avoid the future that so many communities have realized with transportation solutions that do not respect and respond to the surrounding context. The transportation strategies contained herein are tailored to support and enable the County's desired land use vision scenario, being one of focusing mixed use development in areas already impacted by human settlement, and in a form that preserves and protects the countryside that is dear to Haywood County.

This effort began with a review of the community vision and desires as expressed in an online community survey and at a series of community “open houses.” From those, the following items were expressed as “Vision and Growth Principles” in summer 2023. The vision statement directed the plan “To ensure that Haywood County respects, preserves, and enhances its values, diversity, history, quality of life, and character as the community grows. The statement went further to articulate the following Growth Principles and Objectives that were important to the citizens of Haywood County:

- **GROW & PROTECT:** Accommodate growth and change while ensuring the scale and nature of investment does not erode or degrade the rural character, iconic landscapes, productive farmland, environmentally sensitive areas that should be protected for future generations;
- **GUIDE & FOCUS:** Guide growth and focus investment to occur in and around existing communities, thereby preserving the County’s rural character, agricultural lands, and natural environment;
- **INVEST IN EXISTING:** Encourage improvement, revitalization, and beautification of existing communities, corridors, and gateways including the maintenance and reuse of existing structures;
- **ACCESSIBILITY TO FACILITIES:** Locate public and private facilities in existing communities or designated growth areas to be more accessible to citizens and complementary to the surrounding area;
- **HIGH-QUALITY & INCLUSIVE:** Promote high-quality places that enhance small town charm, provide inclusive public space, foster personal growth, and support small businesses;
- **MAINTAINING ATTAINABILITY:** Provide a wider variety of housing types and range of development forms with an emphasis on maintaining attainability and promoting inclusion for people of all lifestyles, ages, and economic means; and
- **IMPROVE CONNECTIVITY:** Improve the connectivity of communities and increase options for walking, biking, and transit.

The fiscal analysis for the County showed that the preferred growth scenario would be the “Community Concentration and Countryside Conservation” scenario, by which growth would be designated within existing settlement areas or targeted at specific crossroads (called “Four Ways”). This scenario is predicated on providing goods and services within proximity to settlement to alleviate the distances current and future residents would have to travel to satisfy general daily needs. This idea of mixed use also emphasizes the ability for residents to make shorter trips, some of which could be accomplished by walking or biking; this ability will require that these settlement areas be supported by a finer grained transportation network of slower connected streets with facilities for people to safely walk or bike. This strategy also allows for preservation of the vistas and farmland that makes Haywood



TN 19 in Nutbush. Area could be the site of new settlement supported by network of walkable streets and mixed use.

County special, and by providing network in this pattern the need for wholesale highway widening and its scarring of the landscape is mitigated. To develop this strategy, we reviewed the draft land use maps, reviewed the community goals and issues articulated in the community survey, and compared the relative traffic impacts of the Blue Oval facility to the current roadway network to see where enhancements should be focused and what they should consist of. Culminating with a two day site visit, we observed firsthand the major corridors of the County and their traffic and character. We have summarized these findings and set of strategies in the following memorandum.

Traffic Data Evaluation

Located within Haywood County, the Blue Oval facility will have a significant impact on the transportation network within the County, especially the roadways closer to the facility. Impacts will distribute to the roadway network within the County farther away from the facility, lessening the impact on any single roadway. Estimates of new daily traffic attributable to a heavy manufacturing facility with 6,000 employees is estimated at 15,000 trips per day using ITE's trip generation methodology. Knowing that the 6,000 employees only encompass the Blue Oval facilities and not additional suppliers and vendors who usually co-locate with auto manufacturing plants, assuming an additional

4,000 employees (10,000 total employees) raises that number to slightly over 21,000 new trips per day. Understanding that many employees may live in the Jackson or East Memphis areas initially, a majority of these trips will rely on I-40 for access to work, with another significant amount using US 79. This volume will be concentrated near the facility with roadways such as I-40 and TN 222 seeing the bulk of the traffic, and distributing throughout the network as it moves farther away from the plant. TN 222 has been recently widened from two to four lanes from the I-40 interchange along the Blue Oval frontage to the new Haywood County EMS and Fire Station just north of the Blue Oval property.

A cursory review of the roadway network's current TDOT traffic count data reveals that most of the roadway network is not operating anywhere near its capacity currently. The highest trafficked roadway in the study area, I-40 currently carries approximately 35,000 vehicles per day between TN 222 and TN 179. With four freeway lanes, I-40 should be able to accommodate in the range of 60,000 vehicles per day before significant congestion is seen; this would reflect an almost 40% increase in traffic volumes. Daily capacity estimates are obtained using Florida DOT's Generalized Level of Service tables (FDOT, 2020). Surface roadways carry even less, with the peak reported daily volume being just over 10,000 vehicles per day on the four lane US 79 Bypass just south of Main Street near Downtown Brownsville.

The rural two lane roadways which could potentially be feeders for the Blue Oval facility for workers commutes again hold a significant amount of excess capacity, with capacity of an uninterrupted rural two-lane state roadway estimated at between 25,000 and 30,000 vehicles per day; in areas closer to towns where signals are present, that capacity is reduced to between 14,000 and 16,000 vehicles per day. A few typical rural 2-lane roadways with their 2022 TDOT daily counts are listed below:

- US 79/TN 1 (just east of TN 222 and Stanton), 2,004
- TN 222 (between Blue Oval and Stanton), 928
- TN 76 (south of Brownsville), 8,783
- TN 54 (west of Brownsville), 2,686
- TN 19 (south Nutbush), 2,296
- US 70 (west of Union Mercer Road) 4,673
- TN 179 (south of I-40), 887

The peak volume on most of these segments is less than 50% of the signalized capacity and even less on the rural unsignalized segments, allowing significant capacity for traffic growth to be distributed among the existing roadway network without the need for wholesale widening of two lane highways. This strategy is also in line with the Growth Principles inasmuch as they look to preserve and protect the rural character and quality of life for Haywood County residents, both today and in the future.

Observations from Site Visit and Research

The team spent a day driving these routes in Haywood County to observe the roadway conditions and elements such as horizontal and vertical geometry, presence or absence of shoulders and recovery areas, presence or absence of turn lanes, separation to roadside drainage swales, and tree canopy and scenic vistas. The predominant impression is that major roadways in the County are for the most part aesthetically pleasing and offer views of the surrounding farms and landscape, and in many instances also have areas of significant tree canopy. The major highways included shoulders (gravel or grassed) to allow for pull offs for disabled vehicles or for a recovery area if a distracted driver ran off the road. These facilities also incorporated adequate sight lines and avoided sharp horizontal curvature while providing space between the travel lanes and open drainage swales and trees.



90-degree curve and lack of shoulders on Elm Tree Road

Some of the less trafficked roadways though did include some safety concerns such as almost 90-degree turns in areas, lack of usable shoulders, and remarkably close proximity between the edge of the traveled way and obstacles such as steep slopes of open drainage swales and trees very close to the edge of the travelway. These geometric conditions should be carefully rectified as the ability to address them is available through selective

additions of shoulders (structural turf if possible, for aesthetics), retrofit of sharp curves with more gentle curvature through realignment, and better protection/selective guardrail installations to allow motorists to avoid collisions with trees (without removing the tree canopy) and steep slopes associated with open swales.

From the community survey, there were comments on intersection treatments and a desire to see more roundabouts like the one constructed in Atoka. Roundabouts have proven to be effective in not only moving traffic but also eliminating high-speed T-bone crashes that can be prevalent on high speed rural roadways at intersections, so they should be included in the toolbox of measures considered for Haywood County.



Roundabout at Rosemark Road in Atoka, TN

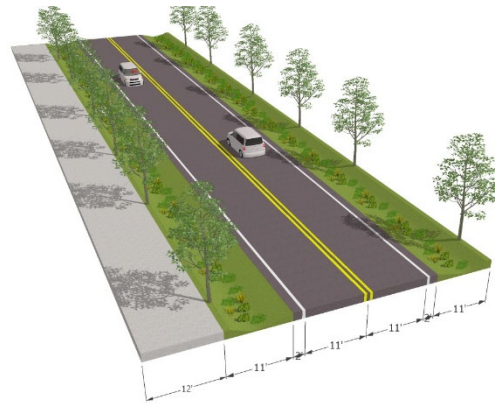
Haywood County also has a unique and special resource in the Hatchie River basin and the Hatchie National Wildlife Refuge. Many communities have successfully leveraged eco-tourism with facilities such as blueways and greenways in corridors such as this, and the preferred growth scenario works seamlessly within the framework of a Hatchie River focus. The County should support and encourage the visibility and legacy of the Hatchie River to provide its residents and visitors with ways to experience natural Tennessee, and to capitalize on the potential economic benefits from highlighting this unique resource through accessibility for outdoor exploring by biking, hiking, or paddling. The designation of the National Wildlife Refuge also opens facility funding sources through programs such as the Federal Lands Access Program (FLAP), which can be used to construct trails or other non-motorized access facilities.

Recommended Strategies

The data and observations lead us to a recommendation that instead of focusing on wholesale widenings of the County's two lane highways, the focus should be more on a "do no harm" approach that addresses spot operational and critical safety concerns as the County sees growth related to Blue Oval City. The following set of recommendations should be considered to not only address safety, but also to meet the goals of creating a roadway network that preserves and enhances all the attributes that make Haywood County a desirable place to live. High level strategies are as follows:

- Preserve scenic vistas and viewsheds;
- Focus any roadway capacity enhancements/widenings near Blue Oval City, such as TN 222 south to I-40;
- Begin planning for widening I-40 at some point in the future;
- Continue development and support of I-69 corridor planning efforts;
- Address safety on current 2-lane highways;
 - Add left turn bays where needed at intersections

- Create shoulders where none exist (reinforced turf preferable to gravel to maintain rural character)
- Similar to shoulder areas, provide occasional pull-offs for agricultural vehicles to move out of the way of queues of faster moving traffic on rural highways
- Eliminate sharp curves where impacts to surrounding context allows
- Preserve canopy sections and add small segments of guardrail where necessary to prevent vehicles from impacting trees
- Consider roundabouts at locations where there would be potential for high speed T-bone type crashes, as well as either at entries/gateways to Towns or within Four Ways
- Create character changes to alert drivers to more settled areas and presence of vulnerable users such as pedestrians and bicyclists in currently settled rural areas and in the proposed “Four Ways” and entries to Towns.
 - Develop transition area to signal that driver is entering more built up area with pavement edge delineation, formally spaced landscape, and sidewalk/shared use path
 - Develop gateway for Four Ways with signage, entry feature, and beginning of curbed section
 - Within core area of Four Way, develop curb and gutter, on street parking (if needed), and continuous sidewalks, lighting, and streetscape on both sides



Rural road transition area typical section

Conclusions

The strategies outlined above should accommodate the expected growth associated with Blue Oval City even beyond the ten-year horizon outlined in the Future Land Use Mapping. These strategies also focus on preserving and enhancing the character of what respondents to the community survey indicated were the things most important to Haywood County residents and what makes it such a special place, such as scenic vistas, the small town and rural character, tree canopy, working farmland, and natural treasures such as the rolling topography and scenic watersheds. Particular attention should be paid to the Hatchie River resource and steps should be taken to not only preserve that resource but to tell its story to both residents and visitors, leveraging that natural asset as a community resource.

Additional steps such as development of street design guidelines, funding allocations, and programming of transportation network enhancements will all be required to implement the above strategies, but these strategies will allow Haywood County to realize the vision set forth in the Future Land Use Map with a robust and context-consistent transportation system.