

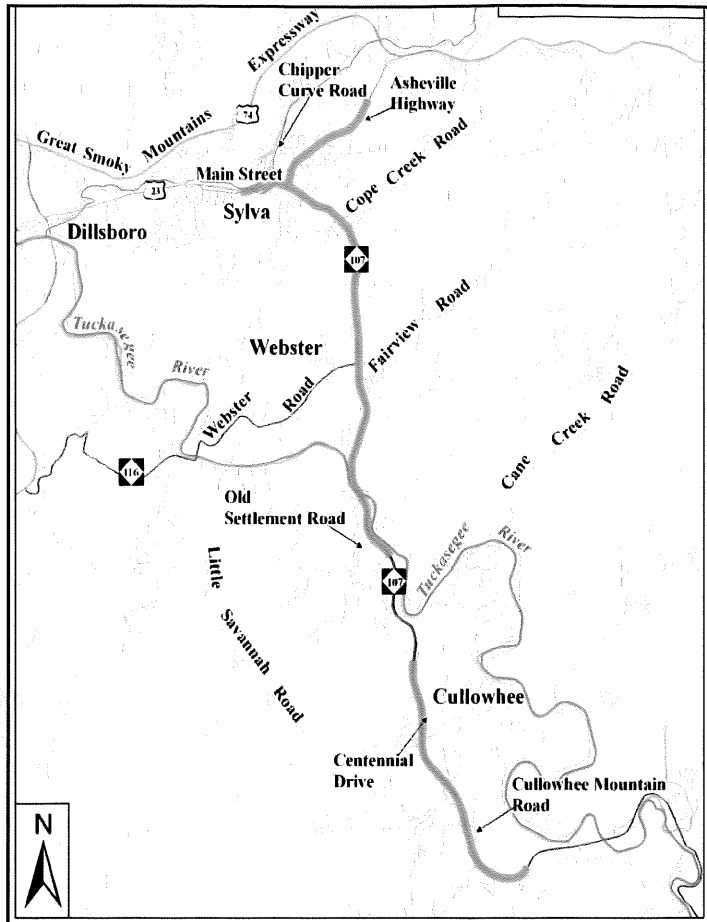
The NC 107 Feasibility Study

completed in June 2011, is a result of local leaders asking NCDOT to study improvements needed to solve traffic problems along NC 107 and US 23 Business in the Sylva/Cullowhee area. This feasibility study considered ways to improve the road so it can handle traffic and estimated growth until the year 2035. *If no improvements are made to NC 107, congestion will continue to get worse in the future.*

The purpose is to achieve an acceptable level of service to improve the traffic capacity and the north/ south transportation link between US 23-74 near Sylva and NC 107 near Cullowhee. NC 107 is the only major north/ south transportation corridor in Jackson County. With no reasonable transportation alternatives, traffic entering NC 107 from the secondary roads, businesses, and public institutions contributes to the overall traffic congestion.

The Jackson County Comprehensive Transportation Plan (CTP), adopted in 2010, proposed recommendations for three portions of NC 107 and US 23 Business for improvements. These are:

- NC 107 from US 23 Business to four-lane divided roadway south of Lovedale Road
- US 23 Business from Hospital Drive to NC 107
- US 23 Business from Chipper Curve Road to Mill Street



The CTP proposes a four-lane boulevard with a median for NC 107 and US 23 Business (Asheville Highway) and three-lane upgrades to US 23 Business (West Main Street).

Four Alternatives were studied in detail to address growing traffic along NC 107. Each of these options has been examined with and without the traffic benefits of the NC 107 Connector project (TIP Project R-4745).

The NC 107 Connector proposes to help relieve some of the traffic issues along NC 107 by building a new road linking NC 107. If the NC 107 Connector is built, it would help NC 107 traffic operations by diverting approximately 15% of the traffic from existing NC 107.

Costs or impacts associated with the NC 107 Connector are not included in this evaluation because the connector is being developed under an independent project.

Alternatives 1 and 2

Widening and Intersection Upgrades (6.4 miles) - Parts of US 23 Business and NC 107 would be widened and certain intersections would be upgraded to include more lanes for traffic going straight through the intersection and for those turning left or right.

These alternatives include major improvements that will significantly improve future traffic on NC 107 and US 23 Business but impact many properties.

A four-lane divided roadway with 30-foot raised median was studied in the Sylva area. A 46-foot median was considered near Cullowhee. **Alternative 1** assumes the NC 107 Connector is NOT built. **Alternative 2** assumes the NC 107 Connector IS built.

COSTS AND IMPACTS

- Costs \$113 to \$115 million for right of way and construction
- Relocates 109 homes and businesses and one cemetery

ADVANTAGES

- Meets acceptable traffic level of service conditions in future
- Less traffic congestion and less time waiting at stop lights
- Allows traditional left turns at intersections
- Reduces traffic bottlenecks in Sylva between Mill Street and NC 107
- Widens the bridge over Scotts Creek to four lanes

DISADVANTAGES

- Extensive land acquisition and relocations in Sylva commercial district
- Town of Sylva and citizens desire for NC 107 to be improved with little to no increase in width

Alternatives 3 & 4

Widening and Superstreet (7.5 miles) - Parts of US 23 Business and NC 107 would be widened and certain intersections would be changed so that drivers wanting to turn left onto NC 107 would instead turn right and make a U-turn a short distance away.

This concept includes major improvements that will significantly improve future traffic on NC 107 and US 23 Business but impact many properties.

A four-lane divided roadway with 30-foot raised median was studied in the Sylva area. A 46-foot median was considered near Cullowhee. **Alternative 3** assumes the NC 107 Connector is NOT built. **Alternative 4** assumes the NC 107 Connector IS built.

COSTS AND IMPACTS

- Costs \$122 million for right of way and construction
- Relocates 122 homes and businesses and one cemetery

ADVANTAGES

- Meets acceptable traffic level of service conditions in future
- Less traffic congestion and less time waiting at stop lights
- Reduces traffic bottlenecks in Sylva between Mill Street and NC 107
- Widens the bridge over Scotts Creek to four lanes

DISADVANTAGES

- Extensive land acquisition and relocations in Sylva commercial district
- Town of Sylva and citizens desire for NC 107 to be improved with little to no increase in width
- To turn left in some places, drivers will turn right then make a U-turn
- Driver inconveniences (particularly for heavy trucks in commercial areas)

Other Alternatives Considered

The Town of Sylva officials and many citizens desire for NC 107 to remain a four-lane city street with little or no increase in width to avoid business impacts. Suggestions for reconfiguring NC 107 included:

- replacing the center turn lane with an island
- adjusting traffic signal timings
- eliminating the Sunset Park approach from the US 23 Business intersection
- constructing roundabouts.

These were not studied in detail because they would not meaningfully address congestion. A more detailed design analysis may consider refining the design criteria, allowing narrower lanes or median widths, and locating the alignment for the least disruption to properties and other sensitive resources. This type of analysis is traditionally performed during detailed environmental and design studies and not in a feasibility study.

Interim Improvements were considered as Alternatives 5 and 6 at more congested areas from west of NC 107 / US 23 Business intersection to the intersection at Wal-Mart and near the Tuckasegee River crossing. These were similar to the widening and superstreet concept. More extensive upgrades and new traffic signals were considered at the NC 107/ US 23 Business intersection. The right of way costs and relocations were substantially higher because of the expanded construction limits. These did not provide a continuous median throughout the corridor. Alternatives 5 and 6 were eliminated from further consideration.

A Roundabout Concept was considered for the NC 107/ US 23 Business intersection but not pursued in detail because the traffic volumes were determined to be too great for a roundabout to function properly. A three-way roundabout with two lanes in each direction was evaluated. A proposed flyover was also considered from southbound US 23 Business to eastbound NC 107. Without a flyover, the roundabout is considerably over capacity. With a flyover, a roundabout could function acceptably but would require a considerable amount of construction and property impacts

A Connecting Street Plan for alleviating congestion and providing alternative routes to NC 107 was considered but not studied in detail. A Sylva Street Plan was developed several years ago but was not adopted by the Town of Sylva. Most of its components were not reflected in the Jackson County CTP. In feasibility studies, NCDOT typically considers options that are consistent with an area's long range or comprehensive transportation plan. In this project study area, the County's CTP proposes improvements for NC 107, US 23 Business, Skyland Drive, Cope Creek Road, Webster Road, and other routes south of Sylva.

Recommendations from the Feasibility Study focused on long term substantial upgrades that would solve NC 107 congestion and allow traffic to operate under acceptable levels of service through the year 2035. These are as follows:

- incrementally phase the upgrades to first address the most congested intersection areas and later the second and third order improvements to reach the ultimate traffic operation goals.
- include access management techniques to promote a safer and more efficient corridor by limiting drivers' access between the highway and adjacent properties.
- Future environmental and design studies should address options to that have the least disruption to properties and other sensitive resources.
- Widening and Superstreet improvements (Alternatives 3 and 4) for the northern 4.1 miles from north and west of US 23 Business to north of Old Cullowhee Road are the highest priorities to promote the most efficient traffic progression and to reduce the turning conflicts at intersections.
- Traditional widening improvements (Alternatives 1 and 2) from north of Old Cullowhee Road to south of Cullowhee Mountain Road are secondary priorities to improve traffic operations where congestion at intersections is not as pronounced.