

Charlotte Court House Pilot Intersection Study

PREPARED BY: COMMONWEALTH REGIONAL COUNCIL

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Description of Intersection



The Intersection of State Route 40 (David Bruce Avenue) and State Route 47 (LeGrande Avenue) is located in the heart of Charlotte Court House, Virginia. The Town of Charlotte Court House is a small rural historic town, population 543. The intersection is unique in several ways, one being that State Route 40 and 47 intersect and split off (see pictures below) with Route 47 continuing South and Route 40 to the East.

Also, the downtown area of Charlotte Court House is on the National Historic District Landmark Listing. Buildings date back to the 1800's. Large trucks, including tractor trailers and dump trucks travel through Charlotte Court House daily. The Town of Charlotte Court House conducted an informal Truck Survey in April of 2005. Between the hours of 7:15 a.m. – 6:00 p.m. 534 trucks entered and exited this intersection. It is worth noting this survey was taken before the BMC Rock Quarry Inc. opened in 2005 just south of Town, which has added considerable truck traffic since then. On-street parking also hampers this



The only Virginia courthouse to have been designed by Thomas Jefferson that still stands. The courthouse was built in 1823 and stands amidst a group of 19th and early 20th century court buildings and residences.



intersection by obstructing turn radius for large trucks. Because the buildings in the downtown area are very old, the large trucks traveling through the town also endanger the buildings structures/foundations. When standing in some of these buildings you can literally feel the building shake as the large trucks go through town. The close proximity of buildings combined with pedestrian sidewalks deters widening of this intersection.

EXISTING CONDITIONS

Roadway & Traffic

Turning movements captured in April 2010 by the CRC's Regional Long Range Transportation Plan (RLRP) indicate the largest volume of traffic 255, are turning west from Route 47 (LeGrande) onto Route 40 (David Bruce) in the morning hours (7-8:45 a.m.). Grand total for traffic at this location was 1061 from 7:00-8:45 a.m. Hose counts were also taken south of this intersection (see image below) just north of Statesmen Drive indicating a count of 1396.

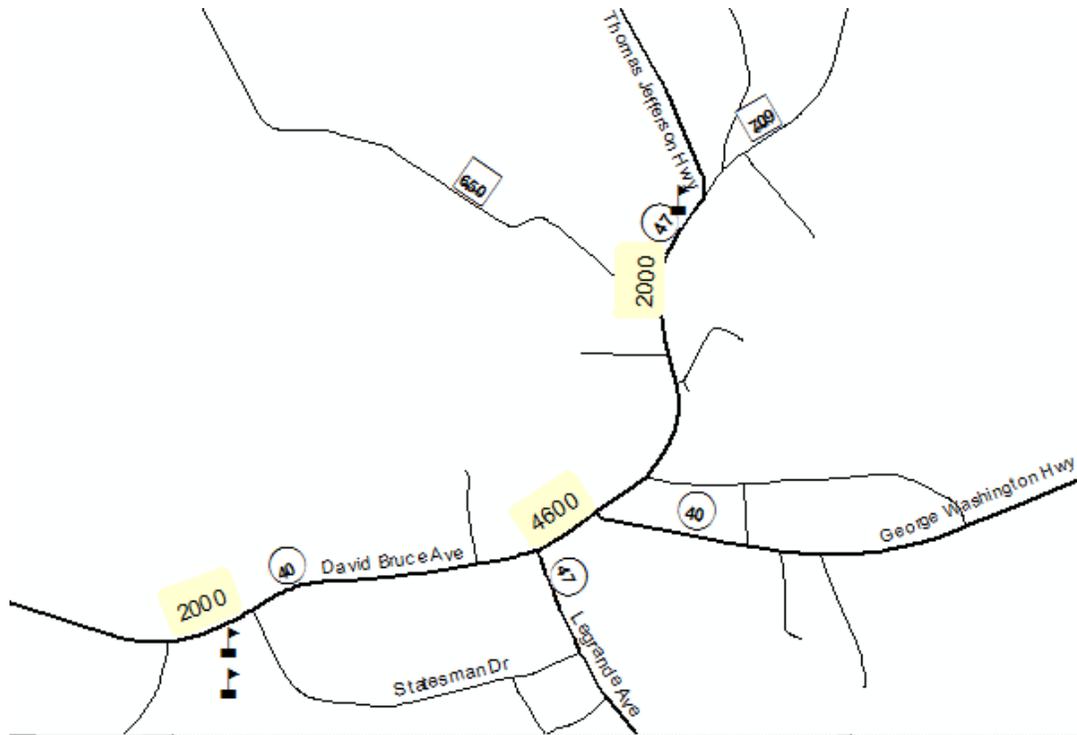
**Commonwealth Regional Commission
Count Locations for RLRP
Congestion-Related Detailed Study Locations**



17: SR 40/47 (David Bruce Avenue) at SR 47 (LeGrande Avenue)

-  — Intersection turning movement count, 4 hours total (2 hours a.m., 2 hours p.m.), volume only (no classification)
-  — Machine count, 48-hour directional counts, including classification ("FHWA" classification scheme)

According to 2012 VDOT Traffic Counts (see map below), the Annual Average Daily Traffic Count (AADT) for Route 40 (David Bruce) from Route 47 (LeGrande) to Route 40 (George Washington Hwy) is 4600. AADT for Route 40 (Thomas Jefferson Hwy) from West of the Town limits to Route 47 (LeGrande Ave) were 2000. AADT also indicated that 14% of traffic traveling through town was truck traffic.





Charlotte County 2005 Functional Classification

Proposed	Existing	FUNCTIONAL CLASSIFICATIONS
.....	Urban Interstate
.....	Urban Freeway & Expressway
.....	Urban Other Principal Arterial
.....	Urban Minor Arterial
.....	Urban Collector
.....	Rural Interstate
.....	Rural Other Principal Arterial
.....	Rural Minor Arterial
.....	Rural Major Collector
.....	Rural Minor Collector
.....	Not Classified, Urban Local, Rural Local

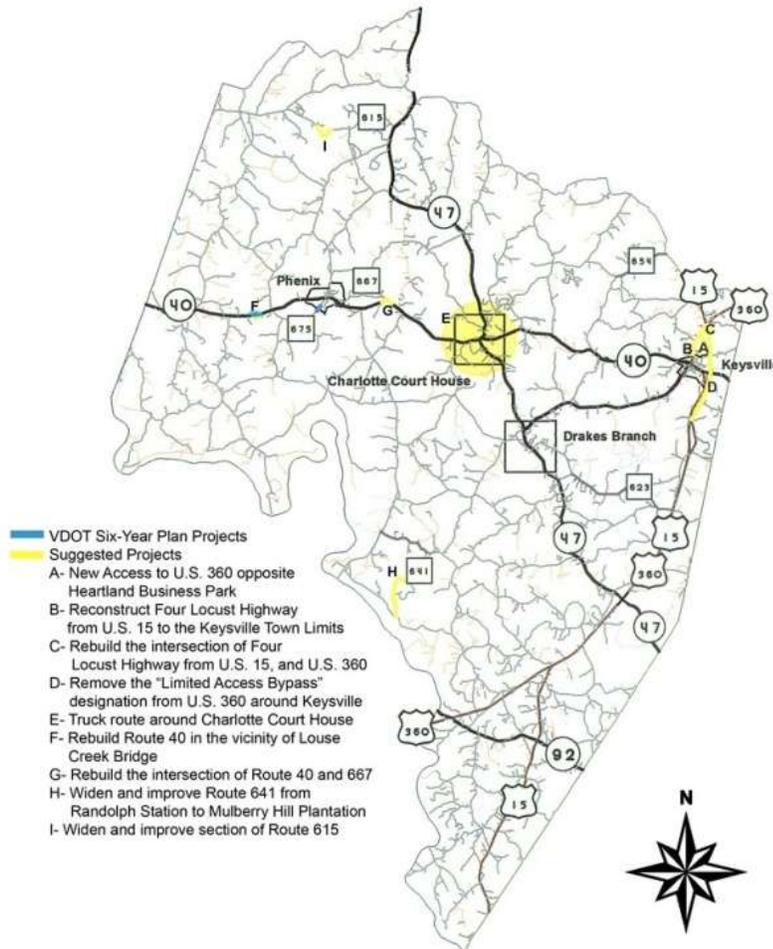
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According to 2005 FHWA approved VDOT’s Functional Classifications; Route 40 is a Rural Minor Arterial. Route 47 is a Rural Major Collector of traffic.

There are three schools located in the Town of Charlotte Court House; Randolph Henry High School, Central Middle School and the Early Learning Center, all are within the Town limits. The Virginia Department of Education’s 2013-2014 Fall Membership Counts indicate a total of 1,141 students at these three schools. Local officials indicate a large number of students drive to school or are transported by parents or others. This adds to traffic congestion at the David Bruce/LeGrande intersection twice daily (opening and closing of school). This also can cause safety issues when buses, tractor trailers and local traffic all try to traverse this tight intersection at one time. The County courthouse is located at this intersection as well. General District Court is held every Thursday. Circuit Court is held the first Wednesday of the month with any additional days needed to meet the court docket added as needed. Juvenile & Domestic Relations Court is held every Tuesday. All of these court dates generate a significant amount of vehicle and pedestrian traffic at this location. As mentioned earlier in this report, the downtown area is located in a Historic District with the majority of the buildings (circa 1800’s) listed on the National Historic Landmark Listing. This in itself creates a unique problem in the inability to widen the intersection for wider turning radius. Vehicles trying to navigate this tight turning intersection is one problem, but with increased pedestrian traffic added to the mix there is an additional concern for the safety of citizens.

The 2011 Charlotte County Comprehensive Plan provides a recommendation of a Truck Route around Charlotte Court House (see Item E in Figure 29 below). Town officials adopted a Resolution in 2005 supporting an Alternate Route around the Town due to high volume of commercial traffic traveling daily through the Town on Routes 40 & 47. The Town requested that VDOT develop plans for a bypass/alternate route around the Town to be included in the VDOT Six Year Improvement Plan. As of this report date, this has not been promulgated in the Six Year Improvement Plan.

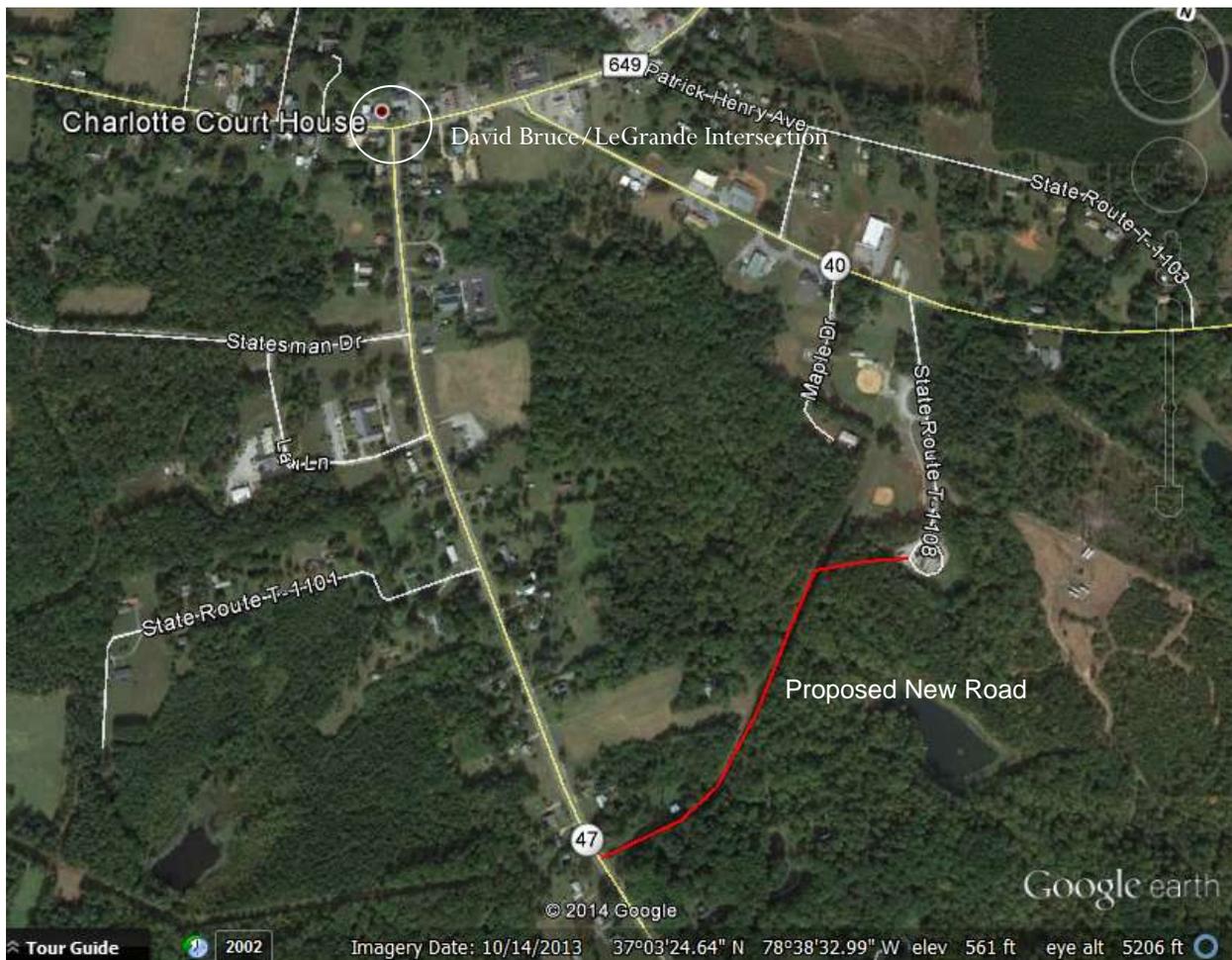
Figure 29
Charlotte County Transportation Planning



Project Concepts

Project concepts considered are discussed below:

1. Creating a Truck Route/Bypass to route truck traffic away from the downtown area. Town officials would like for commercial/truck traffic to be diverted away from the Historic downtown area. This would alleviate the majority of concerns over the intersection of David Bruce Ave/LeGrande Avenue. However, it is noted this will not be easy or cheap. One such solution would be to extend T-1108 off of George Washington Highway to the South to connect with LeGrande Avenue (See image below for suggested Route). T-1108 currently leads to the County owned Recycling Center. This proposed road would extend the current T-1108 approximately .37 of a mile (1,950.83 ft) in length to reach LeGrande Avenue. This would alleviate some of the commercial/truck traffic that currently traverses the downtown area as the BMC Rock Quarry is just South of the downtown area. This would not however alleviate any of the concerns for traffic traveling west from LeGrande Avenue or for traffic turning south from David Bruce Avenue onto LeGrande Avenue. Estimated costs for this proposed Truck Route/Bypass are unknown at this time. There are several property owners who own this property who have not been contacted at this time to gain their interest. Town officials are in favor of this option.



2. Designating Statesmen Drive, off of LeGrande Avenue as a Truck Route for commercial traffic East and West. This too creates a unique problem, in that this route would bring traffic directly out beside the Middle School and High School. This would not be favored by the School System and would create new safety issues with school traffic. Also, Statesman Drive was not designed for heavy traffic and would need to be updated and improved to handle this type of traffic. Town officials are not in favor of this option.



Facing North on LeGrande Avenue with Statesman Drive to the West .



Facing North on David Bruce Avenue with Statesman Drive to the South.

3. Installing a traffic light and redesigning the stop bars on the street to push traffic further back at the intersections, thereby, allowing trucks a larger radius to turn. This option would not alleviate truck traffic from the downtown area and also would be very costly. VDOT traffic engineers determine if a signal is needed by carefully evaluating:

- The number of vehicles and pedestrians that use the intersection
- The physical makeup of the intersection
- Roadside development
- Traffic delays during peak hours
- Average vehicle speeds
- Future road construction plans
- The number and types of accidents that have occurred there

According to the Department of Motor Vehicles, Crash Data Report, there have been no reported accidents at this intersection in 2011 or 2012. Town officials are not in favor of this option.



Recommendation

Based on conversations with Town officials, the Town is not in favor of any option that does not include diverting truck traffic away from the downtown area. The Downtown area is historic and would prevent upgrades from occurring without destroying historic property. Based on this information this analysis concludes that Option 1, a new Truck/Bypass Route be pursued by VDOT in coordination with the Town of Charlotte Court House and the County of Charlotte. It is further recommended that a VDOT Freight Study be conducted at this intersection to determine the amount of truck traffic currently traveling through the Town.

Information Sources

- Commonwealth Regional Council, 2035 Regional Long Range Transportation Plan
- 2012 VDOT Traffic Count Data, Annual Average Daily Traffic Counts
- Aerial Images provided by Google Map and Google Earth
- GIS Maps Created by Commonwealth Regional Council staff
- Virginia Department of Education, 2013-2014 Fall Membership, Charlotte County Schools
- Virginia Department of Motor Vehicles, 2011/2012 TREDs Report, Crash Data
- April 4, 2005 Informal Study of Commercial Traffic Traveling Through Charlotte Court House
- Meeting with Town Mayor, Stephen Walker and Town Clerk, Karen Price