



## Town of Mooresville, North Carolina

### Comprehensive Transportation Plan Amendments

### Addendum Report



Adopted April 4, 2013

Town of Mooresville

Development Services Department



## **Executive Summary**

The current Mooresville Comprehensive Transportation Plan (CTP) was adopted by the Mooresville Town Board of Commissioners on September 4, 2007, and by the North Carolina Board of Transportation on June 3, 2008. The CTP and Land Use Plan were developed simultaneously to address emerging transportation trends as well as prepare for growth anticipated to occur in the region based upon a 2030 planning horizon. Since the adoption of these plans, staff referenced the documents simultaneously to guide future development and prioritize future transportation projects. The following amendments are intended to update the CTP prior to the inclusion in the new Charlotte MPO:

### ***Study Area Boundary Revision:***

- The CTP study area boundary has been modified to remove a small area of overlap between the Mooresville, Troutman, Iredell County, and Statesville CTP's.

### ***Highway Map Amendments:***

#### *Full Problem Statements:*

1. Initially, a proposed bridge connection between Doolie Road (SR 1180) and Oak Tree Road (SR 1179) was included in the CTP amendments. This amendment was adopted by the Mooresville Town Board of Commissioners, but not the Iredell County Board of Commissioners. For the reason that the proposed bridge connection was not acceptable, improvements to the intersection of NC 150 and Doolie Road/Perth Road (SR 1303) intersection are recommended.
2. Widen Perth Road (SR 1303) to a two-lane boulevard from Cornelius Road (SR 1302) to the northern planning boundary.
3. Re-align Bluefield Road (SR 1474) westward between Big Indian Loop (SR 1395) and Cornelius Road (SR 1302) as recommended in the Cornelius Road Small Area Plan. The purpose of this realignment is to account for the future widening of I-77 and a proposed interchange at I-77 and Cornelius Road.
4. Modify the Cornelius Road –Mazeppa Road Alignment to reference the Town Board adopted option from the Feasibility Study.
5. Re-classification of Shearers Road (SR 1125) between Rocky River Road (SR 1147) and the Mecklenburg County Line from major thoroughfare needs improvement to minor thoroughfare needs improvement. The section of Shearers Road between Timber Road (SR 1254) and Rocky River Road is recommended to be reclassified to minor thoroughfare needs improvement.
6. Add a connection linking Bluefield Road (SR 1474) and Exmore Road (SR 1472) with a grade separation over I-77. This will be constructed on new location as a two lane minor thoroughfare. This connection was recommended in the Cornelius Road Small Area Plan to serve the intended development.
7. Add an extension of Sundown Road (SR 1190) to Silver Hook Drive. This will be constructed on new location as a two-lane minor thoroughfare. This connection was recommended in the Brawley School Road Small Area Plan to serve the intended development.
8. Re-classification of Oates Road (SR 1305) and Midnight Lane between US 21 and Bluefield Road (SR 1474) from collector street to minor thoroughfare needs improvement. This is a proposed overpass of I-77 that would reduce congestion in the vicinity of the I-77/NC 150 interchange.

9. Re-classification of Stutts Road (SR 1112) between Brawley School Road (SR 1100) and Shoreline Loop (SR 1267) from collector street to minor thoroughfare needs improvement.

*Recommended Roadway Widening Projects:*

1. Widen Bluefield Road (SR 1474) between NC 150 to the proposed Bluefield Road Realignment to a two-lane boulevard.
2. Widen Flower House Loop (SR 1312) to 12 foot lanes from US 21 / NC 115 to the northern planning boundary.
3. Extend the boulevard needs improvements designation on Mazeppa Road (SR 2395) by 0.5 miles to the east of Overhead Bridge Road (SR 2397) to Penske Way based upon 2030 projected traffic volumes.
4. Widen Oswalt Amity Road (SR 1001) to 12 foot lanes from the I-77 overpass to the Rowan County line.
5. Widen Overhead Bridge Road (SR 2397) from NC 150 to Mazeppa Road to three 12 foot lanes.
6. Widen Shinnville Road (SR 2383) to three 12 foot lanes from US 21/NC 115 to Ostwalt Amity Road (SR 1001).
7. Widen Talbert Road (SR 1116) to a three-lane roadway from NC 150 to Oates Road (SR 1305).

*Recommended Reclassifications:*

1. Reclassification of NC 3 from boulevard existing to major thoroughfare existing from Culp Street to NC 150. This roadway travels through Downtown Mooresville, and there is limited right-of-way for improvements. The 2030 model projections indicate that the current cross-section is sufficient to handle future traffic volumes.
2. Reclassification of NC 115 from major thoroughfare existing to major thoroughfare needs improvements from Mclelland Avenue to NC 150.
3. Reclassification of the I-77 and NC 150 Interchange (Exit 36) from existing interchange to interchange needs improvements to account for a proposed conversion of this interchange to a diverging diamond interchange (DDI) to address capacity and operational deficiencies.
4. Reclassification of the I-77 and US 21/Williamson Road (SR 1109) Interchange (Exit 33) from existing interchange to interchange needs improvements. The on-going Fairview Flyover/Exit 33 Feasibility Study (R-4757) is currently analyzing several modifications to the existing interchange configuration.

*Project Completion Revisions:*

1. The I-77/Langtree Road (SR 1102) interchange has been completed. Change from recommended interchange to existing interchange.
2. The widening of Brawley School Road (SR 1100) to a four-lane boulevard has been completed from Chuckwood Road (SR 1177) to Williamson Road (SR 1109). Change from boulevard needs improvement to boulevard existing.

***Public Transit and Rail Map Amendments:***

1. Bus service along Williamson Road and I-77 has been discontinued, but is recommended for the future. Change designation from existing to recommended.
2. Relocate the recommended rail stop from the Legacy Village development near Fairview Road to the Knox Property south of the intersection with NC 115 and Langtree Road (SR 1302). This request was approved by the Town and CATS MTC.

3. Reclassify the I-77 corridor within the Mooresville CTP study area as operational strategies recommended. This designation will account for the I-4750 HOT lanes project, which was derived from a recommendation in the Charlotte Fast Lanes Study.

***Bicycle Map Amendments:***

- Classify roadways with bicycle lanes as on-road existing.
- The initial and ultimate routes of Lake Norman Bicycle Route were labeled with shields throughout the CTP study area.
- Roadway corridors that were recommended for improvement in the Mooresville Comprehensive Bicycle Plan were labeled on-road needs improvement on the bicycle map.
- Recreational trail corridors recommended in the Carolina Thread Trail plan for Iredell County were labeled multi-use recommended on the bicycle map.
- Bicycle improvements specified in Town adopted small area plans were included on the bicycle map.

***Pedestrian Map Amendments:***

- Existing Sidewalks data was updated to reflect 2012 conditions on the pedestrian map.
- Recommended multi-use paths in the Bicycle Map amendments were also added to the pedestrian map.

***Recommended Plans, Policies, and Programs:***

- The collector street plan has been revised to account for a road connection that would benefit existing and proposed development. Several connections were removed because they were cost prohibitive, would require excessive environmental mitigation, or would not provide a network benefit.
- Once an alignment for the Fairview Flyover/Exit 33 improvements has been chosen, the CTP should be amended to depict the alignments and facilitate the reservation of right-of-way. The current alignments of Fairview and Alcove Roads will need to be relocated to accommodate bridge over I-77 in this location.

## **Background**

The current Mooresville Comprehensive Transportation Plan (CTP) was adopted by the Mooresville Town Board of Commissioners on September 4, 2007, and by the North Carolina Board of Transportation on June 3, 2008. The CTP and Land Use Plan were developed simultaneously to address emerging transportation trends as well as prepare for growth anticipated to occur in the region based upon a 2030 planning horizon. Since the adoption of these plans, staff referenced the documents simultaneously to guide future development and prioritize future transportation projects.

## **Purpose of Revisions to the CTP**

In the years following the adoption of the Mooresville CTP, several road improvement projects have been completed, and ancillary land use and transportation plans have been adopted throughout the study area. These changes are sufficient enough to justify amending the CTP. From a land development perspective, periodically updating the CTP is essential in ensuring that right-of-way can be reserved for recommended projects and developers are required to build their pro-rata share of transportation improvements as stated in the Mooresville Zoning Ordinance Section 1.6.4 (1,2).

In addition, the Charlotte Urbanized Area has expanded to include the Town of Mooresville as determined in the 2010 Census. The Town will be transitioning from the Lake Norman Rural Planning Organization (RPO) to an expanded Charlotte Regional Transportation Planning Organization (CRTPO) in 2013. MPO's are required to complete one CTP that covers all of the jurisdictions within its planning area. The Town wants to ensure that the data added to the reconstituted CRTPO from the Mooresville CTP is as up to date and as accurate as possible.

Town of Mooresville staff led the effort of amending the CTP. A public workshop to inform area residents of the proposed amendments to the plan was conducted on September 11, 2012. The Mooresville Town Board of Commissioners approved the amendments to the CTP on November 5, 2012. Iredell County adopted the CTP amendments on Tuesday, December 4, 2012. The Lake Norman RPO endorsed the CTP amendments on February 26, 2013, and the NC Board of Transportation adopted the CTP amendments on April 4, 2013. Once this amendment is adopted by all required agencies, Town staff will coordinate with City of Charlotte and NCDOT staff to ensure that the amended CTP data is incorporated into the CRTPO's CTP.

## **SECTION 1: CTP AMENDMENTS**

Section 1 of this document describes the amendments to the CTP maps to reflect completed construction projects, and adopted plans. Section 2 of the report highlights revisions to other plans, and recommendations for future projects, policies and programs.

### **1. Study Area Boundary Revision**

The revised boundary removes the small northern notch that is shown in the current CTP. This revision removes a small area of overlap between the study areas for the Mooresville, Troutman, Statesville and Iredell County CTP's, and is reflective of the 2007 Annexation Agreement. The revised boundary is consistent with the Comprehensive Land Use plan.

## 2. Mooresville CTP Map Amendments

This section summarizes the modifications that were made to the adopted Mooresville CTP maps to reflect completed transportation projects, and modifications to recommendations based upon local and regional plans that were completed following the adoption process for the CTP. The Mooresville CTP represents a system of modal transportation elements with separate maps to denote existing and proposed highway, bicycle, pedestrian, public transit, and rail projects. Each mode of transportation is represented on a different map. The following problem statements document the purpose and need for each of the proposed amendments to the CTP. The adoption sheet map is shown on Sheet 1.

### A. Highway Map Amendments

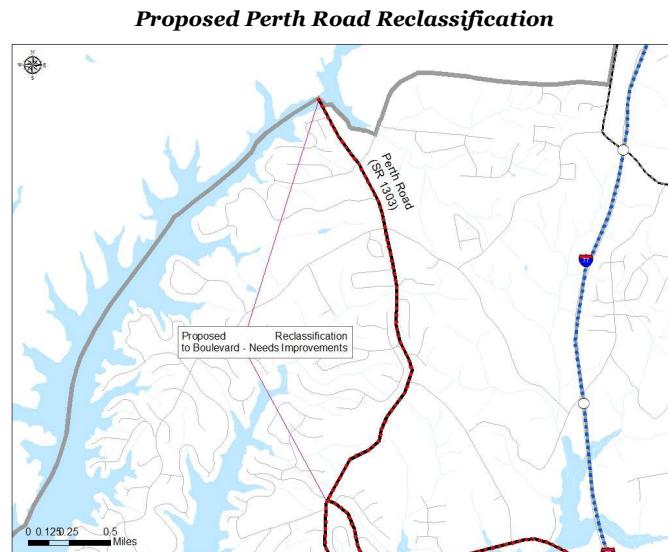
The recommended amendments for the Highway Map are shown on Sheet 2, with an inset of the I-77 corridor shown on Sheet 2A. The proposed amendments are summarized below by full problem statements, other changes, and re-classifications.

Full Problem Statements:

1. Initially, a proposed bridge connection between Doolie Road (SR 1180) and Oak Tree Road (SR 1179) was included in the CTP amendments. This amendment was adopted by the Mooresville Town Board of Commissioners, but not the Iredell County Board of Commissioners. For the reason that the proposed bridge connection was not acceptable, improvements to the intersection of NC 150 and Doolie Road/Perth Road (SR 1303) intersection are recommended.
2. *Widen Perth Road to a two-lane boulevard from Cornelius Road to the northern planning boundary*

**Purpose:** The current version of the CTP identifies the Perth Road corridor as boulevard needs improvements from NC 150 to Cornelius Road, and the segment north of Cornelius Road to the northern planning boundary as a minor thoroughfare. Directly north of the Mooresville CTP boundary, the Troutman CTP identifies the Perth Road corridor as boulevard needs improvements.

**Need:** The 2011 AADT for Perth Road between Cornelius Road and the planning area boundary is 7,200 and the 2030 projected volume is 17,500. It is anticipated that significant residential development will continue to occur along the Perth Road corridor. The proposed I-77/Cornelius Road interchange may also divert an additional percentage of traffic volumes to the Perth Road



corridor.

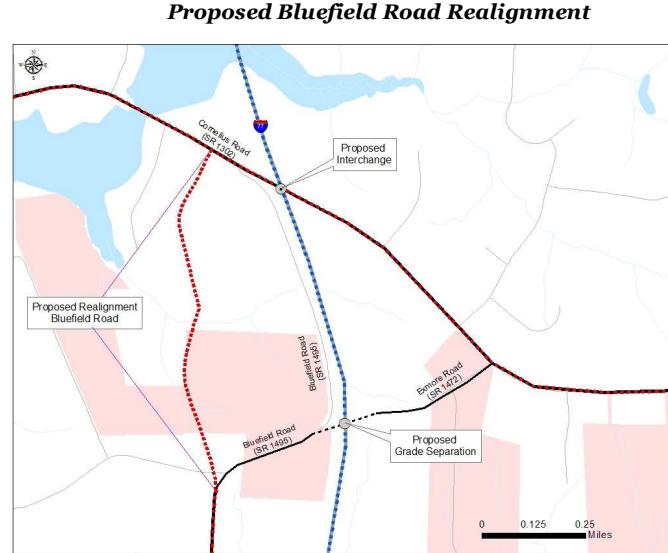
**Recommendation:** It is recommended that the Perth Road corridor between Cornelius Road (SR 1302) and the northern planning area boundary be widened to a two-lane divided boulevard with accommodations for bicyclists. This will accommodate the projected volumes and maintain consistency between the Mooresville and Troutman CTPs.

### 3. Re-alignment of Bluefield Road between Big Indian Loop (SR 1395) and Cornelius Road

**Purpose:** The current alignment of Bluefield Road (SR 1474) needs to be realigned for traffic safety purposes and to accommodate a proposed interchange at I-77 and Cornelius Road (SR 1302).

**Need:** The Cornelius Road Small Area Plan identified a realignment concept of Bluefield Road from Big Indian Loop to Cornelius Road that would provide a safer intersection with Cornelius Road, make the construction of an interchange at I-77 and Cornelius Road feasible, and enhance connectivity from anticipated developments identified in the Cornelius Road Small Area Plan.

The current Bluefield Road alignment is parallel and located within 75 feet of the southbound lanes of I-77 between Cornelius Road (SR 1302) and the proposed overpass connection to Exmore Road. The signalized intersection of Cornelius Road and Bluefield Road is skewed because of the proximity to the Cornelius Road overpass over I-77. An interchange has been proposed for the current grade separation at I-77 and Cornelius Road, and Bluefield Road would need to be realigned to construct a new interchange. In addition, the proposed I-77 widening project (I-4750) may impact the existing alignment of Bluefield Road in this area, and require a realignment of the existing roadway. In addition, Bluefield Road is identified as a segment in the Lake Norman Bicycle Route, therefore; appropriate considerations for bicyclists such as bike lanes should be considered in the design of this facility.



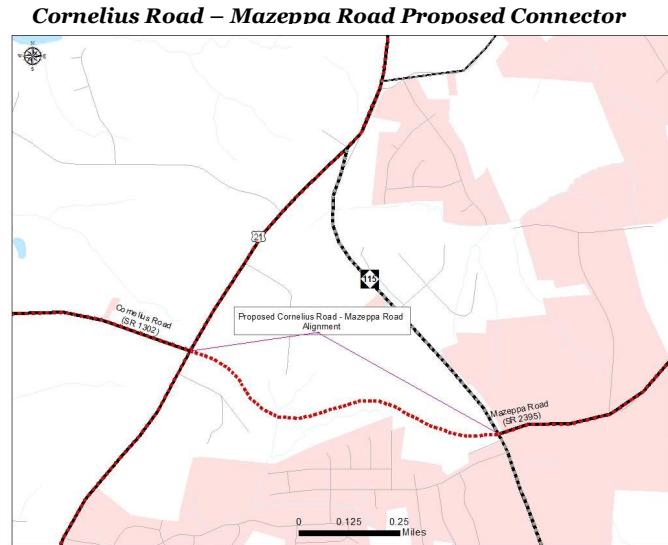
**Recommendation:** It is recommended that the proposed realignment of Bluefield Road is shown as a boulevard recommended in the amended CTP from Big Indian Loop to Cornelius Road to account for the I-77 widening project and the proposed interchange at I-77 and Cornelius Road. The boulevard is proposed as two lanes on new location.

#### 4. Proposed Cornelius Road – Mazeppa Road Connector Alignment Modification

**Purpose:** The proposed connection of Cornelius and Mazeppa Roads would provide safer and more efficient access for freight and vehicular traffic traveling through the area.

**Need:** The CTP showed a preliminary alignment connecting the Cornelius and Mazeppa Roads. Following the adoption of the CTP, the Town completed an alignment study, and the alignment shifted to minimize impacts to the existing natural and built environment.

The Town is in the process of acquiring right-of-way and completing roadway construction drawings for the adopted alignment.

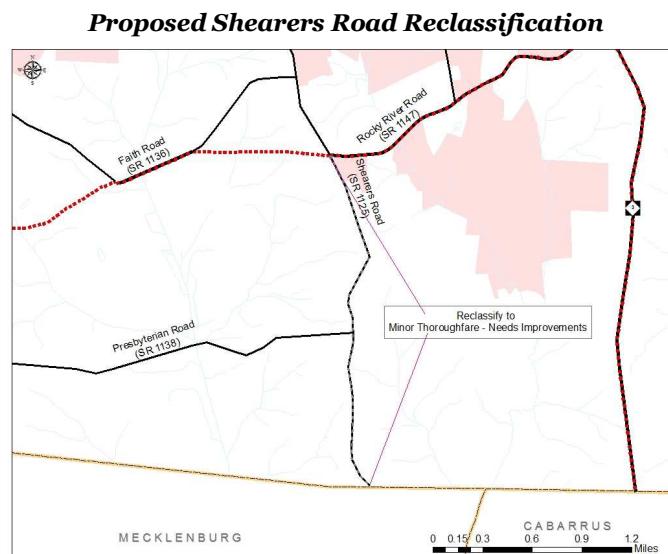


**Recommendation:** It is recommended that adopted alignment for the proposed Cornelius Road – Mazeppa Road connector is shown on the amended Highway Map.

#### 5. Widening of Shearers Road to a three-lane section between the Mecklenburg County Line and Timber Road

**Purpose:** Shearers Road (SR 1125) was identified as a major thoroughfare needs improvements between Rocky River Road (SR 1147) and the Mecklenburg County Line and as a minor thoroughfare between Timber Road (SR 1254) and Rocky River Road in the 2008 CTP.

**Need:** The 2011 AADT for this section is 1,400; however, the 2030 projections are 16,450 for this corridor, which is predicated on the completion of



proposed roadway extensions to Prosperity Church Road and I-485 in Mecklenburg County. Shearer Road (SR 2418) in Mecklenburg County is classified as a minor thoroughfare in the ongoing MUMPO CTP.

There are several residences, a church and a cemetery that may be affected by widening this roadway. The proposed widening of the NC 3 corridor would help to address some of the projected capacity issues with this corridor. Intersection improvements and geometric improvements would still be needed along this corridor. For the reason that the 2030 projected volumes will exceed the capacity, this segment will be an unaddressed deficiency.

The section of Shearers Road between Timber Road (SR 1254) and Rocky River Road is recommended to be reclassified to minor thoroughfare needs improvement.

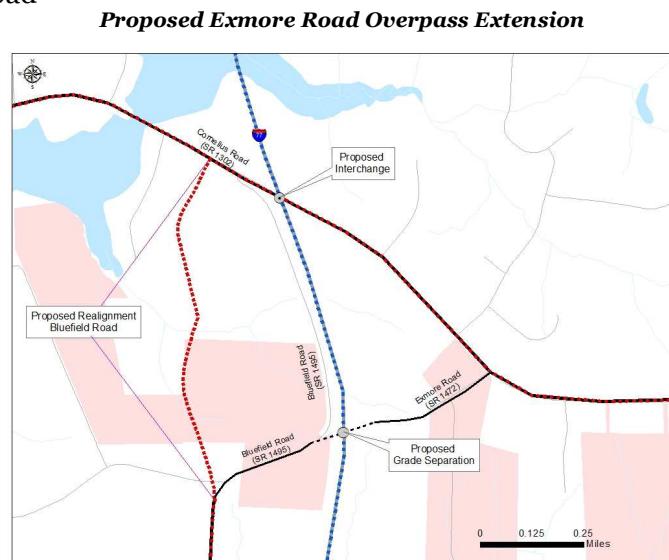
**Recommendation:** It is recommended that Shearers Road between the Mecklenburg County line and Timber Road is widened to three 12 foot lanes with accommodation for bicyclists. It is also recommended that the entire classification of Shearers Road/Shearer Road in Iredell and Mecklenburg Counties should be revisited when the Mooresville CTP is merged with the Charlotte MPO CTP.

## 6. Exmore Road Extension

**Purpose:** The Cornelius Road Small Area Plan identified a proposed connection opportunity by extending Exmore Road (SR 1472) to meet Cornelius Road. This connection would enhance the roadway connectivity in the area as development occurs.

**Need:** The Exmore Road extension to Cornelius Road would take pressure off of the intersection of Bluefield Road and Cornelius Road, especially if an interchange is constructed with I-77 at this location.

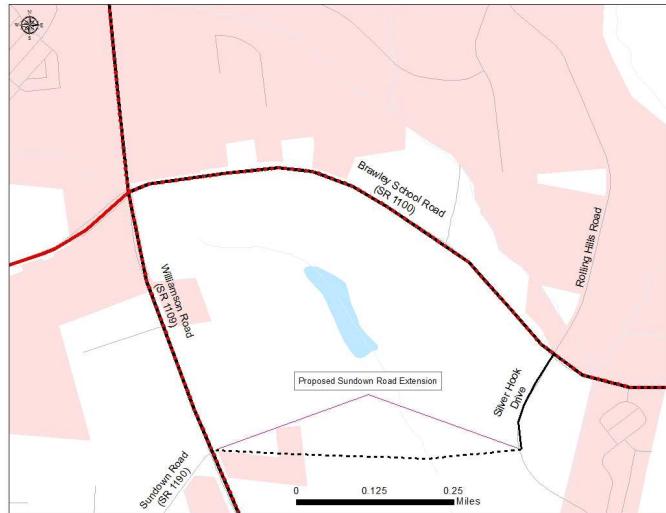
**Recommendation:** It is recommended that the existing Exmore Road is identified as minor thoroughfare on the amended Highway Map and the proposed connection should be identified as minor thoroughfare recommended.



## 7. Proposed Sundown Road Extension

**Proposed Sundown Road Extension**

**Purpose:** The Brawley School Road Small Area Plan identified a proposed connection opportunity for a parallel roadway to Brawley School Road between Silver Hook Drive and Sundown Road (SR 1190). This roadway connection would enhance the roadway connectivity in the area as development occurs.



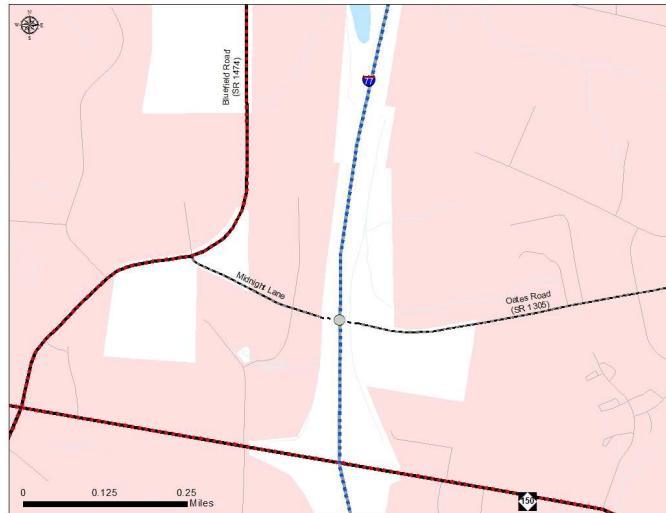
**Need:** The roadway connection between Silver Hook Drive and Sundown Road would help to reduce congestion along Brawley School Road and Williamson Road, and serve as access to the intended development as described in the small area plan.

**Recommendation:** It is recommended that the proposed roadway connection be a two-lane minor thoroughfare on new location and shown as a minor thoroughfare – recommended on the amended Highway Map.

## 8. Re-classification of Oates Road and Midnight Lane between Talbert Road and Bluefield Road from collector street to minor thoroughfare

**Purpose:** A new grade separation was proposed in the 2008 CTP for a grade separation over I-77 linking the termini of Oates Road (SR 1305) and Midnight Lane. This connection was initially defined as a proposed collector street connection, however; the primary purpose of this new roadway and improvements would be to provide balanced mobility and access to the area, which is consistent with the definition of a minor thoroughfare.

**Proposed Oates Road and Midnight Lane Reclassification**



**Need:** Midnight Lane, Oates Road and the proposed connection is classified as a collector street in the CTP. The definition of a collector street is to collect traffic from the local streets and distribute to the thoroughfares. We feel that this connection would function more as a minor thoroughfare by handling a moderate traffic volume and balancing mobility and access to adjacent businesses.

It is anticipated that this proposed connection would help to relieve congestion along the NC 150 corridor in the vicinity of the I-77 Interchange. The Midnight Lane – Oates Road connection would also serve as an alternative access to the existing commercial development along the NC 150 corridor, and provide primary access to the proposed development as identified in the land use plan.

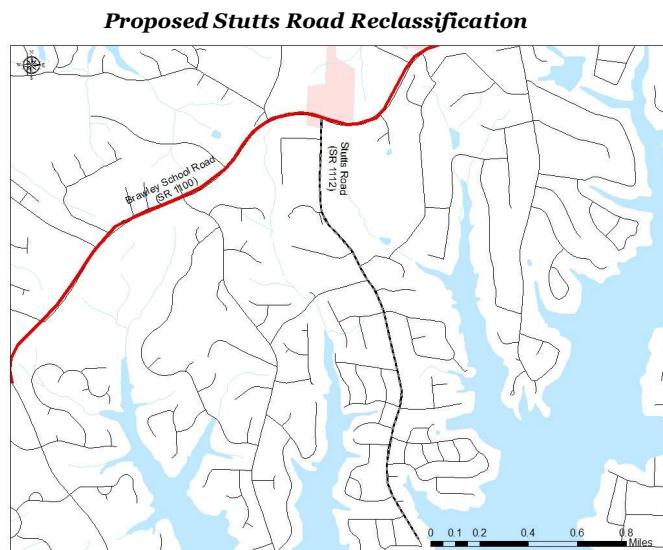
The Town has completed an alignment feasibility study for this corridor and is in agreement that this connection should be classified as a minor thoroughfare needs improvements for the existing roadway sections, and minor thoroughfare proposed for the proposed overpass and roadway connection. East of Talbert Road (SR 1116), it is recommended that Oates Road is widened to a three-lane section based upon the 2030 model projections.

**Recommendation:** It is recommended that the existing sections of Oates Road and Midnight Lane are re-classified to minor thoroughfare needs improvements and the proposed roadway connection is classified as minor thoroughfare proposed in the amended CTP. This modification would account for the proposed grade separation in the CTP, and the balanced mobility and access that this roadway connection would provide for the area.

*9. Re-classification of Stutts Road between Brawley School Road and Shoreline Loop from collector street to minor thoroughfare needs improvements*

**Purpose:** Stutts Road (SR 1112) was classified as a local/residential street between Brawley School Road and Shoreline Loop in the CTP. Town staff recommends a reclassification of Stutts Road to minor thoroughfare needs improvements.

**Need:** Stutts Road has an average annual daily traffic volume of 5,500 vehicles (2009) per day in the vicinity of the intersection with Brawley School Road, and the average pavement width is 18 feet. There are several residential developments with single family homes along the Stutts Road corridor. The roadway surface is in poor condition, and vehicles with boat trailers frequently use Stutts Road to access a marina, located at the end of the road.



**Recommendation:** It is recommended that the Stutts Road corridor is reclassified as minor thoroughfare - needs improvements to account for the need for twelve foot travel lanes in each approach to accommodate increased traffic volumes and boat trailer traffic. In addition, turn lanes may also be required at intersections along the corridor.

Recommended Roadway Widening Projects:

1. *Widen Bluefield Road (SR 1474) to a two-lane boulevard from NC 150 to the proposed Bluefield Road Realignment.*

The roadway is recommended to be reclassified from minor thoroughfare needs improvement to boulevard needs improvement.

It is recommended that Bluefield Road be widened to a two-lane divided boulevard with accommodations for bicyclists. The 2030 model projections indicate that additional capacity will be required to adequately serve the anticipated traffic volumes.

2. *Widen Flower House Loop (SR 1312) to 12 foot lanes from US 21/NC 115 to the northern planning boundary.*

It is recommended that Flower House Loop (SR 1312) is reclassified from a collector street to minor thoroughfare – needs improvements to match the designation specified in the Troutman CTP. In particular, the roadway needs to be widened to accommodate a 12 foot travel lane in each direction to address current safety issues.

3. *Extend the boulevard needs improvements designation on Mazeppa Road (SR 2395) by 0.5 miles to the east of Overhead Bridge Road (SR 2397) to Penske Way.*

The 2030 model projections indicate that additional capacity will be required to adequately serve the anticipated traffic volumes. In addition, Penske Way serves as the main entrance to the Mooresville Industrial Park, and there is significant volume of heavy trucks that use Mazeppa Road to access this development.

4. *Widen Ostwalt Amity Road (SR 1001) to 12 foot lanes from the I-77 overpass to the Rowan County line.*

It is recommended that Ostwalt Amity Road (SR 1001) is reclassified from minor thoroughfare to minor thoroughfare needs improvements to match the designation specified for this roadway in the Troutman and Statesville CTP's. In particular, the roadway needs to be widened to accommodate a 12 foot travel lane in each direction to address current safety issues. This corridor is also proposed to include a multi-use trail adjacent to the current roadway alignment based upon the Carolina Thread Trail plan for Iredell County.

5. *Widen Overhead Bridge Road (SR 2397) to three 12 foot lanes from NC 150 to Mazeppa Road.*

The roadway is recommended to be reclassified from minor thoroughfare existing to minor thoroughfare needs improvement. The 2030 model projections indicate that

additional capacity will be required to adequately serve the anticipated traffic volumes.

6. *Widen Shinnville Road (SR 2397) to three 12 foot lanes from US 21/NC 115 to Ostwalt Amity Road (SR 1001).*

The roadway is recommended to be reclassified from minor thoroughfare existing to minor thoroughfare needs improvement. The 2030 model projections indicate that additional capacity will be required to adequately serve the anticipated traffic volumes.

7. Widen Talbert Road (SR 1116) to a three-lane roadway from NC 150 to Oates Road (SR 1305).

The roadway is recommended to be reclassified from minor thoroughfare existing to minor thoroughfare needs improvement. The 2030 model projections indicate that additional capacity will be required to adequately serve the anticipated traffic volumes.

#### Recommended Reclassifications:

1. *Reclassification of NC 3 from boulevard existing to major thoroughfare existing from Culp Street to NC 150.*

This roadway travels through Downtown Mooresville and there is limited right-of-way for improvements. The 2030 model projections indicate that the current cross-section is sufficient to handle future traffic volumes.

2. *Reclassification of NC 115 from major thoroughfare existing to major thoroughfare needs improvement from McLellan Avenue to NC 150.*

This roadway travels through Downtown Mooresville parallel to the active Norfolk Southern rail line and there is limited right-of-way for improvements. The proposed cross-section would provide accommodations for bicyclists and pedestrians.

3. *Reclassification of the I-77 and NC 150 Interchange (Exit 36) from existing interchange to interchange needs improvements.*

A diverging diamond interchange (DDI) has been proposed for this interchange to address capacity and operational deficiencies.

4. *Reclassification of the I-77 and US 21/Williamson Road (SR 1109) Interchange (Exit 33) from existing interchange to interchange needs improvements.*

The on-going Fairview Flyover/Exit 33 Feasibility Study (R-4757) is currently evaluating several concepts that would modify the existing interchange configuration.

#### Project Completion Revisions:

1. *I-77/Langtree Road (SR 1102) Conversion from recommended interchange to existing interchange*

The new interchange was open to traffic in 2010. It is recommended that the Highway Map is modified to show I-77 and Langtree Road as an existing interchange.

2. *Re-classification of a segment of Brawley School Road (SR 1100) from boulevard needs improvements to boulevard existing.*

Brawley School Road between Chuckwood Road (SR 1177) and Williamson Road is shown on the amended Highway Map as boulevard existing because the widening of this section is complete. The improvement has reduced congestion and safety deficiencies along the corridor. Once the R-3833 – Section B project has been completed, an additional amendment will be required to modify the Highway Map to show the Brawley School Road section between Williamson Road and Talbert Road as boulevard existing.

## ***B. Public Transportation and Rail Map Amendments***

The recommended amendments for the Public Transportation and Rail Map are shown on Sheet 3. The proposed amendments are for this map is summarized below.

1. *Modify bus route along Williamson Road and I-77 from Existing to Recommended.* Weekday Service was discontinued on the Mooresville Express (83x) in 2010. This service was operated by the Charlotte Area Transit System (CATS) between Uptown Charlotte and Williamson Chapel United Methodist Church parking lot.  
It is recommended that the Town and CATS re-visit the feasibility for re-establishing service and a sustainable source of funding.
2. *Modify park and ride lot at the intersection of Williamson Road and Brawley School Road from Existing to Recommended.* This park and ride lot was the existing church parking lot that served as parking for the 83x during the week. Following the discontinuation of the 83x, this lot has reverted to full-time use by the church. It is recommended that this site is considered for a park and ride lot in the future if the 83x service is re-established.
3. *Relocate the recommended rail stop from the Legacy Village development near Fairview Road to the Knox Property approximately 1 mile south of the previously proposed location.* This initiative is part of the Red Line Regional Rail (RLRR) project (Phase 1) to upgrade the existing Norfolk Southern rail line to accommodate passenger rail service between Uptown Charlotte and Mooresville. This station would serve as the terminal passenger stop for phase 1, and the Town determined that a relocation of the station was necessary to minimize the impact of traffic congestion, and increase the opportunities for transit oriented development on vacant property. Mooresville Town Board approved this request in January of 2012, and CATS Metropolitan Transit Commission (MTC) approved the request in April of 2012.

Phase 2 of the RLRR project would include extending passenger service to Statesville, with proposed stops in Downtown Mooresville, and a stop adjacent to the NC 150 corridor, and this phase of the project would not be implemented within the next 20 years.

4. *Reclassify the I-77 corridor within the Mooresville CTP study area as operational strategies - recommended.*

The Charlotte Region Fast Lanes Study identified the I-77 corridor between Uptown Charlotte and Troutman as a candidate corridor for High Occupancy Toll (HOT) lanes. The I-4750 HOT project will construct HOT lanes on I-77 from Catawba Avenue to the NC 150 interchange in 2015 if a public-private partnership can be secured. It is recommended that the I-77 corridor is reclassified to operational strategies recommended to ensure that HOT lanes are included in the design of any future widening projects within the Mooresville CTP study area.

### **C. Bicycle Map Amendments**

The most recent version of the CTP combined bicycle and pedestrian recommendations on a single map. As part of this amendment, separate bicycle and pedestrian maps have been created to identify specific improvements by mode. The recommended amendments for the Bicycle Map are shown on Sheet 4. The proposed amendments for this map are summarized below.

1. Existing bicycle lanes/sharrows were classified as on road existing at the following locations:
  - Brawley School Road between Chuckwood Road (SR 1177) and Williamson Road (SR 1109)
  - Wilson Avenue between Hillside Street and Broad Street
  - Plantation Ridge Drive between Williamson Road and Morrison Plantation Parkway
  - Downtown Mooresville – to – Bellingham Park Bicycle Route along Center Avenue, Magnolia Street, Heatherly Road, and Fieldstone Road
2. The following existing roadway sections were designated for bicycle accommodations in the Mooresville Comprehensive Bicycle Plan (2008):
  - NC 3 –bicycle lanes were included in the cross-section in the NC 3 corridor plan from Culp Street to the Cabarrus County Line.
  - NC 115 - Wide outside shoulders and an off-road multi-use trail were recommended between the Iredell-Mecklenburg County line and Downtown Mooresville.
  - Alcove Road (SR 1206) between Langtree Road (SR 1102) and Williamson Road (SR 1109)
  - Faith Road (SR 1136) between NC 115 and the Proposed East-West Connector
  - Johnson Dairy Road (SR 1142) between Shearers Road (SR 1125) and the Rocky River Multi-Use Trail (Carolina Thread Trail)
  - Kistler Farm Road (SR 1148) between River Birch Circle and Rocky River Road (SR 1147)
  - Langtree Road between the proposed East-West Connector and NC 115
  - Linwood Road (SR 1150) between NC 152 and Teeter Road (SR 1151)

- Rocky River Road (SR 1147) between Shearers Road and NC 3
  - Shearers Road (SR 1125) between Brawley Avenue and Greystone Road (SR 1141)
  - White Oaks Road between Shearers Road (SR 1125) and Fieldstone Road
  - Williamson Road (SR 1109) between US 21 and Brawley School Road (SR 1100)
  - Sections of Wilson Avenue, Church Street, Academy Street and Iredell Avenue in Downtown Mooresville.
3. An additional recommendation in the Bicycle Plan included the modification of an existing underpass at I-77 between NC 150 and Cornelius Road to allow for a multi-use path. This path would provide an east-west connection throughout Mooresville for cyclists and pedestrians without having to traverse the I-77/NC 150 interchange. This recommendation is shown on the bicycle map as a proposed grade separation, but no further investigation has occurred to determine the feasibility of converting this structure for use by bicyclists and pedestrians. However, there may be an opportunity to retrofit this structure for pedestrian and bicycle accommodations as part of the I-77 (I-4750) widening project.
4. The East-West Connector Alignment Feasibility Study (2009) identified bicycle lanes to be included within the cross-section of the proposed roadway. This includes the addition of bicycle accommodations the existing roadway sections on Langtree Road, Faith Road, Rocky River Road, and Teeter Road along with the upgrade of these roadways for the East-West Connector.
5. Lake Norman Bicycle Route (LNBR) was labeled with shields throughout the CTP study area.
- NCDOT, the Town and Iredell County have adopted the LNBR.
  - It is officially recognized as a NCDOT bicycle route, and the route has been signed with bike route shields.
  - Sections of NC 115, Brawley School Road, Rolling Hills Road, Bluefield Road, Judas Road, and Perth Road were identified for bicycle accommodations as part of the LNBR planning process.
  - Perth Road and NC 150 was identified as part of the ultimate route, but it was recognized that the current alignment of this roadway is not ideal for bicyclists. It is recommended that a multi-use trail alignment is studied between NC 150 and Judas Road as the ultimate alignment for the route.
6. The Carolina Thread Trail plan for Iredell County has identified a series of proposed on- and off- road trail segments intended to provide multimodal connectivity between local and regional attractions. For the reason that the Town would like these future facilities to be accessible to all users, the following corridors are identified as multi-use recommended on the amended Bicycle Map:
- NC 150 from Perth Road to the Catawba County Line (Lake Norman Bridge). When the NC 150 Bridge linking Iredell and Catawba Counties is reconstructed as part of the R-2307 project, a separated bicycle path should be considered on the bridge with cored slab units. This bridge connection is a significant link in the Carolina Thread Trail and the Lake Norman Bicycle Plans.
  - Rankin Hill Road (SR 1311) between Judas Road (SR 1378) and Parkertown Road (SR 1310)
  - US 21/NC 115 between Mazeppa Road and the CTP study area boundary

- Oswalt Amity Road (SR 1001) between the CTP study area boundary and the Rowan County line
- Mazeppa Road (SR 2395) between NC 115 and NC 801
- NC 152 between Stewart Avenue and Wiggins Road (SR 2399)
- Triplet Road (SR 2362) between Mazeppa Road (SR 2395) and the CTP study area boundary (Oswalt Amity Road (SR 1001).
- Medical Park Road/Centre Church Road (SR 1245)/Fairview Road between US 21 and NC 115
- NC 801 between Mazeppa Road (SR 2395) and the Rowan County line.

Additional multi-use trails are recommended throughout the CTP study area. These features are shown on the bicycle and pedestrian maps as recommended multi-use trails. When these multi-use trails are studied in additional detail, grade separations may be recommended at some locations.

7. The following bicycle and pedestrian improvements have been identified in small area plans completed by the Town:
  - A multi-use path was recommended on US 21 in the US 21 Small Area Plan between Fairview Road (SR 1246) and Wilson Avenue
  - Bicycle lanes were recommended in the NC 3 plan along NC 3 between Church Street and the Mecklenburg County line as roadway improvements occur.

#### **D. Pedestrian Map Amendments**

The 2008 Mooresville CTP did not include a pedestrian map. All existing and recommended pedestrian facilities are shown on Sheet 5. As part of the Mooresville Comprehensive Pedestrian Plan, a GIS sidewalk inventory was completed in 2006. Town staff has updated the GIS database on an annual basis to account for recently completed sidewalk projects. The proposed amendments to the Comprehensive Pedestrian Plan are summarized below.

- Sidewalks were constructed on each side of Brawley School Road as part of the widening project between Chuckwood Road and Williamson Road (R-3833, Phase A).
- Phase B of the widening project will include sidewalks along both sides of the road between Williamson Road and Talbert Road. The estimated completion date of this project is the summer of 2013.
- The recommended multi-use paths described in the Bicycle Map amendments were also added to the Pedestrian Map.

#### **SECTION 2: OTHER PLANS AND PROGRAMS**

The purpose of this section of the CTP is to summarize changes to the CTP in addition to the official plan maps that have been amended in Section 1. These recommendations will highlight specific projects as well as Town-wide policies that will guide transportation enhancements over a long range outlook.

### **A. Revision to the Collector Street Plan**

The purpose of the Collector Street Plan in the CTP was to ensure adequate connectivity as development and redevelopment occurs. This section of the plan is to be revisited by staff on a periodic basis to ensure that the proposed roadway connections are feasible from a cost and construction standpoint.

The following proposed roadway connections should be **removed** from the collector street plan. It was determined that these roadway connections would be cost prohibitive, would require excessive environmental mitigation, or would not provide a benefit from a connectivity standpoint.

- Half circle roadway connection proposed for Langtree Road (SR 1102) east of I-77. NCDOT has identified the Langtree Road Corridor between I-77 and the Lowe's South Access as controlled access, and median breaks will not be approved.
- Connection between Midway Lake Road (SR 1137) and Shearers Road via Tammy Lane and Streamside Place (SR 3289).
- Connection between Fieldstone Road and NC 3 via Kam Drive and Saint Marks Drive.
- Connection between Alexander Acres Road (SR 1154) and Brumley Road (SR 1153)
- Connection between Kerr Street and NC 801
- Extension of Penske Drive to connect to NC 801 via Wallaces Grant Drive
- Connection between Mazeppa Road (SR 2395) and Shinnville Road (SR 2383) via Pondview Road and Woodridge Lane

### **B. Fairview Flyover/Exit 33 Interchange Modification Feasibility Study**

NCDOT is currently undertaking a study to determine the feasibility of an overpass connecting Fairview Road with Alcove Road, and potential modifications to the existing Williamson Road/US 21 (Exit 33) interchange on I-77 (R-4757). The Lowe's Home Improvement Corporate Campus is located adjacent to this interchange, currently employs 3,500 employees and is projected to employ 12,000 employees at the buildout of the campus.

An overpass linking Fairview Road and Alcove Road was a recommendation in the CTP, however; the scope of the feasibility study has been expanded to include potential roadway network improvements and interchange improvements at Exit 33 with projected land use intensities in mind. The outcome of the study will have three roadway alignment alternatives for future consideration. At a point in time when an option is selected by NCDOT to advance design and place the project on the TIP, the Town should amend the CTP to include the alignment to reserve right-of-way. The current alignments of Fairview and Alcove Roads will need to be relocated to accommodate bridge over I-77 in this location.

### **C. Conversion of I-77/NC 150 Interchange to a Diverging Diamond Interchange**

The CTP recognized the issues with congestion along the NC 150 corridor in the vicinity of the interchange with I-77. TIP project R-2307 will address issues along the NC 150 corridor in terms of capacity and restriction of access, west of the I-77 interchange to NC 16 in Catawba County. NCDOT and the Town have collaborated on a concept to convert the existing simple diamond

interchange to a Diverging Diamond Interchange (DDI). NCDOT-Division 12 is in favor of this project, and NCDOT – Congestion Management has determined that this conversion could reduce travel times on NC 150 through the I-77 Ramp intersections by 50%. It is recommended that the Town and NCDOT continue to pursue funding strategies to implement this project within the next 5-10 years.

#### **D. Complete Streets Policy**

NCDOT adopted a "Complete Streets" policy in July 2009. The policy directs NCDOT to consider and incorporate several modes of transportation when building new projects or making improvements to existing infrastructure.

Complete streets elements of projects can include; bicycle lanes, raised medians, curb extensions, and on-street parking as traffic calming measures and to encourage multimodal transportation.

Several communities throughout North Carolina have also implemented projects using elements of complete streets. In many cases, the Town's development ordinance and adopted plans currently contain elements of Complete Streets policy, but the Town could choose to adopt a policy, and ensure that new roadways and roadway improvement projects include Complete Streets elements where applicable.