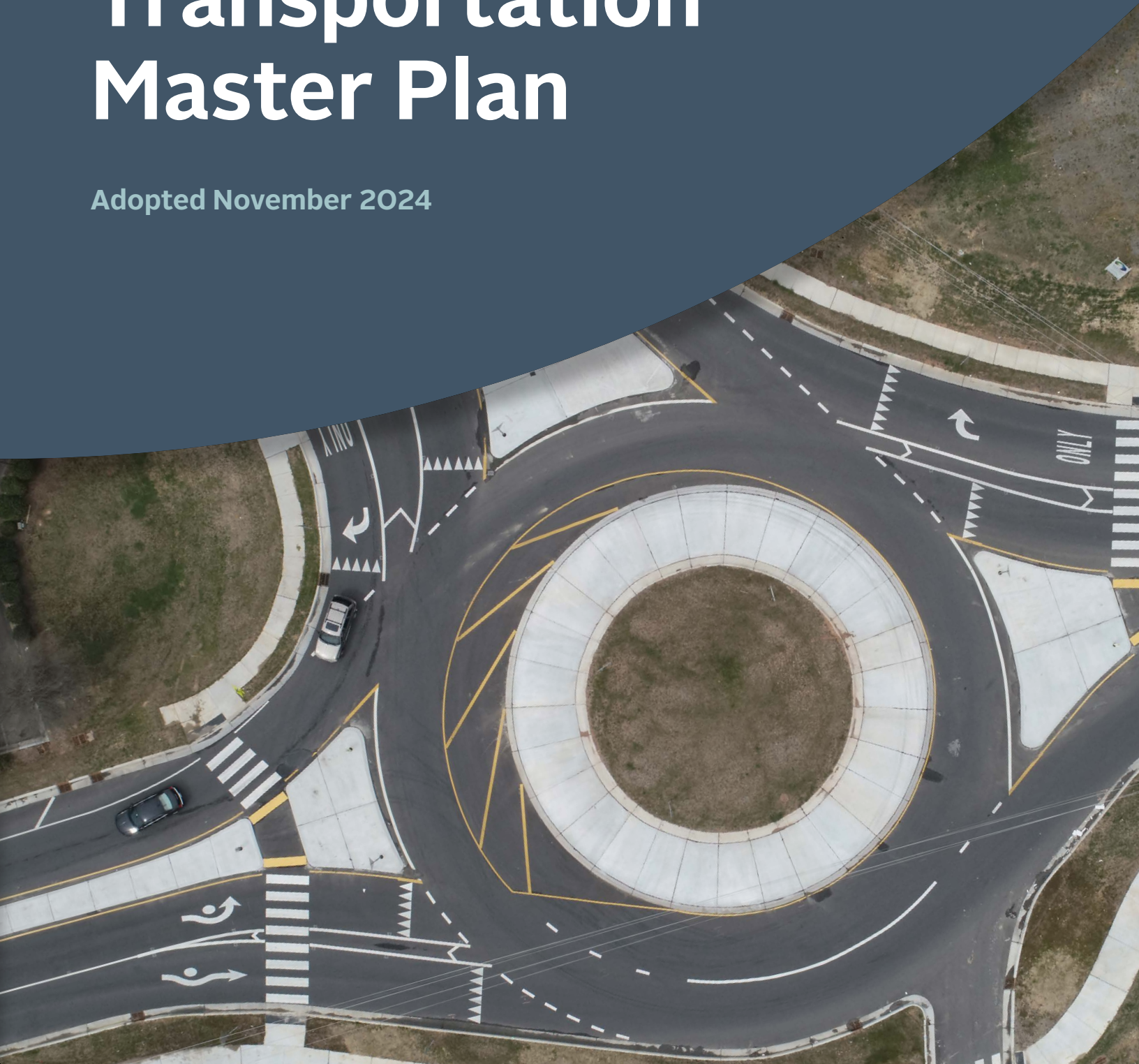




Indian Trail Transportation Master Plan

Adopted November 2024







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Plan Vision

The Indian Trail Transportation Master Plan (TMP) identifies transportation issues and deficiencies, integrates land use and transportation strategies, and shapes investment decisions to implement transportation improvements that connect people and places, safely and efficiently move goods and people, and expand travel choices.

The TMP aligns with two Town Council priorities set forth in the town's Strategic Plan:



Transportation



Town Infrastructure

INDIAN TRAIL TOWN COUNCIL 2024-2027 PRIORITIES



Public Safety

- Police (Union County Sheriff's Office)
- Fire
- Public Works



Town Infrastructure

- Public Works
- Facilities



Transportation

- Streets and Roads
- Sidewalks and Greenways
- Public Transit



Human Capital

- Retention, Recruitment, and Training



Economic Development

- Business Development
- Park Development
- Planning and Code Enforcement



Capital Improvement Projects

- Indian Trail Road Complete Street Phases 1 and 2
- Chestnut Parkway Phase 3
- Shady Bluff Improvements
- Southfork Crooked Creek Greenway
- Chestnut Square Park Phases 2A and 2B

Purpose

Indian Trail, the largest municipality in Union County, had a population jump of almost 20% from 33,518 people in 2010 to 39,997 people in 2020. The population continues to grow due to the town's many desirable aspects including good schools, low tax rates, and proximity to Charlotte.

from **33,518**
people in 2010



to **39,997**
people in 2020

Transportation improvement projects have been limited in the past; however, there are currently multiple North Carolina Department of Transportation (NCDOT) and town projects underway or funded within Indian Trail, as well as on the outskirts of town limits. In addition to these projects, the town has also recently completed plans like the Downtown Master Plan and Pedestrian Plan Update that are focused on revitalization of downtown and promoting transportation choices.

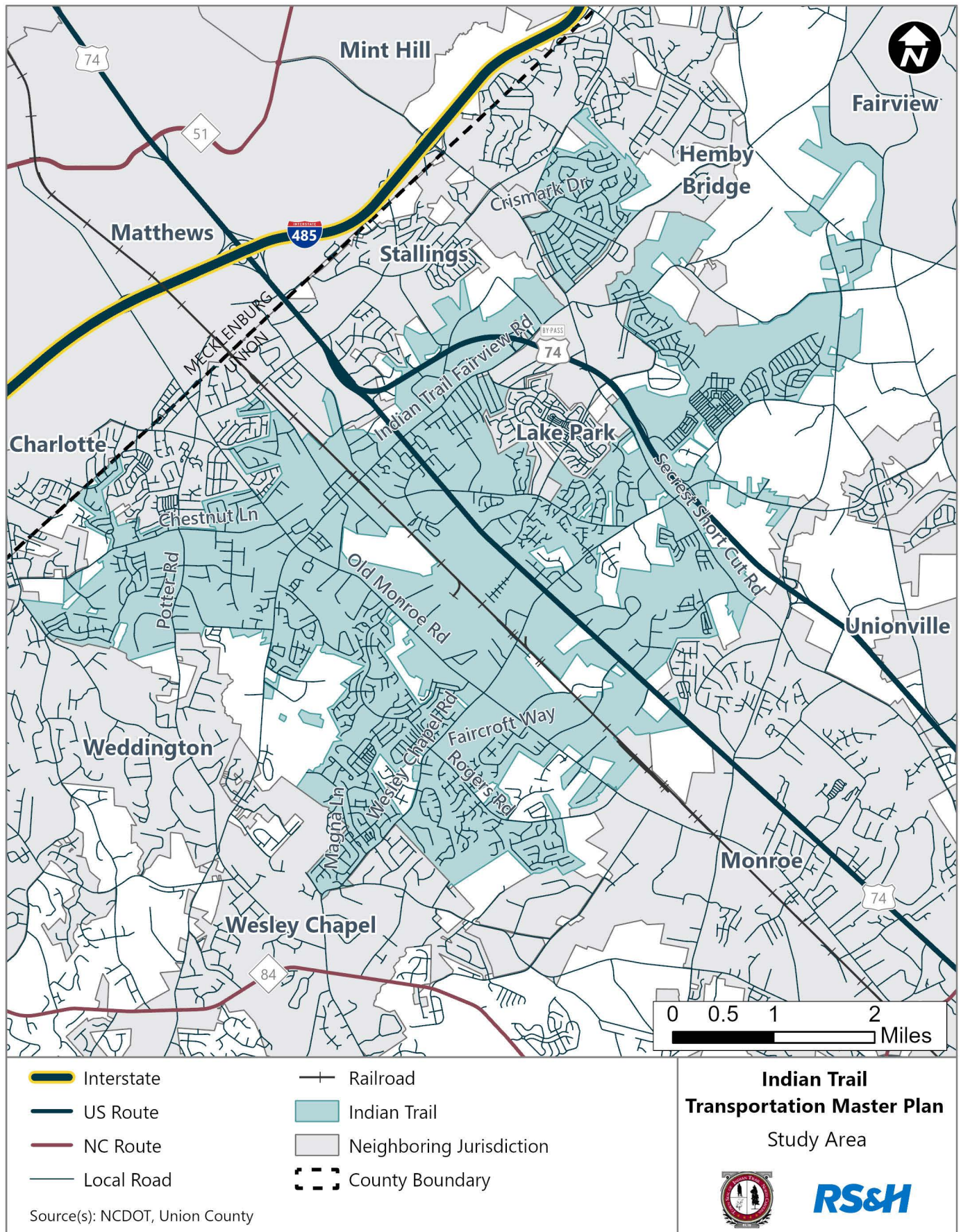
The Town Council adopted their 2024-2027 Town Council priorities in March 2024 which include transportation and town infrastructure along with public safety, economic development, and human capital.

These combined efforts will result in notable improvements to mobility, safety, and connectivity in town. Indian Trail wants to ensure this momentum continues. Through development of the TMP, the town has proactively identified issues or deficiencies not currently being addressed and has developed short- and long-term recommendations and strategies to address them.

Study Area

The study area for the plan is the Indian Trail town limits. However, as shown in **Figure 1**, the town is uniquely shaped with several doughnut holes and is adjacent to multiple jurisdictions including unincorporated Union County; the cities of Charlotte and Monroe; the towns of Fairview, Hemby Bridge, Stallings, and Weddington; and the villages of Lake Park Wesley Chapel, and Marvin. As a result, development and transportation project activity in these areas influence mobility in Indian Trail. This activity was considered when identifying needs and deficiencies during the planning process.

Figure 1: Study Area



Stakeholders

Project Advisory Committee

The town formed an advisory body to provide strategic guidance and facilitate decision-making. The main roles and responsibilities of the Project Advisory Committee (PAC) are shown below and the committee members are listed in **Table 1**.

Roles and Responsibilities

1

Provide guidance and direction on the development of the plan.

2

Help identify deficiencies and associated improvements.

3

Participate in Project Advisory Committee meetings.

4

Assist with public outreach.

Table 1: Project Advisory Committee

Name	Title	Organization
Todd Huntsinger	Director of Engineering	Indian Trail Engineering Department
Magdalene Ngan	Engineering Intern	Indian Trail Engineering Department
Brandi Deese	Planning Director	Indian Trail Planning Department
Bjorn Hansen	Senior Planner	Union County Planning Department
Paul Benton	Senior Transportation & Planning Engineer	Charlotte Regional Transportation Planning Organization (CRTPO)
Theo Ghitea	Division Planning Engineer	NCDOT Division 10



Indian Trail Road Complete Street

Key Stakeholders

Key stakeholders are individuals or entities who have an interest in transportation, will be impacted by plan recommendations and outcomes, and/or play a role in plan implementation.

Key stakeholders were identified by the PAC and include:

- City of Monroe
- Town of Weddington
- Developers
- Indian Trail Town Council
- Union County Schools
- NCDOT

Input was sought from key stakeholders through a mix of methods, including virtual and in-person interviews, online surveys, and emails in February 2024. Details on the outreach strategies and the input received are provided in the Data Collection & Existing Conditions Analysis section.

Data Collection & Existing Conditions Analysis

The town undertook an extensive data collection effort and analyzed the information gathered to develop a complete understanding of the existing and planned transportation system. The analysis included review of relevant plans and studies, examination of the Metrolina Regional Model (MRM) and available geographic information system (GIS) data, and consideration of input from key stakeholders and the general public.

Relevant Plans and Studies

Several plans and studies recently completed by the town or its planning partners include information relevant to the TMP. The type of plan (Plan), a brief plan description (Description), and information on if/how plan information was used in the TMP (Outcome) are summarized in **Table 2**.

Table 2: *Relevant Plans and Studies Summary*

Plan	Description	Outcome
TOWN PLANS		
Move Indian Trail Pedestrian Plan Update (2024)	- Documents existing pedestrian facilities - Analyzes bike/ped crash and safety data - Recommends and prioritizes pedestrian improvements - Includes concept designs for six priority projects	- Used to identify existing and proposed pedestrian facilities - High priority pedestrian improvements were incorporated into the intersection screening and concept designs and cost estimates
Downtown Master Plan (2023)	- Works in collaboration with the Comprehensive Plan to help guide future development, specifically in the downtown area - Proposes several new roadway extensions and connections as well as greenways	- Used to identify proposed roadway connections and greenway facilities - Proposed roadway and greenway connections were evaluated for inclusion as recommended facilities among required CTP amendments (see CRTPO CTP)
2041 Comprehensive Plan (2022)	- Provides guidance for future development in Indian Trail and establishes a guide for economic development, land use, public facilities, utilities decision-making, and zoning - Documents recently completed projects, identifies activity centers and revitalization areas, and provides updated transportation recommendations within Village Plans	Activity centers, revitalization areas, and recommendations were considered when identifying candidate intersection locations
Secrest Short Cut Small Area Plan (2018)	- Identifies land uses and infrastructure most appropriate for the area surrounding the US 74 Bypass interchange at Unionville-Indian Trail Road - Several transportation-focused goals and strategies were included in the plan	Goals and strategies were considered before developing recommendations in this area

Relevant Plans and Studies Summary (continued)

Plan	Description	Outcome
Bicycle Master Plan (2010)	Identifies a system of neighborhood loops, town-wide connectors, and neighborhood connectors	This plan is dated, and the town indicated its focus was on construction of sidewalks, multi-use paths, and greenways
Parks and Greenway Master Plan (2010)	Includes strategies to help meet current future park and recreation needs	The Parks and Recreation Director indicated this plan was dated and to refer to newer plans, like the Comprehensive Pedestrian Plan and Downtown Master Plan, for recommended greenway facilities in town
Traffic Impact Assessments (TIAs) (last five years)	- Valuable tool for assessing potential impacts of traffic generated by a proposed development to the surrounding transportation system - Over 20 TIA's were reviewed	- Documented intersections studied and improvements recommended - Intersections were considered when developing the candidate intersections list and screening intersection projects - NCDOT was contacted to see what improvements were required as a part of the TIAs and if additional improvements are needed
REGIONAL PLANS		
Charlotte Area Transit System (CATS) 2030 Transit Corridor System Plan / LYNX Silver Line Study (2023)	- Planned 29-mile, 30 station light rail alignment from the City of Belmont in Gaston County, through Center City Charlotte and the Town of Matthews in Mecklenburg County, and into Stallings and Indian Trail in Union County - The Locally Preferred Alternative (LPA) shows the alignment along US 74 and Matthews-Indian Trail Road in Indian Trail with a stop near Town Hall - Three phases for implementation: - Phase A (Center City Charlotte to the Town of Matthews) - Phase B (Center City Charlotte to I-485 in western Mecklenburg County) - Subsequent phases (into Gaston and Union Counties)	- Because the portion of the LYNX Silver Line in Union County is in an unfunded subsequent phase, the town felt it was too far out to influence any recommendations or improvements included in the plan - The town decided to incorporate some initial transit questions in its online surveys to begin gauging support for public transit in town

Relevant Plans and Studies Summary (continued)

Plan	Description	Outcome
CRTPO 2050 Metropolitan Transportation Plan (MTP) (2022)	- Documents the region's vision for the future - Establishes goals, objectives, and transportation priorities over the next 20+ years to help achieve that vision - Must be fiscally constrained	- Used to identify funded transportation projects in town - Intersections that were already being improved (either as a stand-alone project or part of a larger transportation project) were eliminated from further consideration for additional study - Candidate projects that were submitted but did not make the fiscally constrained project list were reviewed and considered as candidate projects for the next MTP (2055 MTP)
CRTPO Comprehensive Transportation Plan (CTP) (Continuously Updated)	- Multi-modal plan for the region that identifies transportation system improvements necessary to address future mobility needs - Serves as the framework for selecting future transportation projects for the MTP - Includes four maps (highway, pedestrian, bicycle, and public transportation/rail) and each facility on the map is categorized as either existing, needs improvement, or recommended	- Evaluated the current CTP to see if any updates were needed. This included removing recommended improvements when no longer feasible, modifying alignments, and changing designations from "Existing" to "Needs Improvement" - Checked to see if any recommendations from newly adopted plans needed to be added to the CTP - Considered candidate projects for the 2055 MTP
CONNECT Beyond (2021)	- Regional transit vision and plan for a 12-county region including Union County - Identifies two options for a future High-Capacity Transit (HCT) Corridor in the planning area and recommends an additional planning study to determine the optimal future corridor - Identifies a Long-Term Commuter Rail Corridor along the CSX Railroad	- Recommendations from CONNECT Beyond were included on the Existing & Planned Transit Network Map - Due to the long-term nature of the plan, a future HCT Corridor was not considered to influence recommendations or improvements included in the plan - The town decided to incorporate some initial transit questions in its online surveys to begin gauging support for public transit in town

Relevant Plans and Studies Summary (continued)

Plan	Description	Outcome
Greater Charlotte Regional Freight Mobility Plan (2016)	- Compiles freight-related data, provides freight-related recommendations for inclusion in state and local land use and transportation plans, and serves as a cornerstone for expanded and sustained regional coordination - Designates US 74 as a freight corridor and recommends conducting an evaluation to address congestion and safety along the corridor	US 74 and other local freight routes were included in the traffic and safety analysis
Carolina Thread Trail (CTT) Master Plan (2011)	- Regional network of connected greenways, trails and blueways that reaches 15 counties and two states - The network is a mix of completed and planned trails - All 15 counties, including Union County, have adopted Master Plans that highlight destinations and connection opportunities	Used to identify existing and proposed greenways in town
OTHER PLANS		
Union County 2050 Comprehensive Plan (2021)	- Multi-disciplinary document that establishes a future community vision for Union County - Includes a new land use map as well as transportation strategies related to cooperatively planning and implementing improvements to the transportation system, a vision for interstate status for the US 74 corridor, managing traffic by tying rezonings to completing funded road improvements, and enhanced land use coordination with municipalities - References the county's critical intersection program	- The critical intersection program was consulted before identifying the list of candidate intersections - Any intersections that were already being studied as part of this program were eliminated from further consideration for additional study as a part of the Indian Trail TMP
NCDOT 2024-2033 State Transportation Improvement Program (STIP) (April 2024)	The current STIP identifies transportation projects that will receive funding between 2024 and 2033	- Used to identify funded transportation projects in town - Any intersections that were already being improved (either as a stand-alone project or part of a larger transportation project) were eliminated from further consideration for additional study as a part of the Indian Trail TMP



Travel Demand Model and GIS Data

The Existing Conditions Analysis included a review of the MRM and available GIS data associated with population and employment growth, traffic operations, safety, land use, development activity, programmed projects, transit infrastructure, and bicycle and pedestrian facilities. Data was obtained from the Charlotte Department of Transportation (CDOT), NCDOT, CRTPO, Charlotte Area Transit System (CATS), Centralina Regional Council, Carolina Thread Trail (CTT), Union County, and Indian Trail.

Population and Employment Growth

Population data is available by traffic analysis zone (TAZ) through the MRM. A TAZ is the unit of geography used in the MRM (like a census tract or block group used in the US Census). The planning area is expected to experience significant population growth, increasing from approximately 67,411 people in 2018 to 109,561 people in 2050. Population growth is anticipated to be the highest northeast of the US 74 bypass (Monroe Expressway) between Secrest Shortcut Road and N Rocky River Road and just south of Indian Trail Road S / Waxhaw Indian Trail Road, west of the railroad tracks.

Population growth is shown in **Figure 2**.

Similar to population, employment data is available by TAZ. Employment in the planning area is anticipated to more than double, growing from 30,700 jobs in 2018 to 67,590 jobs in 2050. Employment growth is expected to be the highest between US 74 and Old Monroe Road, south of Sardis Church Road / Unionville-Indian Trail Road W / Wesley Chapel Stouts Road, surrounding the Charlotte-Monroe Executive Airport, south of Chestnut Lane, south of N Rocky River Road, and just north of town between I-485 and Stevens Mill Road (east of Idlewild Road).

Employment growth is shown in **Figure 3**.

Figure 2: 2018-2050 Population Growth

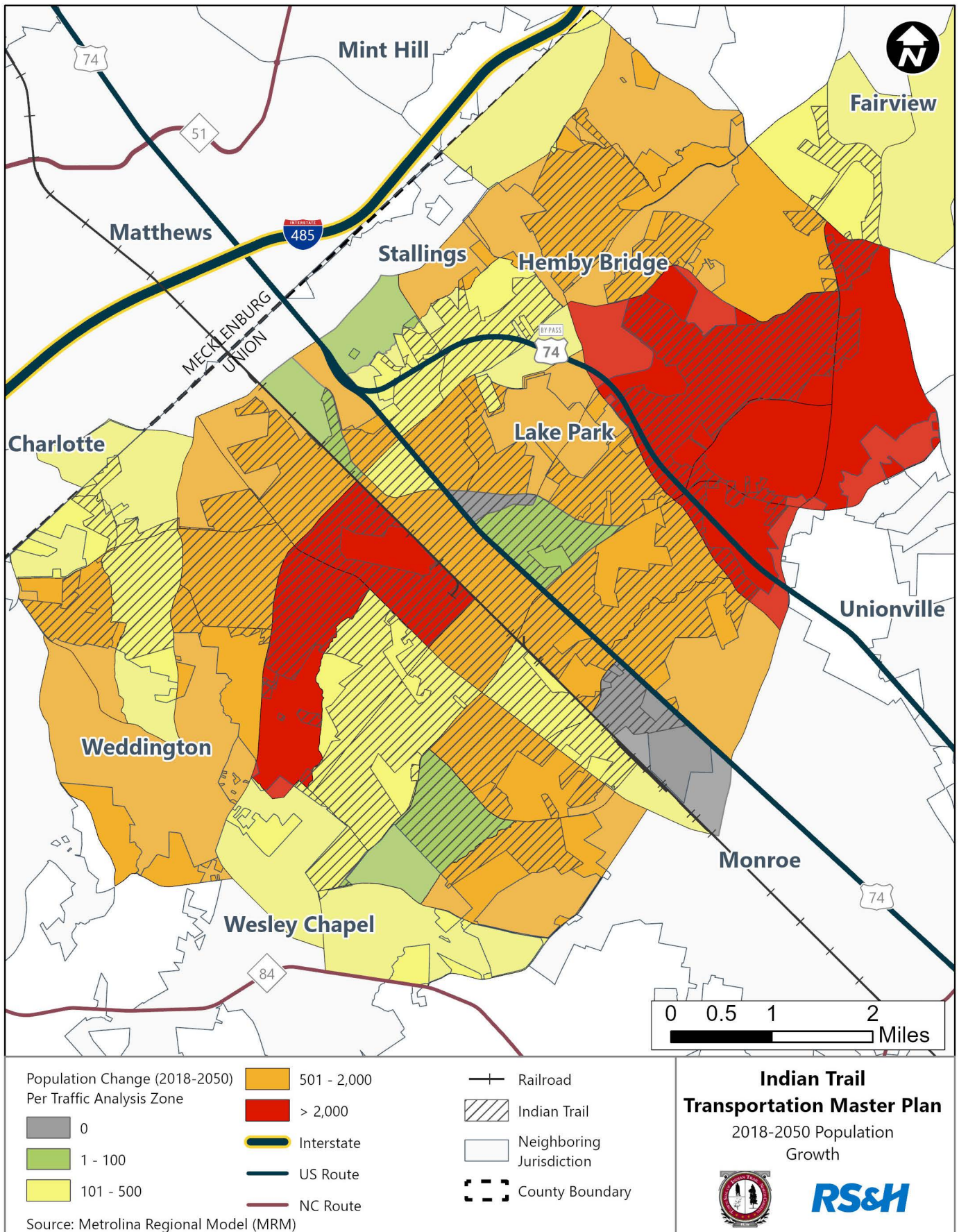
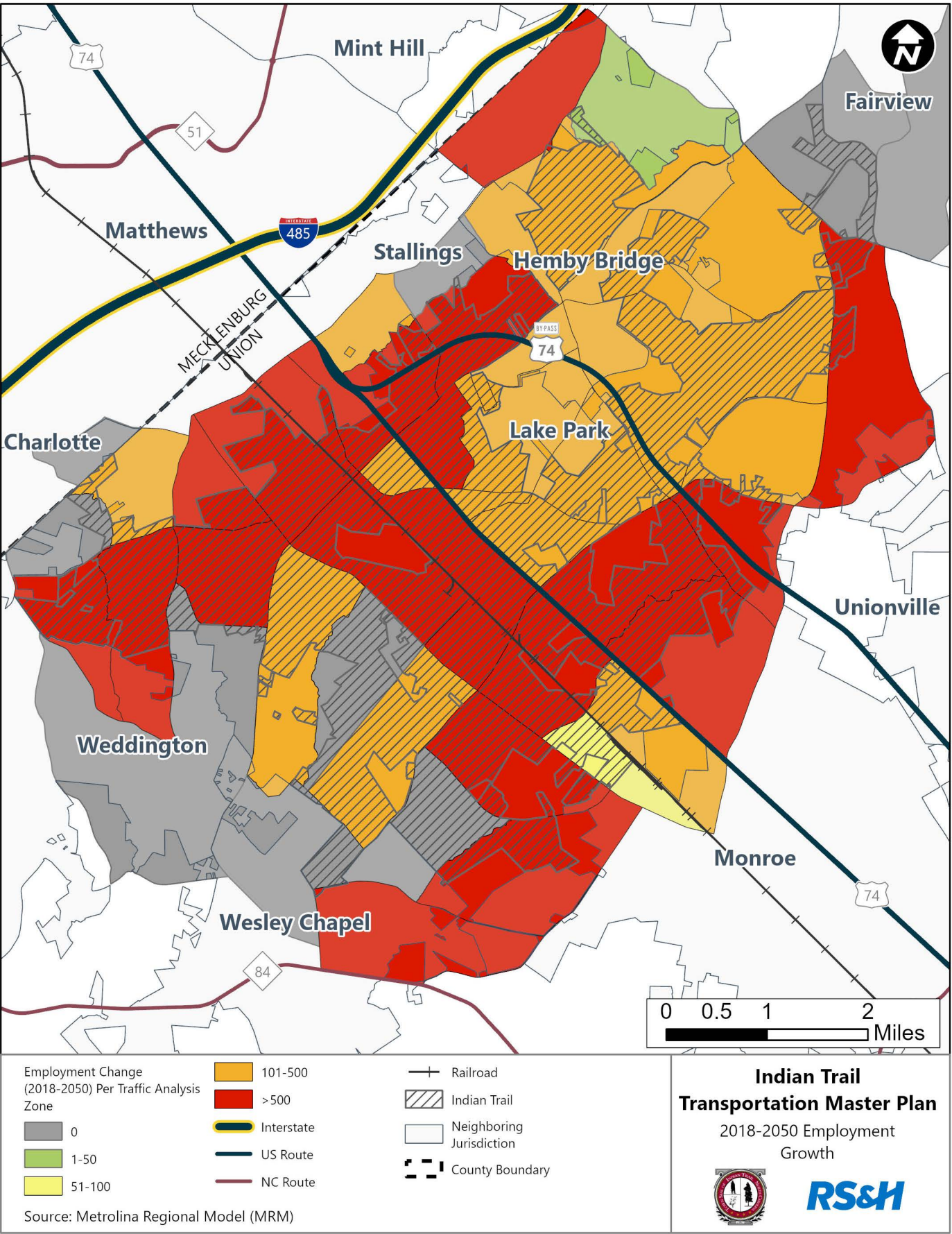


Figure 3: 2018-2050 Employment Growth



Functional Classification

Functional classification is a Federal Highway Administration (FHWA) process by which streets and highways are grouped into classes according to the services they provide. A functional classification is assigned based on the road's level of mobility and accessibility and affects its eligibility for federal aid. Interstates, urban freeways and expressways, and principal arterials generally receive higher levels of funding and minor roads (minor arterials, major collectors, and minor collectors) typically receive lower levels of funding. Local roads are not eligible for federal funding.

The roads with a functional classification other than local are as follows (see **Figure 4**):

- **Other Principal Arterial:** US 74, US 74 Bypass (Monroe Expressway)
- **Minor Arterial:** Old Monroe Road
- **Major Collector:** Indian Trail Fairview Road / Indian Trail Road, Sardis Church Road / Wesley Chapel Stouts Road, Potter Road, Rocky River Road, Lawyers Road, Secrest Shortcut Road/Idlewild Road, Mill Grove Road
- **Minor Collector:** Chestnut Lane, Forest Lawn Drive

FHWA makes the ultimate decision regarding the functional classification of a street or highway. NCDOT makes recommendations for proposed changes and also has procedures in place to allow Metropolitan Planning Organizations (MPOs) and Rural Planning Organizations (RPOs) to request functional classification revisions. Common reasons for proposed changes to functional classification include changes in land use, improvements to the roadway in question, and improvements on other roadways that affect traffic patterns of the subject roadway.

The PAC identified roads in Indian Trail where a change in functional classification may be appropriate. Details are provided in the Recommendations Section starting on **page 43**.

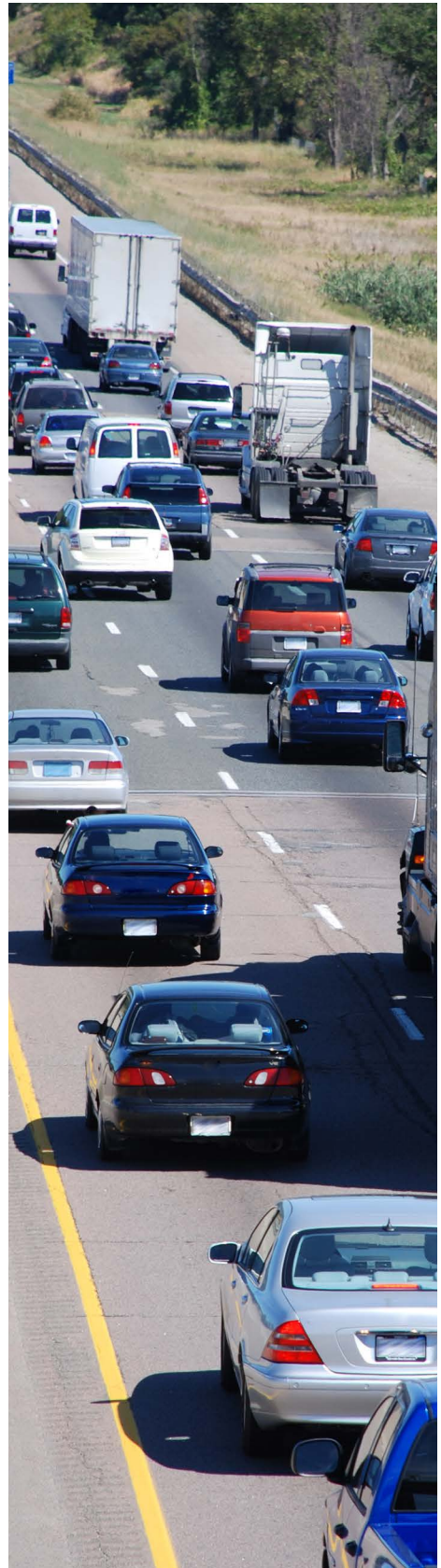
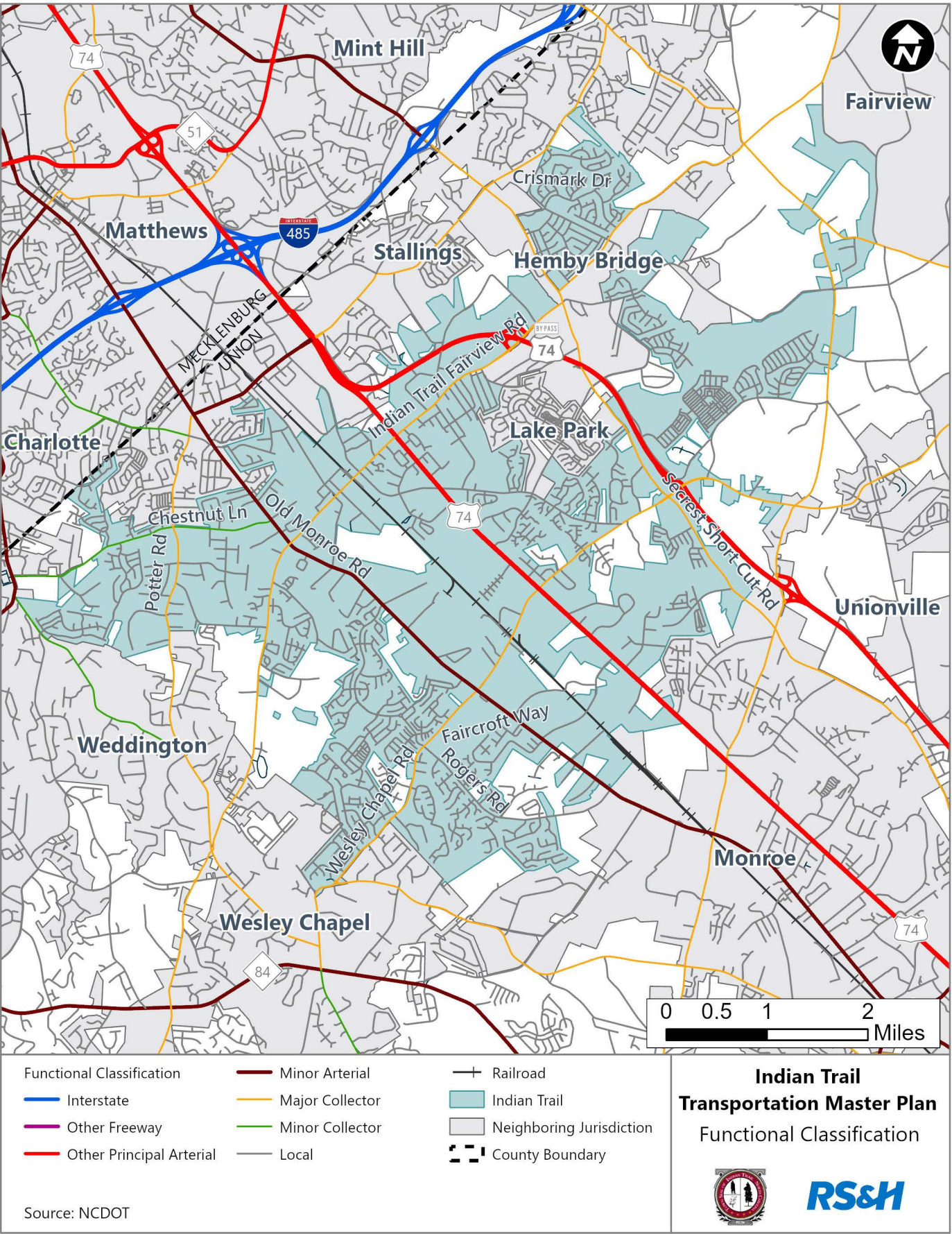


Figure 4: Functional Classification





2022 Traffic Volumes

According to 2022 NCDOT Annual Average Daily Traffic (AADT), US 74 carries the largest amount of traffic in the planning area – between 37,500 and 62,500 vehicles per day (vpd). Additional roads with high traffic volumes include the US 74 Bypass (Monroe Expressway) (19,000 to 20,500 vpd), Old Monroe Road / Old Charlotte Highway (14,000 to 20,500 vpd), Wesley Chapel Stouts Road / Wesley Chapel Road (11,500 to 20,500 vpd), Waxhaw Indian Trail Road / Indian Trail Road (6,500 to 16,000 vpd), Indian Trail Fairview Road (10,000 to 13,500 vpd), and Secrest Shortcut Road (8,500 vpd to 9,500 vpd).

Figure 5 shows 2022 traffic volumes.

Of the 37,500 to 62,500 vehicles traveling on US 74 each day, between 6 and 10 percent are trucks. According to the 2019 *Monroe Expressway Impacts on the US 74 Corridor Memo*, average weekday truck traffic along US 74 decreased by approximately 200 to 800 vehicles, or 5 to 27 percent between 2018 and 2019, with the greatest reductions occurring west of Monroe. Trucks making through-trips on US 74 between Marshville and Stallings decreased from a weekday average of 23.8 percent of all truck trips on US 74 in 2018 to 16.3 percent of all truck trips in 2019. This data indicates the US 74 bypass (Monroe Expressway) has reduced truck traffic on US 74 through town.

Figure 6 shows 2022 truck traffic volumes on US 74.

Additionally, data provided by the North Carolina Turnpike Authority (NCTA) shows that truck volumes have increased 71 percent on the three segments of the Monroe Expressway in proximity to Indian Trail over the five-year period from 2019 to 2023 from an average of 1,544 average annual daily truck transactions* (AADTTs) to an average of 2,635 AADTTs.

Of the 15,287 to 25,118 vehicles traveling on the Monroe Expressway each day** on the same segments over the same time period, between 9 and 14 percent are trucks.

**The average annual daily truck counts are of transactions recorded at toll gantries for vehicles with more than three axles, whereas the AADT numbers are actual traffic counts. In this case, the difference between truck transaction counts and truck traffic counts are not significant.*

***The NCTA usually reports traffic numbers from the Monroe Expressway as "average weekday traffic," excluding weekends and holidays from the counts. This is shown as average annual daily traffic, however, in order to allow a more accurate comparison with AADT numbers from other highways in Union County.*

US 74 carries between

37,500
and **62,500**
vehicles per day (vpd)



and **6%**
to **10%**
are trucks



Figure 5: 2022 Traffic Volumes

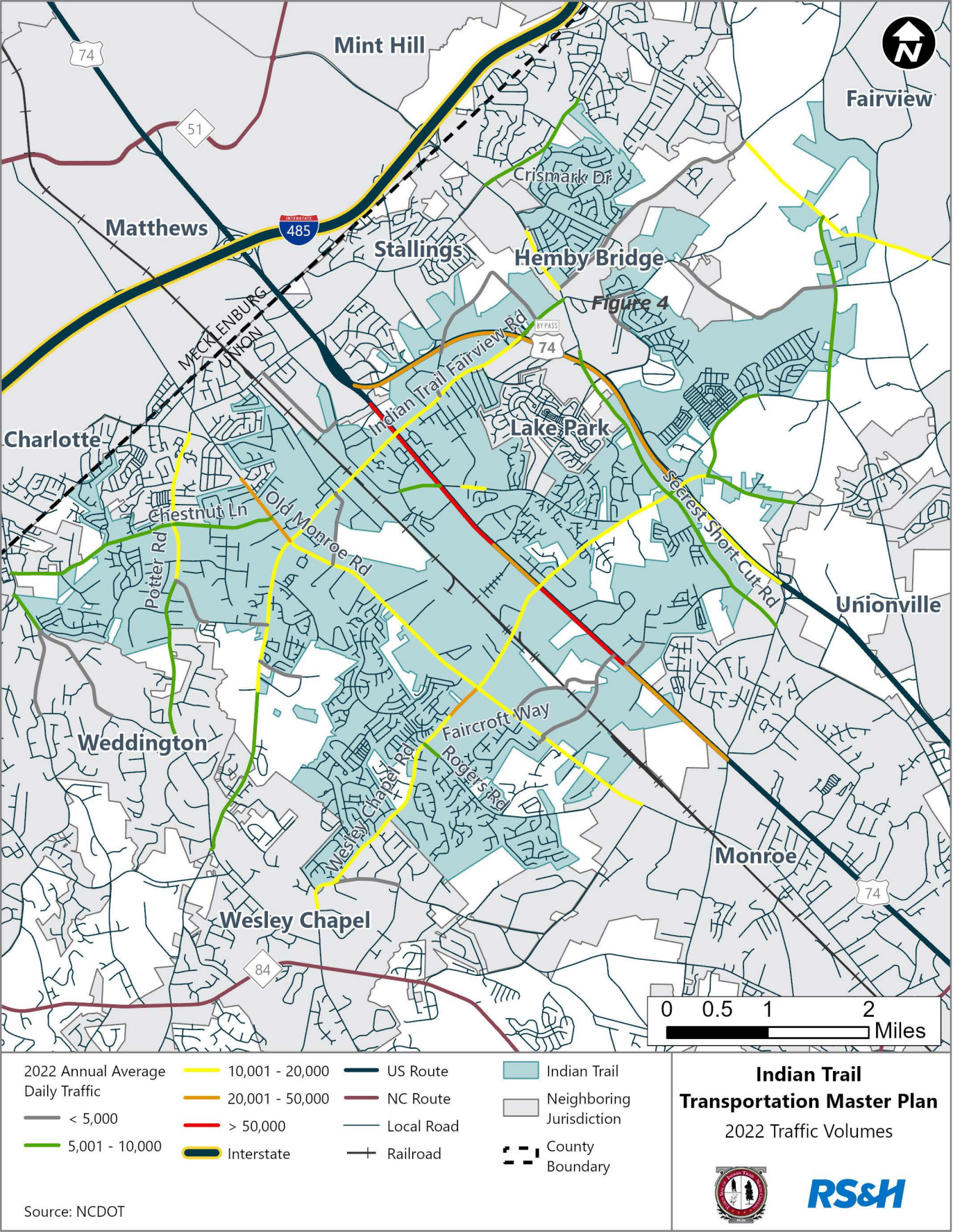
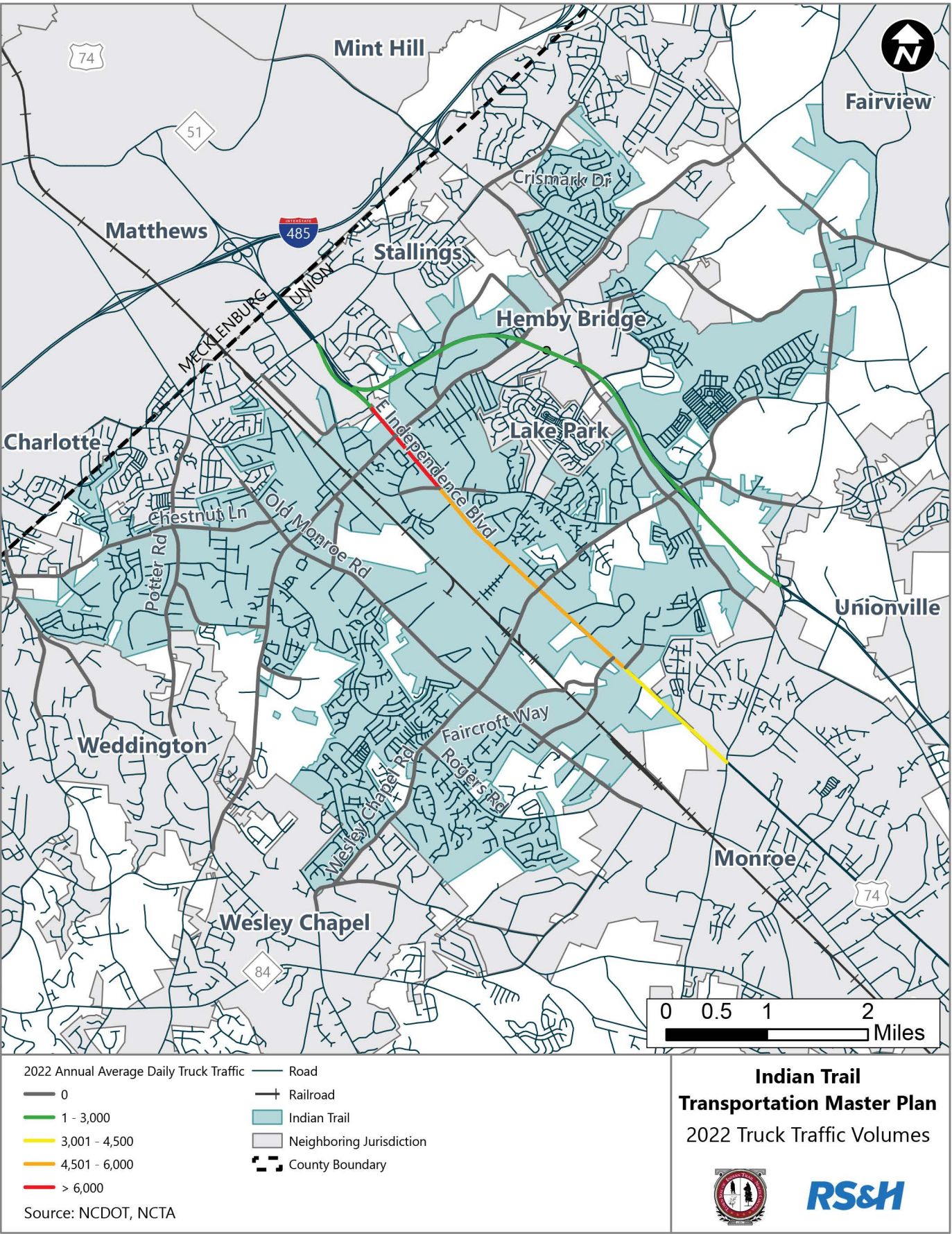


Figure 6: 2022 Truck Traffic Volumes



Roadway Congestion

A volume to capacity (v/c) ratio measures the amount of traffic on a given roadway relative to the amount of traffic the roadway was designed to accommodate. Data on traffic volumes and roadway capacity are available in the MRM. V/C ratios can vary from a low of near zero (free flow of traffic) to greater than one, where the volume exceeds the capacity of the roadway (heavily congested). Typically, a v/c ratio of less than 0.85 indicates adequate capacity for vehicles without experiencing significant delays.

According to 2018 (baseline) MRM data, heavily congested roads in Indian Trail include the following:

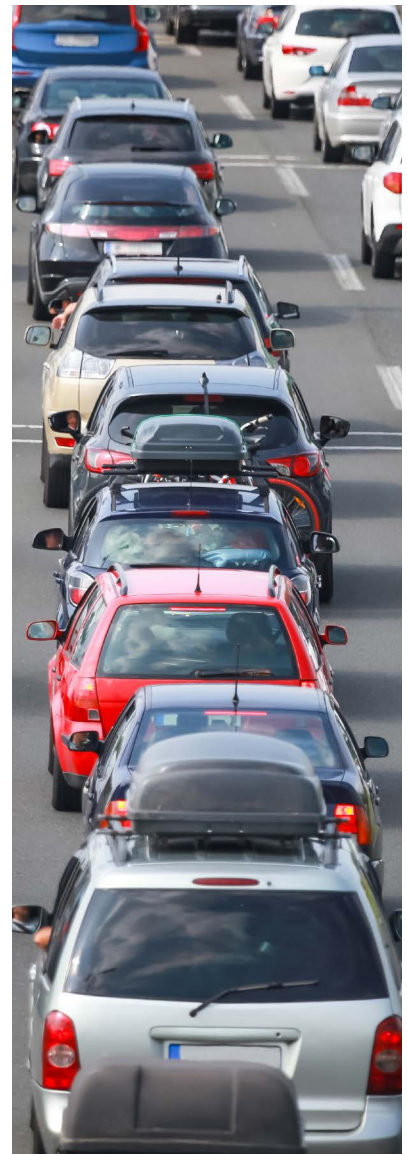
- Chestnut Lane
- Potter Road
- Old Monroe Road
- Rogers Road
- Secrest Shortcut Road
- Idlewild Road
- US 74
- US 74 Bypass (north of Indian Trail Fairview Road)
- Indian Trail Fairview Road / Indian Trail Road (west of Hemby Commons Parkway)
- Sardis Church Road / Wesley Chapel Road
- Rocky River Road
- Lawyers Road
- Mill Grove Road
- Unionville Indian Trail Road / Unionville-Indian Trail Road W
- Faith Church Road

By 2050, Gribble Road, US 74 Bypass (south of Indian Trail Fairview Road), and Indian Trail Fairview Road (east of Hemby Commons Parkway) will also experience heavy congestion.

Heavily congested roads in 2018 are shown in **Figure 7** and heavily congested roads in 2050 are shown in **Figure 8**.

Traffic Growth

According to the MRM, the greatest increases in traffic are expected on the southern portion of Gribble Road and the eastern portion of Indian Trail Fairview Road. Between 2018 and 2050, Gribble Road traffic volumes are expected to increase by a factor of eight, from 1,800 to 14,300 vpd, and traffic volumes on Indian Trail Fairview Road are expected to increase by a factor of six, from 1,400 to 9,100 vpd (see **Figure 9**).



According to the MRM, the greatest increases in traffic are expected on the southern portion of Gribble Road and the eastern portion of Indian Trail Fairview Road.

Figure 7: 2018 Roadway Congestion

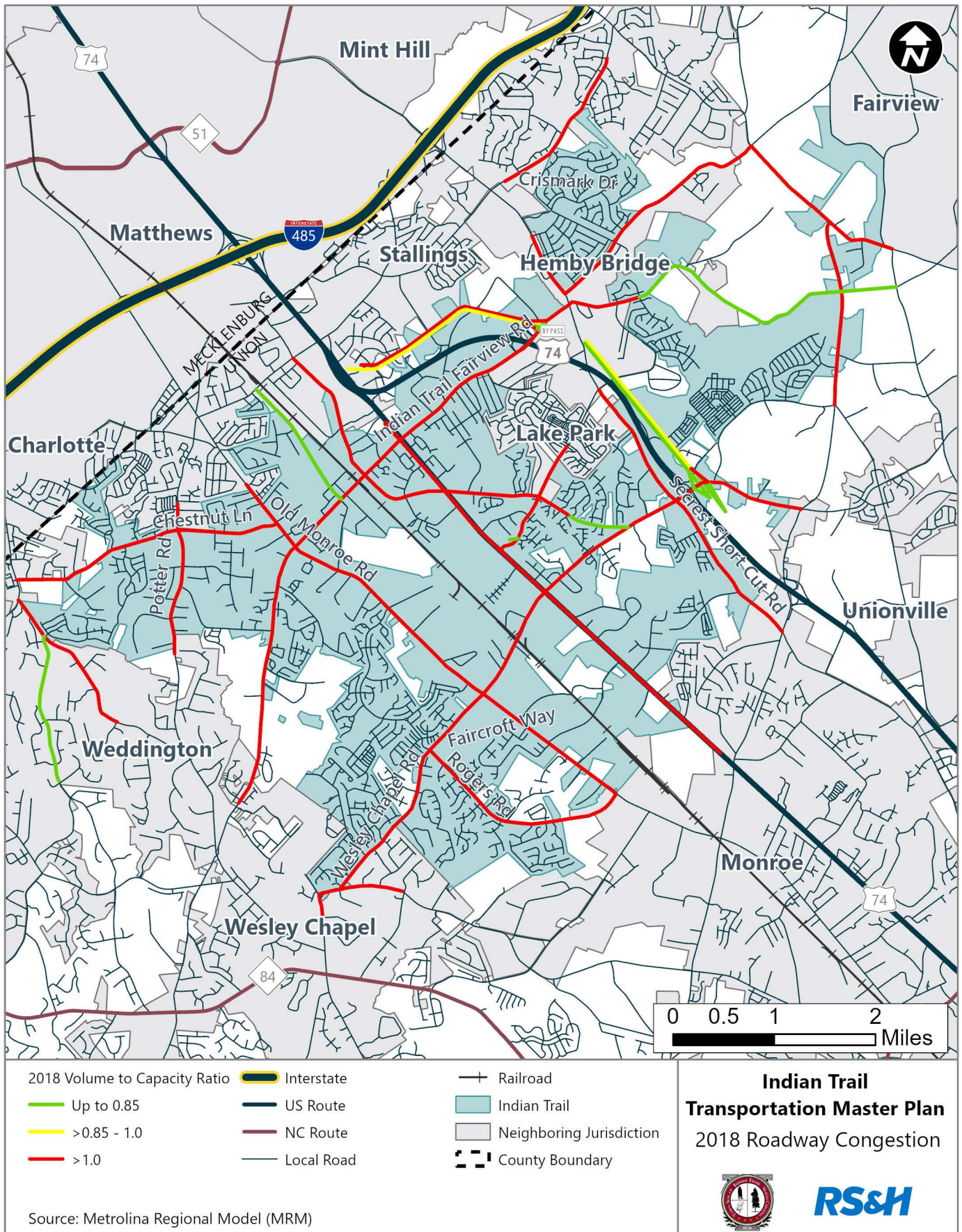


Figure 8: 2050 Roadway Congestion

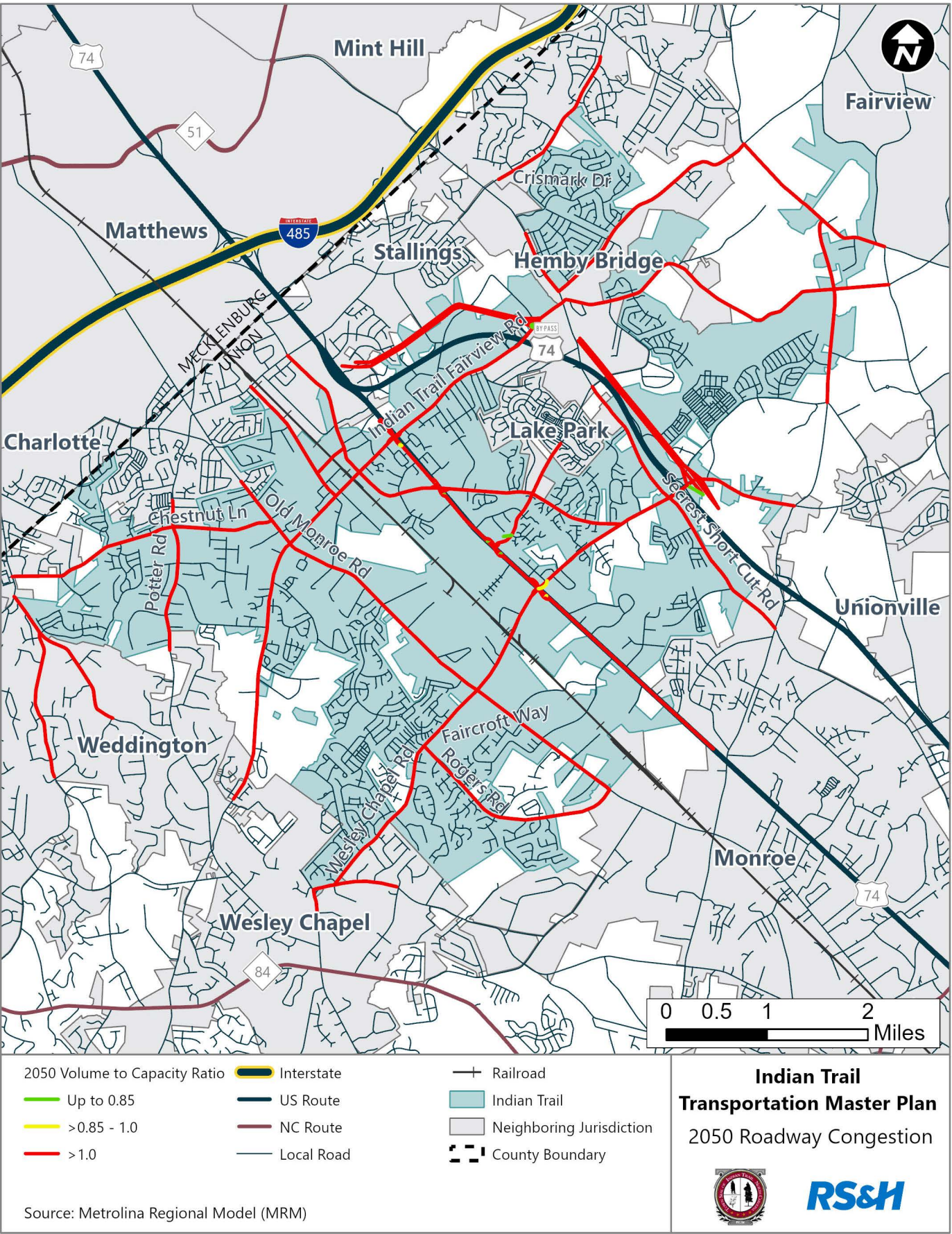
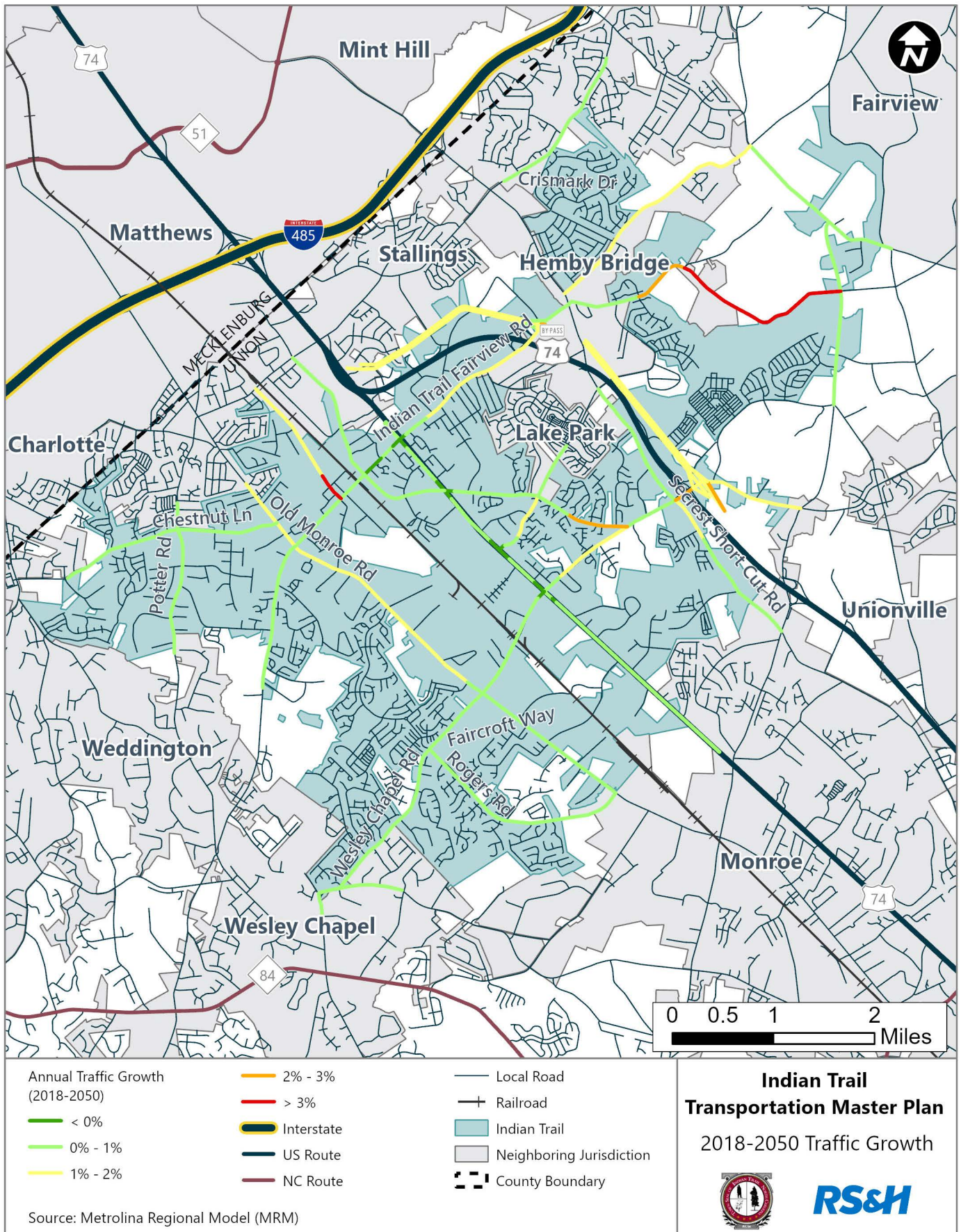


Figure 9: 2018-2050 Traffic Growth



Crash Data

Almost 500 crashes occurred in the planning area during the five-year period from January 1, 2018 to December 31, 2022. Several of these locations were improved during this time period.

The top five crash locations that have not been improved during this time period (and the associated number of crashes) are as follows:

- Old Monroe Road / Old Charlotte Highway at Wesley Chapel Road / Wesley Chapel Stouts Road (140)*
- Old Monroe Road at Waxhaw Indian Trail Road / Indian Trail Road (77)*
- US 74 at Hayes Road (70)
- Wesley Chapel Road at Rogers Road (40)*
- Unionville-Indian Trail Road W at Secrest Shortcut Road (39)

*Intersection will be improved as part of a funded transportation project.

Figure 10 shows the total crash frequency by intersection between January 1, 2018 and December 31, 2022.

Nine fatal crashes and 51 serious injury crashes occurred in the planning area during the same time period. Six of the nine fatal crashes occurred on US 74 (4) and Old Monroe Road (2). While serious injury crashes occurred throughout the planning area, they were concentrated along US 74, Old Monroe Road, and Wesley Chapel Road (see **Figure 11**).

NCDOT uses planning level section safety scores to indicate the highway safety performance of roadway segments (measured in half mile increments). The higher the score, the poorer the safety performance. The safety score is based on the crash density ratio (the crash density of the study area versus the average crash density of similar facilities), the severity index (the measure of the severity of a crash or series of crashes), and the critical crash rate ratio (actual crash rate for the study area versus the critical crash rate).

Several segments of roadway had high safety scores on US 74, Old Monroe Road, Sardis Church Road / Wesley Chapel Road, Unionville Indian Trail Road / Unionville-Indian Trail W, Secrest Shortcut Road / Idlewild Road, Rocky River Road, Lawyers Road, Indian Trail Fairview Road, Chestnut Lane, Potter Road, and Southfork Road (see **Figure 12**).



Figure 10: Total Crash Frequency by Intersection

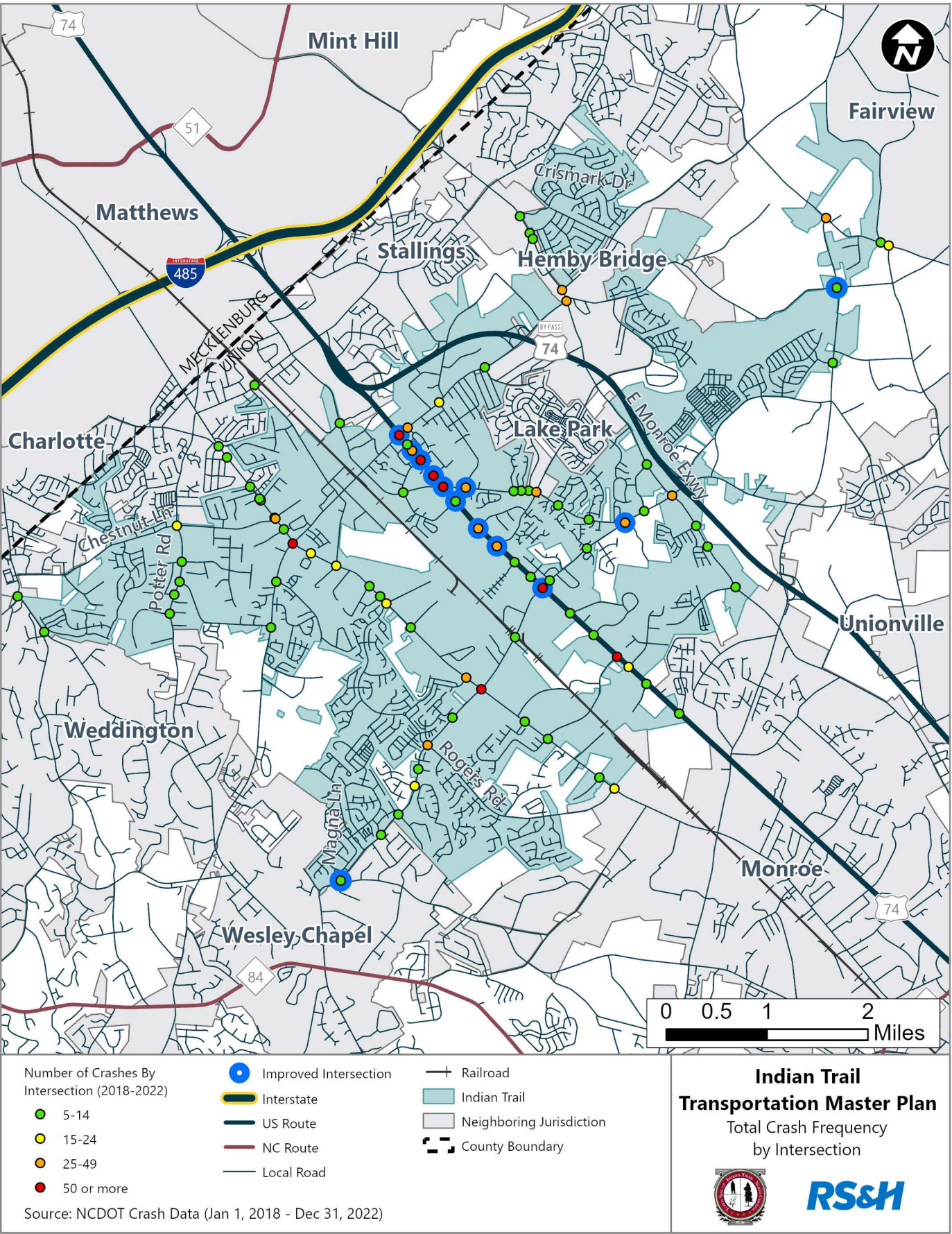


Figure 11: Fatal and Serious Injury Crashes

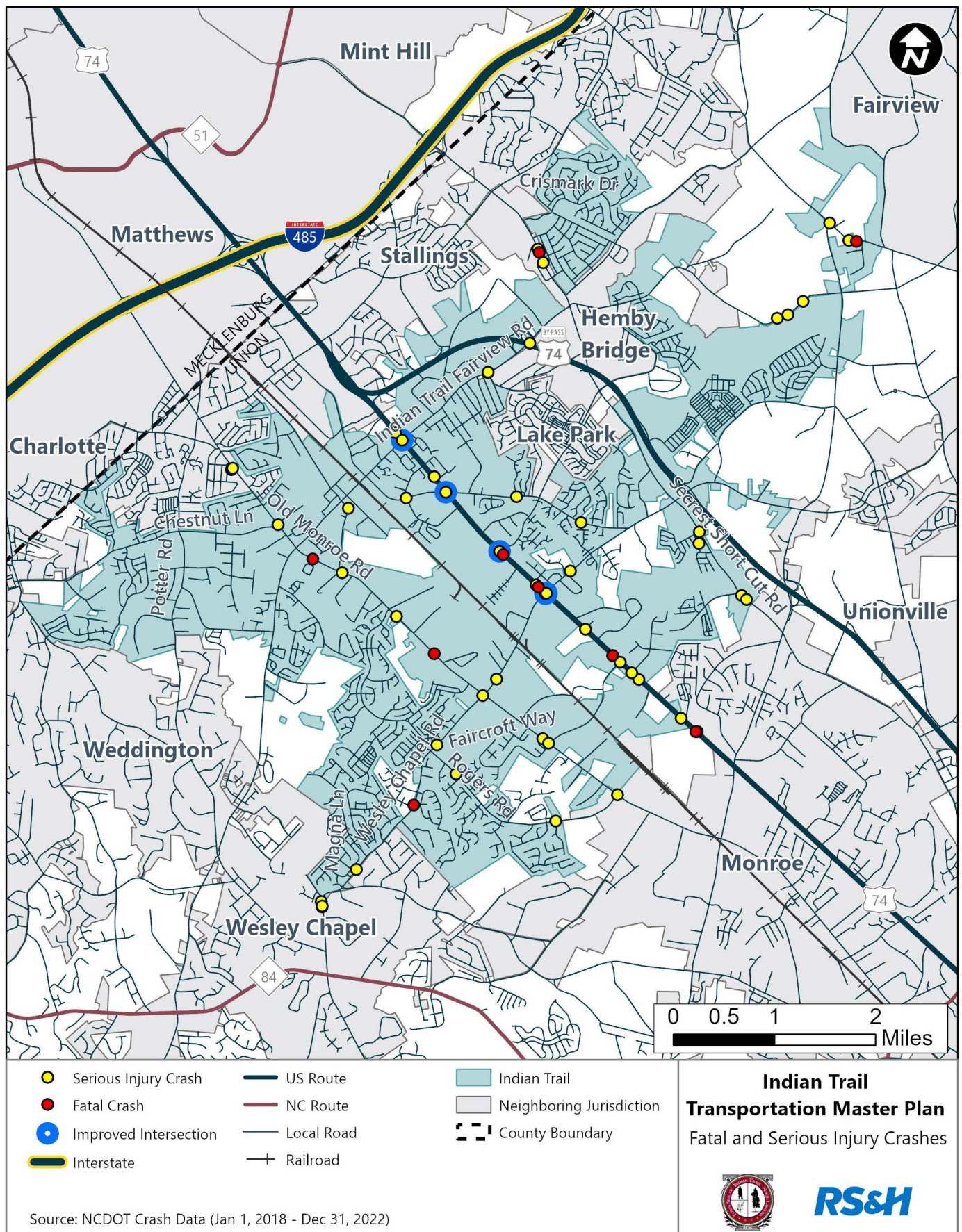
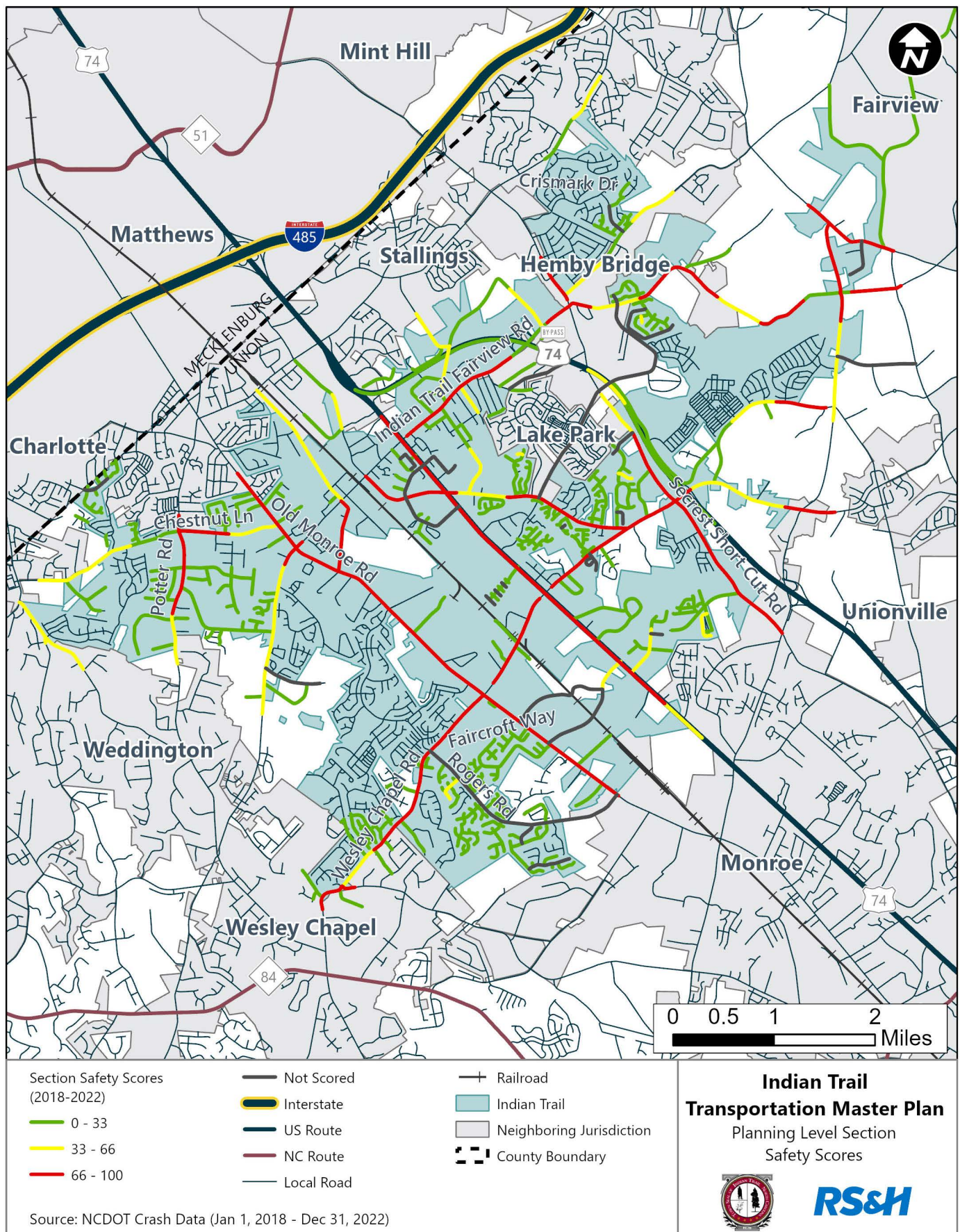


Figure 12: Planning Level Section Safety Scores



Existing and Proposed Bicycle and Pedestrian Facilities

Sidewalks are largely concentrated within newer residential subdivisions. Older neighborhoods and many major roadways (such as Wesley Chapel Stouts Road and Unionville Indian Trail Road) that connect older subdivisions with newer subdivisions and schools lack continuous sidewalks. Additionally, most of the signalized intersections in the town lack striped crosswalks, curb ramps, pedestrian signals or signage.

There is one multi-use path in town on US 74 from Biscuitville to Independence Drive.

Sidewalks and multi-use paths are proposed along several corridors including Wesley Chapel Stouts Road, Matthews-Indian Trail Road, N Indian Trail Road, Chestnut Parkway, Sardis Church Road, Unionville Indian Trail Road, and Old Monroe Road.¹

There are no bicycle lanes, dedicated bicycle routes, or greenways in town. However, the Southfork Greenway connecting US 74 to Crooked Creek Park is in design.

The town has indicated a preference for multi-use paths and greenways, so proposed bicycle facilities are focused on these facility types.

Existing and proposed bicycle and pedestrian facilities are shown in **Figure 13**.

Existing and Proposed Transit Facilities

CATS operates one express bus route along US 74 that connects Indian Trail to Uptown Charlotte and there is one Park and Ride Lot at Union Towne Center near US 74.

Proposed facilities include the planned CATS Silver Line, a High-Capacity Transit (HCT) Corridor along US 74 or along the US 74 Bypass, and a Long-Term Commuter Rail Corridor along the CSX Railroad. The CATS Silver Line is anticipated to run along US 74 and Matthews-Indian Trail Road in Indian Trail with a stop near Town Hall that will serve as the southeastern terminus for the Silver Line. CONNECT Beyond identifies two HCT Corridor options in the planning area: either along US 74 or along the US 74 Bypass. A future study is needed before the preferred option is identified. The CSX Queen City Express Commuter Rail Corridor is identified as a long-term commuter rail corridor from Charlotte to Wadesboro.

Existing and proposed transit facilities are shown in **Figure 14**.

¹ A full list of priority sidewalks and multi-use paths is included in Table 4.4 and Map 4.5 of the Indian Trail Comprehensive Pedestrian Plan.



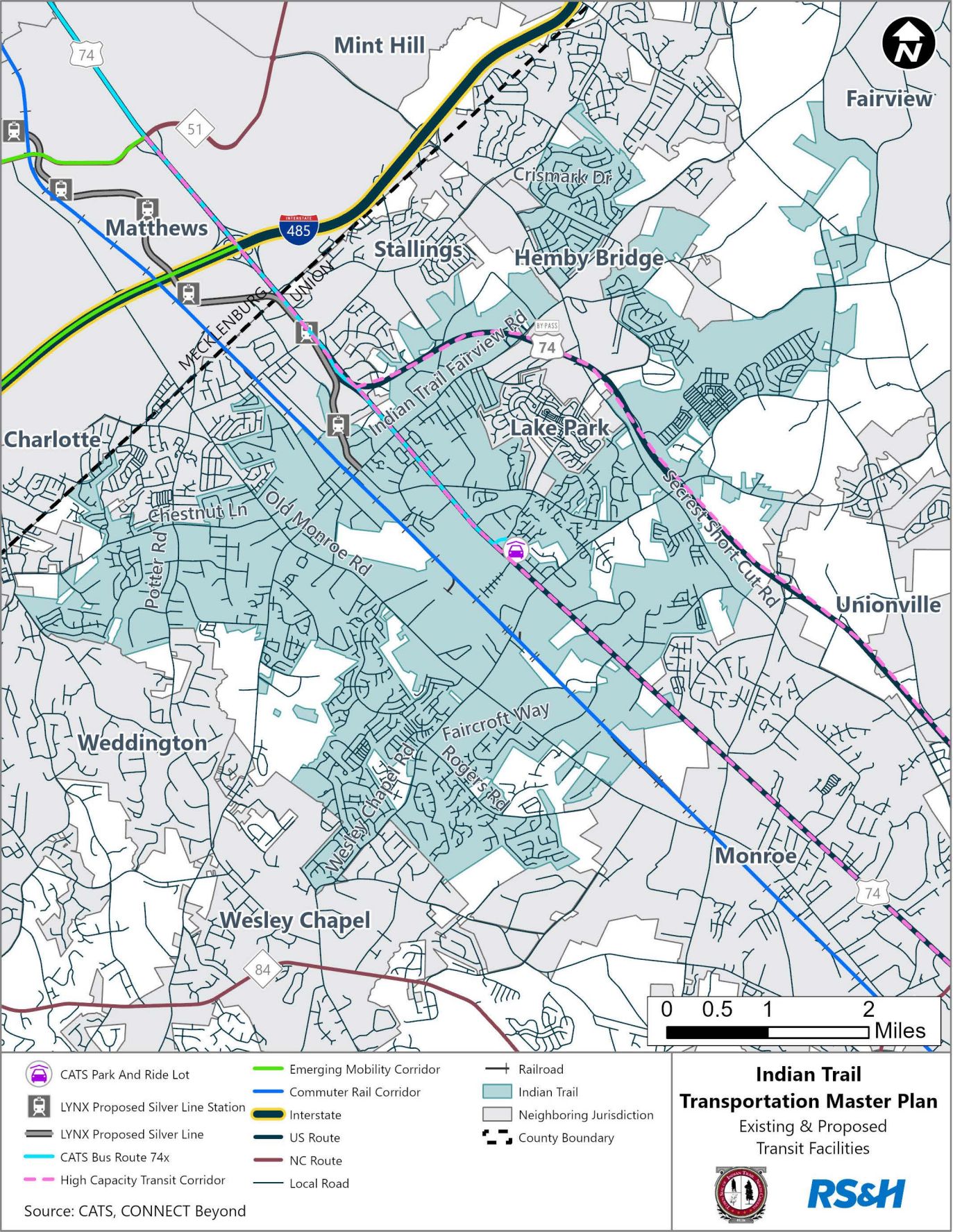
Indian Trail Transportation Master Plan
Existing and Proposed Bicycle and Pedestrian Facilities

Legend:

- Existing Facility**
 - Sidewalk (Red line)
 - Sidepath (Pink line)
- Planned Facility**
 - Greenway (Green line)
 - Greenway Crossing (Orange dot)
- Other Infrastructure**
 - Sidewalk (Red dashed line)
 - Sidepath (Pink dashed line)
 - On-Road Bicycle (Blue line)
 - Greenway (Green dashed line)
 - Carolina Thread Trail (Yellow line)
 - Existing (Yellow line)
 - Planned/In Progress (Green line)
 - Interstate (Thick blue line)
 - US Route (Thick red line)
 - NC Route (Thick brown line)
 - Local Road (Thin black line)
 - Railroad (Black line with cross-ticks)
 - Indian Trail (Light blue shaded area)
 - Neighboring Jurisdiction (Light grey shaded area)
 - County Boundary (Dashed black line)

Sources: CRTPO CTP, NCDOT PBIN, CTT, Comprehensive Pedestrian Plan

Figure 14: Existing and Proposed Transit Facilities





As of April 2024, almost
6,000 residential
units and over
one million
square feet of non-
residential development
have been approved,
proposed, or are under
construction in town.

Land Use and Development Activity

The predominant land use in the planning area is single family residential. Higher density residential is concentrated near US 74 and the US 74 Bypass as well as the southwest side of town. Mixed-use is focused downtown and between US 74 and Old Monroe Road. Office uses are concentrated on the western end of the US 74 Bypass and along US 74, while commercial uses are concentrated along US 74, Old Monroe Road, and the intersection of Chestnut Lane and Potter Road. Industrial land uses are found near the airport, railroad tracks, and along US 74.

Land use is shown in **Figure 15**.

Several residential and non-residential developments are approved, proposed, or under construction in the planning area. The non-residential developments include commercial, mixed-use, and industrial uses, with the majority being mixed-use developments. While development activity is occurring throughout town, larger developments are occurring on the edges of Indian Trail – specifically north of the US 74 Bypass. As of April 2024, almost 6,000 residential units and over one million square feet of non-residential development have been approved, proposed, or are under construction in town.

Development activity is shown in **Figure 16**.

Figure 15: Future Land Use

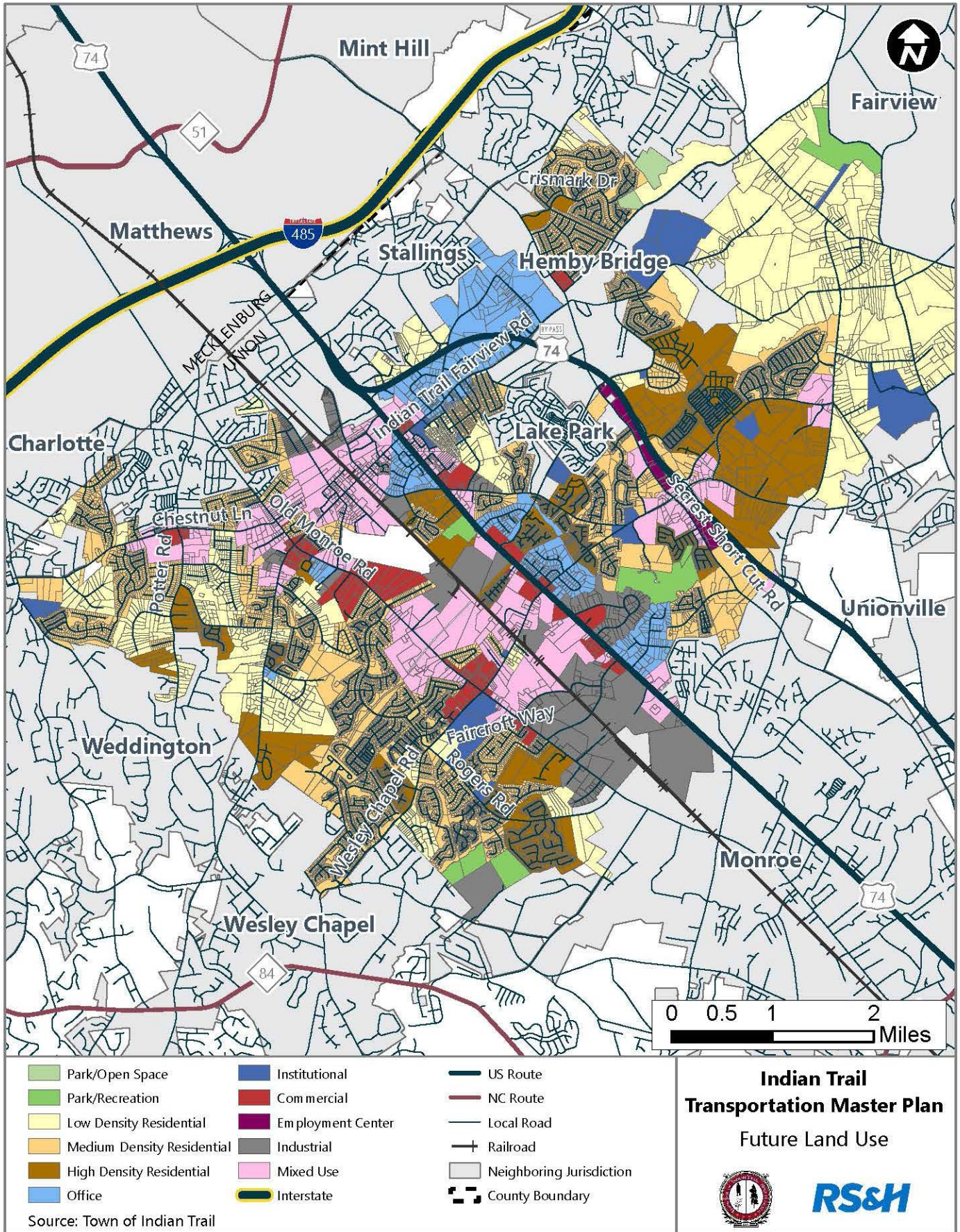
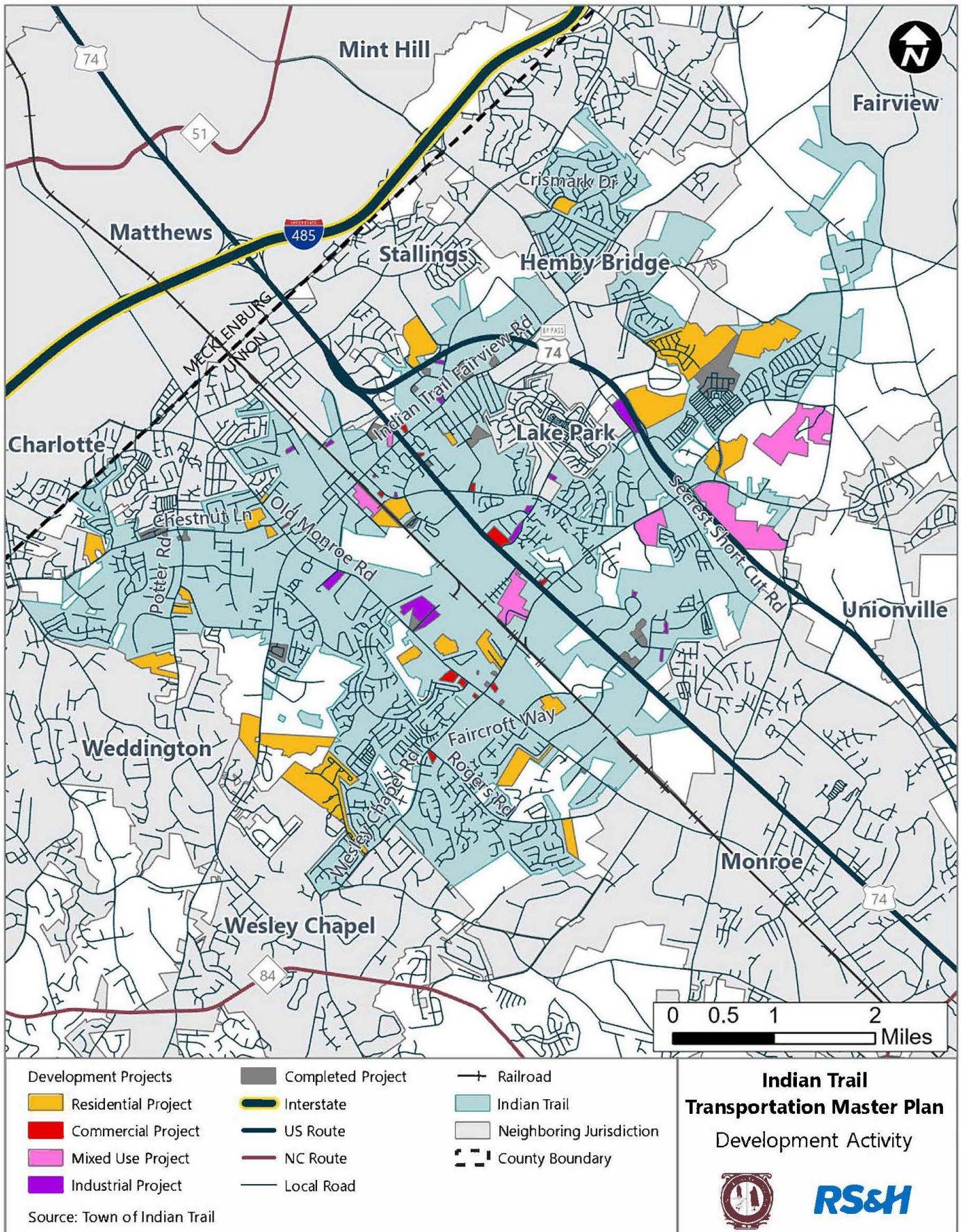


Figure 16: Development Activity



Key Stakeholder and Public Input

Interviews with key stakeholders and the first round of public input occurred early in the planning process to identify issues and priorities that may not be captured in the data discussed above.

Key Stakeholder Interviews

The town conducted interviews of the Key Stakeholders in February 2024 through various formats including email exchanges, virtual meetings, in-person meetings, and online surveys. The format used and the information obtained is summarized below.

CITY OF MONROE

The town held a virtual meeting with the City of Monroe Planning and Engineering staff to discuss activity in the northwest portion of Monroe in proximity to Indian Trail. The northeast portion of Indian Trail is experiencing high growth and development, and activity on the Monroe side may expedite the need for improvements in this area.

Monroe staff shared a new interactive map that illustrates development activity in the city. Eight developments have either been approved, are under construction, or have been recently completed in proximity to Indian Trail. In total, these developments include almost 2,000 housing units and about 450,000 square feet of non-residential uses. Additionally, Monroe staff noted that South Piedmont Community College (SPCC) is expanding, and transportation improvements will be required.



Development activity in Monroe in proximity to Indian Trail.

Monroe staff indicated TIAs completed for projects in this area recommend improvements at the N Rocky River Road / W Unionville Indian Trail Road and Poplin Road / W Unionville Indian Trail Road intersections. The Poplin Road / W Unionville Indian Trail Road intersection was also identified as a critical intersection by Union County in the 2019 Critical Intersection Analysis (CIA). Another intersection, Old Charlotte Highway and Rogers Road, was on the 2023 Candidate CIA list, but did not move forward because it had been recently improved.

Monroe staff indicated long-term plans to widen US 74 to six lanes. They also disclosed plans to submit the Secrest Shortcut Road widening project to the CRTPO 2055 Metropolitan Transportation Plan (MTP), although it did not make the fiscally constrained project list for either the 2045 or 2050 MTPs.

Finally, Monroe noted three projects in the current NCDOT Prioritization process (P7.0), NCDOT's data-driven approach for ranking projects for inclusion in the next State Transportation Improvement Program (STIP) (2026-2035):

- Rocky River Road widening (holding tank)²
- Weddington Road widening (holding tank)²
- Old Charlotte Highway / Rocky River Road grade separation (new submittal)

Project scoring is underway and the outcomes of P7.0 will be announced after this plan is completed. Projects must be consistent between the MTP and STIP so if these projects end up being included in the STIP, CRTPO will add them to the MTP. If the projects do not make it into the STIP, Monroe will submit them for the 2055 MTP.

Monroe staff indicated the location most in need of improvement in Indian Trail is Indian Trail Road, specifically the intersection of Old Monroe Road and Indian Trail Road.

² A holding tank project is a project that was submitted previously but was not programmed in the STIP.

Town of Weddington

Indian Trail emailed the Town of Weddington Planner, who responded that no development or transportation projects are planned in Weddington near the Indian Trail town limits.

Local Developer

Scott Vickery, a developer and resident of Indian Trail, participated in an in-person interview with town staff. His interests are concentrated west of US 74, specifically at the Chestnut Lane / Potter Road intersection and the future intersection of Gribble Road and Chestnut Parkway. He spoke of the need for and his support of all planned development projects in and near town including the Old Monroe Road widening (U-4714B), the I-485 interchange improvements, and the Pleasant Plains Road / Potter Road intersection improvements.

He believes the area of town between the US 74 bypass (Monroe Expressway) and Rocky River Road will experience the most growth and noted the presence of an anti-growth contingent in Indian Trail. Scott suggested coordinating with neighboring jurisdictions to identify development and transportation projects that may impact this study.

Indian Trail Town Council

Members of the Town Council were sent an online survey to request their input on transportation issues. Three council members took the survey. Congestion on local roads was the highest priority transportation issue. Improving existing roads was the highest priority transportation improvement, including maintenance and widening. Constituents regularly comment about traffic on local roads and believe local roads are not able to support current traffic volumes.

The intersections Town Council members are interested in studying further include the following:

- Wesley Chapel Road / Rogers Road³
- Unionville Indian Trail Road / Corporate Boulevard / Plyer Road
- Indian Trail Fairview Road / Peace Drive
- Chestnut Lane / Potter Road
- Waxhaw Indian Trail Road / Fincher Road

Town Council members suggested seeking the public's opinion on road bonds, growth moratoriums, public transportation, charging stations, and an increase in traffic officers.

In general, Town Council expressed frustration with the pace at which transportation projects like the Old Monroe Road widening and Indian Trail Road Complete Street project are progressing.

The full survey results are available in **Appendix A**.

³ Wesley Chapel Road / Rogers Road was removed from the TMP candidate list when it was placed on the 2023 Union County Critical Intersection List.



Union County Schools

Town staff emailed the Union County Schools Director of Transportation and asked him to share any congestion and safety concerns. He noted congestion concerns on Indian Trail Road and safety concerns at the following intersections: Old Monroe Road / Southfork Road, Old Monroe Road / Chestnut Lane, and Indian Trail Road / Gribble Road.

Town staff reviewed these locations and notified the Director of Transportation that these locations were being improved as part of funded transportation projects (the Old Monroe Road widening project and the Indian Trail Road Complete Streets project).

NCDOT

As noted in **Table 1**, a Division 10 Planning Engineer served on the PAC and provided input and feedback throughout the plan development process.

Additionally, the NCDOT Transportation Mobility & Safety Division was contacted about current and proposed safety projects in town. NCDOT provided a list of funded safety projects and notified the town that no locations were under investigation in Indian Trail as part of the Highway Safety Improvement Program (HSIP) at the time this TMP was under development.

The Division 10 District Engineer was also consulted regarding improvements being required as a part of TIAs. The information shared was included in the intersection screening and prioritization.

The Division 10 Traffic Engineer was contacted to verify if any of the priority intersections had been studied. The Traffic Engineer noted that an analysis was conducted at three of the intersections to evaluate if protected left-turns were warranted based on citizen inquiries. The volumes did not meet warrant requirements at the time and protected left-turn signals were not added.

The Division 10 Project Development Engineer was emailed regarding specific design questions associated with the Indian Trail Fairview Road / Peace Drive intersection. The Project Development Engineer noted that the median island on Indian Trail Fairview Road was originally shortened to accommodate the Chick-fil-a but was expanded after a crash pattern developed.



Online Survey



A flyer with a QR code and webpage link was created to help spread the word about the online survey.

Social Media

Facebook

5 Posts
31,269 Total Reach
31,680 Total Impressions

Nextdoor

5 Posts
10,280 Total Impressions

Instagram

3 Posts/Stories
685 Total Reach
715 Total Impressions

X (Formerly Twitter)

5 Posts
331 Total Impressions

Additional Outreach

Included in

5 weekly IT Update e-newsletters (sent each Friday)

445 Total Clicks

4 out of the **5** weeks it was the **top link clicked**

Public Engagement

The Town conducted an online survey through ArcGIS Experience Builder to educate the public on projects already funded in Indian Trail, help identify transportation issues and problem areas, learn about transportation investment priorities, and prioritize intersection projects. The survey included a CrowdSource Reporter map that allowed residents to drop a pin to indicate where they experienced transportation issues and leave comments to expand upon the issues. The town shared the link to the survey on the plan webpage (<https://indiantrail.org/1793/Transportation-Master-Plan>) and produced a flyer with a QR code to access the survey. The flyer was posted on the town's social media and shared with PAC members for posting on their social media.

The survey was open from March 23 to April 26, 2024.

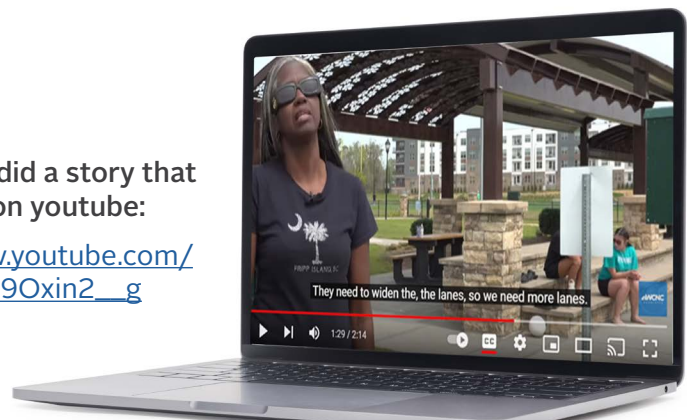


Background page from the Experience Builder online survey.

Information about the plan, including a link and QR code to the online survey, were shared in the Town's Newsletter

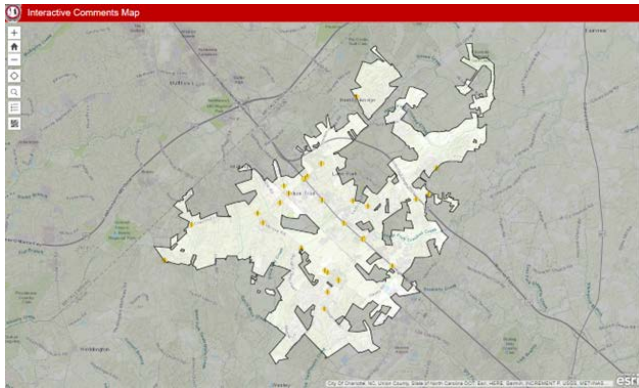
WCNC also did a story that is available on youtube:

https://www.youtube.com/watch?v=pN9Oxin2_g



WCNC produced a story on the TMP in April 2024.

Almost 400 people took the general survey and 55 people responded to the intersection-specific survey.



Additionally, 50 people placed safety and congestion comments on the Comment Map and 97 likes were placed on comments provided by others.

Key takeaways from the public input include:

- Over 40% of survey respondents said congestion on local roads was the biggest transportation issue in town
- The highest priorities for transportation investment in town are widening existing roads (53%) and improving intersections (45%)
- Almost three-quarters of respondents (74%) support extending bus service into Union County and over three-quarters (79%) support extending light rail into Union County
- Vehicle safety concerns were the highest on US 74, Old Monroe Road, Indian Trail Road / Indian Trail Fairview Road, and Unionville Indian Trail Road
- Pedestrian safety concerns largely consisted of needed intersection improvements and lack of sidewalks
- Congestion issues were concentrated at the Indian Trail Fairview Road / Secrest Short Cut Road / Idlewild Road intersection, Old Monroe Road / Waxhaw Indian Trail Road / Indian Trail Road S area, and the Wesley Chapel Road/Rogers Road area
- Over 70% of respondents who answered the question about the intersection list agreed with the intersections identified for further study; all of the intersections suggested to be added to the list are either outside town limits or are already being improved
- The top three intersections identified for further study include the following:
 - Chestnut Lane / Potter Road
 - Indian Trail Fairview Road / Peace Drive
 - W Unionville-Indian Trail Road / Secrest Short Cut Rd
- General transportation comments were focused on a desire for complete streets, better connectivity across US 74, road improvements keeping pace with growth, and maintaining roads in good condition.

The Town also sponsored a booth at the Hop To It event held on March 23, 2024 at Chestnut Square Park. Over 2,000 people attended the event. The Town's Project Manager, Consultant Project Manager, and CRTPO's Participation & Consultation Planner passed out flyers and spoke with about 30-40 attendees.



Todd Huntsinger, the Town's Project Manager, speaking with a resident about the plan at the Hop To It event

A second online survey through Survey 123 was held later in the planning process to get input on recommended improvements at priority intersections and proposed CRTPO CTP amendments.

The survey was open from August 19 to September 17, 2024 and met CRTPO's CTP amendment requirements. A postcard was shared with the town Communications Director, the CRTPO Participation & Consultation Planner, and PAC for posting on the webpage and social media and distribution through their channels.



Indian Trail Transportation Master Plan

The second and final round of public input is now open for the Indian Trail Transportation Master Plan (TMP)! The online survey will remain open through **September 17, 2024**.

We are seeking input on proposed improvements at priority intersections and proposed amendments to the Charlotte Regional Transportation Planning Organization (CRTPO) Comprehensive Transportation Plan (CTP).

SHARE YOUR THOUGHTS!

Scan the code to take our survey.

Visit the project webpage at <https://indiantrail.org/1793/Transportation-Master-Plan> to learn more about the plan and work to date. The results from this survey and the draft plan will be available for review in early October. **Check back for updates!**



“Children/Parents crossing from the school are in danger, especially with new construction adding many more cars to the road.”

“There should be more pedestrian and bike paths for people that don’t or can’t drive in Indian Trail. Most car trips are under 5 miles and that is perfect for biking.”

“There is a lot of rapid growth. Without future updates, the area is already congested and consists of numerous vehicle accidents.”

A total of 277 people took the survey. Respondents overwhelmingly supported the proposed intersection improvements and recommended CRTPO CTP amendments. Full survey responses, including concerns and additional comments, are documented in **Appendix A**.

The full survey results from the second online survey are available in **Appendix A**.

Key Findings

The information gleaned from the Existing Conditions Analysis was used to help identify projects and improvements that are already funded in town and to help identify needs and deficiencies that need further study.

Funded Projects

The Existing Conditions Analysis revealed several projects that are already funded in town. These projects are summarized in **Table 3** and shown on **Figure 17**. Project details are provided in **Appendix B**.

Locations where projects are funded are already slated for improvements and were therefore eliminated from consideration for further study as a part of the Indian Trail TMP.

Table 3: Funded Transportation Projects

Map Number	Name	Description
NCDOT 2024-2033 STIP/CRTPO 2050 MTP Projects		
1	North Indian Trail Road (EB-5931)	This project has been incorporated with the Indian Trail Road Complete Street project discussed in the Town Projects section below. - Phase 1 (currently in right-of-way acquisition) includes the portion of the road from Liberty Lane to Gribble Road and is planned to have underground utilities and improved traffic and pedestrian access. These transportation improvements will include the installation of storm drainage, curb and gutter, 10-foot multi-use concrete paths on both sides, and a two-way left turn lane down the middle of the street. There is a new traffic signal proposed at the Gribble Road intersection, a roundabout at the new Towne Centre Development, and turn lane improvements at the Matthews-Indian Trail Road/Unionville Indian Trail Road intersection. - Navajo Extension (currently in design) will be a new roadway connected off Indian Trail Road as the fourth leg to the new proposed roundabout at the Towne Centre to provide access for the Indian Trail Pharmacy and STEPS Academy. The extension will continue to Navajo Trail in a future project.
2	Chestnut Lane Connector (U-5808)	Construct a four-lane median road with sidewalks on new location from Matthews-Indian Trail Road to Gribble Road. Note: This project is the NCDOT-funded portion of the Chestnut Parkway discussed in the Town Projects section below.
3	Multi-Use Path (EB-5723)	Construct a multi-use path on US 74 from Indian Trail Fairview Road to Unionville-Indian Trail Road and Unionville-Indian Trail Road to Oakwood Lane.
4	Wesley Chapel Stouts Road Grade Separation (P-5744)	Construct a grade separation at Wesley Chapel Stouts Road and the CSX Railroad.

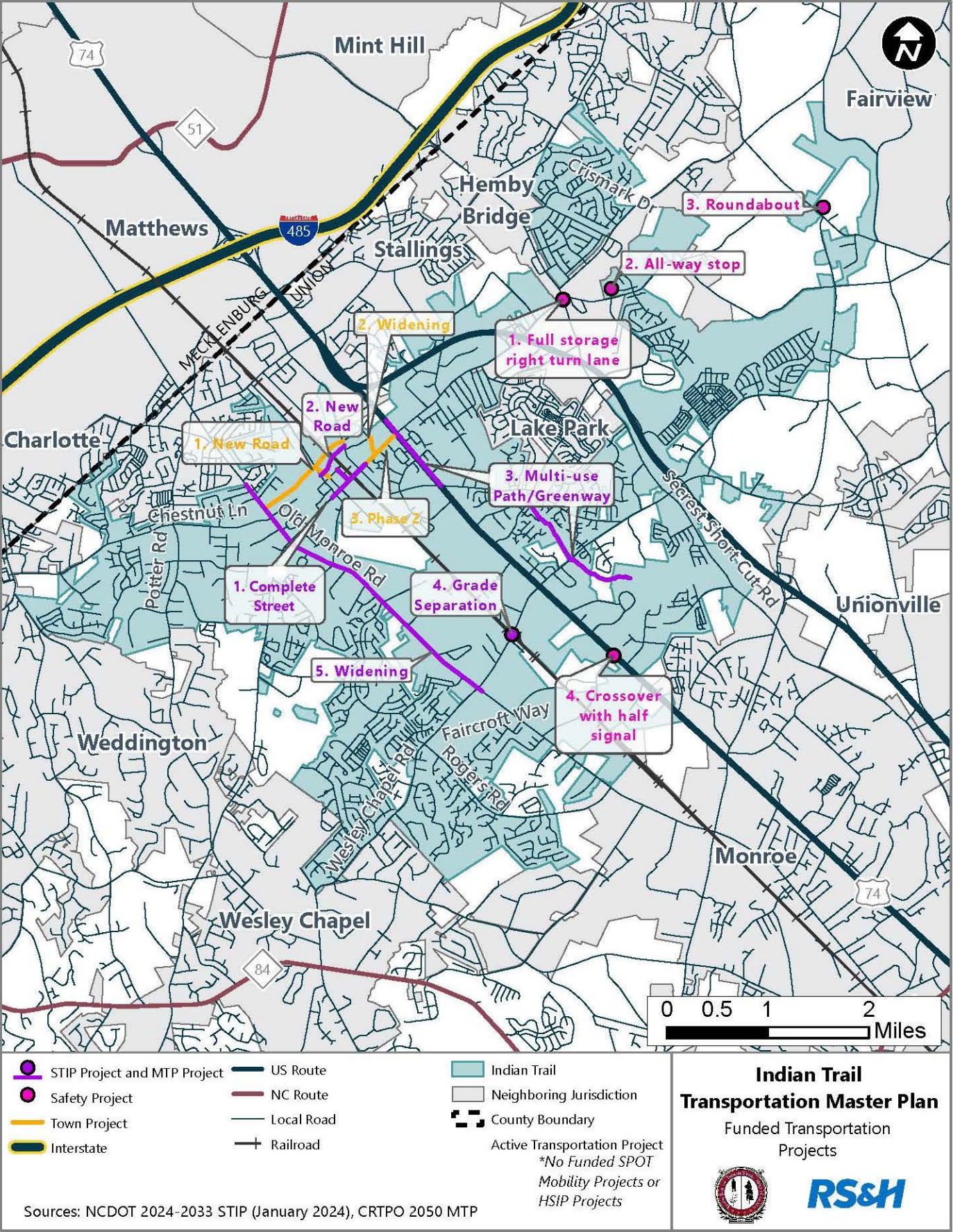
Funded Transportation Projects (continued)

Map Number	Name	Description
5	Old Monroe Road Widening (U-4714B)	Widening of Old Monroe Road from west of Morningside Meadow Lane to East of SR 1377 (Wesley Chapel Stouts Road) from two to four lanes with <u>reduced conflict intersections</u> , except for three roundabouts in the Sun Valley business district. The roundabouts will be at Mustang Lane (near the Harris Teeter), Wesley Chapel Stouts Road, and just east of Sun Valley High School. Right-of-way acquisition is in progress and construction is anticipated in 2026.
Town Projects		
1	Chestnut Parkway	Construct a four-lane median road with sidewalks on new location from south of Gribble Road to Old Monroe Road. Once construction begins, a temporary intersection will be constructed at Old Monroe Road to provide a right in/right out access until NCDOT's Old Monroe Road (U-4714B) widening project is complete.
2	Shady Bluff	This project will widen Shady Bluff and provide a curb, gutter, and an 8'-wide sidewalk on one side of the roadway. It will also improve connectivity between Chestnut Square Park and Indian Trail Road.
3	Indian Trail Road Complete Street (Phase 2)	The Town acquired this road from NCDOT and has flexibility on how it redevelops. This project will improve Indian Trail Road from US 74 to Old Monroe Road. Phase 2 (currently in design) covers the rest of Indian Trail Road. It will consist of more transportation improvements that will be located along two portions of the existing roadway. The first section of construction will be between Gribble Road and Old Monroe Road, with the other section between Liberty Lane and US 74. These transportation improvements will include the installation of storm drainage, curb, and gutter, 10-foot multi-use concrete paths on both sides, and a two-way left turn lane down the middle of the street.
NCDOT Safety Projects		
1	Indian Trail Fairview Road and Idlewild Road / Secrest Shortcut Road	Extend the slip right turn lane to a full storage right turn lane.
2	Faith Church Road and Indian Trail Fairview Road	Install an all-way stop condition.
3*	Lawyers Road and Rocky River Road	Install a roundabout.
4	US 74 and Hayes Road	Install a directional crossover with half signal.

**This project was completed between the time the TMP was initiated and when it was adopted.*

While the TMP was under development, NCDOT released its Prioritization 7.0 (P7.0) quantitative scores and Statewide Mobility Programmed Projects. One project was programmed in town - the widening of US 74 from four to six lanes, from Indian Trail-Fairview Road to North Rocky River Road.

Figure 17: Funded Transportation Projects



Intersections Already Programmed for Improvements

Eleven intersections in town are already programmed for improvements as a part of two of the planned transportation projects discussed previously: Old Monroe Road Widening (U-4714B) and the Indian Trail Road Complete Streets project. These intersections and associated improvements are shown in **Table 4**.

Table 4: *Intersections Programmed for Improvements*

Intersection	Improvement Type
Old Monroe Road Widening (U-4714B)	
Old Monroe Road / Chestnut Lane	Side Street Right In / Right Out with Island Separation
Old Monroe Road / Waxhaw Indian Trail Road / Indian Trail Road	Reduced Conflict Intersection (RCI)
Old Monroe Road / Glenn Valley Lane	Side Street Right In / Right Out
Old Monroe Road / Garmon Rd / Southfork Road	Main Line Dual Protected Left Turns, Both Side Streets will be Right In / Right Out
Old Monroe Road / Brandon Oaks Parkway / Midway Drive	Reduced Conflict Intersection (RCI)
Old Monroe Road / Mustang Drive	Dual Lanes Roundabout
Old Monroe Road / Wesley Chapel Stouts Road	Reduced Conflict Intersection (RCI) with Thru Lanes on the Side Street
Wesley Chapel Road / Sun Valley Commons	Three Leg Dual Lanes Roundabout
Old Monroe Road / Sun Valley Entrance / Public Entrance	Dual Lanes Roundabout
North Indian Trail Road (EB-5931)/ Indian Trail Road Complete Streets Project	
Indian Trail Road / Matthews-Indian Trail Road/ Unionville Indian Trail Road	Signalized Intersection with 4 Left Turn Lanes and 2 Right Turn Lanes Added
Indian Trail Road / Gribble Road / Southfork Road	Signalized Intersection with Right Turn Lane Added Westbound Along Indian Trail Road

Intersections Already Being Studied by Others

Additionally, Union County has a Critical Intersection Program focused on identifying intersections for which the county should direct local funding. Design concepts and cost estimates are being developed for one intersection in Indian Trail and two others have been identified as critical.

Wesley Chapel Road / Rogers Road was identified as a priority intersection in the 2016 Critical Intersection Analysis (CIA). Designs and cost estimates were prepared in 2016, but a decision was made to hold off on pursuing funding when the Wesley Chapel Road widening project was submitted as a candidate project for the CRTPO 2045 MTP and 2050 MTPs. This project did not make the fiscally constrained project list for either MTP, however, and the county selected the intersection for updated conceptual designs and cost estimates as part of the 2024 CIA Design and Cost Estimate Study (one of six intersections).

No intersections from Indian Trail were identified for the 2019 CIA.

In September 2023, the county approved its third CIA. Two intersections from Indian Trail are on the critical list: Old Charlotte Highway / Faircroft Way / Hayes Road and Mill Grove Road / Idlewild Road and Idlewild Road / Secrest Shortcut Road.⁴ No funding has been secured for improvements at these locations at this time, but the intent of the program is to improve all intersections identified as critical over time. Since these intersections are already being studied by the county, they were not studied as a part of this plan.

⁴ These intersections are in both Hemby Bridge and Indian Trail and were combined on the 2023 Critical Intersection List.

Programmed Projects in Proximity to Town

The Old Charlotte Highway and Rocky River Road grade separation was programmed in P7.O.

Other projects under construction or programmed outside of town limits include:

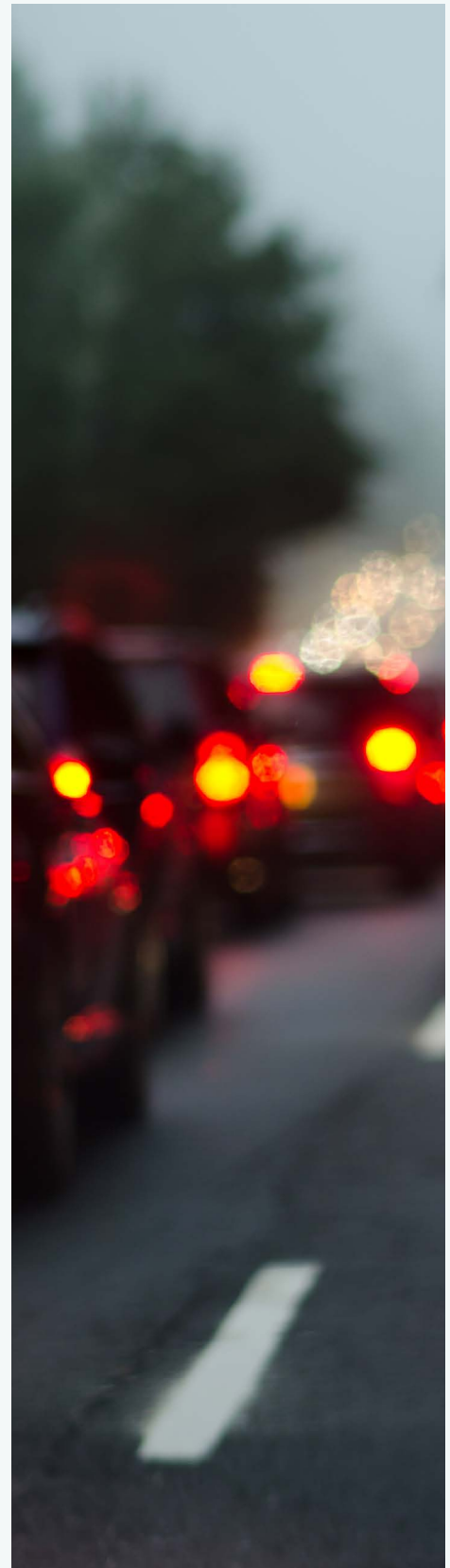
- Pleasant Plains Road / Potter Road intersection improvements
- I-485 interchange improvements
- Lawyers Road and Indian Trail Fairview Road roundabout

Remaining Needs and Deficiencies

All other relevant projects or locations in need of improvement identified in other plans or by stakeholders or the public were carried forward for further consideration in this plan. Each relevant project or location was placed into one of the following recommendation categories:

- Priority Intersections
- CTP Amendments
- Candidate CRTPO 2055 MTP Projects
- Functional Classification Changes
- Other Recommendations

The recommendations are discussed in more detail on the following pages.



Recommendations

Priority Intersections

Identification & Screening

A high-level traffic and safety analysis and qualitative screening was conducted on the remaining intersections in town to identify an initial list of intersections for consideration for future study as a part of this plan.

 Crash frequency	 Development activity
 Number of fatal or serious injury crashes	 Required TIA improvements
 Traffic volumes	 Rank using CRTPO's Discretionary Funds Policy Guide Intersection Scoring Criteria ⁶
 Traffic growth	 Whether the intersection was recommended in another plan TIA improvements
 Congestion levels	 Public input
 Population and employment growth	
 Land use	

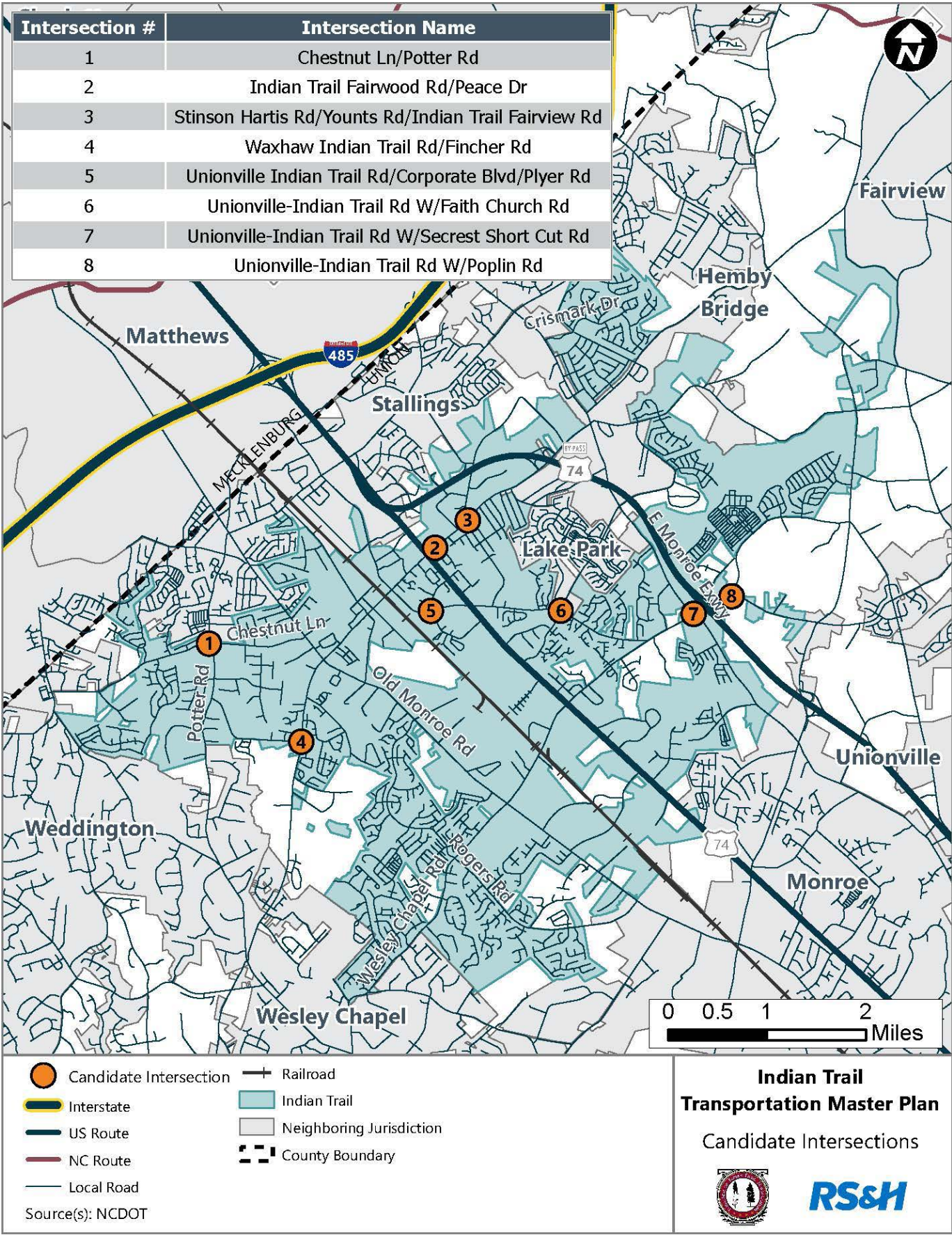
Based on the screening, eight (8) candidate intersections were identified. These eight (8) intersections were shared with the public and the input was considered as a part of the screening process. **Figure 18** shows the eight (8) candidate intersections. The screening details and outcomes are available in **Appendix C**. Based on the results of the screening, the town (with input from the PAC) selected three intersections to carry forward for a more detailed traffic and safety analysis, along with concept designs and cost estimates.

The intersections selected are as follows:

- Chestnut Lane / Potter Road
- Stinson Hartis Road / Younts Road / Indian Trail Fairview Road
- Unionville-Indian Trail Road / Faith Church Road

⁶ Since federal discretionary funds will be the primary funding source for intersection projects, consideration was given to how the intersection would score using CRTPO's Discretionary Funds Policy Guide Intersection Scoring Criteria. This is the criteria used by the Project Oversight Committee (POC) when awarding available discretionary funds. The screening included determining how the intersections ranked against one another and against projects that were submitted during the last call for projects.

Figure 18: Candidate Intersections



Top Three Intersections

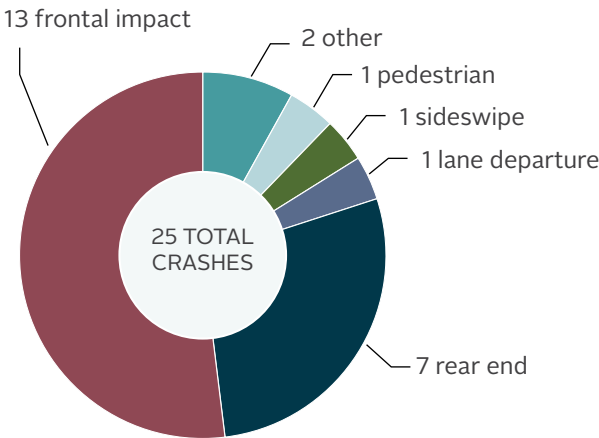
For the three selected intersections, turning movement counts were collected, detailed Traffic Engineering Accident Analysis System (TEAAS) crash data was requested and reviewed, and pertinent traffic impact assessments (TIAs) were studied.

Per the Town's guidance, the design year for the intersections is 2050. Growth rates for each intersection were calculated using the current version of the MRM (MRM22v2.0) and rounded to the nearest 0.25%. 2022 NCDOT traffic volumes are noted.

CHESTNUT LANE / POTTER ROAD

Design & Safety Deficiencies

Crash types/numbers



Capacity issues

2050 No-Build
PM: Level of Service (LOS) E
with 76.9 seconds of delay
and v/c ratio of 1.30

Design Considerations

- Assumed growth rate of 1.5%
- Potter Road has higher traffic volumes (12,500 AADT – 14,000 AADT as compared to 5,500 AADT – 8,100 AADT on Chestnut Lane)
 - Higher volumes on Potter Road traveling northbound (NB) in AM and southbound (SB) in PM
 - Volumes on Chestnut Lane the same in AM and PM
- Vacant outparcel in southwest corner of intersection
- Improvements under construction at Pleasant Plains Road / Potter Road that will likely increase traffic at Chestnut Lane / Potter Road
- Above ground utility poles on west side of Potter Road
- Lack of sidewalks on west side of Potter Road north of Chestnut Lane
- Gazebo in southeast corner of intersection
- No protected lefts currently
- Circle K driveway restricts left turn lane (LTL) storage on Potter Road

Improvement Considerations and Recommendations

Table 5 displays the various improvements considered at each intersection and notes which improvements were carried forward to conceptual design.

Table 5: *Improvement Considerations and Recommendations*

Improvement	Details	Recommendation
Add protected green arrow and flashing yellow arrow for northbound and southbound left-turn movements	Would improve the safety and queue for these movements	Carry forward
Add exclusive right-turn lanes on southbound and eastbound approaches	Would improve queuing associated with heavy through movements	Carry forward
Roundabout	Would improve safety, but poor LOS and operations; capacity of roundabout could not accommodate design year 2050 traffic volumes	Eliminate
Reduced Conflict Intersection (RCI) and Median U-Cut	Poor operations due to Potter Road being a 2-lane road combined with some high-volume movements - Median U-Turn would be rerouting all left-turn movements, some of which are high volume - RCI would reroute Chestnut thru and left-turn volumes, some of which are high volume. U-Turn bulb outs would create additional impacts and likely need additional widening between the main intersection and each U-turn location (~600') Push back from public – lots of pushback on US-74 and Old Monroe Road	Eliminate
Lengthen existing turn lanes	Would improve safety and operations	Carry forward - Lengthen northbound and southbound left turn lanes on Potter Road

Improvement Considerations and Recommendations (continued)

Improvement	Details	Recommendation
Realigned stop bars, high visibility crosswalks, pedestrian refuge island on Chestnut Lane (eastern side of intersection), pedestrian countdown signals* ⁶	Would improve pedestrian safety	Carry forward stop bars, high visibility crosswalks, pedestrian countdown signals Eliminate pedestrian refuge island – The concrete island would need to be widened to at least 6' to provide adequate pedestrian refuge. The refuge is not needed with the high visibility crosswalks and pedestrian countdown signals.
Sidewalk on west side of Potter Road	Would fill sidewalk gap	Carry forward

⁶ Priority Project #5 in Pedestrian Plan

Level of Service

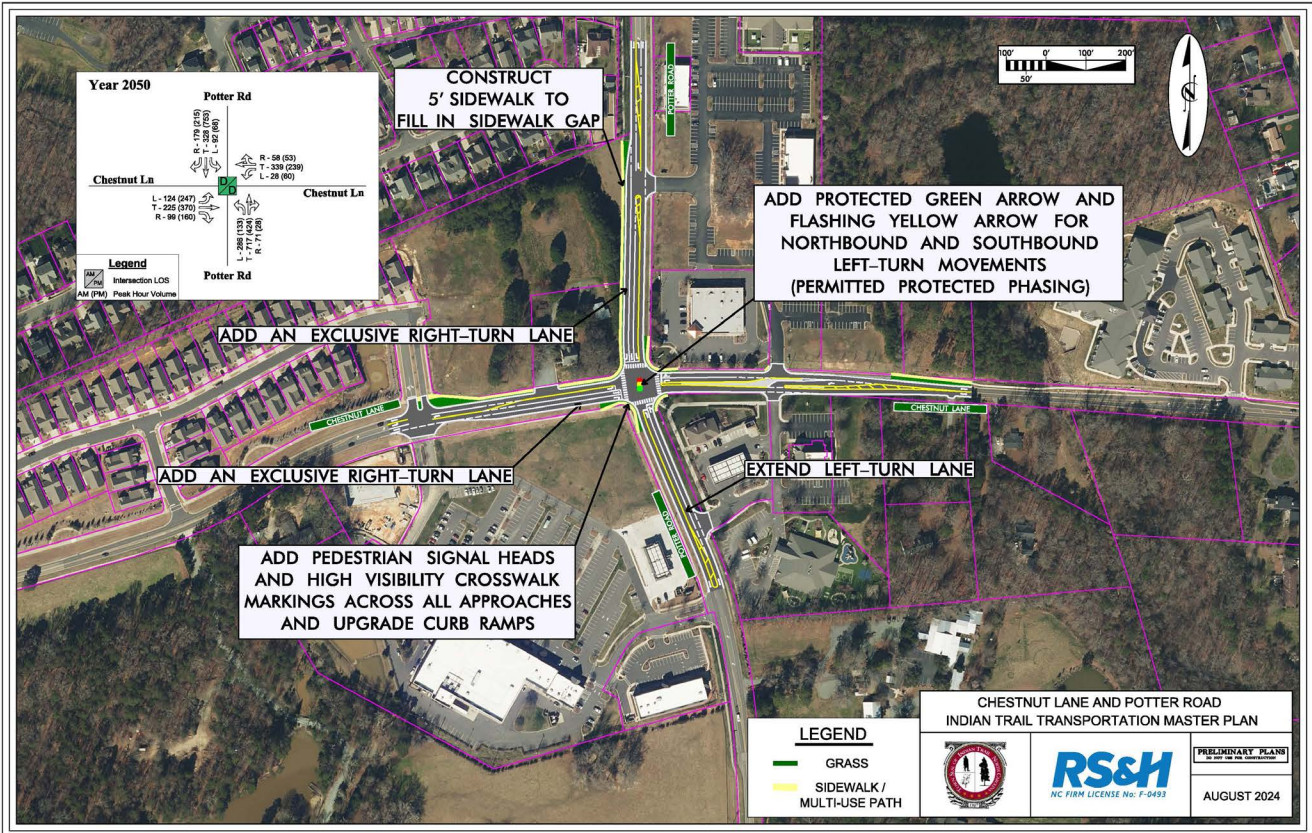
The intersection will operate at a Level of Service (LOS) D in 2050 in the AM with the proposed improvements (same LOS as 2050 No-Build). The improvements will result in the intersection operating at a LOS D in 2050 in the PM as compared to a LOS E without the improvements. By allowing the protected left, the delay is reduced by more than 25 seconds in the PM (see **Table 6**).

Table 6: Chestnut Lane / Potter Road LOS Details

	2024 Existing	2050 No-Build	2050 Build
AM	LOS B with 16.2 seconds of delay and v/c ratio of 0.71	LOS D with 35.3 seconds of delay and v/c ratio of 0.98	LOS D with 47.9 seconds of delay and v/c ratio of 1.13
PM	LOS C with 22.3 seconds of delay and v/c ratio of 0.84	LOS E with 76.9 seconds of delay and v/c ratio of 1.30	LOS D with 50.1 seconds of delay and v/c ratio of 1.06

The conceptual design is shown in **Figure 19** below. The planning level cost estimate for these improvements is estimated at \$3.14M. (complete cost breakdown in **Appendix D**).

Figure 19: Chestnut Lane / Potter Road Conceptual Design

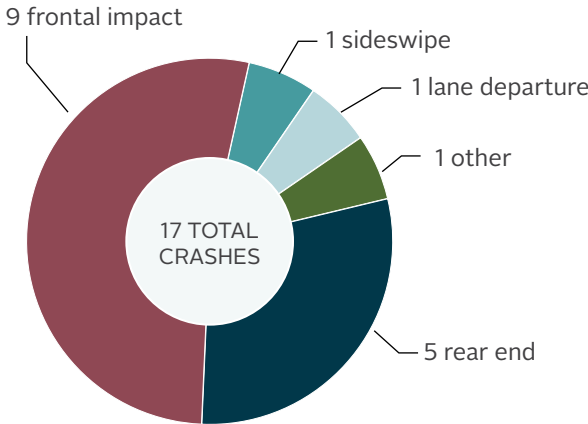


STINSON HARTIS ROAD / YOUNTS ROAD / INDIAN TRAIL FAIRVIEW ROAD

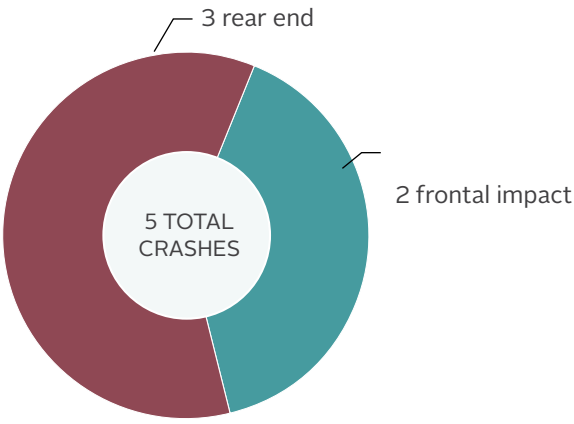
Design & Safety Deficiencies

Crash types/numbers

17 TOTAL CRASHES AT YOUNTS ROAD / INDIAN TRAIL FAIRVIEW ROAD



5 TOTAL CRASHES AT STINSON HARTIS ROAD / INDIAN TRAIL FAIRVIEW ROAD



Capacity issues

2024 Existing (Stinson Hartis Road)

- AM: NBL/T/R - LOS E with 43.4 seconds of delay and v/c ratio of 0.33
- PM: SBL - LOS F with 72.4 seconds of delay and v/c ratio of 0.65

2050 No-Build (Stinson Hartis Road)

- AM: Both Stop Approaches - LOS F with >100 seconds of delay and v/c ratio of >1.0
- PM: Both Stop Approaches - LOS F with >100 seconds of delay and v/c ratio of >1.0

Design Considerations

- Assumed growth rate of 2.25%
- Speed limits: 35 mph Indian Trail Fairview Road; 45 mph Stinson Hartis Road; 35 mph Younts Road
- Traffic volumes: 13,500 AADT on Indian Trail Fairview Road; 3,800 AADT on Stinson Hartis Road; N/A on Younts Road
- Wooded area east of Younts Road owned by same property owner
- Younts Road is signalized (operates well);

Stinson Hartis Road is stop-controlled (poorer operations)

- Southeast Connections business is using Woodlawn Lane as a driveway
- Properties on northeast and northwest corners are vacant; development plans were proposed for light industrial in the northwest corner but were not approved
- Greenway planned along Crooked Creek (part of Carolina Thread Trail)

Improvement Considerations and Recommendations

Table 7 displays the various improvements considered at each intersection and notes which improvements were carried forward to conceptual design.

Table 7: *Improvement Considerations and Recommendations*

Improvement	Details	Recommendation
Peanut roundabout combining Younts Road and Stinson Hartis Road	Poor LOS and operations; capacity of roundabout could not accommodate design year 2050 traffic volumes	Eliminate
Combined single signalized intersection by realigning Younts Road to Stinson Hartis Road	Improved safety for unsignalized movements and more efficient operations than two closely spaced signals	Carry forward
Reconfigure Southeast Connections business site to have access to Brown Lane and realigned Younts Road	Improved access to business while avoiding impacts to business	Carry forward
Add dedicated right turn lanes on southbound Stinson Hartis Road and northbound Younts Road	Would improve queuing associated with heavy through movements	Carry forward
Lengthen existing turn lanes	Would improve safety and operations	Carry forward (northbound left turn on Younts Road, westbound and eastbound right and left turns on Indian Trail Fairview Road)
8'-10' sidepath along south side of Indian Trail Fairview Road and west side of Stinson Hartis Road; 5' min sidewalk along north side of Indian Trail Fairview Road; 12' greenway starting along Brown Lane (CTT segment); high visibility crosswalks; ADA curb ramps; pedestrian lighting; Rectangular Rapid Flashing Beacon (RRFB) to cross Indian Trail-Fairview Road on west side of Stinson Hartis Road ⁷	Would improve pedestrian safety	Carry forward an 8'-10' sidepath along the south side of Indian Trail Fairview Road and west side of Stinson Hartis Road, 5' min sidewalk along north side of Indian Trail Fairview Road; high visibility crosswalks; ADA curb ramps; pedestrian lighting Eliminate RRFB (not needed when intersection is signalized) Replace 12' greenway on Brown Lane with a 10' sidepath along the newly realigned Younts Road ⁸

⁷ Priority Project #6 in Pedestrian Plan

⁸ Conceptual design was discussed with CTT since a route in the area (Route A) is shown in the CTT Master Plan for Union County and Participating Municipalities. The CTT was supportive of the realignment.

Level of Service

The recommended improvements will enhance operations at Indian Trail Fairview Road / Stinson Hartis Road from a LOS F to a LOS C in both the AM and PM. While operations will remain the same LOS (LOS C) in the AM and PM along Younts Road, there will be a slight reduction in delay (see **Table 8**).

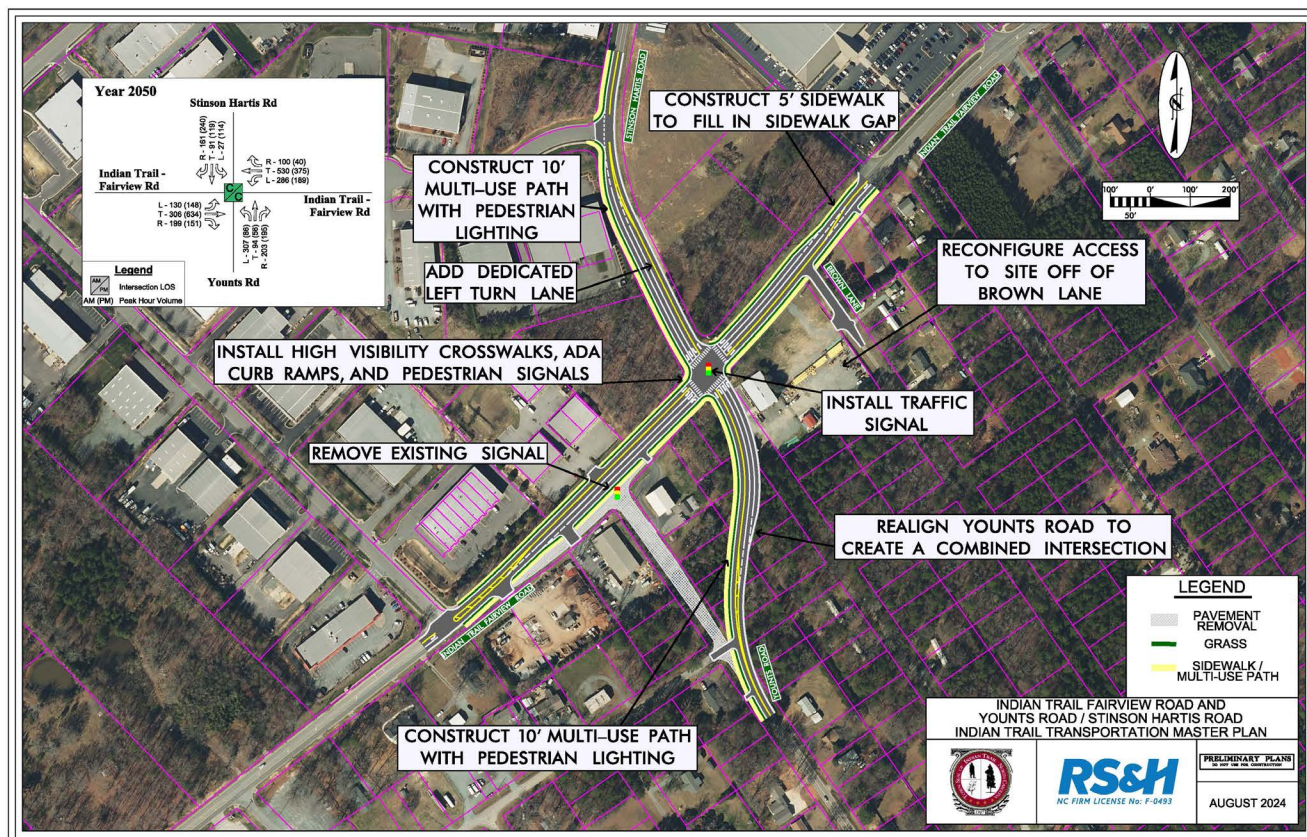
Table 8: *Stinson Hartis Road / Younts Road / Indian-Trail Fairview Road LOS Details*

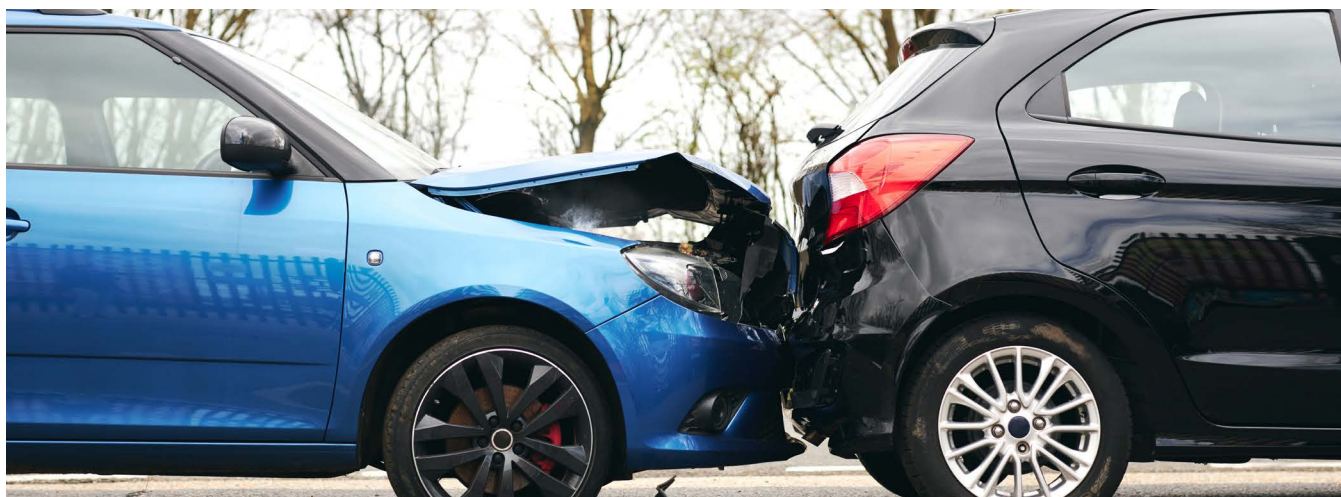
	2024 Existing	2050 No-Build	2050 Build
STINSON HARTIS ROAD			LOS C with 26.4 seconds of delay and v/c ratio of 0.84
AM	NBL/T/R - LOS E with 43.4 seconds of delay and v/c ratio of 0.33	Both Stop Approaches - LOS F with >100 seconds of delay and v/c ratio of >1.0	
YOUNTS ROAD			
AM	LOS B with 18.0 seconds of delay and v/c ratio of 0.56	LOS C with 30.3 seconds of delay and v/c ratio of 0.87	
STINSON HARTIS ROAD			LOS C with 20.9 seconds of delay and v/c ratio of 0.79
PM	SBL - LOS F with 72.4 seconds of delay and v/c ratio of 0.65	Both Stop Approaches - LOS F with >100 seconds of delay and v/c ratio of >1.0	
YOUNTS ROAD			
PM	LOS B with 17.6 seconds of delay and v/c ratio of 0.72	LOS C with 34.8 seconds of delay and v/c ratio of 0.93	



The conceptual design is shown in **Figure 20** below. The planning level cost estimate for these improvements is estimated at \$11.66M (complete cost breakdown in **Appendix D**).

Figure 20: Indian Trail Fairview Road / Younts Road / Stinson Hartis Road Conceptual Design

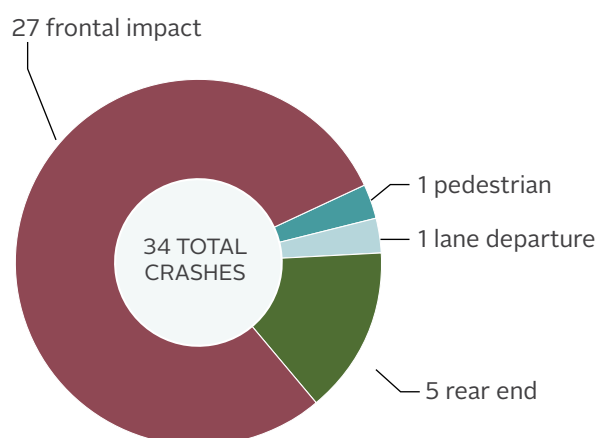




UNIONVILLE-INDIAN TRAIL ROAD / FAITH CHURCH ROAD

Design Deficiencies

Crash types/numbers



Capacity issues

2050 No-Build

PM: LOS E with **60.8** seconds
of delay and v/c ratio of **1.38**

Design Considerations

- Assumed growth rate of 2.25%
- Speed limits: 35 mph Faith Church Road; 45 mph Unionville-Indian Trail Road
- Traffic volumes: 13,500 AADT on Unionville Indian Trail Road west of intersection; no other volumes available
- Floodplain west and south of intersection
- Utilities in northeast and northwest corners
- Northeast corner is in Village Park; Village of Lake Park has approved a townhome development (The Landings at Lake Park)
 - Development will require sidewalks on Faith Church Road and Unionville-Indian Trail Road
 - Development will be using the old concrete plant driveway; there will be a right turn lane added traveling westbound on Unionville Indian Trail Road to access driveway

Improvement Considerations and Recommendations

Table 9 displays the various improvements considered at each intersection and notes which improvements were carried forward to conceptual design.

Table 9: Improvement Considerations and Recommendations

Improvement	Details	Recommendation
Add protected green arrow and flashing yellow arrow for eastbound and westbound left-turn movements to improve the safety and queue for these movements	Would improve the safety and queue for these movements	Carry forward
Add exclusive right-turn lanes along northbound and southbound approaches	Would allow the signal to give more green time to Unionville Indian Trail Road	Carry forward
Roundabout	Would result in poor LOS and operations capacity of roundabout could not accommodate design year 2050 traffic volumes	Eliminate
Lengthen existing turn lanes	Would improve safety and operational benefits	Carry forward - Lengthen eastbound and westbound left turn lanes on Unionville-Indian Trail Road and northbound and southbound left turn lanes on Faith Church Road
Add exclusive right-turn lanes along every approach	Improving these legs would provide value as impacts and costs are low and would result in only having to buy ROW, move utilities, and mobilize once	Carry forward

Improvement Considerations and Recommendations (continued)

Improvement	Details	Recommendation
5' sidewalk on both sides of Faith Church Rd north of Unionville-Indian Trail Rd, 8'-10' sidepath of north side of Unionville-Indian Trail Rd, new curbs (north side), ADA curb ramps, pedestrian countdown signals, high visibility crosswalks* ⁹	Would improve pedestrian safety	Carry forward - 5' sidewalk on both sides of Faith Church Rd north of Unionville-Indian Trail Rd (sidewalk on east side will be constructed by developer), new curbs (north side), ADA curb ramps, pedestrian countdown signals, high visibility crosswalks Replace 8'-10' side path on north side of Unionville-Indian Trail Rd with a 5' sidewalk (this portion is in Lake Park and 5' sidewalk is part of approved development plans) Move 8'-10' sidepath to south side of Unionville-Indian Trail Rd to avoid higher costs by impacting the nearby pond
Upgrade culvert	Will help maintain proper drainage and prevent flooding of houses along floodplain	Carry forward

⁹ Priority Project #4 in Pedestrian Plan

Level of Service

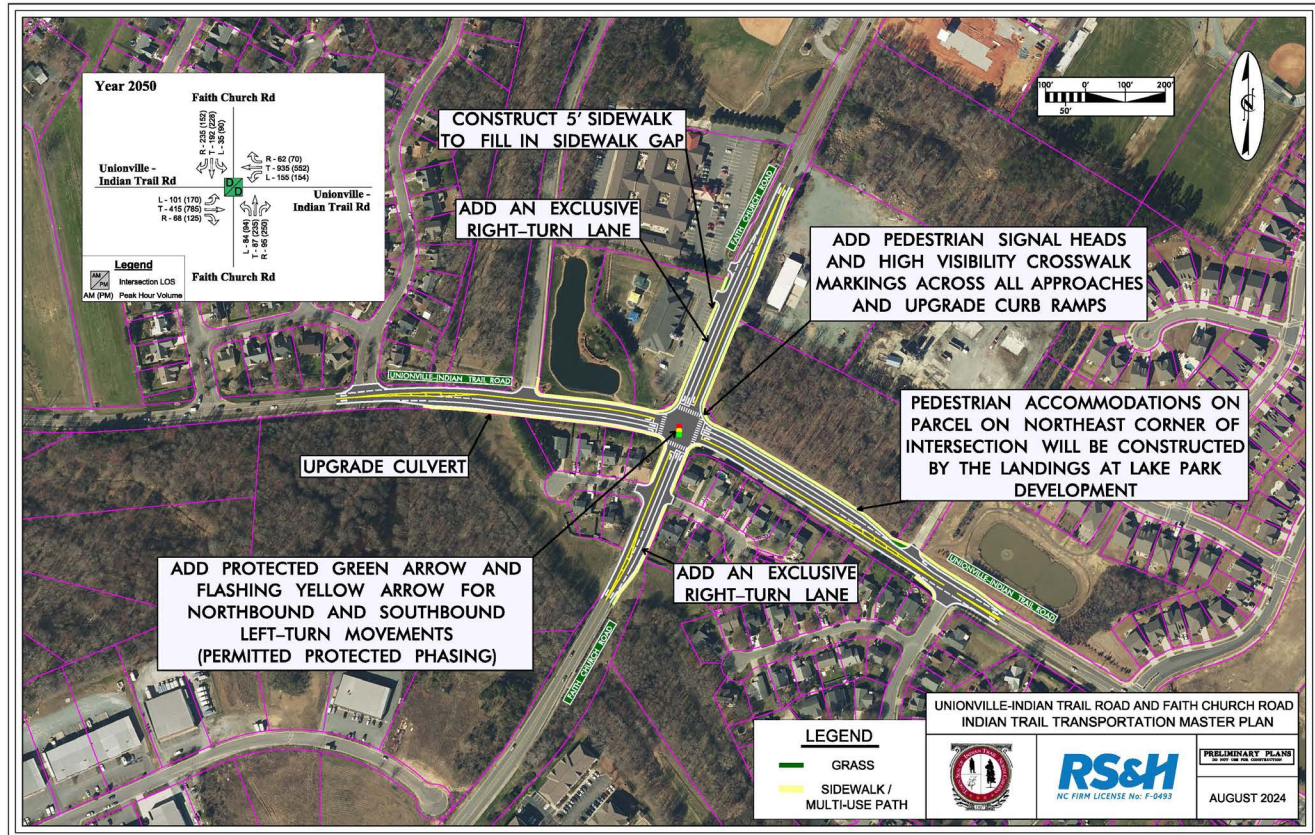
The intersection will operate at a LOS D in 2050 in the AM with the proposed improvements (same LOS as 2050 No-Build), but with less delay. The improvements will result in the intersection operating at a LOS D in 2050 in the PM as compared to a LOS E without the improvements. By allowing the protected left, the delay is reduced by more than 20 seconds in the PM (**see Table 10**).

Table 10: Unionville-Indian Trail Road and Faith Church Road LOS Details

	2024 Existing	2050 No-Build	2050 Build
AM	LOS B with 16.8 seconds of delay and v/c ratio of 0.74	LOS D with 49.2 seconds of delay and v/c ratio of 1.08	LOS D with 37.8 seconds of delay and v/c ratio of 0.99
PM	LOS B with 16.4 seconds of delay and v/c ratio of 0.73	LOS E with 60.8 seconds of delay and v/c ratio of 1.38	LOS D with 40.0 seconds of delay and v/c ratio of 0.96

The conceptual design is shown in **Figure 21** below. The planning level cost estimate for these improvements is estimated at \$7.47M (complete cost breakdown in **Appendix D**).

Figure 21: Unionville-Indian Trail Road / Faith Church Road Conceptual Design





Remaining Priority Intersections

A high-level analysis was conducted for three of the five remaining intersections. NCDOT confirmed two intersections, Unionville-Indian Trail Road W / Secrest Short Cut Road and Unionville-Indian Trail Road W / Poplin Road, have several improvements planned but could not confirm the specifics at the time this plan was developed. The town should continue to monitor these intersections, especially once improvements are constructed, to determine if the intersections may benefit from additional improvements beyond what was required as a part of TIAs.

The following design elements are recommended at the remaining intersections:

- Indian Trail Fairview Road / Peace Drive – If safety concerns continue, consider extending the median to Peace Drive to provide increased access management.
- Waxhaw Indian Trail Road / Fincher Drive – No improvements are recommended for capacity or vehicle safety. The Pedestrian Plan recommends sidewalk on Waxhaw Indian Trail Road from Blanchard Circle to Old Monroe Road as a part of the Priority Network. It also recommends pedestrian crossing improvements at the intersection as a high priority. Sidewalks are also recommended on Fincher Drive as a lower priority project.
- Unionville Indian Trail Road / Corporate Boulevard / Plyer Road – The Town is taking over the portion of Unionville-Indian Trail Road from N Indian Trail Road to US 74, which includes this intersection. As a result, this portion of the road is ineligible for federal funds. The Town could add left turn lanes on Unionville Indian Trail Road or consider a single-lane roundabout. The Pedestrian Plan recommends a sidepath on Unionville Indian Trail Road along the portion the town is taking over as a part of the Priority Network.

CTP Amendments

It is important for the CRTPO CTP to be accurate; the Town refers to the CTP when identifying candidate projects to submit to the CRTPO MTP for federal and state funds. Additionally, in most cases, the town cannot submit projects for federal and state discretionary funding through CRTPO and NCDOT unless the improvements are reflected in the CRTPO CTP. A review of the CRTPO CTP was conducted as a part of this plan.

CTP Highway

Recommended CTP highway amendments are as follows:

- **Faith Church Road Extension** – the extension of Faith Church Road across the railroad tracks between Old Monroe Road and US 74 is no longer feasible due to construction of the Harris Teeter Distribution Center and should be removed from the CRTPO CTP.
 - **Potter Road** - Potter Road is a major collector between Indian Trail and Stallings. It is currently experiencing congestion and the public has identified safety and congestion concerns at intersections along the roadway. Potter Road is currently identified as “Existing” (meeting current needs/adequate) and should be changed to “Needs Improvement.”
 - **Brandon Oaks Parkway** – This roadway will experience a significant increase in traffic when the Brandon Oaks Parkway Extension is constructed and with the removal of the Faith Church Road Extension. This road should also be changed to “Needs Improvement” to accommodate expected traffic volumes.
 - **Downtown Master Plan New Road Connections** – Several new road connections were recommended in the Downtown Master Plan to improve connectivity in downtown. The town reviewed all recommendations from this plan, and the feasible new roadways should be added to the CRTPO CTP to ensure consistency between plans. These include:
 - Extension of Choctaw Road to the new Chestnut Parkway
 - New road off Gribble Road to the new Chestnut Parkway
 - New road connecting Edna Love Lane to the new Chestnut Parkway
 - Extension of VFW Lane
 - New roadway connecting extension of VFW Lane to Unionville Indian Trail Road
 - New roadway connecting Liberty Lane and Associates Lane
 - **Additional New Road Connections** – A handful of other small road connections to improve connectivity outside of downtown are recommended to be added to the CRTPO CTP. **These include:**
 - New road connecting Stratford Drive to South Fork Road
 - New road connecting McLendon Road to Waxhaw Indian Trail Road
- Recommended CRTPO CTP highway amendments are shown on **Figure 22**.

CTP Bicycle



The town is focused on construction of sidewalks, multi-use paths, and greenways. Therefore, all roads listed as “Needs Improvement” for on-road bicycle facilities in town should be removed from the CRTPO CTP.

All high-priority multi-use paths identified in the Comprehensive Pedestrian Plan should be added as “Recommended” multi-use paths.

These include the following:

- Wesley Chapel Stouts Road
- Matthews-Indian Trail Road
- N Indian Trail Road
- Sardis Church Road
- Unionville Indian Trail Road
- Old Monroe Road
- Indian Trail Fairview Road
- East US 74
- Wesley Chapel Road
- S Indian Trail Road
- Unionville-Indian Trail Road W

Recommended CRTPO CTP bicycle amendments are shown on **Figure 23**.

CTP Pedestrian



The town adopted its Comprehensive Pedestrian Plan in 2024. The proposed CRTPO CTP Pedestrian amendments ensure all high-priority sidewalks identified in the Comprehensive Pedestrian Plan are shown as “Recommended” sidewalks in the CRTPO CTP.

High-priority sidewalks are recommended on the following roads:

- Chestnut Parkway
- Gribble Road
- Waxhaw Indian Trail Road

Recommended CRTPO CTP pedestrian amendments are shown on **Figure 24**.

CTP Transit & Rail



Transit planning and implementation of transit recommendations is being coordinated at the regional level. The town supports CATS and Centralina Regional Council coordinating with CRTPO to introduce needed transit CTP amendments to ensure the CRTPO CTP is consistent with CONNECT Beyond, the CATS 2030 Transit Corridor System Plan / LYNX Silver Line Study, and other relevant transit plans.

Future CTP Considerations

The alignments of two projects under construction in town are incorrect in the CRTPO CTP. These include Chestnut Parkway and Southfork Greenway. Once construction is complete on these projects, the town should work with CRTPO staff on administrative amendments to remove the recommended alignments currently shown in the CTP and add the correct alignments as existing (see **Figure 25**).

With the elimination of the Faith Church Road Extension, the PAC discussed other potential crossings of US 74, including grade separations at Wesley Chapel Stouts Road / Sardis Church Road and N Rocky River Road. Both roads have funded grade separations at the railroad. The grade separation at N Rocky River Road was the preferred location because it is located near the midpoint between Indian Trail and Monroe and has more truck traffic because of its proximity to the airport and industrial uses. However, this location is outside of Indian Trail town limits.

The N Rocky River Road grade separation was discussed with City of Monroe Planning, Engineering, and Economic Development staff, and the idea was presented at the July Union County Quarterly CRTPO Members meeting and the August Monroe Public Enterprise Committee meeting. NCDOT staff were present at these meetings. The grade separation was discussed at the Monroe Strategic Planning Retreat. The City intends to move forward with the amendment accordance with the CRTPO CTP amendment process.

Figure 22: CTP Highway Map

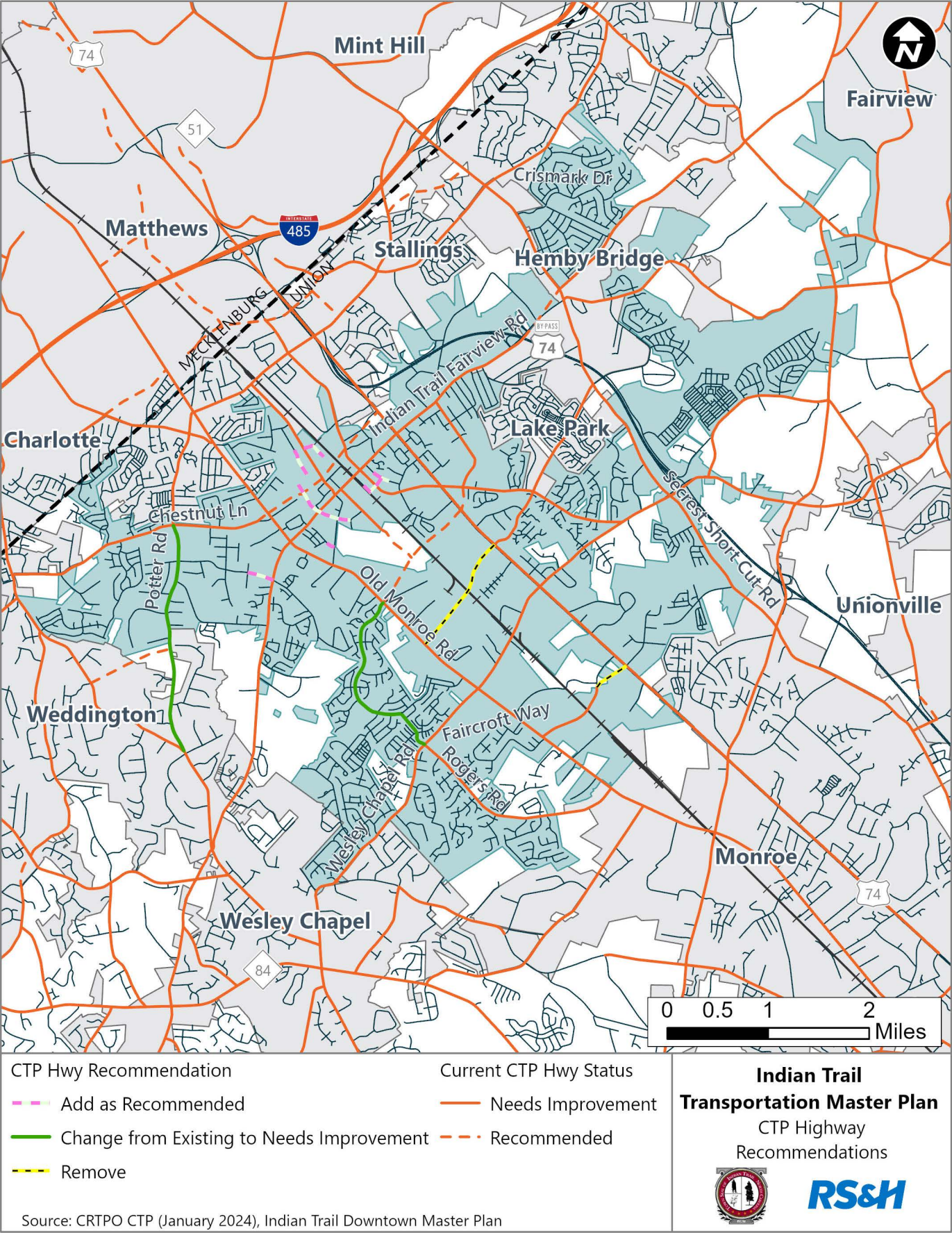


Figure 23: CTP Bicycle Map

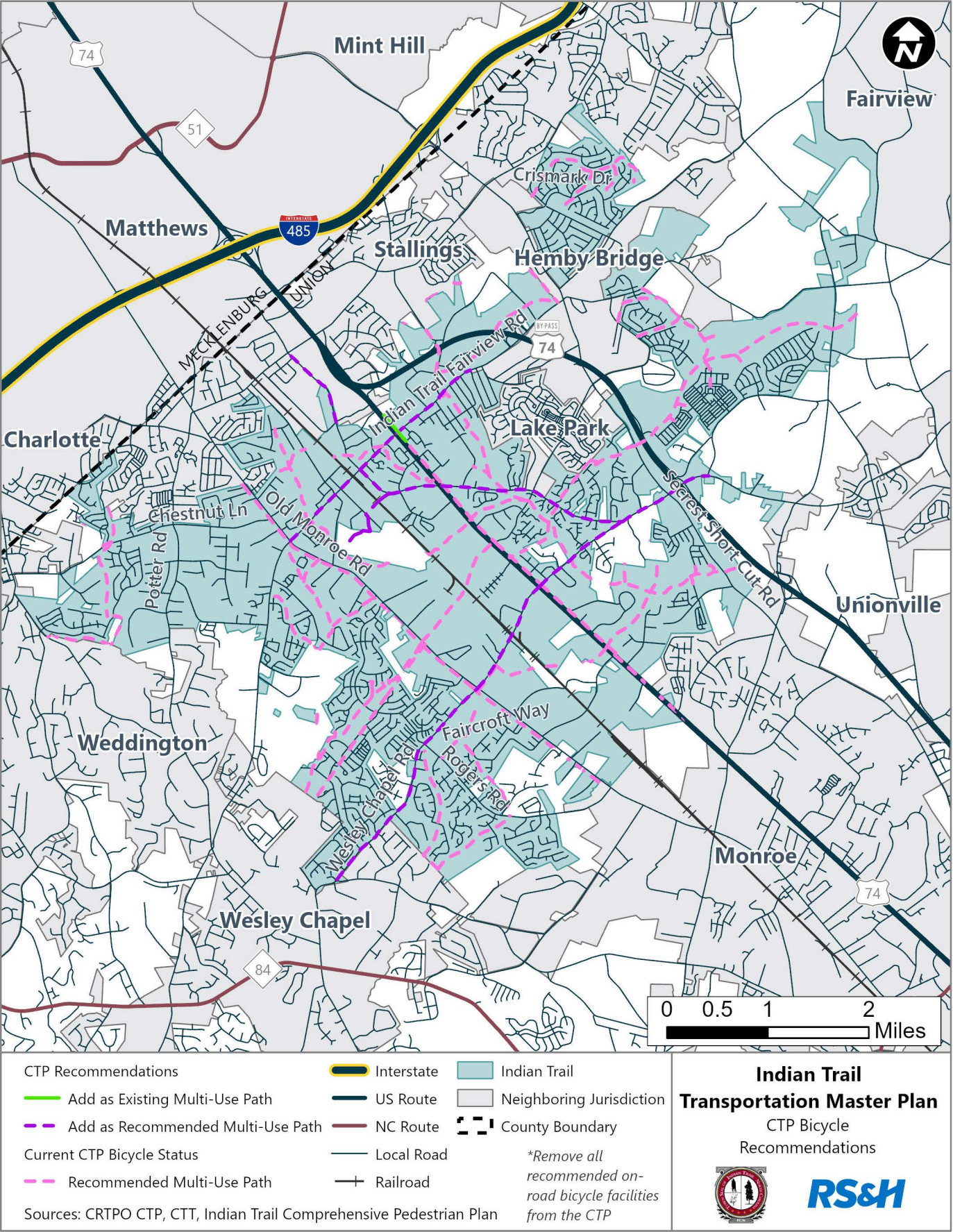


Figure 24: CTP Pedestrian Map

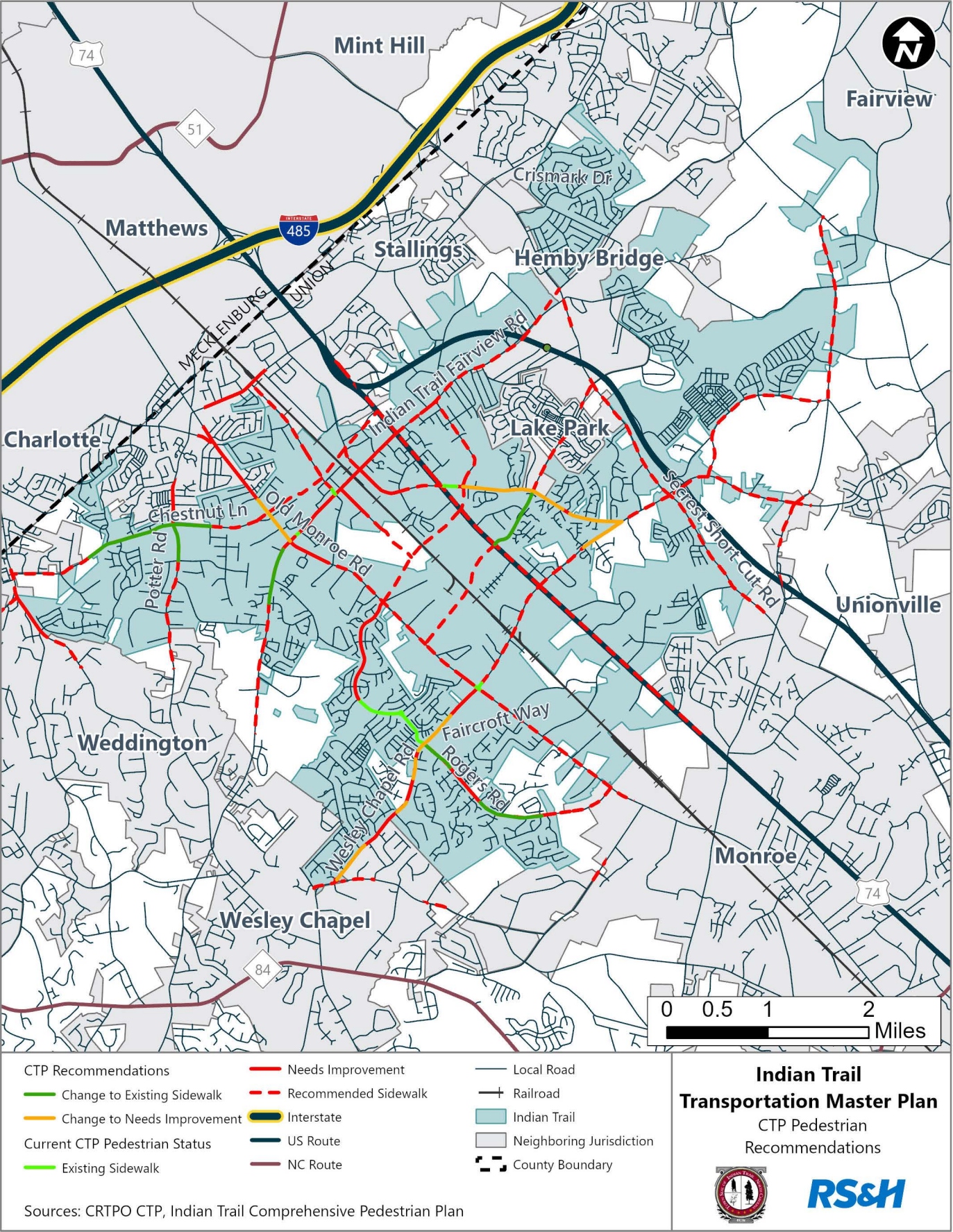
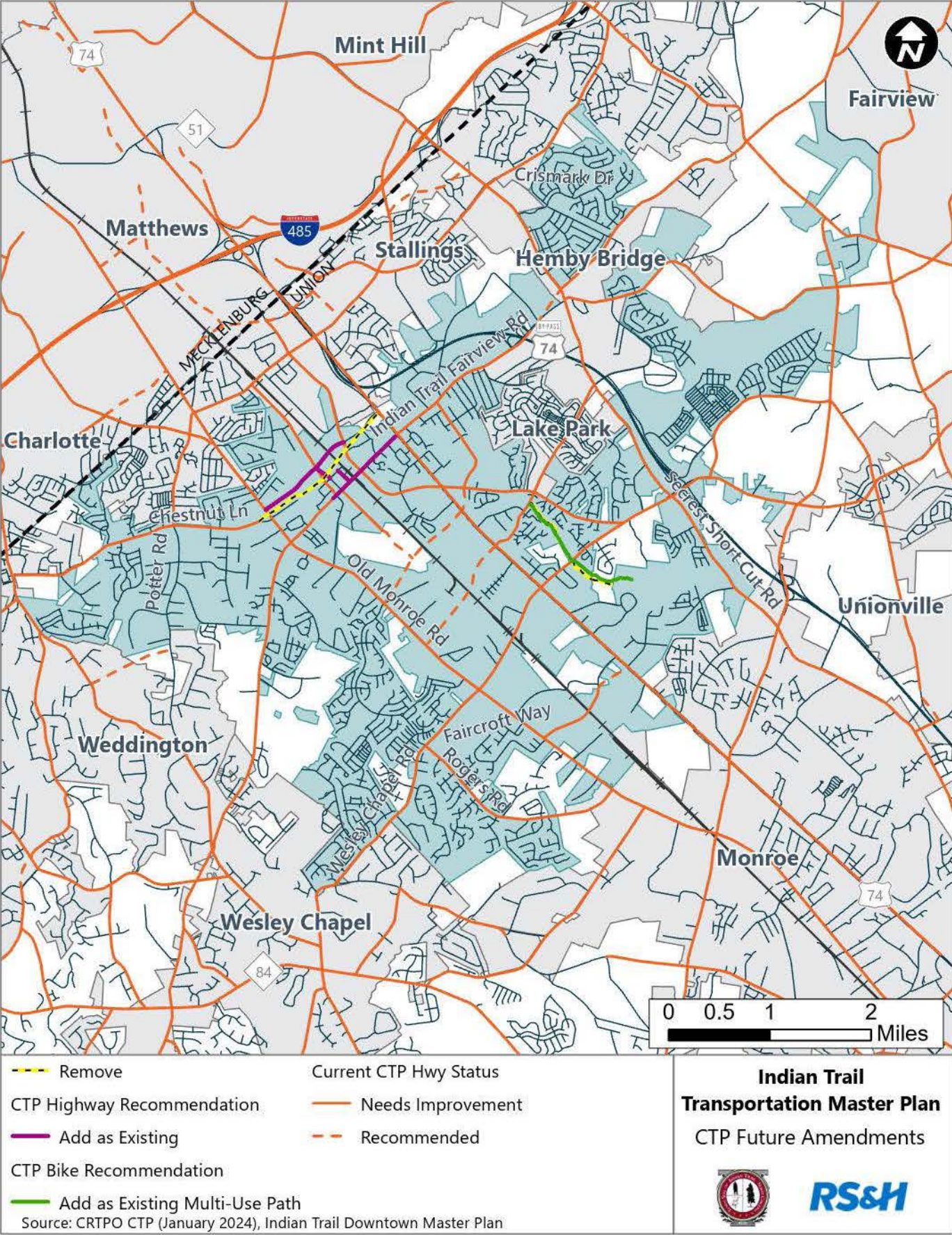


Figure 25: CTP Future Map



Candidate CRTPO 2055 MTP Projects

The plan also identifies candidate projects for the town to submit for consideration in the CRTPO 2055 MTP. First, projects submitted for prioritization in P7.O and to previous MTPs that did not make the MTP fiscally constrained project list were reviewed.

Three projects were submitted to P7.O and received high scores during the 2050 MTP project ranking process (181 points or higher). These projects are recommended to be submitted as 2055 MTP candidate projects (shown in green in **Table 11**).

Six projects submitted by the Town for the 2050 MTP received a middle score (shown in orange in **Table 11**) during the 2050 MTP project ranking process. While there is no limit to the number of projects a jurisdiction can submit as candidate projects, these projects are unlikely to be programmed in the 2055 MTP due to the amount of funding available relative to the project needs in the CRTPO planning area. In addition, available funding is more limited than it has been for previous MTP updates. According to NCDOT May 17, 2024 numbers, Region E is overcommitted by \$471M and Division 10 is overcommitted by \$108M (Indian Trail is a part of Region E and Division 10).¹⁰ While these numbers will change due to updated project cost estimates and schedule changes for

committed projects, it is likely that funding for these categories will remain overprogrammed, meaning no new projects will be funded. The overcommitments make it even more unlikely that these projects would make the 2055 MTP fiscally constrained list.

It should be noted that the town is currently in the process of taking over Unionville Indian Trail Road from N Indian Trail Road to US 74. Should the town submit this road to the 2055 MTP or future MTPs, the extents of the first segment are recommended to be revised to US 74 to Sardis Church Road since locally owned or maintained roads are not eligible for federal funds.

Four projects submitted previously are not recommended to be submitted to the 2055 MTP (shown in red in **Table 11**). The Faith Church Road Extension is no longer feasible, while Indian Trail Road was transferred to town ownership, making it ineligible for federal funds. These two projects should also not be submitted during any future MTP updates. The Chestnut Lane and Rogers Road widening projects scored low during the 2050 MTP project ranking process (60 and 41 out of 300 respectively). While these projects are not recommended to be submitted to the 2055 MTP, they could be considered for future MTP updates.

¹⁰ Presentation given to the CRTPO TCC in July 2024. These numbers will continue to change as cost estimates are revised. Region E and Division 10 are Strategic Transportation Investments (STI) funding regions (see the Funding section for more detail).

Table 11: Recommendation for Previous Candidate CRTPO MTP Projects

Project Name	Extents	2050 MTP Score / p7.0	Recommendation / Comments
Idlewild Road Widening (2 to 4 lanes)	Stevens Mill Road to Indian Trail - Fairview Road Note - Extents are different than what was previously submitted to MTP	193 (Drop in Tier II) P7.0	Submit
Old Monroe Widening (2 to 4 lanes)	Airport Road to Wesley Chapel Road	187 (Drop in Tier II) P7.0	Submit
Wesley Chapel - Stouts Road Widening (2 to 4 lanes)	US 74 to Rogers Road Note - Extents are different than what was previously submitted to MTP	181 (Drop in Tier II) P7.0	Submit
Unionville - Indian Trail Road Widening (2 to 4 lanes)	Indian Trail Road to Sardis Church Road	111 (Drop in Tier I)	Revise extents to US 74 to Sardis Church Road
Indian Trail Fairview Road Widening (2 to 4 lanes)	US 74 to Idlewild Road	104 (Drop in Tier I)	Middle score - could submit, but unlikely to make FC list
Secrest Short Cut Road Widening (2 to 4 lanes)	Faith Church Road to Rocky River Road	91 (Drop in Tier I)	Middle score - could submit, but unlikely to make FC list
Unionville - Indian Trail Road Widening (2 to 4 lanes)	Sardis Church Road to Rocky River Road	89 (Drop in Tier I)	Middle score - could submit, but unlikely to make FC list
Waxham Indian Trail Road Widening (2 to 4 lanes)	Potter Road to Old Monroe Road	83 (Drop in Tier I)	Middle score - could submit, but unlikely to make FC list
Sardis Church Road Widening (2 to 4 lanes)	Unionville Indian Trail Road to US 74	77 (Drop in Tier I)	Middle score - could submit, but unlikely to make FC list
Faith Church Road Extn	US 74 to Old Monroe Road	208 (Drop in Tier II)	No longer feasible; removing from CTP
Indian Trail Road Widening (2 to 3 lanes)	US 74 to Old Monroe Road	182 (Drop in Tier II)	Transferred to Town Ownership
Chestnut Lane Widening	Potter Road to Old Monroe Road	60 (Drop in Tier II)	Don't Submit
Rogers Road Widening (2 to 4 lanes)	Wesley Chapel Road to Old Charlotte Hwy	41 (Drop in Tier II)	Don't Submit

Second, new projects that had not been previously submitted to the CRTPO MTP were also identified. Since the Faith Church Road Extension from US 74 to Old Monroe Road is no longer feasible and was the highest scoring project in town that did not make the fiscally constrained list, the town considered other projects that would offer a similar connection. The recommended Brandon Oaks Parkway Extension would offer a similar connection and is recommended to be submitted in place of the Faith Church Road Extension (shown in green in **Table 12**).

Lastly, CRTPO has indicated that it will be allowing intersection project submissions for the first time in the 2055 MTP. CRTPO is still finalizing criteria for submitting these projects, but they will be limited to intersections “larger in scope.” The two intersections identified as critical in the 2023 Union County CIA may be eligible. Once criteria details are available from CRTPO, the town will be better informed to determine which intersections to submit as candidate 2055 MTP projects.

Table 12: *New Candidate 2055 CRTPO MTP Projects*

Project Name	Extents	Reasoning
Brandon Oaks Pkwy Extn	Old Monroe Road to Unionville - Indian Trail Road	Replaces Faith Church Road Extn that is no longer feasible
Old Charlotte Hwy / Faircroft Way / Hayes Road	N/A	Identified as priority intersection in 2023 UC CIA; CRTPO accepting intersections larger in scope as candidate projects; need to see what parameters are provided
Mill Grove Road / Idlewild Road	N/A	Identified as priority intersection in 2023 UC CIA; CRTPO accepting intersections larger in scope as candidate projects; need to see what parameters are provided

Functional Classification Changes

As discussed on **page 13**, streets and highways are grouped into classes according to the services they provide. As development activity occurs and roadway improvements are constructed, traffic patterns are altered on several nearby roads, changing the level of mobility and accessibility of those roads.

While FHWA makes the ultimate decision regarding the functional classification of a street or highway, there are procedures in place at the state and regional levels for local jurisdictions to request functional classification revisions.

When the services a road provides change, it is important for the local government to work with the MPO to request a functional classification change, since a change from a local road classification makes the roadway eligible to receive federal funding.

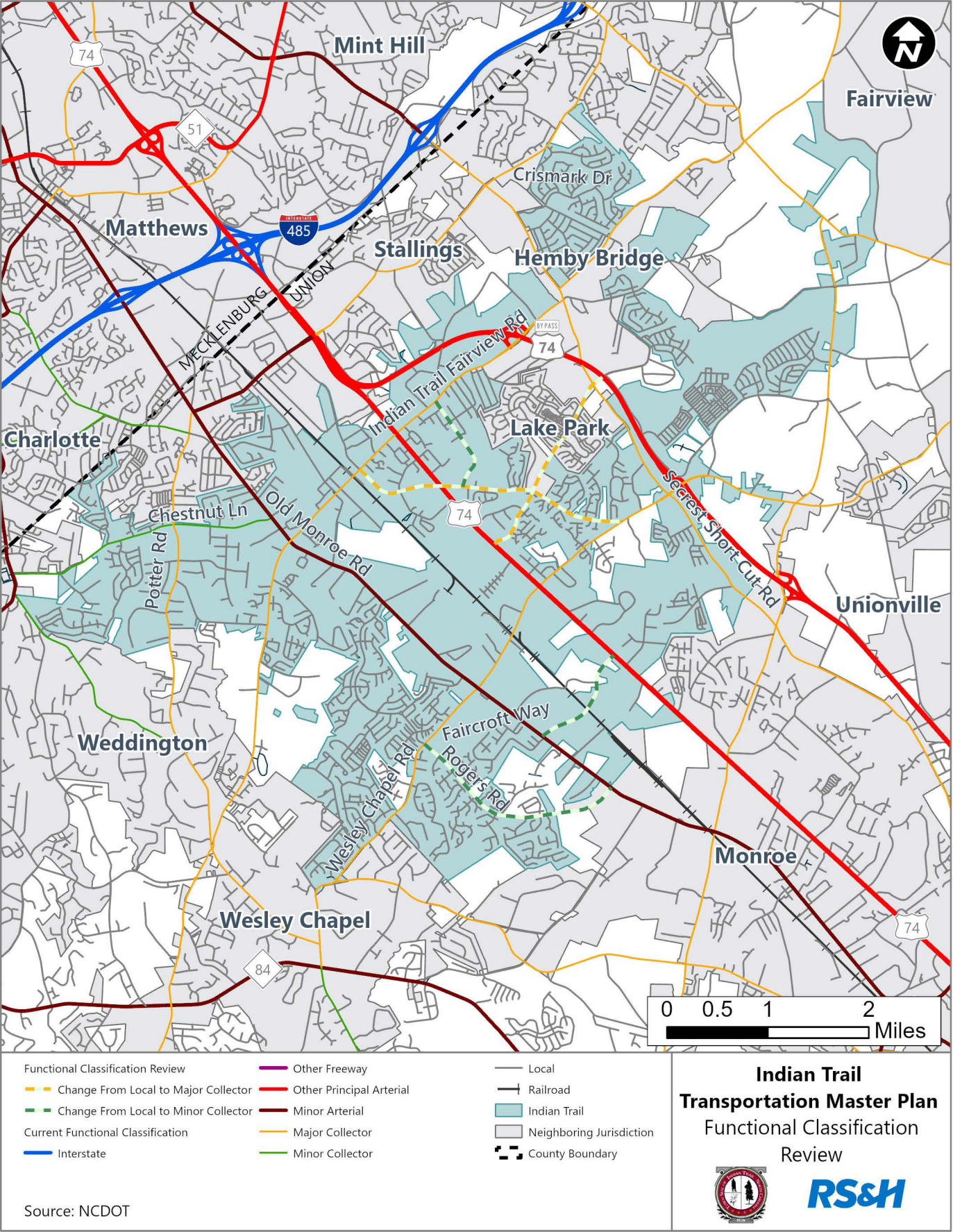
It is recommended that the town discuss changing the classification of Unionville Indian Trail Road and Faith Church Road from local to major collector with CRTPO staff. These roads gather traffic from surrounding local roads and funnel them to nearby arterial roads over greater than three-quarters of a mile, serve land access and traffic circulation in higher-density areas, and have operating characteristics that include higher speeds and more signalized intersections.

It is also recommended that the town discuss changing the classification of Younts Road, Rogers Road, and Hayes Road from local to minor collector. These roads gather traffic from surrounding local roads and funnel them to nearby arterial roads less than three-quarters of a mile, serve land access and traffic circulation in lower-density residential areas, and have operating characteristics that include lower speeds and fewer signalized intersections.

While FHWA makes the ultimate decision regarding the functional classification of a street or highway, there are procedures in place at the state and regional levels for local jurisdictions to request functional classification revisions.



Figure 26: Recommended Functional Classification Changes Map



Other Recommendations

In addition to the recommendations documented above, there are a handful of other recommendations that, if implemented, will help the town achieve its desired mobility vision.

The recommendations are related to coordination, alternative funding, and advancing planning studies. The full list of recommendations is included in the Implementation Plan starting on **page 77**.



Funding

Most roadway infrastructure in Union County is owned and maintained by the state, as is the case throughout North Carolina. Due to several factors, including increased project costs and project complexity, natural disasters, and changing revenue streams, the State has experienced challenges that have delayed planned projects and limited the submission of new projects for consideration.

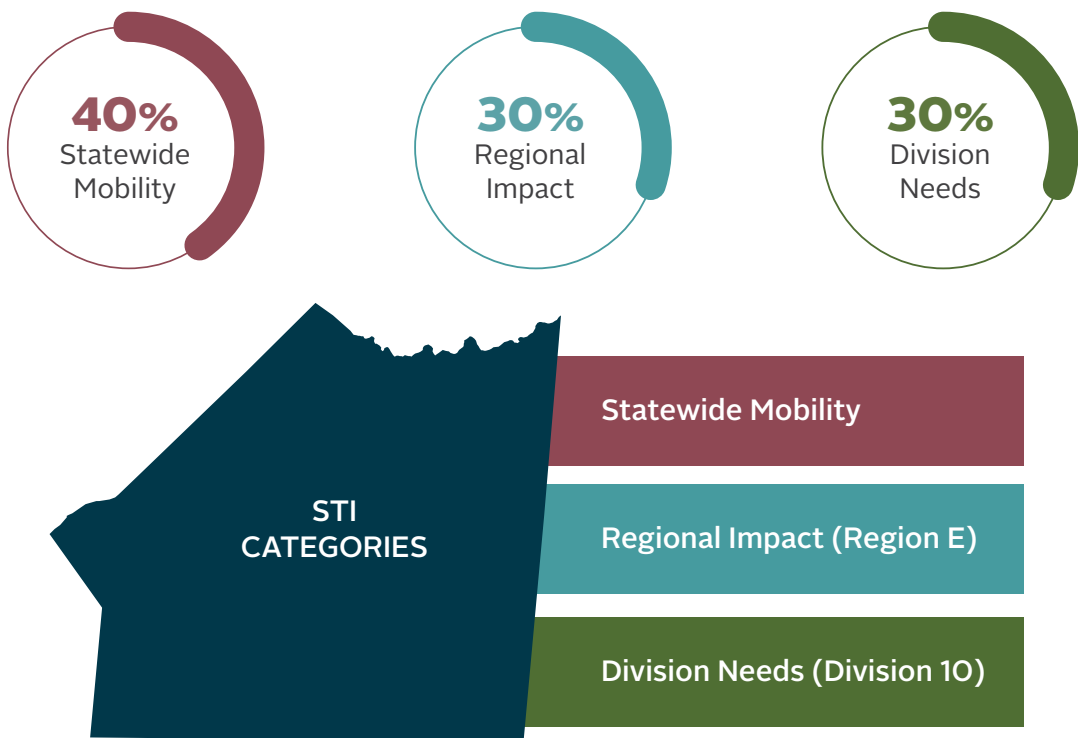
Despite these challenges, state and federal funds remain the largest and most common funding source for transportation infrastructure improvements, specifically roadway projects. There are other funding sources available, but they are limited and highly competitive. Funding sources available to Indian Trail, eligible uses, and how they are administered are described below.

Roadway Projects

State and Federal Funds

A high-level traffic and safety analysis and qualitative screening was conducted on the remaining intersections in town to identify an initial list of intersections for consideration for future study as a part of this plan.

In North Carolina, funds for roadway projects are allocated through a quantitative process called Strategic Transportation Investments (STI). The process is a collaborative effort between NCDOT and the State's MPOs. Funds are allocated in three categories based on geography:



Indian Trail is in the following geographies for the distribution of STI funds: Statewide Mobility, Region E, and Division 10. While the Statewide Mobility category is 100% quantitative/data driven, Division 10 and CRTPO assign local input points to projects in the Regional Impact and Division Needs categories, which can influence how those projects score.

There are two significant planning processes that determine how the STI funds are allocated: NCDOT Prioritization (SPOT) and the CRTPO MTP.

NCDOT PRIORITIZATION (SPOT)

NCDOT conducts SPOT Prioritization approximately every two years. The SPOT process is used to develop the STIP, which identifies transportation projects that will receive funding over a 10-year period.

The SPOT cycle to update the STIP for the years 2026-2035 is referred to as Prioritization 7.0 or P7.0.

CRTPO MTP

The CRTPO MTP is updated every four years. As a part of the update, CRTPO anticipates how much STI roadway project funding will be available to the MPO and issues a call for projects from jurisdictions within its planning area. Using an adopted ranking methodology with similar criteria to the NCDOT SPOT process, CRTPO scores and programs MTP projects based on anticipated available funding.

The highest scoring projects are programmed in the MTP fiscally constrained project list.

MTP projects are eligible to be submitted for SPOT consideration. The call for P7.0 project submittals occurred before the adoption of the 2055 MTP, but any projects in the 2055 MTP fiscally constrained project list will be eligible for P8.0 submission (STIP years 2027-2036).

Other Funding Sources

FEDERAL DISCRETIONARY FUNDS

Other revenue sources for roadway projects include the following types of federal discretionary funding:

- Surface Transportation Block Grant – Direct Attributable (STBG-DA)
- Congestion Mitigation and Air Quality (CMAQ)
- Transportation Alternatives Program (TAP)
- Bonus Allocation (BA)

Federal discretionary funds have differing requirements depending on the type of funding and are administered through CRTPO. CRTPO established a Project Oversight Committee (POC) to monitor and recommend the allocation of discretionary funds and has a Discretionary Projects Policy in place to solicit eligible projects, evaluate projects, and allocate funds. CRTPO issues a call for projects (highway, intersection, transit, bicycle, and pedestrian) annually. A 20% match is required by the local jurisdiction and federal guidelines apply.

The amount of federal discretionary funds available through CRTPO varies from year to year.





STATE DISCRETIONARY FUNDS

State discretionary funding is another revenue source for roadway projects and includes the following:

- Spot Mobility and Safety
- Highway Safety Improvement Program (HSIP)
- High Impact/Low Cost
- Small Construction
- State Contingency

These funds are limited and highly competitive. NCDOT has processes and procedures in place to select, prioritize, and award these funds. To be considered, requests must be made to the NCDOT Division office (Division 10 for Indian Trail). The Division office then evaluates the improvement requested and determines the funding type most appropriate based on the project's purpose and need (i.e., safety or capacity). Projects are considered on a case-by-case basis.

POWELL BILL

Powell bill funds are generated by the state gasoline tax and are distributed by the state to municipalities to help fund transportation projects and are most suited to maintaining town roads.

INFRASTRUCTURE INVESTMENT & JOBS ACT (IIJA)

The IIJA provides approximately \$350 billion for Federal highway programs over a five-year period from fiscal years 2022 through 2026. Most of this funding is apportioned to states based on formulas specified in Federal law. However, the IIJA also provides funding through a wide range of competitive grant programs. MPOs and local governments are eligible applicants for the majority of these programs.

In July 2024, CRTPO was awarded a \$5 million Rebuilding American Infrastructure with Sustainability and Equity (RAISE) grant to conduct a study that addresses issues of safety, equity, sustainability, and accessibility in communities within the planning area that have been marginalized by underinvestment. CRTPO is also pursuing a Safe Streets and Roads for All (SS4A) grant to study safety issues in the rest of the planning area. Once the RAISE study is complete, and should the CRTPO be awarded funds to prepare a Comprehensive Safety Action Plan, member jurisdictions (including Indian Trail) would be able to pursue implementation grants for projects that address safety issues identified in the plans.

CRTPO is also considering pursuing other IIJA grants that would benefit its member jurisdictions. A complete listing of these programs can be found on the United States Department of Transportation (USDOT) website ([BIL Grant Programs](#)).

ALTERNATIVE FUNDS

Several recently completed initiatives at the state and regional level, including the CRTPO 2050 MTP, Beyond 77 study, NC First Commission, and CONNECT Beyond have identified potential alternative funding sources for the region to explore. CRTPO is currently working to advance the recommendations and details of the next steps on alternative funding solutions. The outcome of these efforts could produce funding options for the Town to consider for funding projects identified in this plan.

Additionally, North Carolina allows counties to raise funds for a wide range of eligible uses, including transportation projects, through a quarter-cent sales tax increase with voter approval. Union County is not currently advocating for a program, but some jurisdictions have started gauging level of support for the tax. The county discussed the sales tax during its Comprehensive Plan update and the Town of Waxhaw included the topic as a survey question in its Master Transportation Plan. Should support increase, the county could place a quarter-cent sales tax on a referendum. If passed, the tax could be another means for Union County (and its municipalities) to address transportation infrastructure needs outside of state and federal funding.

PLANNING FUNDS

Planning Funds, also known as PL or PL 104 (f) funds, are federal funds provided to MPOs to carry out eligible transportation planning activities documented in the MPO's work program. The funds are not eligible for right-of-way or construction costs. NCDOT allocates funds to MPOs based on a formula approved by the North Carolina Board of Transportation (BOT)

and FHWA. Each fiscal year, CRTPO provides an opportunity for member jurisdictions to request the use of these funds for transportation planning studies. A 20% match is required by the local jurisdiction and federal guidelines apply. Indian Trail received PL funds to complete this Transportation Master Plan.

LOCAL FUNDS

Local funds, set aside by individual counties or municipalities, can be used to fund transportation improvements. Examples of local funds include bond referendums or a transportation reserve fund.

A bond referendum asks voters whether they authorize local government to use General Obligation (GO) bonds as a financing tool for specific projects. These bonds could be used for building new roads and bridges, improving existing intersections and transportation infrastructure, or advancing pedestrian connectivity.

A transportation reserve fund sets aside funds to cover transportation infrastructure projects. This fund serves as a financial cushion to ensure that there are adequate funds available for ongoing maintenance, repairs, or unexpected costs associated with transportation systems such as roads, bridges, or public transit. A transportation reserve fund would operate on the pay-as-you-go model. While this approach can offer financial stability and prevent the accumulation of debt, it can also lead to slower project delivery. It could take a long time to accumulate the project funding necessary to construct needed projects.

Local funds are also often used to provide the required local match for projects using federal funds.

Bicycle and Pedestrian Projects



Many of the funding sources noted above can also be used to fund bicycle and pedestrian infrastructure.

Bicycle and pedestrian infrastructure can be funded as part of larger roadway projects using state and federal funds. NCDOT's Complete Streets Policy requires consideration and incorporation of different modes when constructing transportation projects. NCDOT considers the CRTPO CTP and other adopted plans (like this one) when identifying nonmotorized facilities to be evaluated as part of a roadway project. NCDOT enters into maintenance agreements with local municipalities to maintain facilities once constructed.

Stand-alone bicycle and pedestrian projects are typically funded through discretionary and local funds. For federal discretionary funds, CRTPO's Discretionary Projects Policy includes a provision that 20% of all discretionary funding is directed

to non-roadway projects, including bicycle and pedestrian projects. State discretionary funding is allocated on a case-by-case basis.

Other funding sources could include grants (federal, state, or non-profit) and developer contributions. One example is the [CTT Implementation Grant Program](#) that offers eligible local governments the opportunity to apply for grants from a private pool of capital funds. There is no deadline for the rolling application period and funding varies depending on location and project type, so applicants are encouraged to discuss projects with CTT staff before applying.

Transit Projects



The Federal Transit Administration (FTA) oversees and administers various grant programs (both formula and discretionary) which provide funds to support public transportation. Union County Transportation (UCT) offers demand response transportation services throughout the county and is eligible for formula funds through designated recipients and local administrators including NCDOT, CRTPO, and CATS.

For example, as a member of CRTPO, UCT is eligible for Section 5307 (Urbanized Area Formula Grants) funds. These funds are allocated to urbanized areas for transit capital and operating assistance, as well as transit-related planning. These funds are subject to specific federal requirements and limitations but are generally applicable for funding a variety of transit activities, including operating assistance for smaller operators in urbanized areas with a population over 200,000 with fewer than 100 buses. The amount of funds available to UCT is based on a sub allocation formula agreed upon by transit operators in the CRTPO planning area. Other formula grants for which UCT is eligible include Section 5303 (Metropolitan Transportation

Planning), Section 5310 (Enhanced Mobility of Seniors & Individuals with Disabilities), and Section 5311 (Formula Grants for Rural Areas). Discretionary grants are awarded through a competitive process. Each grant program has its own set of criteria, eligibility, and rules. For details on transit grants, UCT should contact FTA or CRTPO.

Transit projects and initiatives are also eligible for federal discretionary funding allocated by CRTPO. As non-roadway projects, transit projects are eligible for a minimum of 20% of all discretionary funding.

Implementation Plan

The Implementation Plan below in **Table 13** summarizes the recommendations documented throughout the Indian Trail Transportation Master Plan as well as the resources, timeframe, funding sources, and agencies to assist with implementation. Accomplishing the items outlined in the Implementation Plan incrementally over time, the town will make great strides toward achieving the Plan Vision and addressing the Town Council priorities.

Table 13: Implementation Plan

Improvement	Recommendation Type	Resource	Time-frame*	Funding Source	Agencies Involved
Submit the Stinson Hartis Road / Younts Road / Indian Trail Fairview Road intersection for discretionary funds through CRTPO during the fall 2024 call for projects and explore funding options available through Division 10.	Priority Intersections	Stinson Hartis Road / Younts Road / Indian Trail Fairview Road Design and Cost Estimate; CRTPO staff; CRTPO Discretionary Funds Policy Document	short-term	federal discretionary funds; state discretionary funds	Indian Trail CRTPO
Submit the Chestnut Lane / Potter Road and Unionville-Indian Trail Road W / Faith Church Road intersections for discretionary funds through CRTPO during future calls for projects and explore funding options available through Division 10.	Priority Intersections	Chestnut Lane / Potter Road Design and Cost Estimate; Unionville-Indian Trail Road W / Faith Church Road Design and Cost Estimate; CRTPO staff; CRTPO Discretionary Funds Policy Document	short-term to mid-term	federal discretionary funds; state discretionary funds	Indian Trail CRTPO
Reserve local funds for the required 20% match for discretionary funds when appropriate.	Priority Intersections	CRTPO Discretionary Funds Policy Document	ongoing	local funds; developer contributions	Indian Trail

Implementation Plan (continued)

Improvement	Recommendation Type	Resource	Time-frame*	Funding Source	Agencies Involved
Monitor and update the priority intersection list over time by analyzing available traffic and safety data and CRTPO discretionary scoring criteria. Amend the CRTPO CTP to add intersections when appropriate. Prioritize the intersections and determine the best funding source. Develop a preferred conceptual design and cost estimate for projects for which the town intends to apply for discretionary funds.	Priority Intersections	NCDOT Traffic and Safety Data CRTPO Discretionary Scoring Criteria	ongoing	federal discretionary funds; state discretionary funds; Union County Critical Intersection Program	Indian Trail CRTPO NCDOT Union County
Monitor operations at priority intersections for which improvements are being required as a part of a TIA(s) to see if additional improvements are needed.	Priority Intersections	NCDOT TIAs Neighboring Jurisdictions	short-term	federal discretionary funds; state discretionary funds; Union County Critical Intersection Program	Indian Trail NCDOT Neighboring Jurisdictions
Coordinate with CRTPO staff to present the recommended CRTPO CTP amendments (highway, bike, ped) to the CRTPO TCC and Board for approval and to get them incorporated into the CRTPO CTP.	CTP	CRTPO staff	short-term	N/A	Indian Trail CRTPO

Implementation Plan (continued)

Improvement	Recommendation Type	Resource	Time-frame*	Funding Source	Agencies Involved
Submit the new recommended roadway connections identified on the CTP Highway Map for discretionary funds through CRTPO during future calls for projects. Explore other funding sources to construct the identified new roadway connections.	CTP	CRTPO CTP Highway Map	short-term to mid-term	federal discretionary funds; state discretionary funds; local funds; developer contributions	Indian Trail CRTPO
Undertake the Future CTP Amendment Recommendations once Chestnut Parkway and Southfork Greenway are complete.	CTP	Future CTP Map	short-term	N/A	Indian Trail CRTPO
Support updates to the CRTPO Public Transportation and Rail Map to ensure consistency with recent transit plans like CONNECT Beyond and the LYNX Silver Line Study.	CTP	CONNECT Beyond LYNX Silver Line Study	short-term	N/A	Indian Trail CRTPO CATS Centralina Regional Council
Support amending the CTP to add a recommended grade separation at US 74 and N Rocky River Road. Support the submission of the grade separation to the 2055 MTP.	CTP/2055 MTP	CRTPO staff	short-term	N/A	Indian Trail City of Monroe CRTPO
Submit the projects identified in this plan as candidate projects for the 2055 CRTPO MTP when the call for projects is issued.	2055 MTP	Tables 11 and 12 in TMP	short-term	N/A	Indian Trail CRTPO Neighboring Jurisdictions

Implementation Plan (continued)

Improvement	Recommendation Type	Resource	Time-frame*	Funding Source	Agencies Involved
Review criteria for submitting intersection projects as candidate projects to the 2055 MTP (once established by CRTPO) and determine if intersections recommended in this plan are eligible.	2055 MTP	Table 12 in TMP	short-term	N/A	Indian Trail CRTPO
Begin conversations to change the functional classification of roads on the Functional Classification Changes Map. If/when these roads become state roads, request that they be added to the CTP as 'needs improvement.'	Functional Classification Changes/CTP	Functional Classification Changes Map; https://connect.ncdot.gov/projects/planning/TransPlanManuals/2022%20Functional_Classification_Routine.pdf ; https://www.fhwa.dot.gov/planning/processes/state-wide/related/functional_classification/	short-term	N/A	Indian Trail CRTPO NCDOT FHWA
Regularly coordinate with the NCDOT Division 10 Engineer to discuss needed improvements and funding opportunities.	Other Recommendations	NCDOT Division 10	ongoing	N/A	Indian Trail NCDOT
Stay up to date on alternative funding discussions and consider viable options as they are identified to fund needed transportation projects.	Other Recommendations	CRTPO staff NC First Commission Centralina Regional Council staff (CONNECT Beyond)	ongoing	alternative funding sources	Indian Trail CRTPO Union County Centralina Regional Council

Implementation Plan (continued)

Improvement	Recommendation Type	Resource	Time-frame*	Funding Source	Agencies Involved
Gauge local support for a quarter-cent sales tax in Union County.	Other Recommendations	G.S. 105, Article 46	short-term	N/A	Indian Trail Union County
Consider establishing a Pedestrian Program to construct recommended sidewalks, sidepaths, and greenways in town. Allocate funding in CIP for program.	Other Recommendations	Other communities with a program in place	short-term	local funds	Indian Trail
Monitor changes to CATS' transit plan and impacts to Union County/Indian Trail.	Other Recommendations	CATS staff	ongoing	N/A	Indian Trail CATS Union County
Support the CONNECT Beyond recommendation for an additional planning study to determine if US 74 or US 74 bypass is best option for a future HCT corridor.	Other Recommendations	CONNECT Beyond	long-term	N/A	Centralina Regional Council
Continue involvement/participation in the Union County Critical Intersection Program. Advocate for funding for designs and cost estimates for the Indian Trail intersections on the UC 2023 CIA critical list: Old Charlotte Highway / Faircroft Way / Hayes Road; Mill Grove Road / Idlewild Road; and Idlewild Road / Secrest Shortcut Road.	Other Recommendations	2023 UC CIA	short-term; mid-term	federal discretionary funds; state discretionary funds; local funds	Indian Trail Union County

Implementation Plan (continued)

Improvement	Recommendation Type	Resource	Time-frame*	Funding Source	Agencies Involved
Continue coordination with neighboring jurisdictions (Union County, Monroe, Stallings, Lake Park, Hemby Bridge, Weddington) regarding approved development projects, required TIA improvements, CTP amendments, and MTP candidate projects/logical termini.	Other Recommendations	CRTPO staff NCDOT CTP CRTPO MTP	ongoing	N/A	Indian Trail Neighboring Jurisdictions NCDOT CRTPO
Participate in the development of a CRTPO Comprehensive Safety Action Plan if the MPO is awarded funding. Apply for grants to construct safety projects once the plan is in place.	Other Recommendations	CRTPO Comprehensive Safety Action Plan (future)	short-term	federal grant; local funds (possible)	Indian Trail CRTPO
Monitor IIJA Notices of Funding Opportunities (NOFOs) and consider applying for funding through one or more programs when relevant. Seek support for development of grant applications if necessary.	Other Recommendations	https://www.transportation.gov/dot-navigator	short-term	federal grant; local funds may be needed for match	Indian Trail CRTPO
Continue to participate in conversations with CRTPO and NCDOT regarding lighting. Check if projects are eligible for discretionary funds for lighting as new projects are funded. Revisit conversations with Town Council about lighting roads with safety concerns.	Other Recommendations	NCDOT Division 10 CRTPO staff	ongoing	federal discretionary funds; state discretionary funds; local funds	Indian Trail CRTPO NCDOT

Implementation Plan (continued)

Improvement	Recommendation Type	Resource	Time-frame*	Funding Source	Agencies Involved
Remove the Loop concept from the Comprehensive Plan.	Other Recommendations	2041 Comprehensive Plan	short-term	N/A	Indian Trail Planning
Partner with NCDOT IMD, CTT, and other advocacy groups to plan and pursue grants and private funding for multi-use path, greenway, and sidewalk projects that will not be competitive for MTP or discretionary funding. Determine the best project to apply for funding through the CTT Implementation Grant Program.	Other Recommendations	CTT Rolling Grant Application (https://www.carolina-threadtrail.org/wp-content/uploads/2024/07/CTT-Rolling-Grant-Application_final-form.pdf)	ongoing	CTT Implementation Grant Program grants private funding	Indian Trail NCDOT IMD CTT

*=Short-term - 0-5 years; Mid-term - 5-10 years; Long-term - more than 10 years

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Indian Trail Transportation Master Plan

Prepared By:

RS&H