

# Union County Critical Intersections Design and Cost Estimation Study



Town of  
**INDIAN  
TRAIL**  
north carolina



# Program Background

## 2014 – Need Identified

- Union County determined the need for a list of high priority intersections to focus efforts for funding

## 2016 – Critical Intersection Analysis

- 15 intersections identified and designed
- 11 funded

## 2019 – Critical Intersection Analysis II

- Additional 15 priority intersections identified
- 11 funded

## 2019-2020 – Grant Funded Designs

- 6 intersections

## 2020-2021 – Grant Funded Designs

- 5 intersections

## 2023 – Critical Intersection Analysis III

- 15 additional priority intersections identified
- 3 funded



## 2024 Critical Intersection Analysis Design and Cost Estimation Study (Phase III)

UNION COUNTY



## 2024-2026 – Grant Funded Designs

- 2024 Design (6 intersections) and 2026 (5 - current)

# 2025 Study Intersections



## Unionville-Indian Trail Rd. at Unionville-Brief Rd. / E C.J. Thomas Rd.

This is currently two offset, unsignalized, three-way...



## Lancaster Ave. at Bragg St.

This is currently a two-way stop controlled intersection in the City of Monroe.



## New Town Rd. at Lester Davis Rd.

This is currently a three-way, stop-controlled intersection without turn lanes in the Village of Wesley Chapel.



## Old Charlotte Hwy. at Hayes Rd. / Faircroft Way

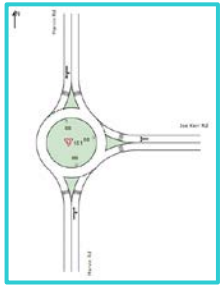
This is currently two offset, stop controlled, three-way intersections in the Town of Indian Trail.



## NC 84 (Weddington Rd.) at Willoughby Rd.

This is currently a three-way unsignalized intersection in unincorporated Union County.

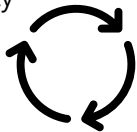
# Critical Intersections – Design Process



Data Collection & Traffic and Safety Analysis



Develop and Refine Alternates & Estimates



**COMMITTEE MEETINGS:**  
 MUNICIPAL REPRESENTATIVES  
 UNION COUNTY  
 NCDOT  
 CRTPO  
 DESIGN TEAM



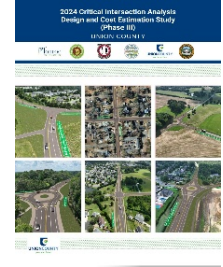
Public Outreach

**Comparison of Alternates**

Criteria	Alt 1 - Realignment and Signal	Alt 2 - Signal
Traffic Safety Performance	Green	Green
Traffic Operational Performance	Green	Green
Multi-Modal Performance (Ped/Bike)	Green	Green
ROW and Utility Impacts	Red	Yellow
Potential to Accommodate Future Growth	Green	Yellow
Construction and Maintenance Cost	Red	Yellow

\*Dark green indicates best performance, light green indicates increased performance/minimal impacts, orange indicates neutral, and red indicates reduced performance/greater impacts

Preferred Alternate Selection



Final Report & Recommendations

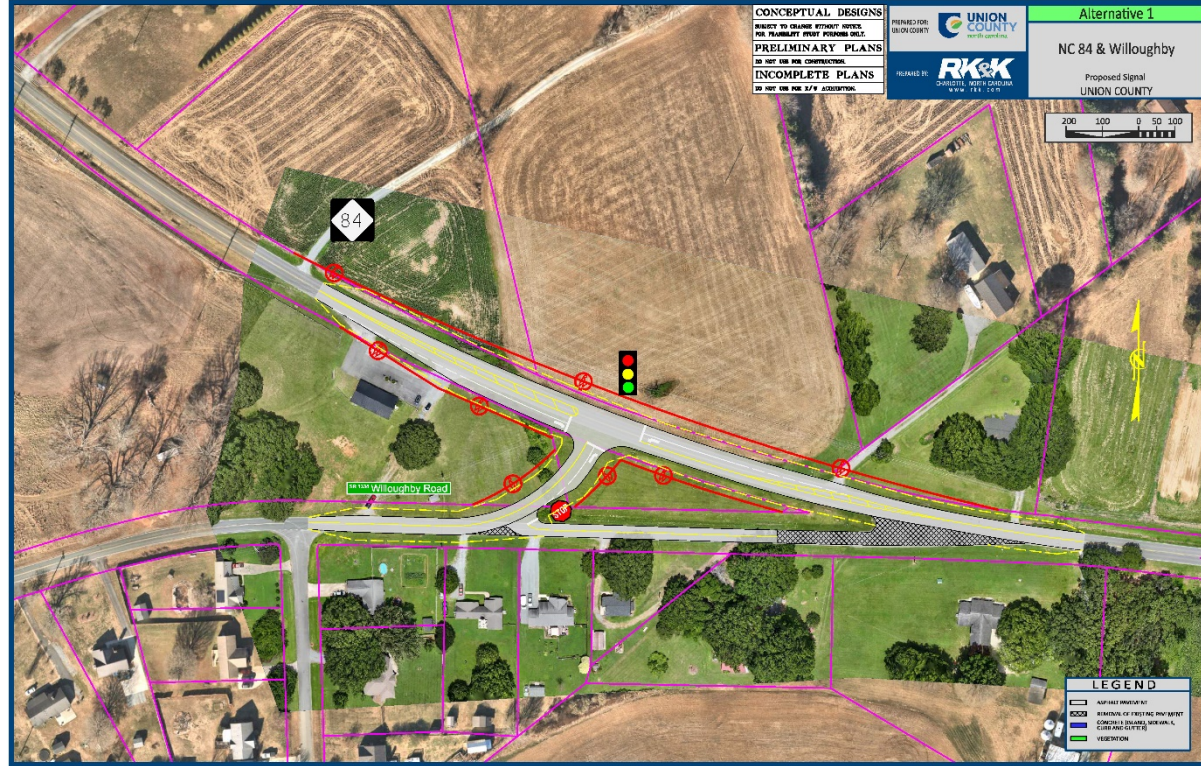


Public Surveys closed March 23, 2026

# NC 84 (Weddington Rd.) and Willoughby Rd.

## Recommended Design – Realign with Signal

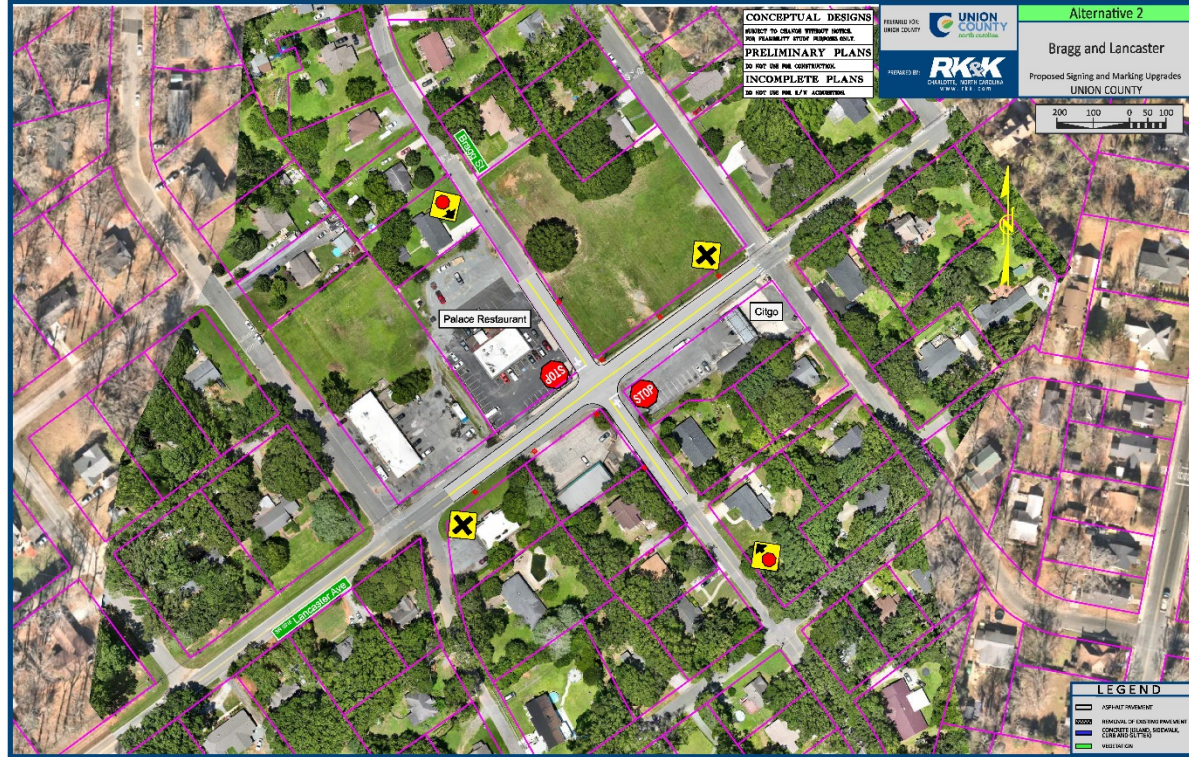
- Alternative was a roundabout
- Recommended design accommodates future traffic growth
- 32% crash reduction
- Public preferred roundabout - 41% versus 30%
- Recommended design cost: \$3 million versus \$3.3 million for a roundabout



# Bragg and Lancaster - Monroe

## Recommended Design – Access Management

- Alternative was striping and lighting
- Signal not warranted by traffic
- 9% crash reduction
- Public preferred access management- 43% versus 36% for alternative design
- Recommended design cost: \$883,000 versus \$283,000 for striping and signage
- Monroe supports the access management option



# New Town and Lester Davis – Wesley Chapel

## Recommended Design – Signal with Turn Lanes

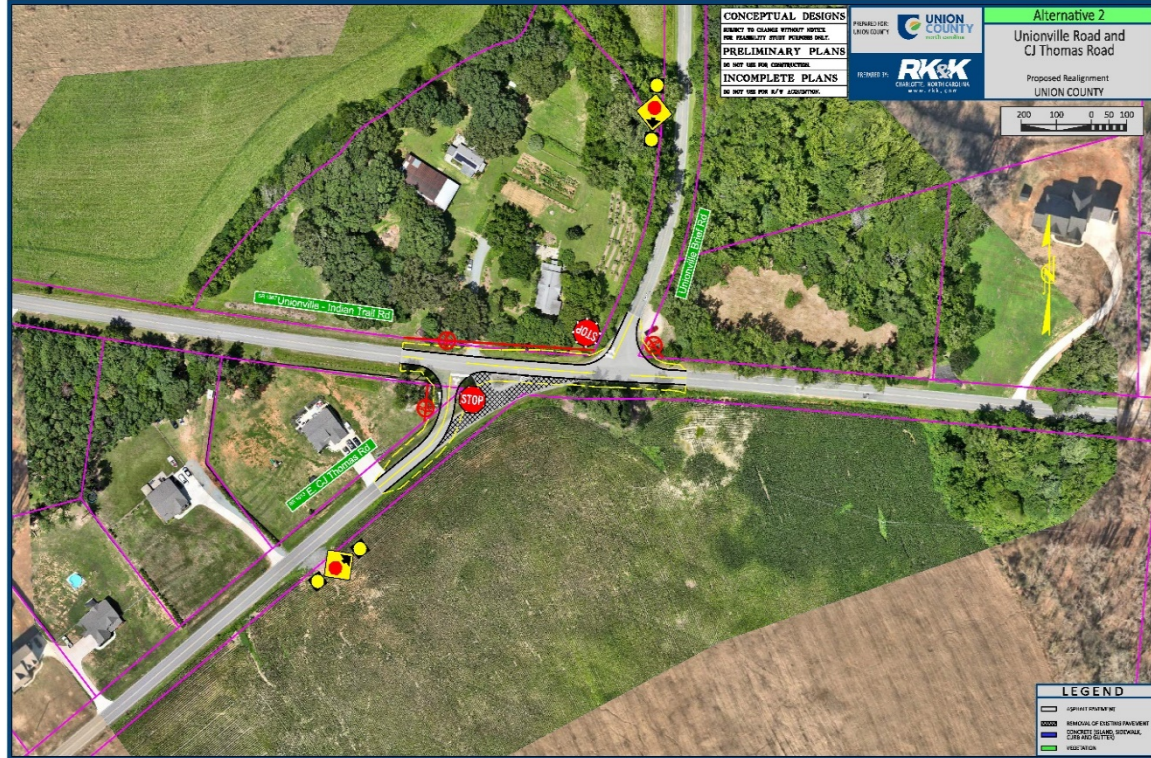
- 14% crash reduction
- Does not rely on Cuthbertson roundabout
- Alternative: Turn lanes with restricted left movement
  - Concern over restricted turn compliance
  - 32% crash reduction
- Similar public support for alternatives - 48% versus 45%
- Recommended design costs: \$2.1 million for signal and turn lanes versus \$1.7 million for turn lanes and restricted left movement
- Wesley Chapel supports signal with turn lanes



# Unionville Indian Trail, Unionville Brief and E. CJ Thomas - Unionville

## Recommended Design – Realignment and Signage

- Alternative was striping and limited alignment changes
- Concern over limited benefit of alternative
- 20% crash reduction
- Strong public support for recommended design, 77% versus 12%
- Recommended design cost: \$655,000 versus \$395,000 alternative design
- Unionville supports, with existing stop sign on Unionville Indian Trail retained



# Old Monroe and Hayes/Faircroft – Indian Trail

## Recommended Design – Realign with turn lanes and signal

- Alternative was improving offset intersections with signal
- Concern over loss of capacity on Old Monroe
- 32% crash reduction
- Equal public support for alternatives, 45% for each option
- Recommended design cost: \$5.7 million versus \$4.3 million for turn lanes and offset signal
- Indian Trail supports realignments with turn lanes and signal



# Requested Action

- Approve recommended designs for the five intersections