



NORTH CAROLINA

Department of Transportation



U-5769 – NC 16 and Rea Rd Intersection

Town of Weddington

May 14, 2018

U-5769

- Scope - Widen of NC 16 between Rea Rd and Waxhaw Pkwy
- ROW – FY 2020
- Construction – FY 2023
- Traffic Analysis
 - Superstreet widening
 - Conventional widening

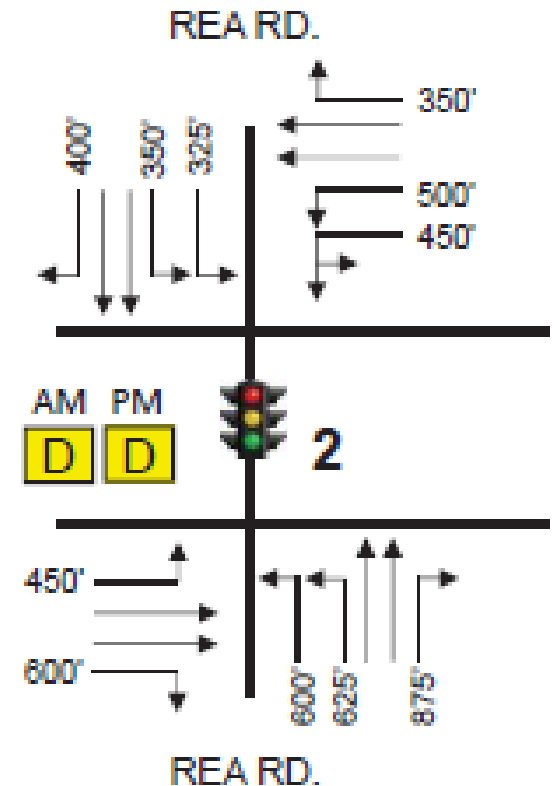
NC 16 and Rea Rd Intersection

- Coordinate proposed improvements with U-3467 (Rea Rd Extension)
 - Minimize throw away work
 - Avoid ROW acquisition from the same property owners twice
 - Need to determine preferred alternative
 - Rea Rd Ext project will acquire ROW needed as much as possible
 - Rea Rd Ext project will only build improvements needed until U-5769 comes along
 - NC 16 project will build ultimate configuration based on preferred alternative

Traffic Capacity Analysis

Conventional

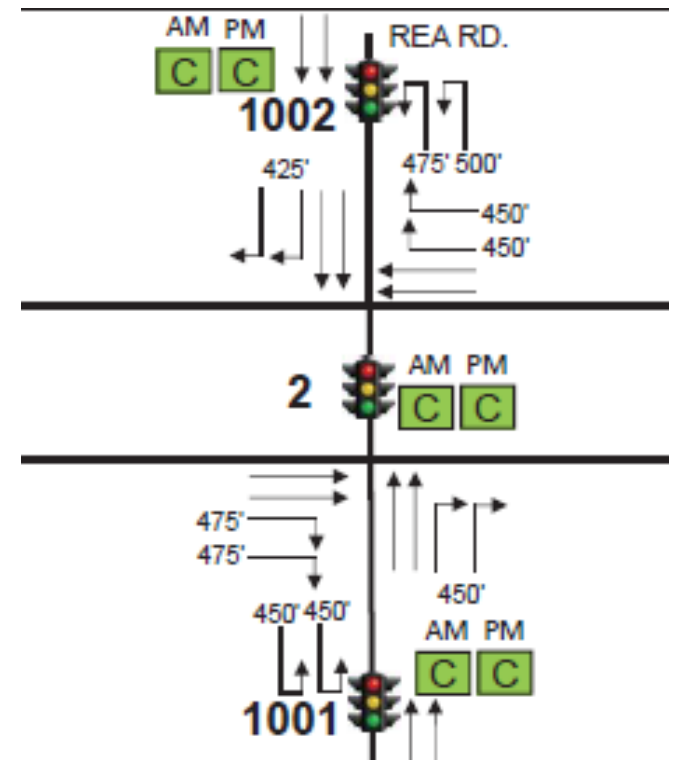
- Overall LOS D
- 3 of 4 approaches 5 lanes
- 300' to 900' storage needed per turn lane
- Increase in traffic volumes over forecast could cause intersection to fail
- 8 phase traffic signal



Traffic Capacity Analysis

Superstreet

- Overall LOS C
- All approaches 4 lanes
- 400' to 500' storage needed per turn lane
- Capacity available for an increase in traffic volumes over forecast and intersection not fail
- 2 phase traffic signal



Traffic Safety

Superstreet Benefits

- Reduced conflict points
 - Standard Full Movement Intersection – 32
 - Standard Superstreet – 14
 - Michigan Left Superstreet – 20
- 60% reduction in fatal and injury crashes
- 42% reduction in total crashes

Traffic Safety

Superstreet Benefits

- Pedestrian Safety
 - Left turn conflicts eliminated
 - Only crossing one direction of travel at a time
 - Pedestrian refuge island on all legs of intersection
 - Short crossing distances

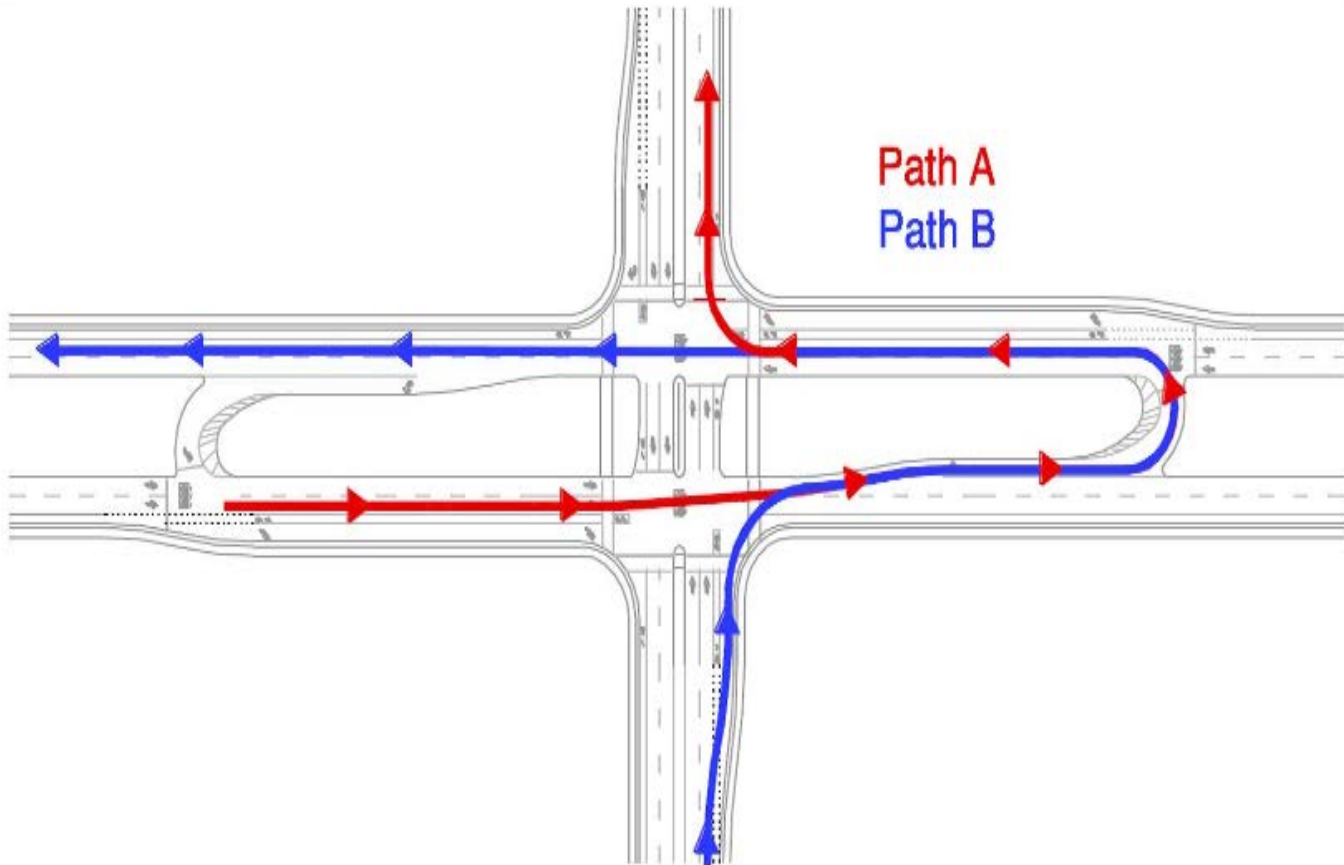
Michigan Left Superstreet

Operations

- No lefts at main intersection
- All left turn movements redirected to U-turn bulbs on Rea Rd and Rea Rd Ext
 - SB Left - Turn right onto existing Rea Rd, make a U-turn and continue straight across
 - NB Left – Turn right onto Rea Rd Ext, make a U-turn and continue straight across
 - EB Left/WB Left – Go straight across NC 16, make a U-turn and turn right onto NC 16
 - U-turn bulbs will be signalized – 2 phase signals

Michigan Left Superstreet

Operations



Preferred Alternative

Michigan Left Superstreet

- Vehicle and Pedestrian Safety
- Reduced delay and congestion
- Smaller intersection footprint

U-5769 – NC 16 and Rea Rd Intersection Ave



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Review Concept Design/Discussion