

**Appendix E –
Traffic Capacity Analysis Notes**

General Notes

Assumed if a TWLTL exists leading up to a left-turn lane, the actual striped length of the turn bay may be adjusted to account for vehicles using the TWLTL as storage. A maximum of 600 feet should be used as the storage length if there is room. If the TWLWL ends before 600 feet, the full length of the TWLWL should be used as the storage length. If there is another intersection within 1200 feet that shares the TWLWL, each intersection will use half of the distance between intersections as the length of the left-turn storage. For instance, if a TWLTL exists between two intersections 800 feet apart, each left-turn lane will receive 400 feet of storage.

Any lane group at an intersection that has a forecast volume of 0 but the movement is allowed will be input as 1 vehicle in order to derive LOS.

All intersections were originally coded to operate as actuated within a coordinated system, which improves vehicle traffic progression through a series of traffic signals. According to the HCM 2000, actuated traffic signals affect the timing on all approaches to an intersection as a result of being influenced by vehicle detectors. This allows for phases to be shortened with low demand. Semi-actuated traffic signals typically only have vehicle detectors on the minor streets. As a result, semi-actuation allows for any unused green time from the minor streets to be reassigned to other phases. Upon optimizing the network cycle lengths, intersections were allowed to operate as semi-actuated and uncoordinated in order to optimize the operations of the entire corridor being analyzed.

Cary Subarea

Intersection 1 – NC 54 (Chapel Hill Road) at NW Cary Parkway

Intersection configuration assumed to be modified by 2035 based on the latest signal plan and Park West Village Traffic Impact Study prepared by Kimley-Horn and Associates, Inc:

- Assumed four-lane section along NC 54 (Chapel Hill Road) with two thru lanes in EB direction and one thru and shared thru-RT lane in WB direction
- Assumed exclusive RT lane on EB NC 54 (Chapel Hill Road)
- Assumed additional exclusive LT lane on NB NW Cary Parkway

Assumed pedestrian phasing for all approaches

No change in intersection configuration due to LRT improvements

Intersection 2 – NW Cary Parkway at Park Place Shopping Center Entrance

Intersection assumed to be signalized in 2035 Scenarios

Intersection configuration assumed to be modified by 2035 based on the Park West Village Traffic Impact Study prepared by Kimley-Horn and Associates, Inc:

- Assumed construction of EB approach with shared LT-thru lane and exclusive RT lane for the Park West Village Entrance.
- Assumed construction of additional exclusive LT lane on NB NW Cary Parkway
- Assumed construction of SB exclusive RT lane on SB NW Cary Parkway

Assumed pedestrian phasing for all approaches

No change in intersection configuration due to LRT improvements

Improvements assumed for 2035 Build with Conceptual Mitigation include:

- Add a WB LT, WB RT and a NB RT lane

Intersection 3 – NW Cary Parkway at James Jackson Avenue

Assumed no change in intersection configuration by 2035

No change in intersection configuration due to LRT improvements

Assumed pedestrian phasing for westbound and northbound approaches

Intersection 4 – James Jackson Avenue at Towerview Court

Assumed no change in intersection configuration by 2035

No change in intersection configuration due to LRT improvements

Intersection 5 – NW Maynard Road at James Jackson Avenue

Assumed no change in intersection configuration by 2035

No change in intersection configuration due to LRT improvements

Assumed pedestrian phasing for westbound, southbound, and northbound approaches

Intersection 6 – NC 54 (Chapel Hill Road) at NW Maynard Road

Assumed no change in intersection configuration by 2035

No change in intersection configuration due to LRT improvements

Assumed pedestrian phasing for westbound, eastbound, and northbound approaches

Intersection 7 – West Chatham Street at Harrison Avenue

Assumed no change in intersection configuration by 2035

Assumed pedestrian phasing for all approaches

Reported intersection delay based on a weighted average of non-train and preempted train events. Intersection modifications due to LRT improvements:

- No-Build/Build assumed 25 second clearance phase (Phase 9) and 205 second freight phase (Phase 10)
- No-Build/Build assumed 25 second clearance phase (Phase 9) and 60 second passenger rail phase (Phase 10)
- Build assumed 25 second clearance phase (Phase 9) and 45 second LRT phase (Phase 10)

Improvements assumed for 2035 Build with Conceptual Mitigation include:

- Add a EB RT lane (potentially via restriping)

Intersection 8 – West Chatham Street at Academy Street

Assumed no change in intersection configuration by 2035

Assumed pedestrian phasing for all approaches

Reported intersection delay based on a weighted average of non-train and preempted train events. Intersection modifications due to LRT improvements:

- No-Build/Build assumed 25 second clearance phase (Phase 9) and 205 second freight phase (Phase 10)

- No-Build/Build assumed 25 second clearance phase (Phase 9) and 60 second passenger rail phase (Phase 10)
- Build assumed 25 second clearance phase (Phase 9) and 45 second LRT phase (Phase 10)

Improvements assumed for 2035 Build with Conceptual Mitigation include:

- Add a WB RT lane
- Add a NB RT lane (potentially via restriping)

Intersection 9 – East Chatham Street at NE Maynard Road

Intersection configuration assumed to be modified by 2035 as part of a Chatham Street widening project:

- Assumed four-lane section along East Chatham Street with dual left-turns, two thru, and one right-turn lane in both the EB and WB direction

Assumed pedestrian phasing for eastbound, southbound, and westbound approaches

Reported intersection delay based on a weighted average of non-train and preempted train events. Intersection modifications due to LRT improvements:

- No-Build/Build assumed 25 second clearance phase (Phase 9) and 135 second freight phase (Phase 11)
- No-Build/Build assumed 25 second clearance phase (Phase 9) and 45 second passenger rail phase (Phase 11)
- Build assumed 25 second clearance phase (Phase 9) and 40 second LRT phase (Phase 11)

Improvements assumed for 2035 Build with Conceptual Mitigation include:

- Add a NB LT lane
- Add a SB LT lane

Intersection 10 – NC 54 (Chapel Hill Road) at NE Maynard Road

Assumed no change in intersection configuration by 2035

No change in intersection configuration due to LRT improvements

Assumed pedestrian phasing for all approaches

Intersection 11 – E Chatham Street at Trinity Road

Intersection assumed to be signalized in 2035 Build Scenario

Intersection configuration assumed to be modified by 2035 based on proposed Chatham Street Widening and Trinity Road Extension projects:

- Assumed four-lane section along East Chatham Street with a left-turn, two thru lanes, and a right-turn lane in both EB and WB directions
- Assumed an exclusive left-turn lane and shared thru-right lane in both the northbound and southbound approaches
- Assumed construction of NB approach with exclusive LT lane and shared thru-RT lane for Trinity Road extension.

Reported intersection delay based on a weighted average of non-train and preempted train events. Intersection modifications due to LRT improvements:

- No-Build/Build assumed 25 second clearance phase (Phase 9) and 135 second freight phase (Phase 11)
- No-Build/Build assumed 25 second clearance phase (Phase 9) and 45 second passenger rail phase (Phase 11)
- Build assumed 25 second clearance phase (Phase 9) and 40 second LRT phase (Phase 11)

Assumed no pedestrian phasing

Improvements assumed for 2035 Build with Conceptual Mitigation include:

- Add a NB LT lane

Fairgrounds Subarea

Intersection 12 – NC 54 (Chapel Hill Road) at I-40 EB Ramps

Assumed no change in intersection configuration by 2035

No Intersection modifications due to LRT improvements

Assumed pedestrian phasing for two of the approaches

Intersection 13 – NC 54 (Chapel Hill Road) at I-40 WB Ramps

Assumed no change in intersection configuration by 2035

No Intersection modifications due to LRT improvements

Assumed pedestrian phasing for two of the approaches

Improvements assumed for 2035 Build with Conceptual Mitigation include:

- Provide an exclusive NB right turn lane

Intersection 14 – NC 54 (Chapel Hill Road) at Corporate Center Drive

Assumed no change in intersection configuration by 2035

No Intersection modifications due to LRT improvements

Assumed that NC 54 will be a four-lane facility per the CAMPO/DCHC MPO 2035 LRTP project A413. Turn lane assumptions were made based upon review of the future year no build project traffic volumes.

Assumed pedestrian phasing for all of the approaches

Intersection 15 – NC 54 (Chapel Hill Road) at Nowell Road

Assumed no change in intersection configuration by 2035

No Intersection modifications due to LRT improvements

Assumed that NC 54 will be a four-lane facility per the CAMPO/DCHC MPO 2035 LRTP project A413. Turn lane assumptions were made based upon review of the future year no build project traffic volumes.

Assumed pedestrian phasing for all of the approaches

Intersection 16 – Hillsborough Road at Nowell Road

Assumed no change in intersection configuration by 2035

Analyzed as unsignalized and results showed that there were not be adequate gaps to allow for any vehicles to enter the intersection from Nowell Road. Therefore, due to operational and safety concerns at the at-grade crossing it was assumed that the intersection would be signalized by 2035 in order to provide a basis of comparison. However, the intersection was analyzed as a Type VII crossing to evaluate the queuing due to the LRT crossing to show the effect on vehicular operations.

Assumed no pedestrian phasing

Intersection 17 – Hillsborough Road at NC 54 (Chapel Hill Road)

Assumed no change in intersection configuration by 2035

Intersection 18 – Hillsborough Street at Powell Road

Assumed no change in intersection configuration by 2035

Analyzed as unsignalized and results showed that there were not be adequate gaps to allow for any vehicles to enter the intersection from Powell Road. Therefore, due to operational and safety concerns at the at-grade crossing it was assumed that the intersection would be signalized by 2035 in order to provide a basis of comparison. However, the intersection was analyzed as a Type VII crossing to evaluate the queuing due to the LRT crossing to show the effect on vehicular operations.

Intersections 19 – Hillsborough Street at Blue Ridge Road

Assumed TIP project U-4437 Alternative 12 would be in place by 2035

Intersection W-16 is now split into intersections W-16(1) and W-16(2) which are the intersections of Blue Ridge Road and Hillsborough Street at the service road connection

Assumed Intersection W-16(1) to have pedestrian phasing for the northbound and westbound phases

Assumed no pedestrian phases for Intersection W-16(2)

Intersections 20 – Blue Ridge Road at Beryl Road

Assumed TIP project U-4437 Alternative 12 would be in place by 2035

Intersection 17 is now Blue Ridge Road at Pylon Drive

Assumed pedestrian phasing for the northbound and westbound phases

No Intersection modifications due to LRT improvements

Intersection 21 – Blue Ridge Road at Trinity Road

Assumed no change in intersection configuration by 2035

No Intersection modifications due to LRT improvements

Intersection 22 – Hillsborough Street at Beryl Road

Assumed no change in intersection configuration by 2035

Assumed pedestrian phasing for the northbound and eastbound phases

For this intersection, it was assumed that by 2035 the trains using the tracks across Beryl Road to the south of the intersection would use pre-emption.

The minimum initial time for EB and WB set to 7 seconds due to train phase occurring prior to EB/WB phase.

The existing location does not include a WB right turn lane onto Beryl Road and vehicles queue in the short distance along Beryl Road between Hillsborough Street and the crossing gates. To emulate this behavior in Synchro the link distance on Beryl Road was added as a WB right turn lane.

Reported intersection delay based on a weighted average of non-train and preempted train events. Intersection modifications due to preemption:

- No-Build/Build assumed 25 second clearance phase (Phase 9) and 135 second freight phase (Phase 10)
- No-Build/Build assumed 25 second clearance phase (Phase 9) and 45 second passenger rail phase (Phase 10)
- Build assumed 25 second clearance phase (Phase 9) and 40 second LRT phase (Phase 10)

For 2035 Build analysis, a right turn lane with 400 feet of storage was assumed to be constructed as part of the proposed project

Intersection 23 – Hillsborough Street at Royal Street

Assumed no change in intersection configuration by 2035

Intersection assumed to remain unsignalized by 2035

No Intersection modifications due to LRT improvements

Downtown Raleigh Subarea

Assumed speed limit of 25 mph on all roads except Dawson Street and McDowell Street, which is 35 mph

Assumed all signalized intersections to have pedestrian phases

Assumed entire subarea to be CBD except for Dawson and McDowell Streets

Intersections 24, 26, 29, 30 and 40-51

Assumed no change in intersection configuration by 2035

No Intersection modifications due to LRT improvements

Intersection 25 – Hillsborough Street at Edenton Street

Analyzed intersection as signalized due to configuration can not be analyzed as unsignalized; therefore, no pedestrian phasing was included in this intersection analysis.

Assumed no change in intersection configuration by 2035

Intersection assumed to remain unsignalized by 2035

No Intersection modifications due to LRT improvements

Intersections 27, 31-33 and 39

Assumed no change in intersection configuration by 2035

Intersection assumed to remain unsignalized by 2035

No Intersection modifications due to LRT improvements

Intersection 28 – Morgan Street at West Street

Assumed no change in intersection configuration by 2035

Intersection modifications due to LRT improvements:

- Added LRT phasing as Phases 9 and 10
- Assumed 45 second gate down time due to a station within 500 feet
- Added exclusive EB RT lane with 50 feet of storage
- Removed WB left turn movement, rerouted traffic through Morgan Street and Harrington Street (Intersection 34) due to the volume being very low and the addition of the LRT phasing.
- Increased all-red phase for West Street to 4 seconds to allow the LRT to clear the intersection

Intersection 34 – Harrington Street at Morgan Street

Assumed no change in intersection configuration by 2035

Intersection modifications due to LRT improvements:

- Added LRT phasing as Phase 9
- Assumed 15 second LRT Phase to allow LRT to transition from roadside to median running
- It is assumed that the pedestrian phase running along the east and west side of Harrington Street would begin during LRT phase and carry over to the thru phase. Because the LRT phase is 15 seconds, the required minimum time shown for pedestrian phase 6 can be reduced by 15 seconds in order to best represent the actual pedestrian phasing.
- Increased the heavy vehicle percentage to 15, and decreased the saturated flow rate to 1800 for the SB through movement

Intersection 35 – Harrington Street at Hillsborough Street

Assumed no change in intersection configuration by 2035

Intersection modifications due to LRT improvements:

- Increased all-red phase for Harrington Street to 13 seconds to allow the LRT to clear the intersection
- Increased the heavy vehicle percentage to 15, and decreased the saturated flow rate to 1800 for the NB and SB through movements

Intersection 36 – Harrington Street at Edenton Street

This configuration cannot be analyzed as an unsignalized intersection. In order to obtain measures of effectiveness it was assumed to be signalized with no pedestrian phasing in the No-Build analysis.

Assumed no change in intersection configuration by 2035

Intersection modifications due to LRT improvements:

- Intersection to become signalized in order to provide a protected movement for the LRT

- Increased all-red phase for Harrington Street to 13 seconds to allow the LRT to clear the intersection
- Increased the heavy vehicle percentage to 15, and decreased the saturated flow rate to 1800 for the NB and SB through movements

Intersection 37 – Harrington Street at Jones Street

Assumed no change in intersection configuration by 2035

Intersection modifications due to LRT improvements:

- Intersection to become signalized in order to provide a protected movement for the LRT
- Increased all-red phase for Harrington Street to 13 seconds to allow the LRT to clear the intersection
- Increased the heavy vehicle percentage to 15, and decreased the saturated flow rate to 1800 for the NB and SB through movements

Intersection 38 – Harrington Street at Lane Street

Assumed no change in intersection configuration by 2035

Intersection modifications due to LRT improvements:

- Intersection to become signalized in order to provide a protected movement for the LRT
- Increased all-red phase for Harrington Street to 13 seconds to allow the LRT to clear the intersection
- Increased the heavy vehicle percentage to 15, and decreased the saturated flow rate to 1800 for the NB and SB through movements

Atlantic Avenue Subarea

Intersection 52 – Wake Forest Road at Whitaker Mill Road

Assumed no change in intersection configuration by 2035

No change in intersection configuration due to LRT improvements

Assumed pedestrian phasing for northbound, eastbound, and southbound approaches

Improvements assumed for 2035 Build with Conceptual Mitigation include:

- Consider adding a NB RT lane if feasible. The turn lane will help contain spillback from the mid-block rail crossing east of this intersection.

Intersection 53 – Atlantic Avenue at Whitaker Mill Road

Assumed no change in intersection configuration by 2035

No change in intersection configuration due to LRT improvements

Assumed no pedestrian phasing

Improvements assumed for 2035 Build with Conceptual Mitigation include:

- Consider adding a SB RT lane if feasible. The turn lane adds capacity and will help contain potential spillback from the mid-block rail crossing west of this intersection.

Intersection 54 – Six Forks Road at Industrial Drive

Assumed no change in intersection configuration by 2035

No change in intersection configuration due to LRT improvements

Assumed pedestrian phasing on the EB, SB, and NB approaches

Intersection 55 – Six Forks Road at Atlantic Avenue

Intersection configuration assumed to be modified by 2035 based on proposed Six Forks Road extension project:

- Assumed construction of additional exclusive LT lane on NB Atlantic Avenue
- Assumed construction of NB exclusive RT lane on NB Atlantic Avenue
- Assumed construction of additional exclusive thru lane on WB Six Forks Road
- Assumed construction of additional exclusive thru lane on EB Six Forks Road along with a corresponding departure lane

No change in intersection configuration due to LRT improvements

Assumed pedestrian phasing on EB, NB and SB approaches

No change in intersection configuration due to LRT improvements

Intersection 56 – Atlantic Avenue at Highwoods Boulevard and Wolfpack Lane

Assumed no change in intersection configuration by 2035

Intersection configuration modified due to LRT improvements:

Assumed no pedestrian phasing

Reported intersection delay based on a weighted average of non-train and preempted train events. Intersection modifications due to LRT improvements:

- No-Build/Build assumed 25 second clearance phase (Phase 9) and 205 second freight phase (Phase 11)
- No-Build/Build assumed 25 second clearance phase (Phase 9) and 60 second passenger rail phase (Phase 11)
- Build assumed 25 second clearance phase (Phase 9) and 45 second LRT phase (Phase 11)

Intersection 57 – Atlantic Avenue at New Hope Church Road

Assumed no change in intersection configuration by 2035

No change in intersection configuration due to LRT improvements

Assumed pedestrian phasing on the NB and WB approaches

Intersection 58 – New Hope Church Road at St. Albans Drive

Assumed no change in intersection configuration by 2035

No change in intersection configuration due to LRT improvements

Intersection 59 – Old Wake Forest Road at E Millbrook Road

Assumed no change in intersection configuration by 2035

No change in intersection configuration due to LRT improvements

Assumed pedestrian phasing for all approaches

Improvements assumed for 2035 Build with Conceptual Mitigation include:

- Add a NB RT lane. The turn lane will add capacity and help contain spillback from the mid-block rail crossing immediately east of this intersection.

Intersection 60 – Atlantic Avenue at Millbrook Road

Assumed no change in intersection configuration by 2035

No change in intersection configuration due to LRT improvements

Assumed pedestrian phasing for all approaches

Intersection 61 – Atlantic Avenue at Spring Forest Road

Assumed no change in intersection configuration by 2035

No change in intersection configuration due to LRT improvements

Assumed pedestrian phasing for all approaches

Improvements assumed for 2035 Build with Conceptual Mitigation include:

- Add a NB RT lane
- Add an EB RT lane
- Add a SB RT lane

Intersection 62 – Spring Forest Road at Atlantic Springs Road

Assumed no change in intersection configuration by 2035

No change in intersection configuration due to LRT improvements

Improvements assumed for 2035 Build with Conceptual Mitigation include:

- Signalize intersection
- Assumed pedestrian phasing for all legs
- Add an EB RT lane
- Add a NB RT lane

Intersection 63 – Spring Forest Road at Departure Drive

Assumed no change in intersection configuration by 2035

No change in intersection configuration due to LRT improvements

Assumed no pedestrian phasing

NERC Subarea

Intersection 64 – Old Wake Forest Road at Oak Forest Drive

Assumed Old Wake Forest Road will be a four-lane divided facility per City of Raleigh CIP

- Assumed pedestrian phasing for all legs

- Assumed that all turning movements on Old Wake Forest Road will have at least one exclusive lane with at least 300 feet of storage. If there is an existing exclusive turn lane that has more than 300 feet of storage, the current length will be used for the future storage bay length.
- Assumed that SB approach will be widened to 2 lanes with a 200-foot exclusive left-turn lane, and a continuous shared thru/right-turn lane.

No change in intersection due to LRT improvements for Alternative D1

Intersection modifications due to LRT improvements (Alternative D2):

- Added LRT phasing as Phases 9 and 10
- Assumed 40 second gate down time due to no stations within 500 feet
- Increased all-red phase for NB Oak Forest Drive and SB Shadowland Crossing movements to 6 seconds
- Restricted lead/lag optimization

Improvements assumed for 2035 Build (Alternative D2) with Conceptual Mitigation include:

- Provide an exclusive NB right turn lane and restripe the existing shared thru-right lane to show an exclusive thru lane, resulting in one exclusive left turn lane, one exclusive thru lane, and one exclusive right turn lane

Intersection 65 – Old Wake Forest Road at Sumner Boulevard

Assumed Old Wake Forest Road will be a four-lane divided facility per City of Raleigh CIP and that Sumner Boulevard will be a four-lane divided facility (per City of Raleigh discussion with Eric Lamb) and will connect to the existing section of Sumner Boulevard at Capital Boulevard

- Assumed pedestrian phasing for all legs
- Assumed that this intersection will be signalized by 2035
- Assumed that all turning movements will have at least one exclusive lane with at least 300 feet of storage.

No change in intersection due to LRT improvements

Improvements assumed for 2035 Build (Alternative D1) with Conceptual Mitigation include:

- Provide an additional SB right turn lane
- Provide an additional WB left turn lane and right turn lane
- Provide an additional EB left turn lane

Intersection 66 – Old Wake Forest Road at Ruritania Street

Assumed Old Wake Forest Road will be a four-lane divided facility per City of Raleigh CIP

- Assumed pedestrian phasing for all legs
- Assumed that all turning movements on EB Old Wake Forest Road will have at least one exclusive lane with at least 300 feet of storage. If there is an exclusive turning lane currently that has more than 300 feet of storage, the current length will be used for the future storage bay length.

No change in intersection due to LRT improvements

Improvements assumed for 2035 Build (Alternative D1) with Conceptual Mitigation include:

- Provide an additional SB left turn lane and restripe the existing shared left-thru lane to show an exclusive thru lane, resulting in dual left turn lanes, one exclusive thru lane, and one exclusive right turn lane

Intersection 67 – US 1 (Capital Boulevard) at Old Wake Forest Road

Assumed pedestrian phasing for all legs

This intersection was analyzed with Old Wake Forest Road operating as split phases as well as with standard protected left-turn then thru movements. It was determined that this signal operated with a lower overall delay with standard protected left-turn then thru movements.

No change in intersection due to LRT improvements

Improvements assumed for 2035 Build (Alternative D1) with Conceptual Mitigation include:

- Provide an additional SB right turn lane

Intersection 68 – US 1 (Capital Boulevard) at Sumner Boulevard

Assumed pedestrian phasing for all legs

Assumed that Sumner Boulevard will be a four-lane divided facility (per City of Raleigh discussion with Eric Lamb) and will connect to the existing section of Sumner Boulevard at Old Wake Forest Road

- It is assumed that all turning movements on Sumner Boulevard will have at least one exclusive lane with at least 300 feet of storage. If there is an exclusive turning lane currently that has more than 300 feet of storage, the current length will be used for the future storage bay length.
- WB Sumner Boulevard is currently a four-lane divided facility at this location, so the only improvement to be done is to restripe the approach to show dual left-turn lanes, an exclusive thru lane, and a shared thru-right lane.
- EB Sumner Boulevard is assumed to have dual left-turn lanes
- NB LT movement on Capital Boulevard assumed to have dual-left turning lanes with 450 feet of storage

This intersection was analyzed with Sumner Boulevard operating as split phases as well as with standard protected left-turn then thru movements. It was determined that this signal operated with a lower overall delay with standard protected left-turn then thru movements.

No change in intersection due to LRT improvements

Intersection 69 – Old Wake Forest Road at Triangle Town Boulevard

As part of a current private development improvement, the northbound approach of Triangle Town Boulevard will be restriped to accommodate an exclusive left-turn lane, an exclusive thru lane, and a shared thru-right lane. The receiving lanes will be widened to accept two lanes of traffic and the northbound leg is already wide enough to accommodate the changes; thus, the crosswalk lengths on all legs will remain the same.

Assumed that due to the likely future development along Triangle Town Boulevard additional improvements to the intersection would take place through the normal development process and would be constructed by private developers, including:

Assumed that WB Old Wake Forest Road will be widened to accommodate an exclusive right-turn lane with a storage of 400 feet, which will add 12 feet to the crosswalk on the east side of the intersection.

Assumed that SB Triangle Town Boulevard will have an additional exclusive left-turn lane

No change in intersection due to LRT improvements for Alternative D1

Intersection modifications due to LRT improvements (Alternative D2):

- Added LRT phasing as Phase 9
- Assumed 40 second gate down time due to no stations within 500 feet
- Increased all-red phase for EB and WB Old Wake Forest Road thru and right-turn movements to 5 seconds
- SB right turn lane with 200 feet of storage added due to LRT Phase; however, assumed no other change in intersection configuration by 2035
- Restricted lead/lag optimization

Improvements assumed for 2035 Build (Alternative D2) with Conceptual Mitigation include:

- Provide an additional WB left turn and right turn lane

Intersection 70 – Old Wake Forest Road at Triangle Town Entrance

Assumed pedestrian phasing for all legs

Assumed SB approach of Triangle Town Entrance has a speed of 25 mph, and the NB approach has a speed of 15 mph

This intersection was analyzed with Triangle Town Entrance operating as split phases as well as with standard permitted left-turn then thru movements. It was determined that this signal operated with a LOS of F and a very high delay regardless of the signal phasing. As a result, the signal is shown as having split phasing due to the southbound approach having a shared left-thru lane.

No change in intersection due to LRT improvements