Appendix C

Traffic Forecast Development Notes

Step 1 – Convert Approach Volumes to 2010 Base Year

Intersections 4 and 5 - The north approach base year volumes at Intersection 4 were adjusted to match the south approach base year volumes at Intersection 5 because they are considered to be adjacent to each other. Following that step, each approach was adjusted proportionately using base year traffic counts.

Intersections 36 and 37 - North approach volumes on Shannon Road at Intersection 36 were adjusted to match south approach volumes on Shannon Road at Intersection 37.

Intersections 37 and 38 - West approach volumes on US 15-501 at Intersection 37 were adjusted to match east approach volumes on US 15-501 at Intersection 38.

Intersections 42-44 - Cornwallis Road volumes at Intersections 42, 43, and 44 were adjusted to match volumes each other at the US 15-501/West Cornwallis Road Interchange and the intersection of West Cornwallis Road at Western Bypass.

Intersections 58 and 59 - South approach volumes on Ninth Street at Intersection 58 were adjusted to match north approach volumes on Ninth Street at Intersection 59.

Intersections 60 and 61 - South approach volumes on Swift Avenue at Intersection 60 were adjusted to match north approach volumes on Swift Avenue at Intersection 61.

North and south approach volumes on Duke Street at Intersection 64 were adjusted to match north approach volumes on Duke Street at Intersection 63.

Intersections 63 and 65 - North approach volumes on Duke Street at Intersection 63 were adjusted to match south approach volumes on Duke Street at Intersection 65.

Intersections 65 and 66 - South approach volumes on Duke Street at Intersection 66 were adjusted to match north approach volumes on Duke Street at Intersection 65.

Intersections 67 and 68 - East approach volumes on Chapel Hill Street at Intersection 67 were adjusted to match west approach volumes on Chapel Hill Street at Intersection 68.

Intersections 69 and 70 - North approach volumes on Corcoran Street at Intersection 70 were adjusted to match south approach volumes on Corcoran Street at Intersection 69.

Intersections 70 and 71 - North approach volumes on Corcoran Street at Intersection 71 were adjusted to match south approach volumes on Corcoran Street at Intersection 70.

Intersections 71 and 74 - East approach volumes on West Pettigrew Street at Intersection 71 and west approach volumes on West Pettigrew Street at Intersection 74 were adjusted to match each other.

Intersections 77 and 78 - Fayetteville Street volumes at Intersections 77 and 78 were adjusted to match volumes each other at the NC 147/Fayetteville Street Interchange.

Step 2 – Apply Growth Rates Derived from TRM to 2010 Base Year Peak Hour Volumes

Manning/UNC Chapel Hill Subarea – To estimate the 2035 Design Year No-Build Peak Hour Approach Volumes, a one percent growth rate was used whenever volumes were not available within the TRM.

NC 54/Meadowmont/Leigh Village Subarea – To estimate the 2035 Design Year No-Build Peak Hour Approach Volumes, a two percent annual growth rate was used whenever model link volumes were not available within the TRM to estimate 2035 Design Year No-Build Approach Volumes. This growth rate was applied to the intersections within the Meadowmont Subdivision. In addition, a single centroid represented the Leigh Village area. Volumes generated by this centroid were split across the intersections with NC 54 at Crossland Drive and Falconbridge/Celeste Circle. Turning movement percentages at these intersections were estimated using existing counts collected in the Meadowmont development.

Intersection 20: Old Chapel Hill Road at Mount Moriah Road. A 2.5 percent annual growth rate for the north approach on Mount Moriah Road was applied.

Intersection 22: Old Durham Road and Old Chapel Hill Road at White Oak Road. A three percent annual growth rate was applied to all approaches.

Intersection 23: Witherspoon Boulevard at McFarland Drive. A three percent annual growth rate was applied to all approaches.

Intersection 24: US SW Durham Drive at Hopeland Avenue. A six percent annual growth rate on Hopeland Avenue.

Intersection 25: US 15-501 at Garrett Road. A one percent annual growth rate was applied to all approaches.

Intersection 26: Old Chapel Hill Road at 501 at Garrett Road. A one percent annual growth rate was applied to all approaches.

South Square Subarea – To estimate the 2035 Design Year No-Build Peak Hour Approach Volumes, a 1-1.5 percent annual growth rate was used whenever there model link volumes were not available within the TRM to estimate 2035 Design Year No-Build Approach Volumes. A three percent annual growth rate was used at the east and west approaches at the intersection of University Drive at South Square Shopping Center. This growth rate is consistent with the percentages calculated from the models at north and south approaches at that intersection.

Intersection 34: A three percent annual growth rate was applied to the West approach on Westgate Drive at South Square Entrance at Intersection 34

Intersection 35: A two percent annual growth rate was applied to the North approach on US 15-501 at Intersection 35

Intersection 44: West Cornwallis Road at Western Bypass. A one percent annual growth rate was applied on the east approach and the south approach.

Erwin Road/Duke Subarea – To estimate the 2035 Design Year No-Build Peak Hour Approach Volumes, a 1-2 percent growth rate was used whenever there model link volumes were not available within the TRM to estimate 2035 Design Year No-Build Approach Volumes.

Intersection 61: Pettigrew Street at Swift Avenue. A one percent annual growth rate was applied on the east approach on Pettigrew Street.

Intersection 65: Duke Street at Peabody Street. A two percent was applied on the east approach on Peabody Street. A one percent was applied on the west approach on Peabody Street.

Intersection 67: A three percent annual growth rate was applied to the south approach on Willard Street at Intersection 67

Intersection 69: Corcoran Street at Main Street. A three percent annual growth rate was applied for the north approach on Corcoran Street.

Intersection 78: Fayetteville Road at NC 147 SB Ramps. A four percent annual growth rate was applied to the NC 147 SB exit ramp.

Intersection 79: Grant Street at East Pettigrew Street. A three percent annual growth rate was applied to all approaches.

Intersection 80: A two percent annual growth rate was applied to all approaches at Intersection 80.

Intersection 81: A two percent annual growth rate was applied to the West approach on Gann Street at Intersection 81.