**Appendix 2 Growth Rate Calculations**

All AADT data was collected from the North Carolina Department of Transportation (NCDOT) ArcGIS AADT Mapping Application and is summarized in Table 4. Some years had no available AADT data; some sites had a one-year gap between available AADT data. Site #7 (Brier Leaf Ln & Brier Creek Pkwy) and Site #8 (NC-55 & O'Kelly Chapel Rd) had the least AADT data out of the eight sites. Site #1 (N Peartree Ln & New Bern Ave) and Site #6 (Brentwood Rd & Capital Blvd) had the most AADT data out of the eight sites. Site #5 (Trawick Rd/Huntleigh Dr & Capital Blvd) had the highest AADT range of 62,000 and 80,000 vehicles. Site #1 (N Peartree Ln & New Bern Ave) had the lowest AADT range of 21,000 and 24,000 vehicles.

To estimate 2023 and 2043 AADT at each site, a scatterplot of AADT vs. the year was created for each site. Due to COVID-19 effects, data from 2020 and 2021 were excluded. A regression line was then fitted to each scatterplot; the corresponding regression equation was used to estimate 2023 and 2043 AADT as shown in Table 5. Based on the results, Site #6 (Brentwood Rd & Capital Blvd) has the highest 2023 and 2043 AADT of 70,300 and 74,400 vehicles, respectively. Site #1 (N Peartree Ln & New Bern Ave) has the lowest 2023 and 2043 AADT of 21,700 and 20,400 vehicles, respectively. Of the eight sites, Site #1 (N Peartree Ln & New Bern Ave) and Site #5 (Trawick Rd/Huntleigh Dr & Capital Blvd) are the only two sites with a negative correlation between AADT and the year.

**Site #1**

LocationID: 0920000593

COUNTY: WAKE

RTE\_CLS: Secondary Routes

ROUTE: SR 2911 (NEW BERN AVE)

LOCATION: EAST OF DONALD ROSS RD

AADT\_2002:

AADT\_2003: 23000

AADT\_2004:

AADT\_2005: 23000

AADT\_2006:

AADT\_2007: 24000

AADT\_2008:

AADT\_2009: 22000

AADT\_2010:

AADT\_2011: 22000

AADT\_2012:

AADT\_2013: 21000

AADT\_2014:

AADT\_2015: 23000

AADT\_2016:

AADT\_2017: 22000

AADT\_2018:

AADT\_2019: 22500

EST\_AADT\_2023: 21700

EST\_AADT\_2043: 20400



**Figure 2. Site #1 AADT vs. Year**

**Site #2**

LocationID: 0920000682

COUNTY: WAKE

RTE\_CLS: NC Hwys

ROUTE: NC 54 (CHAPEL HILL RD)

LOCATION: WEST OF TRINITY RD

AADT\_2002:

AADT\_2003: 20000

AADT\_2004:

AADT\_2005: 21000

AADT\_2006:

AADT\_2007: 21000

AADT\_2008:

AADT\_2009: 29000

AADT\_2010:

AADT\_2011: 22000

AADT\_2012:

AADT\_2013: 24000

AADT\_2014:

AADT\_2015: 29000

AADT\_2016:

AADT\_2017: 27000

AADT\_2018:

AADT\_2019:

EST\_AADT\_2023: 31200

EST\_AADT\_2043: 42000



**Figure 3. Site #2 AADT vs. Year**

**Site #3**

LocationID: 0320000398

COUNTY: DURHAM

RTE\_CLS: Secondary Routes

ROUTE: SR 1999

LOCATION: NORTH OF NC 54

AADT\_2002:

AADT\_2003: 20000

AADT\_2004:

AADT\_2005: 19000

AADT\_2006:

AADT\_2007:

AADT\_2008:

AADT\_2009:

AADT\_2010:

AADT\_2011: 20000

AADT\_2012:

AADT\_2013: 21000

AADT\_2014:

AADT\_2015: 23000

AADT\_2016:

AADT\_2017: 23000

AADT\_2018:

AADT\_2019: 24000

EST\_AADT\_2023: 24600

EST\_AADT\_2043: 30300



**Figure 4. Site #3 AADT vs. Year**

**Site #4**

LocationID: 0920000477

COUNTY: WAKE

RTE\_CLS: Secondary Routes

ROUTE: SR 3555 (OLD WAKE FOREST RD)

LOCATION: WEST OF SR 5167

AADT\_2002:

AADT\_2003: 18000

AADT\_2004:

AADT\_2005: 19000

AADT\_2006:

AADT\_2007: 26000

AADT\_2008:

AADT\_2009: 18000

AADT\_2010:

AADT\_2011: 27000

AADT\_2012:

AADT\_2013: 26000

AADT\_2014:

AADT\_2015: 26000

AADT\_2016:

AADT\_2017: 23000

AADT\_2018:

AADT\_2019:

EST\_AADT\_2023: 29000

EST\_AADT\_2043: 38400



**Figure 5. Site #4 AADT vs. Year**

**Site #5**

LocationID: 0920000417

COUNTY: WAKE

RTE\_CLS: US Routes

ROUTE: US 1-401

LOCATION: NORTH OF SR 2206 TRAWICK RD

AADT\_2002:

AADT\_2003: 66000

AADT\_2004:

AADT\_2005: 80000

AADT\_2006:

AADT\_2007: 62000

AADT\_2008:

AADT\_2009: 66000

AADT\_2010:

AADT\_2011:

AADT\_2012:

AADT\_2013: 66000

AADT\_2014:

AADT\_2015: 66000

AADT\_2016:

AADT\_2017: 69000

AADT\_2018:

AADT\_2019: 67000

EST\_AADT\_2023: 65700

EST\_AADT\_2043: 62200



**Figure 6. Site #5 AADT vs. Year**

**Site #6**

LocationID: 0920000192

COUNTY: WAKE

RTE\_CLS: US Routes

ROUTE: US 1-401

LOCATION: SOUTH OF BRENTWOOD RD

AADT\_2002:

AADT\_2003: 65000

AADT\_2004:

AADT\_2005: 72000

AADT\_2006:

AADT\_2007: 63000

AADT\_2008:

AADT\_2009: 71000

AADT\_2010:

AADT\_2011: 61000

AADT\_2012:

AADT\_2013: 64000

AADT\_2014:

AADT\_2015: 75000

AADT\_2016:

AADT\_2017: 72000

AADT\_2018:

AADT\_2019: 67000

EST\_AADT\_2023: 70300

EST\_AADT\_2043: 74400



**Figure 7. Site #6 AADT vs. Year**

**Site #7**

LocationID: 920001783

COUNTY: WAKE

RTE\_CLS: Secondary Routes

ROUTE: SR 3109 (BRIER CREEK PKWY)

LOCATION: SOUTH OF SR 3102

AADT\_2002:

AADT\_2003:

AADT\_2004:

AADT\_2005:

AADT\_2006:

AADT\_2007:

AADT\_2008:

AADT\_2009:

AADT\_2010:

AADT\_2011: 22000

AADT\_2012:

AADT\_2013: 24000

AADT\_2014:

AADT\_2015: 25000

AADT\_2016:

AADT\_2017: 28000

AADT\_2018:

AADT\_2019:

EST\_AADT\_2023: 33400

EST\_AADT\_2043: 52400



**Figure 8. Site #7 AADT vs. Year**

**Site #8**

LocationID: 920001785

COUNTY: WAKE

RTE\_CLS: Secondary Routes

ROUTE: SR 1628

LOCATION: WEST OF NC 55

AADT\_2002:

AADT\_2003:

AADT\_2004:

AADT\_2005:

AADT\_2006:

AADT\_2007:

AADT\_2008:

AADT\_2009:

AADT\_2010:

AADT\_2011:

AADT\_2012:

AADT\_2013: 8600

AADT\_2014:

AADT\_2015: 13000

AADT\_2016:

AADT\_2017: 15000

AADT\_2018:

AADT\_2019: 18000

EST\_AADT\_2023: 24200

EST\_AADT\_2043: 54400



**Figure 9. Site #8 AADT vs. Year**