

**TENNESSEE DEPARTMENT OF TRANSPORTATION
STRATEGIC TRANSPORTATION INVESTMENTS DIVISION**

PROJECT NO.: NH-1-65-2(113) : 94002-3198-44 ROUTE: BUCKNER ROAD
 COUNTY: WILLIAMSON CITY: SPRING HILL
 PROJECT PIN NUMBER: 128576.00
 PROJECT DESCRIPTION: FROM BUCKNER LANE TO S.R. 106.

DIVISION REQUESTING:

MAINTENANCE PAVEMENT DESIGN
 S.T.I.D. STRUCTURES
 PROG. DEVELOPMENT & ADM. SURVEY & ROADWAY DESIGN
 PUBLIC TRANS. & AERO. TRAFFIC SIGNAL DESIGN
 OTHER VOLKERT INC
 YEAR PROJECT PROGRAMMED FOR CONSTRUCTION: _____
 PROJECTED LETTING DATE: _____

TRAFFIC ASSIGNMENT:

| BASE YEAR | | DESIGN YEAR | | | | | DESIGN ROADWAY % TRUCKS | | DESIGN AVERAGE DAILY LOADS | |
|-----------|------|-------------|-------|----|------|-----------|-------------------------|------|----------------------------|-------|
| AADT | YEAR | AADT | DHV | % | YEAR | DIR.DIST. | DHV | AADT | FLEX | RIGID |
| 26,350 | 2021 | 52,100 | 5,210 | 10 | 2041 | 60-40 | 2 | 3 | 400 | 581 |
| | | | | | | | | | | |
| | | | | | | | | | | |

REQUESTED BY: NAME JUSTIN ECKEL DATE 11/6/19
 DIVISION VOLKERT, INC.
 ADDRESS 302 INNOVATION DRIVE, SUITE 100
FRANKLIN, TN 37067

REVIEWED BY: DEBBI HOWARD *Debbi Howard* DATE 11/14/19
 TRANSPORTATION MANAGER 1
 SUITE 1000, JAMES K. POLK BUILDING

APPROVED BY: TONY ARMSTRONG *Tony Armstrong* DATE 11-14-19
 TRANSPORTATION MANAGER 2
 SUITE 1000, JAMES K. POLK BUILDING

COMMENTS:

THIS TRAFFIC WAS TAKEN FROM THE AADT SHEETS IN THE IAR PREPARED BY VOLKERT DATED JANUARY 2018 AND AVERAGED. ADL's ARE INCLUDED.

Cc: KIMERY GRANT, LOCAL ROADS

DHV'S ARE NOT REQUIRED FOR SIDE ROADS LESS THAN 1000 AADT.

NOTE: FOR BRIDGE REPLACEMENT PROJECTS, ADLs ARE NOT REQUIRED FOR ADTs OF 1000 OR LESS AND PERCENTAGE OF TRUCKS OF 7% OR LESS.

SEE ATTACHMENTS FOR TURNING MOVEMENTS AND/OR OTHER DETAILS.

(REV. 4/1/18)

**TENNESSEE DEPARTMENT OF TRANSPORTATION
STRATEGIC TRANSPORTATION INVESTMENT DIVISION**

PROJECT NO.: NH-I-65-2(113) : 94002-3197-44
 COUNTY: WILLIAMSON
 PROJECT DESCRIPTION: FROM BUCKNER LANE TO S.R. 106.

ROUTE NO.: BUCKNER ROAD
 CITY: SPRING HILL

FAP Urban

Pavement Structural Design

Calculation of Equivalent Daily 18 Kip Single Axle Loads

| Type Vehicle | ADT (No. Counted) | Flexible | | Rigid | |
|----------------------------------|-----------------------|---------------|--------------|---------------|--------------|
| | | 18-kip Factor | ADL | 18-kip Factor | ADL |
| Pass. cars and motorcycles (1-2) | 26,281 | 0.001 | 26 | 0.001 | 26 |
| Pick-up, Panel, Van (3) | 11,767 | 0.004 | 47 | 0.004 | 47 |
| Sing. Unit | Buses (4) | 0.300 | 6 | 0.300 | 6 |
| | 2-axle, 6-tire (5) | 0.260 | 35 | 0.260 | 35 |
| | 3-axle or more (6-7) | 1.000 | 722 | 1.500 | 1,083 |
| Comb. | 4-axle (8) | 0.640 | 65 | 0.800 | 81 |
| | 5-axle or more (9-13) | 1.200 | 241 | 1.900 | 382 |
| Totals (2031 AADT) | 39,225 | | 1,142 | | 1,660 |

Suggested Percentages of Trucks in Design Lane

| | |
|---------------------|-----|
| 5,000 or less ADT | 95% |
| 5,000 - 10,000 ADT | 90% |
| 10,000 - 15,000 ADT | 85% |
| 15,000 - 20,000 ADT | 80% |
| 20,000 - 30,000 ADT | 75% |
| 30,000 - 40,000 ADT | 70% |
| 40,000 Plus | 60% |

No. of Lanes: 4

% Trucks in Design Lane: 70%

ADL in Design Lane:

| | | | | | | | |
|--------|-----|---|------|---|--------|---|-----|
| FLEX: | 0.5 | X | 0.70 | X | 1141.8 | = | 400 |
| RIGID: | 0.5 | X | 0.70 | X | 1659.6 | = | 581 |

ADL Calculations By: TONY ARMSTRONG
 Reviewed By: *Debra Howard*
 [REV. 7/1/14]

Date: 11/13/2019
 Date: 11/14/19



WILLIAMSON COUNTY

SPRING HILL

BUCKNER ROAD

FROM BUCKNER LANE TO S.R. 106

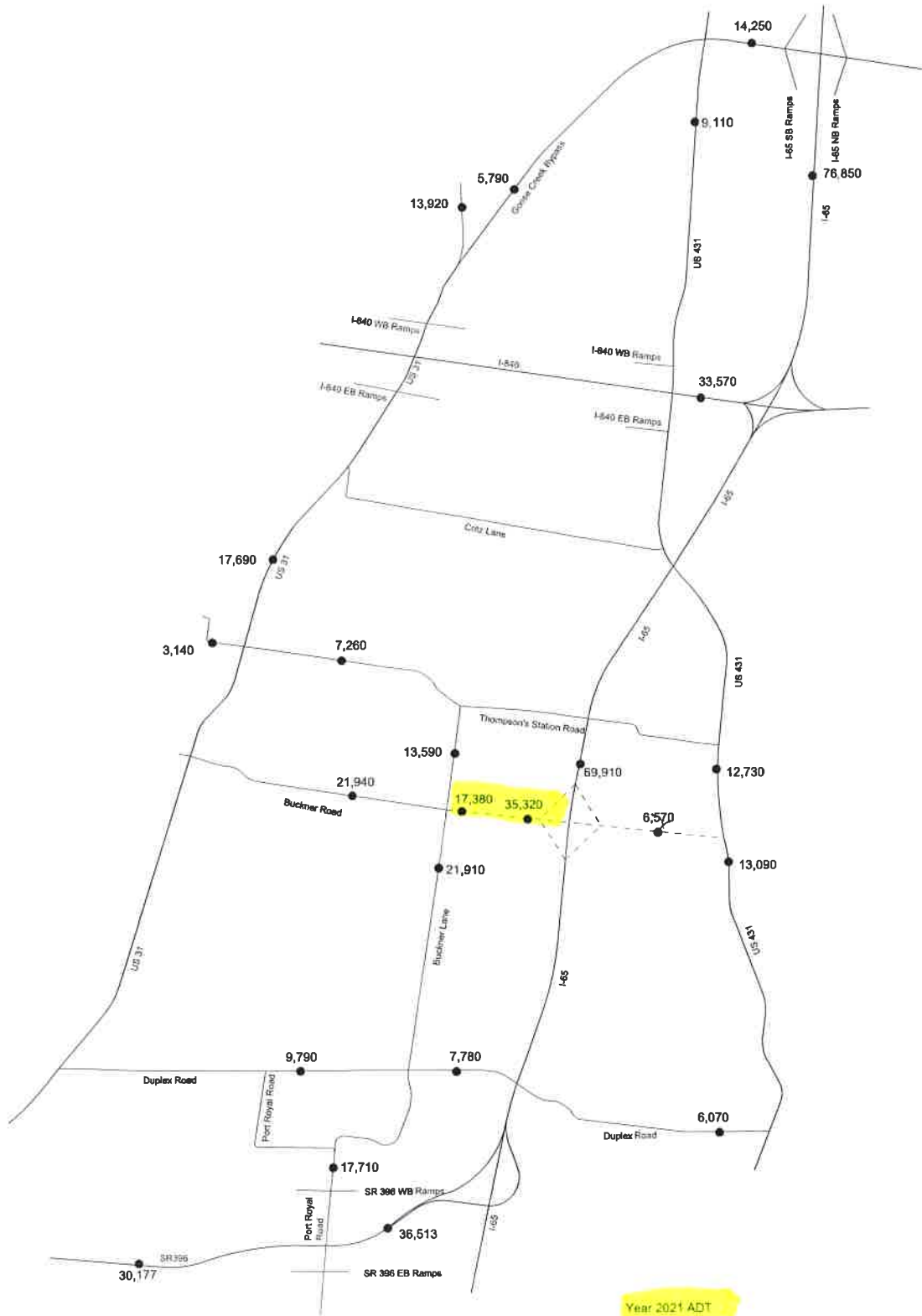
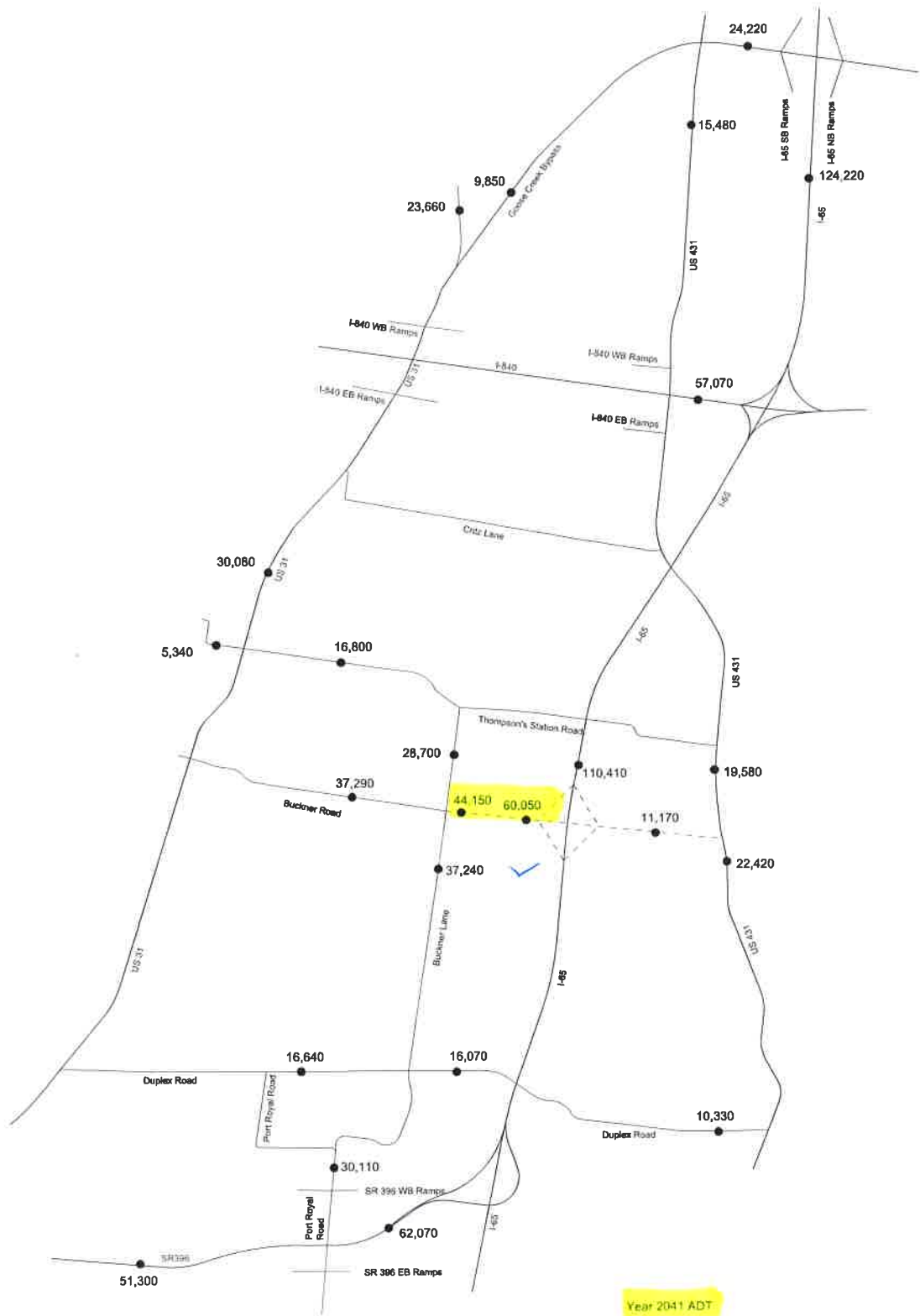


Figure C1, Background Growth 3.5%/Year



Year 2041 ADT
Figure C.2. Background Growth 3.5%/Year