

SR 162 (PELLISSIPPI PARKWAY EXTENSION)

ADDENDUM TO THE TRAFFIC OPERATIONS TECHNICAL REPORT

**BLOUNT COUNTY, TENNESSEE
P.I.N. 101423.00**

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LIST OF ACRONYMS

AASHTO – American Association of State Highway and Transportation Officials
EIS – Environmental Impact Statement
FHWA – Federal Highway Administration
HCM – Highway Capacity Manual
HCS+ – Highway Capacity Software Plus
LOS – Level of Service
NEPA – National Environmental Policy Act
RAH – Relocated Alcoa Highway
TDOT – Tennessee Department of Transportation
TRIMS – Tennessee Roadway Information Management System

1.0 INTRODUCTION

The Tennessee Department of Transportation (TDOT), in cooperation with the Federal Highway Administration (FHWA), is proposing to extend and construct Pellissippi Parkway (Interstate 140 or I-140) from its current terminus at State Route (SR) 33 (Old Knoxville Highway) to SR 73 (US 321 or Lamar Alexander Highway) in Blount County.

Overall, the purpose of this project is to develop and implement a transportation solution in the northern portion of Blount County, east of Alcoa and Maryville that would:

- Enhance regional transportation system linkages;
- Improve circumferential mobility by providing travel options to the existing radial roadway network in Blount County, Maryville, and Alcoa;
- Enhance roadway safety on the roadway network, including the Maryville core; and
- Assist in achieving acceptable traffic operations on the transportation network or not adversely affect traffic flows on the existing transportation network.

TDOT and FHWA have prepared a Draft Environmental Impact Statement (DEIS) in accordance with the National Environmental Policy Act (NEPA) to identify and evaluate the environmental effects of the proposed project and to identify measures to minimize impacts. During the preparation of the DEIS, a traffic operations technical study was prepared in October 2008. The results of this technical study were incorporated into Chapters 1 and 3 of the DEIS.

Following approval of the DEIS in April 2010, the review period began for agencies and the public. Comments have been received from a number of sources including agencies, the general public, Citizens Against the Pellissippi Parkway Extension, Inc. (CAPPE), City of Alcoa, and the Knoxville Regional Transportation Planning Organization (TPO).

This document serves as an addendum to the original Traffic Operations Technical Report and includes updates resulting from public and agency comments provided during the DEIS review period. Overall, the updates seek to provide clarification on the traffic volumes used in the analysis, and more specific level of improvement resulting from the build alternatives.

The alternatives evaluated remain the same and are as follows:

- No-Build Alternative
- Build Alternative
 - Alternative A (Extend Pellissippi Parkway to US 321)
 - Alternative C (Extend Pellissippi Parkway to US 321)
 - Alternative D (Upgrade Two-Lane Network)

For more detail on each alternative refer to the original Traffic Operations Technical Report or the DEIS.

The following sections provide the updated analysis for each of these alternatives.

2.0 ANALYSIS OF ALTERNATIVES

For the proposed Pellissippi Parkway Extension from SR 33 to US 321, an initial assessment in level of service was conducted in 2007 assuming a generic corridor for a four-lane highway concept that was included in the Knoxville Regional Travel Demand Model. Since the initial assessment, two four-lane build alternatives have been identified and refined (Alternatives A and C). The Knoxville Regional Travel Demand Model was evaluated to determine if the location of these alternatives would result in significant differences in estimated volumes such that specific traffic volumes would need to be developed for each alternative. It was determined that the model is not sensitive enough to determine differences in the two four-lane build alternatives, and as such, the existing traffic volumes generated for the generic corridor are assumed for each of the four-lane build alternatives. Therefore, the levels of service for the four-lane extension of Pellissippi Parkway (both corridor and intersection) presented in this report are assumed to apply for both Alternatives A and C (labeled as Alternatives A/C). Under the Alternatives A and C scenario, traffic throughout the rest of the study area was projected through use of the Knoxville Regional Travel Demand Model.

Alternative D (upgrade of existing 2-lane roadway network) was identified and developed in early 2008, based on comments received during the October 2007 and February 2008 public meetings. Portions of the Alternative D corridor would involve new alignment, but this option would primarily follow the existing roads: Sam Houston School Road, Peppermint Road, Hitch Road and Helton Road. Levels of service must be determined for these roadways in order to compare Alternative D directly with the other alternatives. This analysis included an existing conditions analysis as well as traffic forecasts for the future years of 2015 and 2035.

Since the existing routes that form part of Alternative D are not state-maintained routes, TDOT has little to no traffic count information available, nor do the local municipalities. To obtain the needed existing traffic volumes, TDOT conducted five (5) 48-hour tube counts in August 2008. Counts were conducted at the following locations:

- Sam Houston School Road – near SR 33
- Sam Houston School Road – near Wildwood Road
- Peppermint Road – near the mid-point between Wildwood Road and US 411
- Hitch Road – just south of US 411
- Helton Road – south of Centennial Church Road

These counts provided the existing year (2008) LOS for a frame of reference. For the future years of 2015 and 2035, this alternative was coded into the Knoxville Regional Travel Demand Model. The model years were 2014 and 2030. Based on the methodology for the previous traffic forecasts for the No-Build and four-lane build alternative (Alternative A/C), and given the absence of historic traffic growth data, growth rate factors were derived from the model output. These factors were then applied to the model volumes to determine future year volumes of 2015 and 2035. Future year LOS (2015 and 2035) was not initially calculated for Sam Houston School Road, Peppermint Road, Hitch Road, and Helton Road since traffic forecasts were not originally prepared for these roadways.

During the public review period for the DEIS, several review comments related to the approach to the traffic operations analysis of the Build Alternatives. The concern was that the DEIS did not provide sufficient traffic data to understand one of the alternatives (Alternative D). Based on these comments received, TDOT determined that more detailed traffic forecasts would be prepared for Alternative D to the same level as Alternatives A and C and these revised forecasts should include the data necessary to calculate the levels of service. TDOT has now conducted a detailed traffic analysis for Alternative D and the study area network that would be served by Alternative D, which is reported in this addendum.

Also following the review period for the DEIS, some minor changes were proposed by the Knoxville TPO and the City of Alcoa related to the traffic volumes and truck percentages along US 129. The primary focus of changes included:

- Modified forecasted volumes for the No-Build scenario for the segment of US 129 north of US 321 as the base volume from the regional travel demand model was reported incorrectly.
- For clarification, added forecasted volumes and truck percentage for the segment of US 129 between SR 35 and Louisville Road.
- For clarification, added forecasted volumes and truck percentage for the segment of US 129 between Relocated Alcoa Highway and SR 335.

For additional information related to these changes, refer to the memorandum dated October 7, 2010 prepared by Sain Associates, contained in Appendix A.

The revised traffic volumes and truck percentages resulting from the additional analysis are shown on the following figures (**Figure 1 - Figure 3**).

Figure 1: No-Build Forecasted AADT

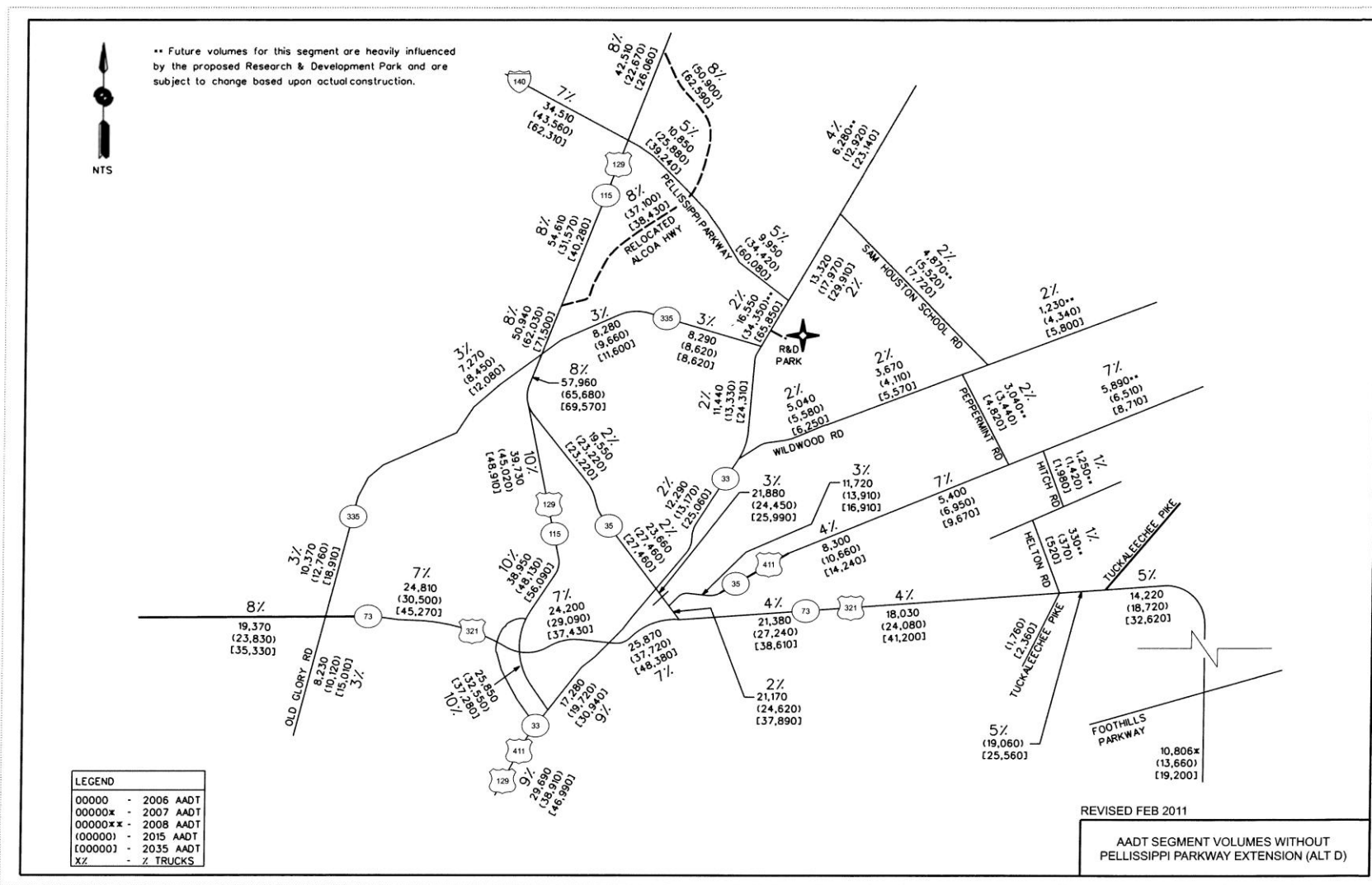
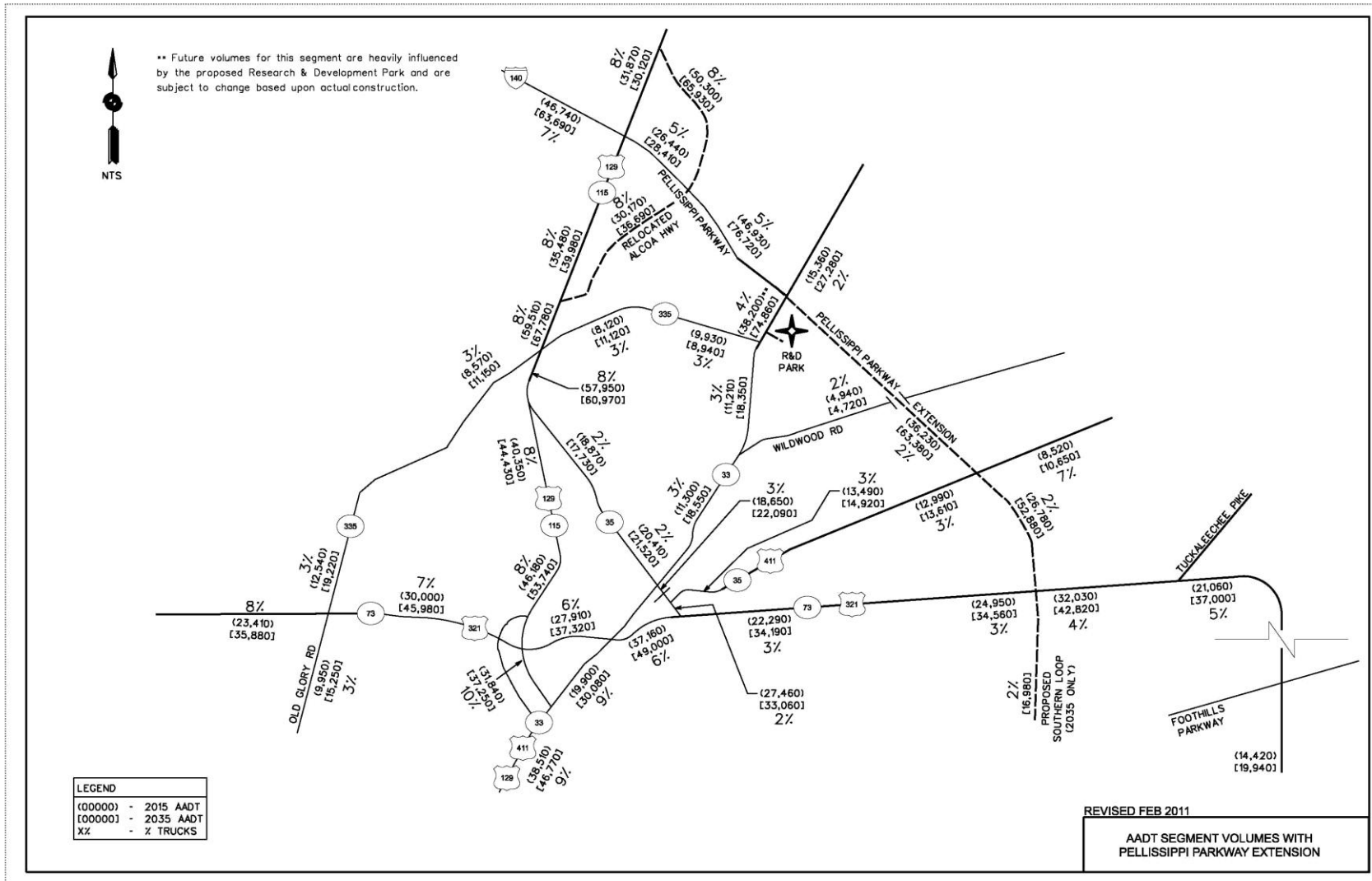


Figure 2: Build Forecasted AADT (Alternatives A/C)



3.0 CORRIDOR LEVEL OF SERVICE ANALYSIS

To evaluate the effects of the project on traffic in the study area, the traffic operations analysis including a level of service analysis was conducted at the corridor level (roadway sections) for the No-Build Alternative and Build Alternatives (A/C and D) for the years 2015 and 2035. Existing (2006 / 2008) levels of service were determined for comparison purposes. The methodology and updated results for the corridor level traffic analysis are presented in the following subsections. Section 4.0 that follows presents the updated results for the traffic analysis at key intersections.

3.1 Study Area Roadways

The following roadways were identified as either routes along proposed interchanges with an extension of Pellissippi Parkway or as routes currently used in lieu of the proposed Pellissippi Parkway Extension.

- East Broadway / Old Knoxville Highway (SR 33)
- US 411 (SR 35)
- Lamar Alexander Parkway (SR 73 / US 321)
- Alcoa Highway (SR 115 / US 129)
- Hall Road (SR 35)
- Washington Street (SR 35)
- Wildwood Road
- Sam Houston School Road
- Peppermint Road
- Hitch Road
- Helton Road
- Tuckaleechee Pike

Each of these roadways has been evaluated for all analysis years to determine the effects of the proposed project on existing and future traffic operations in the vicinity of the project.

The proposed Relocated Alcoa Highway (RAH), which would extend east of the existing Alcoa Highway (SR 115 / US 129) generally between Cusick Road and south of the Blount / Knox County line, was included in the analysis. Since this is a proposed project, it was only included in the 2015 and 2035 No-Build and Build analyses.

The proposed Southern Loop was included in the 2035 Build Analysis for Alternative A/C since it was an approved project coded into the Regional Travel Demand Model (as a two lane road along existing or new alignment) in the later years of the long range plan.

3.2 Methodology

Level of service (LOS) is a qualitative measure of expected traffic conflicts, delay, driver discomfort, and congestion. Levels of service are described according to a letter rating system ranging from LOS A (free flow, minimal or no delays – best conditions) to LOS F

(stop and go conditions, very long delays – worst conditions). There are several ways levels of service can be calculated depending on the type of facility. The analysis methodologies used for this study are described below.

Two-Lane Highway Analysis

The Highway Capacity Software Plus (HCS+) two-lane road analysis software module based on the 2000 Highway Capacity Manual (HCM) was used to evaluate two-lane highways (e.g., SR 33, US 411, Wildwood Road, Sam Houston School Road, Peppermint Road, Hitch Road, Helton Road, and Tuckaleechee Pike). For this method, there are two classes of highways: **Class I** highways typically include higher speed arterials and daily commuter routes while **Class II** highways include lower speed collector roadways and roads primarily designed to provide access to individual properties. As SR 33 and US 411 are major state and nationally designated routes in this section of Tennessee, they were assumed to be Class I highways. As they currently exist, Wildwood Road, Sam Houston School Road, Peppermint Road, Hitch Road, Helton Road, and Tuckaleechee Pike were assumed to be Class II highways based on their lower speeds limits (between 25 mph and 45 mph) and their use as local access roads. However, with the upgrades and realignment proposed in Alternative D, their function changes; Sam Houston School Road, Peppermint Road, Hitch Road, and Helton Road becomes an informal bypass with an increased speed limit of 50 mph. Tuckaleechee Pike also provides additional connectivity in the future years under Alternative D. Therefore for the Alternative D scenario these five roadways are evaluated as Class I highways.

Levels of service for Class I highways are based on the estimated average travel speeds and percent time vehicles spend following other vehicles. Levels of service for Class II highways are based on the percent time vehicles spend following other vehicles only. The level of service criteria for two-lane highways is shown in **Table 1**.

Table 1: LOS Criteria for Two-Lane Highways

| LOS | Class I Highways | | Class II Highways |
|-----|---|----------------------|------------------------------|
| | Percent Time Spent Following | Average Travel Speed | Percent Time Spent Following |
| A | ≤ 35 | >55 | ≤ 40 |
| B | >35 - 50 | >50 – 55 | >40 – 55 |
| C | >50 - 65 | >45 – 50 | >55 – 70 |
| D | >65 – 80 | >40 - 45 | >70 – 85 |
| E | >80 | ≤40 | >85 |
| F | LOS F applies whenever the flow rate exceeds the capacity (3,200 pc/h*) | | |

Source: Highway Capacity Manual (2000)

*Capacity is 3,200 passenger cars per hour (pc/h) for the two-way flow rate

Level of Service (LOS) D is the threshold for desirable traffic operations in this study. According to the *AASHTO-Geometric Design of Highways and Streets* reference manual, a LOS D threshold for freeways and arterials can be an appropriate threshold in developed areas. While the study area is not currently a heavily developed, urbanized area, substantial development pressures may be expected in the future due to the population growth occurring in Blount County. The study area is included in the designated 2030 urban growth boundary for Maryville and Alcoa. It is reasonably foreseeable that by the year 2035 the area could be considered substantially developed.

Therefore, as most of the study area fits this criterion (or will in the future) it is acceptable practice to use this as the traffic operations threshold. Levels of service below this threshold (i.e., LOS E or F) are noted as undesirable and warrant improvement.

Multilane Highway Analysis

To analyze traffic operations for the four-lane or greater highway sections (US 129, SR 35, US 321, and Relocated Alcoa Highway), the HCS+ multilane analysis module was used. This is based on the 2000 Highway Capacity Manual’s methodology. For each section, the estimated travel speed and the resulting levels of service were calculated.

Levels of service for multilane highway sections are based on density in terms of passenger cars per mile per lane (pc/mi/ln) as shown in **Table 2**. Density is used to define level of service because it is an indicator of freedom to maneuver within the traffic stream and the proximity to other vehicles. Speed in terms of mean passenger-car speed and volume-to-capacity (v/c) ratios are interrelated with density and can be used to characterize a multilane highway segment.

Table 2: LOS Criteria for Multilane Highways

| LOS | Density Range (pc/mi/ln) |
|-----|--------------------------|
| A | 0 – 11 |
| B | > 11 – 18 |
| C | > 18 – 26 |
| D | >26 – 35 |
| E | > 35 – 45 |
| F | > 45 |

Source: Highway Capacity Manual (2000)

Similar to the two-lane highway analysis, LOS D is the lowest threshold for desirable traffic operations used in this study. For multilane highways, a LOS D corresponds to a density between 26 and 35 passenger cars per mile per lane. (Refer to the Highway Capacity Manual for more specific information.)

Freeway Analysis

To analyze peak hour traffic operations for Pellissippi Parkway (I-140), the HCS+ freeway analysis package was used. This is based on the 2000 Highway Capacity Manual (HCM Chapter 23) methodology. For each section, the estimated travel speed and the resulting levels of service were calculated.

Levels of service for freeway sections are also based on density in terms of passenger cars per mile per lane (pc/mi/ln) as shown in **Table 3**.

Table 3: LOS Criteria for Freeways

| LOS | Density Range (pc/mi/ln) |
|-----|--------------------------|
| A | 0 – 11 |
| B | > 11 – 18 |
| C | > 18 – 26 |
| D | >26 – 35 |
| E | > 35 – 45 |
| F | > 45 |

Source: Highway Capacity Manual (2000)

Again, LOS D is the threshold for desirable traffic operations used in this study. For freeways, a LOS D corresponds to a density between 26 and 35 passenger cars per mile per lane. (Refer to the Highway Capacity Manual for more specific information.)

3.3 No-Build Corridor Level of Service Results

The analysis of existing levels of service incorporates data from the years 2006 - 2008. The 2006 – 2008 average annual daily traffic volumes and forecasted traffic volumes (2015 and 2035) for the No-Build Alternative were provided as part of a Traffic Forecast Study prepared in 2007 (with the updates made based on the October 7, 2010 memorandum) for this project by Sain Associates, Inc. Also included in the Traffic Forecast Study were truck percentages for all analysis years. Peak hour traffic volumes for highway segments were calculated using a K-factor¹ obtained from TDOT's Tennessee Roadway Information Management System (TRIMS) Blount County Traffic Database. Functional classification, median type, directional split, current lane widths, shoulder widths, percent passing, speed limit, and access points per mile were also obtained from TRIMS as well as from roadway observations.

The Relocated Alcoa Highway is shown for the future years of 2015 and 2035. For the Relocated Alcoa Highway, several geometric assumptions were made based on initial design plans and the current operating characteristics of existing Alcoa Highway (US 129). These assumptions include an assumed K-factor of 0.100, a 55 mph speed limit, four access points per mile, three lanes per direction, and a 55/45 directional split of traffic. The percent trucks were provided in the traffic forecast.

Generally, most highway characteristics were available through TRIMS for the non state-maintained roads of Sam Houston School Road, Peppermint Road, Hitch Road, Helton Road, and Tuckaleechee Pike. Several assumptions were made for these roadways for the operational analysis including:

- Class II Highway
- No passing zones
- Eight (8) access points per mile
- Zero (0) percent recreational vehicles

The calculated level of service for each highway segment is shown on the following tables, **Tables 4** through **6** and on **Figures 4** through **6**. It should be noted that sections with an associated speed less than 45 mph were not analyzed as the HCS+ software will not calculate a level of service if the free-flow speed is less than 45 mph. Typically these sections are located in an urbanized area where traffic signals dictate the traffic operations. Therefore, to determine the operations along these sections please refer to the intersection traffic analysis provided in Section 4.0 of this report.

The shading on the tables and figures indicates acceptable versus poor operating conditions. Green shading was used to indicate acceptable traffic operations (LOS D or better) with red used to indicate poor traffic operations (LOS E or F). Gray shading indicates that the LOS could not be calculated due to the inability of the HCS+ software to determine the corridor LOS for urban streets with speeds less than 45 mph.

¹ The K-factor is used to compute design hour volumes (DHV) and is based on the 30th highest hour of the year.

Table 4: Existing Corridor Levels of Service

| Route | Section | Begin Milepoint | End Milepoint | Section Length (miles) | 2006 ADT | K-Factor | 2006 DHV | Posted Speed Limit (MPH) | % Trucks and Buses | Estimated Travel Speed (MPH) | % Time Spent Following | Density (pc/mi/ln) | LOS |
|--|---------|---|---|------------------------|----------|----------|----------|--------------------------|--------------------|------------------------------|------------------------|--------------------|-----|
| Wildwood Road | 1 | E. Broadway/Old Knoxville Hwy (SR 33) MP 0.000 | Reservoir Rd MP 1.309 | 1.31 | 5,040 | 0.110 | 554 | 45 | 2.0% | 31.6 | 59.6 | N/A | C |
| | 2 | Reservoir Rd MP 1.309 | Sam Houston School Rd, MP 2.650 | 1.34 | 3,670 | 0.110 | 404 | 45 | 2.0% | 32.6 | 57.8 | N/A | C |
| | 3 | Sam Houston School Rd, MP 2.650 | End of Study Area MP 4.740 | 2.09 | 1,230 | 0.110 | 135 | 45 | 2.0% | 35.6 | 36.9 | N/A | A |
| Pellissippi Parkway | 1 | Topside Rd MP 0.810 | Alooa Hwy (SR 115/US 129) MP 2.240 | 1.43 | 34,510 | 0.120 | 4141 | 60 | 7.0% | 57.5 | N/A | 22.1 | C |
| | 2 | Alooa Hwy (SR 115/US 129) MP 2.240 | Relocated Alcoa Highway MP 3.240 | 1.00 | 10,850 | 0.130 | 1411 | 60 | 5.0% | 57.5 | N/A | 7.3 | A |
| | 3 | Relocated Alcoa Highway MP 3.240 | E. Broadway/Old Knoxville Hwy (SR 33) MP 4.710 | 1.47 | 9,950 | 0.130 | 1294 | 60 | 5.0% | 57.5 | N/A | 6.7 | A |
| Lamar Alexander Parkway (SR 73 / US 321) | 1 | Beginning of Study Area MP 8.250 | Alooa Hwy (SR 115/US 129) MP 10.570 | 2.32 | 24,810 | 0.110 | 2729 | 55 | 7.0% | 54.0 | N/A | 16.4 | B |
| | 2 | Alooa Hwy (SR 115/US 129) MP 10.570 | E. Broadway/Old Knoxville Hwy (SR 33) MP 11.650 | 1.08 | 24,200 | 0.100 | 2420 | 45 | 7.0% | 45.0 | N/A | 18.5 | C |
| | 3 | E. Broadway/Old Knoxville Hwy (SR 33) MP 11.650 | Jones Ave MP 12.528 | 0.87 | 25,870 | 0.100 | 2587 | 40 | 7.0% | | | | |
| | 4 | Jones Ave MP 12.520 | Merritt Rd MP 13.980 | 1.46 | 21,380 | 0.100 | 2138 | 50 | 4.0% | 50.0 | N/A | 16.4 | B |
| | 5 | Merritt Rd MP 13.980 | Tuckaleechee Pk MP 17.020 | 3.04 | 18,030 | 0.100 | 1803 | 50 | 4.0% | 50.0 | N/A | 10.8 | A |
| | 6 | Tuckaleechee Pk MP 17.020 | Melrose Station Rd MP 20.020 | 3.00 | 14,220 | 0.100 | 1422 | 55 | 5.0% | 53.0 | N/A | 9.0 | A |
| | 7 | Melrose Station Rd MP 20.020 | Foothills Pkwy MP 22.400 | 2.38 | 10,806 | 0.100 | 1081 | 55 | 5.0% | 53.0 | N/A | 6.8 | A |
| Hall Road (SR 35) | 1 | Alooa Hwy (SR 115/US 129) MP 0.000 | Bessemer St MP 1.520 | 1.52 | 19,550 | 0.100 | 1955 | 45 | 2.0% | 45.0 | N/A | 14.4 | B |
| | 2 | Bessemer St MP 1.520 | E. Broadway/Old Knoxville Hwy (SR 33) MP 2.590 | 1.07 | 23,660 | 0.100 | 2366 | 35 | 2.0% | | | | |
| Washington Street (SR 35) | 1 | E. Broadway/Old Knoxville Hwy (SR 33) MP 2.590 | US 411 (SR 35) MP 2.820 | 0.23 | 21,880 | 0.100 | 2188 | 30 | 3.0% | | | | |
| | 2 | US 411 (SR 35) MP 0.000 | Lamar Alexander Pkwy (SR 73/US 321) MP 0.160 | 0.16 | 21,170 | 0.100 | 2117 | 30 | 2.0% | | | | |
| US 411 (SR 35) | 1 | Washington St (SR 35) MP 2.820 | S. Everett High Rd MP 3.690 | 0.87 | 11,720 | 0.110 | 1289 | 40 | 3.0% | | | | |
| | 2 | S. Everett High Rd MP 3.690 | Westfield Dr 4.527 | 0.84 | 8,300 | 0.100 | 830 | 45 | 4.0% | 26.4 | 69.7 | N/A | E |
| | 3 | Westfield Dr 4.527 | Hitch Rd 7.254 | 2.73 | 5,400 | 0.100 | 540 | 45 | 7.0% | 28.2 | 61.3 | N/A | E |
| | 4 | Hitch Rd 7.254 | End of Study Area 7.990 | 0.74 | 5,890 | 0.100 | 589 | 45 | 7.0% | 27.9 | 62.4 | N/A | E |

Table 4: Existing Corridor Levels of Service (cont.)

| Route | Section | Begin Milepoint | End Milepoint | Section Length (miles) | 2006 ADT | K-Factor | 2006 DHV | Posted Speed Limit (MPH) | % Trucks and Buses | Estimated Travel Speed (MPH) | % Time Spent Following | Density (pc/mi/ln) | LOS |
|---|---------|---|---|------------------------|----------|----------|----------|--------------------------|--------------------|------------------------------|------------------------|--------------------|-----|
| E. Broadway / Old Knoxville Highway (SR 33) | 1 | Beginning of Study Area MP 7.854 | Montgomery Lane MP 10.201 | 2.35 | 29,690 | 0.100 | 2969 | 50 | 9.0% | 50.0 | N/A | 24.3 | C |
| | 2 | Montgomery Lane MP 10.201 | Hall Rd MP 12.340 | 2.14 | 17,280 | 0.100 | 1728 | 30 | 9.0% | | | | |
| | 3 | Hall Rd MP 12.340 | Wildwood Rd MP 14.206 | 1.87 | 12,290 | 0.100 | 1229 | 30 | 2.0% | | | | |
| | 4 | Wildwood Rd MP 14.206 | Hunt Rd MP 15.470 | 1.26 | 11,440 | 0.100 | 1144 | 40 | 2.0% | | | | |
| | 5 | Hunt Rd MP 15.470 | Pellissippi Pky MP 15.920 | 0.45 | 16,550 | 0.110 | 1821 | 40 | 2.0% | | | | |
| | 6 | Pellissippi Pky MP 15.920 | Sam Houston School Rd. MP 18.370 | 0.45 | 13,320 | 0.110 | 1465 | 40 | 2.0% | | | | |
| | 7 | Sam Houston School Rd. MP 18.370 | County Line MP 20.680 | 4.29 | 6,280 | 0.120 | 754 | 50 | 4.0% | 34.9 | 68.4 | N/A | E |
| Alcoa Highway (SR 115 / US 129) | 1 | Broadway Ave MP 10.450 | Lamar Alexander Pkwy (SR 73/US 321) MP 11.340 | 0.89 | 25,850 | 0.100 | 2585 | 50 | 10.0% | 49.0 | N/A | 20.9 | C |
| | 2 | Lamar Alexander Pkwy (SR 73/US 321) MP 11.340 | Louisville Rd (MP 13.020) | 2.94 | 38,950 | 0.100 | 3895 | 55 | 10.0% | 54.3 | N/A | 25.7 | C |
| | 3 | Louisville Rd (MP 13.020) | Hall Rd (SR 35) MP 14.280 | 1.26 | 39,730 | 0.100 | 3973 | 55 | 10.0% | 54.3 | N/A | 25.7 | C |
| | 4 | Hall Rd (SR 35) MP 14.280 | Hunt Rd MP 15.020 | 0.74 | 57,960 | 0.070 | 4057 | 55 | 8.0% | 53.3 | N/A | 30.8 | D |
| | 5 | Hunt Rd MP 15.020 | Cusiok Rd MP 16.000 | 0.98 | 50,940 | 0.100 | 5094 | 50 | 8.0% | 45.8 | N/A | 39.6 | E |
| | 6 | Cusiok Rd MP 16.000 | Pellissippi Pky MP 17.680 | 2.64 | 54,610 | 0.100 | 5461 | 50 | 8.0% | 43.4 | N/A | 42.2 | E |
| | 7 | Pellissippi Pky MP 17.680 | County Line MP 20.400 | 2.74 | 42,510 | 0.110 | 4676 | 55 | 8.0% | 51.1 | N/A | 30.7 | D |
| Sam Houston | 1 | SR 33 MP 0.000 | Wildwood Rd MP 2.650 | 2.65 | 4,870 | 0.160 | 779 | 45 | 2.0% | 32.7 | 55.8 | N/A | C |
| Peppermint Road | 1 | Wildwood Rd MP 0.000 | Sevierville Rd MP 1.100 | 1.10 | 3,040 | 0.150 | 456 | 35 | 2.0% | 30.7 | 38.1 | N/A | A |
| Hitch Road | 1 | Sevierville Rd MP 1.202 | Davis Ford Rd MP 0.000 | 1.20 | 1,250 | 0.150 | 188 | 25 | 1.0% | 27.7 | 22.9 | N/A | A |
| Helton Road | 1 | Davis Ford Rd MP 0.875 | Lamar Alexander Pkwy MP 0.000 | 0.88 | 330 | 0.150 | 65 | 25 | 1.0% | 29.2 | 11.1 | N/A | A |

Table 5: 2015 No-Build Corridor Levels of Service

| Route | Section | Begin Milepoint | End Milepoint | Section Length (miles) | 2015 ADT | K-Factor | 2015 DHV | Posted Speed Limit (MPH) | % Trucks and Buses | Estimated Travel Speed (MPH) | % Time Spent Following | Density (pc/mi/ln) | LOS |
|--|---------|---|---|------------------------|----------|----------|----------|--------------------------|--------------------|------------------------------|------------------------|--------------------|-----|
| Wildwood Road | 1 | E. Broadway/Old Knoxville Hwy (SR 33) MP 0.000 | Reservoir Rd MP 1.309 | 1.31 | 5,580 | 0.110 | 614 | 45 | 2.0% | 31.2 | 61.1 | N/A | C |
| | 2 | Reservoir Rd MP 1.309 | Sam Houston School Rd. MP 2.650 | 1.34 | 4,110 | 0.110 | 452 | 45 | 2.0% | 32.2 | 55.5 | N/A | C |
| | 3 | Sam Houston School Rd. MP 2.650 | End of Study Area MP 4.740 | 2.09 | 4,340 | 0.110 | 477 | 45 | 2.0% | 32.1 | 56.8 | N/A | C |
| Pellissippi Parkway | 1 | Topside Rd MP 0.810 | Alcoa Hwy (SR 115/US 129) MP 2.240 | 1.43 | 43,560 | 0.120 | 5227 | 60 | 7.0% | 57.5 | N/A | 27.9 | D |
| | 2 | Alcoa Hwy (SR 115/US 129) MP 2.240 | Relocated Alcoa Highway MP 3.240 | 1.00 | 25,880 | 0.130 | 3364 | 60 | 5.0% | 57.5 | N/A | 17.5 | B |
| | 3 | Relocated Alcoa Highway MP 3.240 | E. Broadway/Old Knoxville Hwy (SR 33) MP 4.710 | 1.47 | 34,420 | 0.130 | 4475 | 60 | 5.0% | 57.5 | N/A | 23.2 | C |
| Lamar Alexander Parkway (SR 73 / US 321) | 1 | Beginning of Study Area MP 6.250 | Alcoa Hwy (SR 115/US 129) MP 10.570 | 2.32 | 30,500 | 0.110 | 3355 | 55 | 7.0% | 54.0 | N/A | 20.2 | C |
| | 2 | Alcoa Hwy (SR 115/US 129) MP 10.570 | E. Broadway/Old Knoxville Hwy (SR 33) MP 11.650 | 1.08 | 29,090 | 0.100 | 2909 | 45 | 7.0% | 45.0 | N/A | 22.2 | C |
| | 3 | E. Broadway/Old Knoxville Hwy (SR 33) MP 11.650 | Jones Ave MP 12.526 | 0.87 | 37,720 | 0.100 | 3772 | 40 | 7.0% | | | | |
| | 4 | Jones Ave MP 12.520 | Merritt Rd MP 13.980 | 1.46 | 27,240 | 0.100 | 2724 | 50 | 4.0% | 50.0 | N/A | 20.8 | C |
| | 5 | Merritt Rd MP 13.980 | Tuckaleechee Pk MP 17.020 | 3.04 | 24,080 | 0.100 | 2408 | 50 | 4.0% | 50.0 | N/A | 14.5 | B |
| | 6 | Tuckaleechee Pk MP 17.020 | Tuckaleechee Pk MP 17.320 | 0.30 | 19,060 | 0.100 | 1906 | 55 | 5.0% | 53.0 | N/A | 12.0 | B |
| | 7 | Tuckaleechee Pk MP 17.320 | Melrose Station Rd MP 20.020 | 2.70 | 18,720 | 0.100 | 1872 | 55 | 5.0% | 53.0 | N/A | 11.8 | B |
| | 8 | Melrose Station Rd MP 20.020 | Foothills Pkwy MP 22.400 | 2.38 | 13,660 | 0.100 | 1366 | 55 | 5.0% | 53.0 | N/A | 8.6 | A |
| Hall Road (SR 35) | 1 | Alcoa Hwy (SR 115/US 129) MP 0.000 | Bessemer St MP 1.520 | 1.52 | 23,220 | 0.100 | 2322 | 45 | 2.0% | 45.0 | N/A | 17.1 | B |
| | 2 | Bessemer St MP 1.520 | E. Broadway/Old Knoxville Hwy (SR 33) MP 2.590 | 1.07 | 27,460 | 0.100 | 2746 | 35 | 2.0% | | | | |
| Washington Street (SR 35) | 1 | E. Broadway/Old Knoxville Hwy (SR 33) MP 2.590 | US 411 (SR 35) MP 2.820 | 0.23 | 24,450 | 0.100 | 2445 | 30 | 3.0% | | | | |
| | 2 | US 411 (SR 35) MP 0.000 | Lamar Alexander Pkwy (SR 73/US 321) MP 0.160 | 0.16 | 24,620 | 0.100 | 2462 | 30 | 2.0% | | | | |
| US 411 (SR 35) | 1 | Washington St (SR 35) MP 2.820 | S. Everett High Rd MP 3.690 | 0.87 | 13,910 | 0.110 | 1530 | 40 | 3.0% | | | | |
| | 2 | S. Everett High Rd MP 3.690 | Westfield Dr 4.527 | 0.84 | 10,660 | 0.100 | 1066 | 45 | 4.0% | 25.3 | 74.1 | N/A | E |
| | 3 | Westfield Dr 4.527 | Hitch Rd 7.254 | 2.73 | 6,950 | 0.100 | 695 | 45 | 7.0% | 27.2 | 65.3 | N/A | E |
| | 4 | Hitch Rd 7.254 | End of Study Area 7.990 | 0.74 | 6,510 | 0.100 | 651 | 45 | 7.0% | 27.5 | 63.6 | N/A | E |

Table 5: 2015 No-Build Corridor Levels of Service (cont.)

| Route | Section | Begin Milepoint | End Milepoint | Section Length (miles) | 2015 ADT | K-Factor | 2015 DHV | Posted Speed Limit (MPH) | % Trucks and Buses | Estimated Travel Speed (MPH) | % Time Spent Following | Density (pc/mi/ln) | LOS |
|---|---------|---|---|------------------------|----------|----------|----------|--------------------------|--------------------|------------------------------|------------------------|--------------------|-----|
| E. Broadway / Old Knoxville Highway (SR 33) | 1 | Beginning of Study Area MP 7.854 | Montgomery Lane MP 10.201 | 2.35 | 38,910 | 0.100 | 3891 | 50 | 9.0% | 50.0 | N/A | 32.4 | D |
| | 2 | Montgomery Lane MP 10.201 | Hall Rd MP 12.340 | 2.14 | 19,720 | 0.100 | 1972 | 30 | 9.0% | | | | |
| | 3 | Hall Rd MP 12.340 | Wildwood Rd MP 14.206 | 1.87 | 13,170 | 0.100 | 1317 | 30 | 2.0% | | | | |
| | 4 | Wildwood Rd MP 14.206 | Hunt Rd MP 15.470 | 1.26 | 13,330 | 0.100 | 1333 | 40 | 2.0% | | | | |
| | 5 | Hunt Rd MP 15.470 | Pellissippi Pky MP 15.920 | 0.45 | 34,350 | 0.110 | 3779 | 40 | 2.0% | | | | |
| | 6 | Pellissippi Pky MP 15.920 | Sam Houston School Rd MP 16.370 | 0.45 | 17,970 | 0.110 | 1977 | 40 | 2.0% | | | | |
| | 7 | Sam Houston School Rd MP 16.370 | County Line MP 20.660 | 4.29 | 12,920 | 0.120 | 1550 | 50 | 4.0% | 29.8 | 84.1 | N/A | E |
| Alcoa Highway (SR 115 / US 129) | 1 | Broadway Ave MP 10.450 | Lamar Alexander Pkwy (SR 73/US 321) MP 11.340 | 0.89 | 32,550 | 0.100 | 3255 | 50 | 10.0% | 49.0 | N/A | 26.3 | D |
| | 2 | Lamar Alexander Pkwy (SR 73/US 321) MP 11.340 | Louisville Rd (MP 13.020) | 2.94 | 48,130 | 0.100 | 4813 | 55 | 10.0% | 54.3 | N/A | 32.6 | D |
| | 3 | Louisville Rd (MP 13.020) | Hall Rd (SR 35) MP 14.280 | 1.26 | 45,020 | 0.100 | 4502 | 55 | 10.0% | 54.3 | N/A | 29.5 | D |
| | 4 | Hall Rd (SR 35) MP 14.280 | Hunt Rd MP 15.020 | 0.74 | 65,680 | 0.070 | 4598 | 55 | 8.0% | 52.0 | N/A | 35.7 | E |
| | 5 | Hunt Rd MP 15.020 | Relocated Alcoa Hwy MP 16.000 | 0.98 | 62,030 | 0.100 | 6203 | 50 | 8.0% | 45.8 | N/A | - | F |
| | 6 | Relocated Alcoa Hwy MP 16.000 | Pellissippi Pky MP 17.660 | 2.64 | 31,570 | 0.100 | 3157 | 50 | 8.0% | 45.8 | N/A | 21.9 | C |
| | 7 | Pellissippi Pky MP 17.660 | County Line MP 20.400 | 2.74 | 22,670 | 0.110 | 2494 | 55 | 8.0% | 51.8 | N/A | 16.2 | B |
| Sam Houston | 1 | SR 33 MP 0.000 | Wildwood Rd MP 2.650 | 2.65 | 5,520 | 0.160 | 883 | 45 | 2.0% | 31.7 | 60.4 | N/A | C |
| Peppermint Road | 1 | Wildwood Rd MP 0.000 | Sevierville Rd MP 1.100 | 1.10 | 3,440 | 0.150 | 516 | 35 | 2.0% | 30.1 | 41.8 | N/A | B |
| Hitch Road | 1 | Sevierville Rd MP 1.202 | Davis Ford Rd MP 0.000 | 1.20 | 1,420 | 0.150 | 213 | 25 | 1.0% | 27.4 | 25.1 | N/A | A |
| Helton Road | 1 | Davis Ford Rd MP 0.875 | Lamar Alexander Pkwy MP 0.000 | 0.88 | 370 | 0.150 | 56 | 25 | 1.0% | 29.3 | 10.1 | N/A | A |
| Tuckaleechee Pike | 1 | Lamar Alexander Pkwy 4.490 | Hubbard School Rd MP 4.189 | 0.30 | 1,760 | 0.110 | 194 | 45 | 0.0% | 40.1 | 42.0 | N/A | B |
| Relocated Alcoa Highway | 1 | Alcoa Highway (SR 115 / US 129) | Pellissippi Pky | Not Determined | 37,100 | 0.100 | 3710 | 55 | 8.0% | 52.4 | N/A | 16.7 | B |
| | 2 | Pellissippi Pky | Alcoa Highway (SR 115 / US 129) | Not Determined | 50,900 | 0.100 | 5090 | 55 | 8.0% | 52.4 | N/A | 26.2 | D |

Table 6: 2035 No-Build Corridor Levels of Service

| Route | Section | Begin Milepoint | End Milepoint | Section Length (miles) | 2035ADT | K-Factor | 2035 DHV | Posted Speed Limit (MPH) | % Trucks and Buses | Estimated Travel Speed (MPH) | % Time Spent Following | Density (pc/mi/ln) | LOS |
|--|---------|---|---|------------------------|---------|----------|----------|--------------------------|--------------------|------------------------------|------------------------|--------------------|-----|
| Wildwood Road | 1 | E. Broadway/Old Knoxville Hwy (SR 33) MP 0.000 | Reservoir Rd MP 1.309 | 1.31 | 6,250 | 0.110 | 688 | 45 | 2.0% | 30.7 | 63.0 | N/A | C |
| | 2 | Reservoir Rd MP 1.309 | Sam Houston School Rd MP 2.650 | 1.34 | 5,570 | 0.110 | 613 | 45 | 2.0% | 31.2 | 61.1 | N/A | C |
| | 3 | Sam Houston School Rd MP 2.650 | End of Study Area MP 4.740 | 2.09 | 5,800 | 0.110 | 638 | 45 | 2.0% | 31.1 | 61.6 | N/A | C |
| Pellissippi Parkway | 1 | Topside Rd MP 0.810 | Alcoa Hwy (SR 115/US 129) MP 2.240 | 1.43 | 62,310 | 0.120 | 7477 | 60 | 7.0% | - | N/A | - | F |
| | 2 | Alcoa Hwy (SR 115/US 129) MP 2.240 | Relocated Alcoa Highway MP 3.240 | 1.00 | 39,240 | 0.130 | 5101 | 60 | 5.0% | 57.5 | N/A | 26.5 | D |
| | 3 | Relocated Alcoa Highway MP 3.240 | E. Broadway/Old Knoxville Hwy (SR 33) MP 4.710 | 1.47 | 60,080 | 0.130 | 7810 | 60 | 5.0% | - | N/A | - | F |
| Lamar Alexander Parkway (SR 73 / US 321) | 1 | Beginning of Study Area MP 8.250 | Alcoa Hwy (SR 115/US 129) MP 10.570 | 2.32 | 45,270 | 0.110 | 4980 | 55 | 7.0% | 53.2 | N/A | 30.5 | D |
| | 2 | Alcoa Hwy (SR 115/US 129) MP 10.570 | E. Broadway/Old Knoxville Hwy (SR 33) MP 11.650 | 1.08 | 37,430 | 0.100 | 3743 | 45 | 7.0% | 45.0 | N/A | 28.6 | D |
| | 3 | E. Broadway/Old Knoxville Hwy (SR 33) MP 11.650 | Jones Ave MP 12.526 | 0.87 | 48,380 | 0.100 | 4838 | 40 | 7.0% | | | | |
| | 4 | Jones Ave MP 12.520 | Merritt Rd MP 13.980 | 1.46 | 38,610 | 0.100 | 3861 | 50 | 4.0% | 49.8 | N/A | 29.7 | D |
| | 5 | Merritt Rd MP 13.980 | Tuckaleechee Pk MP 17.020 | 3.04 | 41,200 | 0.100 | 4120 | 50 | 4.0% | 50.0 | N/A | 24.7 | C |
| | 6 | Tuckaleechee Pk MP 17.020 | Tuckaleechee Pk MP 17.320 | 0.30 | 25,560 | 0.100 | 2556 | 55 | 5.0% | 53.0 | N/A | 16.1 | B |
| | 7 | Tuckaleechee Pk MP 17.320 | Melrose Station Rd MP 20.020 | 2.70 | 32,620 | 0.100 | 3262 | 55 | 5.0% | 53.0 | N/A | 20.6 | C |
| | 8 | Melrose Station Rd MP 20.020 | Foothills Pkwy MP 22.400 | 2.38 | 19,200 | 0.100 | 1920 | 55 | 5.0% | 53.0 | N/A | 12.1 | B |
| Hall Road (SR 35) | 1 | Alcoa Hwy (SR 115/US 129) MP 0.000 | Bessemer St MP 1.520 | 1.52 | 23,220 | 0.100 | 2322 | 45 | 2.0% | 45.0 | N/A | 17.1 | B |
| | 2 | Bessemer St MP 1.520 | E. Broadway/Old Knoxville Hwy (SR 33) MP 2.590 | 1.07 | 27,460 | 0.100 | 2746 | 35 | 2.0% | | | | |
| Washington Street (SR 35) | 1 | E. Broadway/Old Knoxville Hwy (SR 33) MP 2.590 | US 411 (SR 35) MP 2.820 | 0.23 | 25,990 | 0.100 | 2599 | 30 | 3.0% | | | | |
| | 2 | US 411 (SR 35) MP 0.000 | Lamar Alexander Pkwy (SR 73/US 321) MP 0.160 | 0.16 | 37,890 | 0.100 | 3789 | 30 | 2.0% | | | | |
| US 411 (SR 35) | 1 | Washington St (SR 35) MP 2.820 | S. Everett High Rd MP 3.690 | 0.87 | 16,910 | 0.110 | 1860 | 40 | 3.0% | | | | |
| | 2 | S. Everett High Rd MP 3.690 | Westfield Dr 4.527 | 0.84 | 14,240 | 0.100 | 1424 | 45 | 4.0% | 22.6 | 81.2 | N/A | E |
| | 3 | Westfield Dr 4.527 | Hitch Rd 7.254 | 2.73 | 9,670 | 0.100 | 967 | 45 | 7.0% | 25.8 | 74.0 | N/A | E |
| | 4 | Hitch Rd 7.254 | End of Study Area 7.990 | 0.74 | 8,710 | 0.100 | 871 | 45 | 7.0% | 25.9 | 71.4 | N/A | E |

Table 6: 2035 No-Build Corridor Levels of Service (cont.)

| Route | Section | Begin Milepoint | End Milepoint | Section Length (miles) | 2035 ADT | K-Factor | 2035 DHV | Posted Speed Limit (MPH) | % Trucks and Buses | Estimated Travel Speed (MPH) | % Time Spent Following | Density (pc/mi/ln) | LOS |
|---|---------|---|---|------------------------|----------|----------|----------|--------------------------|--------------------|------------------------------|------------------------|--------------------|-----|
| E. Broadway / Old Knoxville Highway (SR 33) | 1 | Beginning of Study Area MP 7.854 | Montgomery Lane MP 10.201 | 2.35 | 46,990 | 0.100 | 4699 | 50 | 9.0% | 47.1 | N/A | 40.9 | E |
| | 2 | Montgomery Lane MP 10.201 | Hall Rd MP 12.340 | 2.14 | 30,940 | 0.100 | 3094 | 30 | 9.0% | | | | |
| | 3 | Hall Rd MP 12.340 | Wildwood Rd MP 14.206 | 1.87 | 25,060 | 0.100 | 2506 | 30 | 2.0% | | | | |
| | 4 | Wildwood Rd MP 14.206 | Hunt Rd MP 15.470 | 1.26 | 24,310 | 0.100 | 2431 | 40 | 2.0% | | | | |
| | 5 | Hunt Rd MP 15.470 | Pellissippi Pky MP 15.920 | 0.45 | 65,850 | 0.110 | 7244 | 40 | 2.0% | | | | |
| | 6 | Pellissippi Pky MP 15.920 | Sam Houston School Rd MP 16.370 | 0.45 | 29,910 | 0.110 | 3290 | 40 | 2.0% | | | | |
| | 7 | Sam Houston School Rd MP 16.370 | County Line MP 20.660 | 4.29 | 23,140 | 0.120 | 2777 | 50 | 4.0% | 19.5 | 96.6 | N/A | F |
| Alcoa Highway (SR 115 / US 129) | 1 | Broadway Ave MP 10.450 | Lamar Alexander Pkwy (SR 73/US 321) MP 11.340 | 0.89 | 37,280 | 0.100 | 3728 | 50 | 10.0% | 48.8 | N/A | 30.3 | D |
| | 2 | Lamar Alexander Pkwy (SR 73/US 321) MP 11.340 | Louisville Rd (MP 13.020) | 2.94 | 56,090 | 0.100 | 5609 | 55 | 10.0% | 51.1 | N/A | 39.3 | E |
| | 3 | Louisville Rd (MP 13.020) | Hall Rd (SR 35) MP 14.280 | 1.26 | 48,910 | 0.100 | 4891 | 55 | 10.0% | 52.9 | N/A | 32.5 | D |
| | 4 | Hall Rd (SR 35) MP 14.280 | Hunt Rd MP 15.020 | 0.74 | 69,570 | 0.070 | 4870 | 55 | 8.0% | 51.3 | N/A | 38.4 | E |
| | 5 | Hunt Rd MP 15.020 | Relocated Alcoa Hwy MP 16.000 | 0.98 | 71,500 | 0.100 | 7150 | 50 | 8.0% | - | N/A | - | F |
| | 6 | Relocated Alcoa Hwy MP 16.000 | Pellissippi Pky MP 17.660 | 2.64 | 40,280 | 0.100 | 4028 | 50 | 8.0% | 45.8 | N/A | 27.9 | D |
| | 7 | Pellissippi Pky MP 17.660 | County Line MP 20.400 | 2.74 | 26,060 | 0.110 | 2867 | 55 | 8.0% | 51.8 | N/A | 18.6 | C |
| Sam Houston | 1 | SR 33 MP 0.000 | Wildwood Rd MP 2.650 | 2.65 | 7,720 | 0.160 | 1235 | 45 | 2.0% | 29.1 | 70.1 | N/A | D |
| Peppermint Road | 1 | Wildwood Rd MP 0.000 | Sevierville Rd MP 1.100 | 1.10 | 4,820 | 0.150 | 723 | 35 | 2.0% | 28.2 | 53.2 | N/A | B |
| Hitch Road | 1 | Sevierville Rd MP 1.202 | Davis Ford Rd MP 0.000 | 1.20 | 1,980 | 0.150 | 297 | 25 | 1.0% | 26.3 | 32.0 | N/A | A |
| Helton Road | 1 | Davis Ford Rd MP 0.875 | Lamar Alexander Pkwy MP 0.000 | 0.88 | 520 | 0.150 | 78 | 25 | 1.0% | 29.0 | 12.4 | N/A | A |
| Tuckaleechee Pike | 1 | Lamar Alexander Pkwy 4.490 | Hubbard School Rd MP 4.189 | 0.30 | 2,360 | 0.110 | 260 | 45 | 0.0% | 38.8 | 47.4 | N/A | B |
| Relocated Alcoa Highway | 1 | Alcoa Highway (SR 115 / US 129) | Pellissippi Pky | Not Determined | 38,430 | 0.100 | 3710 | 55 | 8.0% | 52.4 | N/A | 19.1 | C |
| | 2 | Pellissippi Pky | Alcoa Highway (SR 115 / US 129) | Not Determined | 62,590 | 0.100 | 6259 | 55 | 8.0% | 51.2 | N/A | 26.2 | D |

Figure 4: Existing Segment Levels of Service

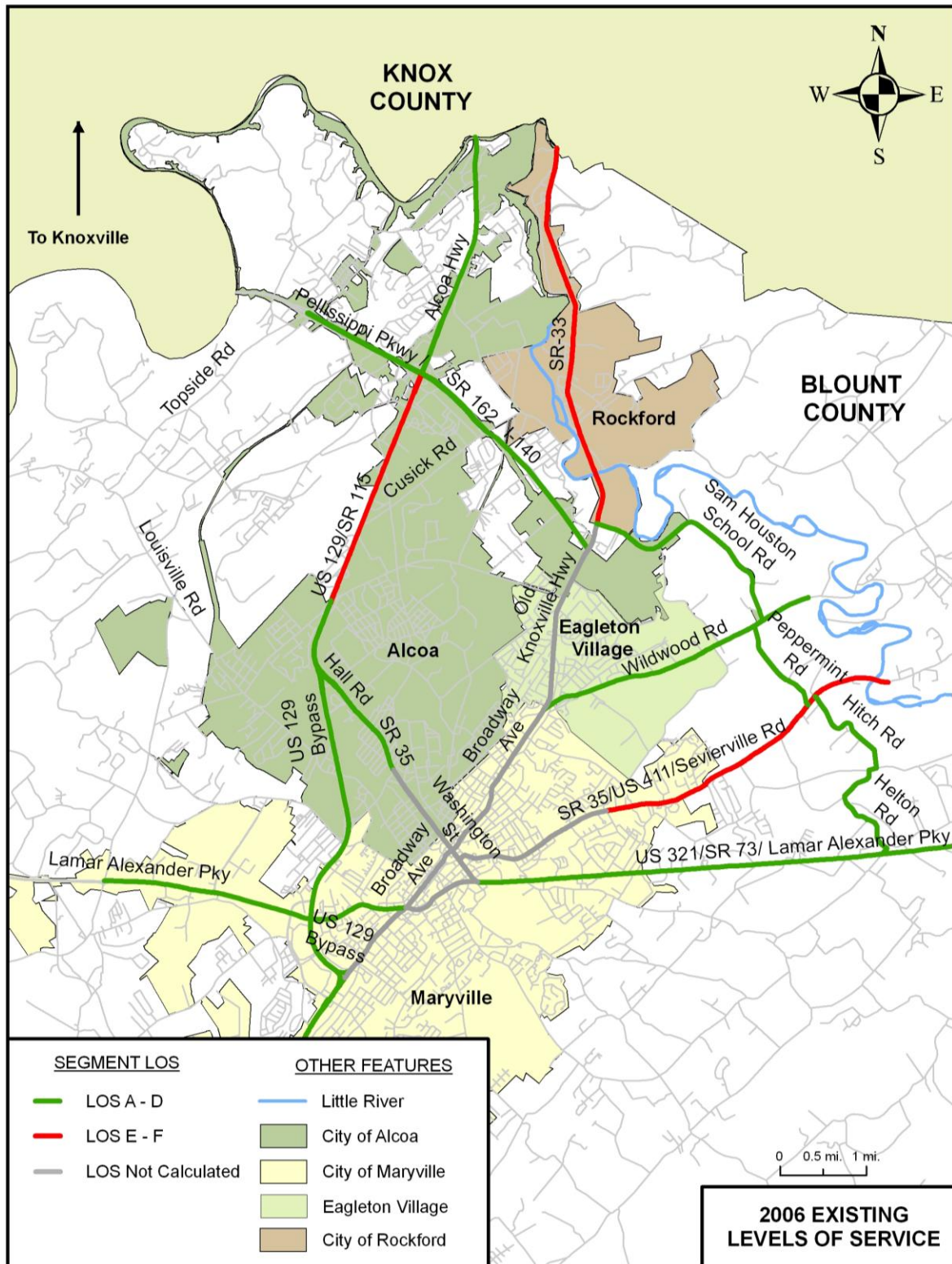
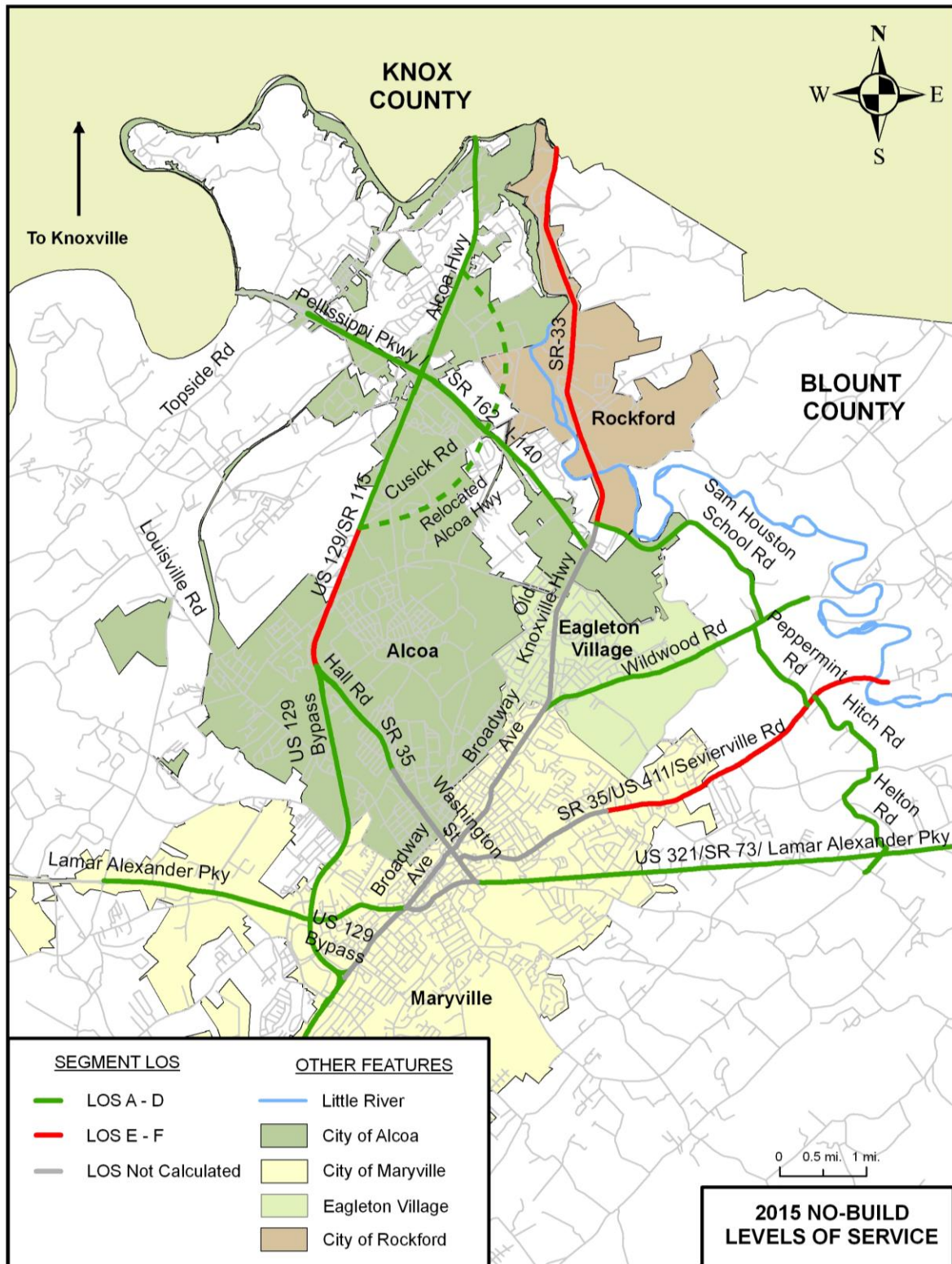
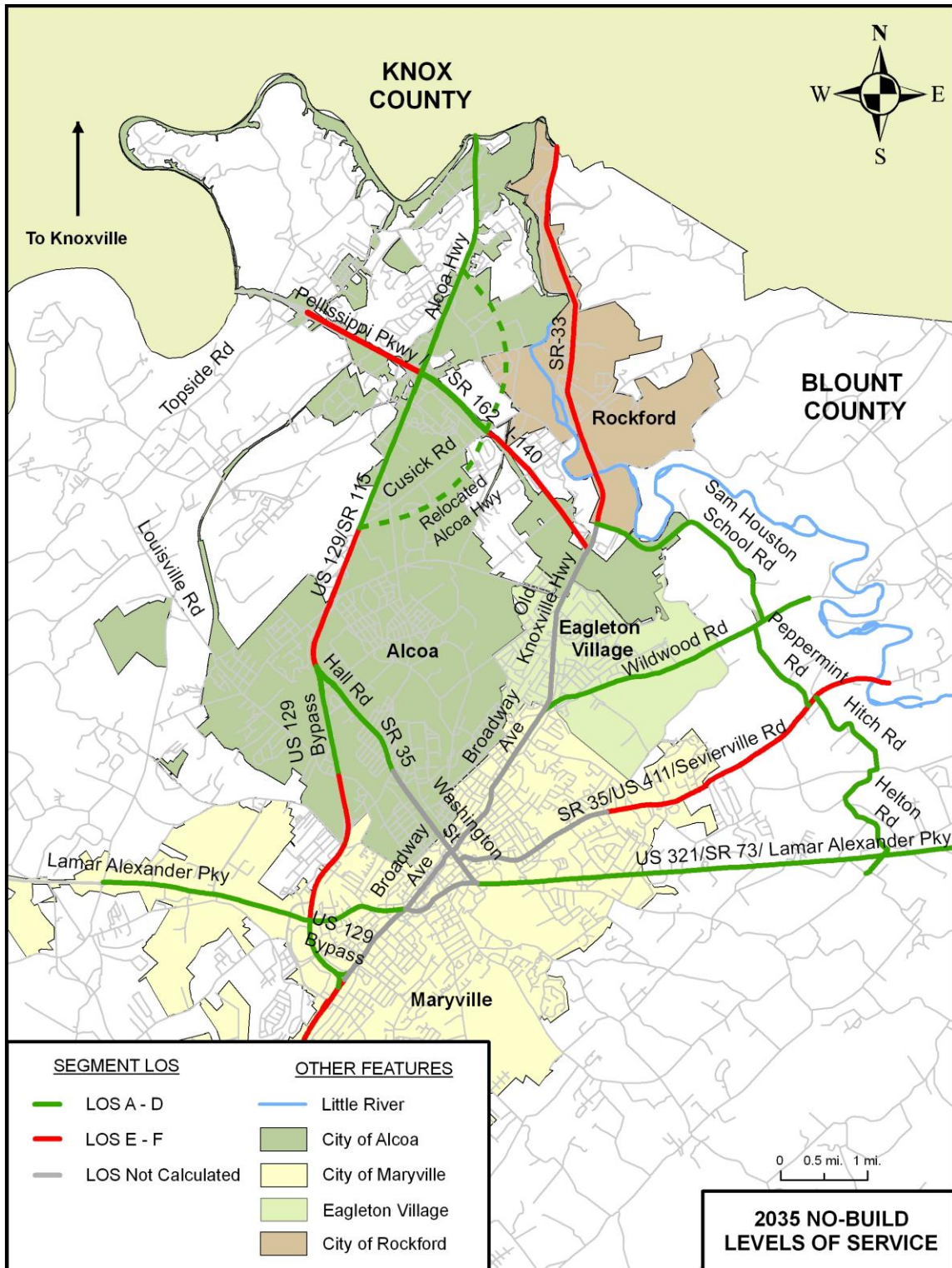


Figure 5: 2015 Segment No-Build Levels of Service



Note: The Relocated Alcoa Highway is shown for conceptual purposes only; no specific alignment or location has been determined.

Figure 6: 2035 Segment No-Build Levels of Service



Note: The Relocated Alcoa Highway is shown for conceptual purposes only; no specific alignment or location has been determined.

3.4 Build Corridor Level of Service Results

As mentioned previously in the Analysis of Alternatives section, according to the Knoxville Regional Travel Demand Model, there is little differentiation between Alternatives A and C. Therefore, the same traffic volumes and operations were assumed for both alternatives at this level of analysis. The forecasted Build Alternatives A and C traffic volumes (2015 and 2035) included as part of the 2007 Traffic Forecast Study prepared for this project by Sain Associates, Inc. were used (with the updates made based on the October 7, 2010 memorandum). Similar geometrics and factors used for the No-Build analysis were also used in this analysis. Forecasts for Alternative D were developed in February 2011 and used for this analysis to have comparable results among the project alternatives.

The following tables and figures, **Tables 7 – 10** and **Figures 7 – 10** show the resulting levels of service for each build alternative (Alternatives A / C and Alternative D).

Table 7: 2015 Build Corridor (Alternatives A/C) Levels of Service

| Route | Section | Begin Milepoint | End Milepoint | Section Length (miles) | 2015 ADT | K-Factor | 2015 DHV | Posted Speed Limit (MPH) | % Trucks and Buses | Estimated Travel Speed (MPH) | % Time Spent Following | Density (pc/mi/in) | LOS |
|--|---------|---|---|------------------------|----------|----------|----------|--------------------------|--------------------|------------------------------|------------------------|--------------------|-----|
| Wildwood Road | 1 | E. Broadway/Old Knoxville Hwy (SR 33) MP 0.000 | Reservoir Rd MP 1.309 | 1.31 | 4,940 | 0.110 | 543 | 45 | 2.0% | 31.6 | 59.3 | N/A | C |
| | 2 | Reservoir Rd MP 1.309 | Sam Houston School Rd MP 2.650 | 1.34 | 4,940 | 0.110 | 543 | 45 | 2.0% | 31.6 | 59.3 | N/A | C |
| | 3 | Sam Houston School Rd MP 2.650 | End of Study Area MP 4.740 | 2.09 | 4,940 | 0.110 | 543 | 45 | 2.0% | 31.6 | 59.3 | N/A | C |
| Pellissippi Parkway | 1 | Topside Rd MP 0.810 | Alcoa Hwy (SR 115/US 129) MP 2.240 | 1.43 | 46,740 | 0.120 | 5609 | 60 | 7.0% | 57.5 | N/A | 30.0 | D |
| | 2 | Alcoa Hwy (SR 115/US 129) MP 2.240 | Relocated Alcoa Highway MP 3.240 | 1.00 | 26,440 | 0.130 | 3437 | 60 | 5.0% | 57.5 | N/A | 17.8 | B |
| | 3 | Relocated Alcoa Highway MP 3.240 | E. Broadway/Old Knoxville Hwy (SR 33) MP 4.710 | 1.47 | 46,930 | 0.130 | 6101 | 60 | 5.0% | 57.3 | N/A | 31.8 | D |
| | 4 | E. Broadway/Old Knoxville Hwy (SR 33) MP 4.710 | US 411 (SR 35) | Not Determined | 36,230 | 0.130 | 4710 | 60 | 2.0% | 57.5 | N/A | 23.4 | C |
| | 5 | US 411 (SR 35) | Lamar Alexander Pkwy (SR 73 / US 321) | Not Determined | 26,780 | 0.130 | 3481 | 60 | 2.0% | 57.5 | N/A | 17.3 | B |
| Lamar Alexander Parkway (SR 73 / US 321) | 1 | Beginning of Study Area MP 8.250 | Alcoa Hwy (SR 115/US 129) MP 10.570 | 2.32 | 30,000 | 0.110 | 3300 | 55 | 7.0% | 54.0 | N/A | 19.9 | C |
| | 2 | Alcoa Hwy (SR 115/US 129) MP 10.570 | E. Broadway/Old Knoxville Hwy (SR 33) MP 11.650 | 1.08 | 27,910 | 0.100 | 2791 | 45 | 6.0% | 45.0 | N/A | 21.0 | C |
| | 3 | E. Broadway/Old Knoxville Hwy (SR 33) MP 11.650 | Jones Ave MP 12.526 | 0.87 | 37,160 | 0.100 | 3716 | 40 | 6.0% | | | | |
| | 4 | Jones Ave MP 12.520 | Merritt Rd MP 13.980 | 1.46 | 22,290 | 0.100 | 2229 | 50 | 3.0% | 50.0 | N/A | 16.8 | B |
| | 5 | Merritt Rd MP 13.980 | Tuckaleechee Pk MP 17.020 | 3.04 | 24,950 | 0.100 | 2495 | 50 | 3.0% | 50.0 | N/A | 14.8 | B |
| | 6 | Tuckaleechee Pk MP 17.020 | Tuckaleechee Pk MP 17.320 | 0.30 | 32,030 | 0.100 | 3203 | 55 | 4.0% | 53.0 | N/A | 19.9 | C |
| | 7 | Tuckaleechee Pk MP 17.320 | Melrose Station Rd MP 20.020 | 2.70 | 21,060 | 0.100 | 2106 | 55 | 5.0% | 53.0 | N/A | 13.3 | B |
| | 8 | Melrose Station Rd MP 20.020 | Foothills Pkwy MP 22.400 | 2.38 | 14,420 | 0.100 | 1442 | 55 | 5.0% | 53.0 | N/A | 9.1 | A |
| Hall Road (SR 35) | 1 | Alcoa Hwy (SR 115/US 129) MP 0.000 | Bessemer St MP 1.520 | 1.52 | 18,870 | 0.100 | 1887 | 45 | 2.0% | 45.0 | N/A | 13.9 | B |
| | 2 | Bessemer St MP 1.520 | E. Broadway/Old Knoxville Hwy (SR 33) MP 2.590 | 1.07 | 20,410 | 0.100 | 2041 | 35 | 2.0% | | | | |
| Washington Street (SR 35) | 1 | E. Broadway/Old Knoxville Hwy (SR 33) MP 2.590 | US 411 (SR 35) MP 2.820 | 0.23 | 18,650 | 0.100 | 1865 | 30 | 3.0% | | | | |
| | 2 | US 411 (SR 35) MP 0.000 | Lamar Alexander Pkwy (SR 73/US 321) MP 0.160 | 0.16 | 27,460 | 0.100 | 2746 | 30 | 2.0% | | | | |
| US 411 (SR 35) | 1 | Washington St (SR 35) MP 2.820 | S. Everett High Rd MP 3.690 | 0.87 | 13,490 | 0.110 | 1484 | 40 | 3.0% | | | | |
| | 2 | S. Everett High Rd MP 3.690 | Westfield Dr 4.527 | 0.84 | 12,990 | 0.100 | 1299 | 45 | 3.0% | 23.6 | 78.9 | N/A | E |
| | 3 | Westfield Dr 4.527 | Hitch Rd 7.254 | 2.73 | 12,990 | 0.100 | 1299 | 45 | 3.0% | 23.4 | 78.9 | N/A | E |
| | 4 | Hitch Rd 7.254 | End of Study Area 7.990 | 0.74 | 8,520 | 0.100 | 852 | 45 | 7.0% | 26.1 | 70.8 | N/A | E |

Table 7: 2015 Build Corridor (Alternatives A/C) Levels of Service (cont.)

| Route | Section | Begin Milepoint | End Milepoint | Section Length (miles) | 2015 ADT | K-Factor | 2015 DHV | Posted Speed Limit (MPH) | % Trucks and Buses | Estimated Travel Speed (MPH) | % Time Spent Following | Density (pc/mi/in) | LOS |
|---|---------|---|---|------------------------|----------|----------|----------|--------------------------|--------------------|------------------------------|------------------------|--------------------|-----|
| E. Broadway / Old Knoxville Highway (SR 33) | 1 | Beginning of Study Area MP 7.854 | Montgomery Lane MP 10.201 | 2.35 | 38,510 | 0.100 | 3851 | 50 | 9.0% | 49.3 | N/A | 32.0 | D |
| | 2 | Montgomery Lane MP 10.201 | Hall Rd MP 12.340 | 2.14 | 19,900 | 0.100 | 1990 | 30 | 9.0% | | | | |
| | 3 | Hall Rd MP 12.340 | Wildwood Rd MP 14.206 | 1.87 | 11,300 | 0.100 | 1130 | 30 | 3.0% | | | | |
| | 4 | Wildwood Rd MP 14.206 | Hunt Rd MP 15.470 | 1.26 | 11,210 | 0.100 | 1121 | 40 | 3.0% | | | | |
| | 5 | Hunt Rd MP 15.470 | Pellissippi Pky MP 15.920 | 0.45 | 38,200 | 0.110 | 4202 | 40 | 4.0% | | | | |
| | 6 | Pellissippi Pky MP 15.920 | Sam Houston School Rd MP 16.370 | 0.45 | 15,360 | 0.110 | 1690 | 40 | 2.0% | | | | |
| | 7 | Sam Houston School Rd MP 16.370 | County Line MP 20.660 | 4.29 | 15,360 | 0.120 | 1843 | 50 | 2.0% | 27.6 | 87.6 | N/A | E |
| Alcoa Highway (SR 115 / US 129) | 1 | Broadway Ave MP 10.450 | Lamar Alexander Pkwy (SR 73/US 321) MP 11.340 | 0.89 | 31,840 | 0.100 | 3184 | 50 | 10.0% | 49.0 | N/A | 25.7 | C |
| | 2 | Lamar Alexander Pkwy (SR 73/US 321) MP 11.340 | Louisville Rd (MP 13.020) | 2.94 | 46,180 | 0.100 | 4618 | 55 | 8.0% | 53.5 | N/A | 30.1 | D |
| | 3 | Louisville Rd (MP 13.020) | Hall Rd (SR 35) MP 14.280 | 1.26 | 40,350 | 0.100 | 4035 | 55 | 8.0% | 54.3 | N/A | 25.4 | C |
| | 4 | Hall Rd (SR 35) MP 14.280 | Hunt Rd MP 15.020 | 0.74 | 57,950 | 0.070 | 4057 | 55 | 8.0% | 53.3 | N/A | 30.8 | D |
| | 5 | Hunt Rd MP 15.020 | Relocated Alcoa Hwy MP 16.000 | 0.98 | 59,510 | 0.100 | 5951 | 50 | 8.0% | 45.8 | N/A | - | F |
| | 6 | Relocated Alcoa Hwy MP 16.000 | Pellissippi Pky MP 17.660 | 2.64 | 35,480 | 0.100 | 3548 | 50 | 8.0% | 45.8 | N/A | 24.6 | C |
| | 7 | Pellissippi Pky MP 17.660 | County Line MP 20.400 | 2.74 | 31,870 | 0.110 | 3506 | 55 | 8.0% | 51.8 | N/A | 22.7 | C |
| Sam Houston | 1 | SR 33 MP 0.000 | Wildwood Rd MP 2.650 | 2.65 | - | - | - | - | - | - | - | - | - |
| Peppermint Road | 1 | Wildwood Rd MP 0.000 | Sevierville Rd MP 1.100 | 1.10 | - | - | - | - | - | - | - | - | - |
| Hitch Road | 1 | Sevierville Rd MP 1.202 | Davis Ford Rd MP 0.000 | 1.20 | - | - | - | - | - | - | - | - | - |
| Helton Road | 1 | Davis Ford Rd MP 0.875 | Lamar Alexander Pkwy MP 0.000 | 0.88 | - | - | - | - | - | - | - | - | - |
| Tuckaleechee Pike | 1 | Lamar Alexander Pkwy 4.490 | Hubbard School Rd MP 4.189 | 0.30 | - | - | - | - | - | - | - | - | - |
| Relocated Alcoa Highway | 1 | Alcoa Highway (SR 115 / US 129) | Pellissippi Pky | Not Determined | 30,170 | 0.100 | 3017 | 55 | 8.0% | 52.4 | N/A | 15.5 | B |
| | 2 | Pellissippi Pky | Alcoa Highway (SR 115 / US 129) | Not Determined | 50,300 | 0.100 | 5030 | 55 | 8.0% | 52.4 | N/A | 25.9 | C |

Table 8: 2015 Build Corridor (Alternative D) Level of Service

| Route | Section | Begin Milepoint | End Milepoint | Section Length (miles) | 2015ADT | K-Factor | 2015 DHV | Posted Speed Limit (MPH) | % Trucks and Buses | Estimated Travel Speed (MPH) | % Time Spent Following | Density (pc/mi/ln) | LOS |
|--|---------|---|---|------------------------|---------|----------|----------|--------------------------|--------------------|------------------------------|------------------------|--------------------|-----|
| Wildwood Road | 1 | E. Broadway/Old Knoxville Hwy (SR 33) MP 0.000 | Reservoir Rd MP 1.309 | 1.31 | 8,360 | 0.110 | 920 | 45 | 2.0% | 29.1 | 71.0 | N/A | D |
| | 2 | Reservoir Rd MP 1.309 | Sam Houston School Rd MP 2.650 | 1.34 | 8,360 | 0.110 | 920 | 45 | 2.0% | 29.1 | 71.0 | N/A | D |
| | 3 | Sam Houston School Rd MP 2.650 | End of Study Area MP 4.740 | 2.09 | 5,760 | 0.110 | 634 | 45 | 3.0% | 31.1 | 61.6 | N/A | C |
| Pellissippi Parkway | 1 | Topside Rd MP 0.810 | Alcoa Hwy (SR 115/US 129) MP 2.240 | 1.43 | 39,830 | 0.120 | 4780 | 60 | 7.0% | 57.5 | N/A | 25.5 | C |
| | 2 | Alcoa Hwy (SR 115/US 129) MP 2.240 | Relocated Alcoa Highway MP 3.240 | 1.00 | 24,260 | 0.130 | 3154 | 60 | 5.0% | 57.5 | N/A | 16.4 | B |
| | 3 | Relocated Alcoa Highway MP 3.240 | E. Broadway/Old Knoxville Hwy (SR 33) MP 4.710 | 1.47 | 38,860 | 0.130 | 5052 | 60 | 5.0% | 57.5 | N/A | 26.2 | D |
| Lamar Alexander Parkway (SR 73 / US 321) | 1 | Beginning of Study Area MP 8.250 | Alcoa Hwy (SR 115/US 129) MP 10.570 | 2.32 | 25,320 | 0.110 | 2785 | 55 | 7.0% | 54.0 | N/A | 16.8 | B |
| | 2 | Alcoa Hwy (SR 115/US 129) MP 10.570 | E. Broadway/Old Knoxville Hwy (SR 33) MP 11.650 | 1.08 | 27,930 | 0.100 | 2793 | 45 | 6.0% | 45.0 | N/A | 21.0 | C |
| | 3 | E. Broadway/Old Knoxville Hwy (SR 33) MP 11.650 | Jones Ave MP 12.526 | 0.87 | 37,700 | 0.100 | 3770 | 40 | 6.0% | | | | |
| | 4 | Jones Ave MP 12.520 | Merritt Rd MP 13.980 | 1.46 | 25,850 | 0.100 | 2585 | 50 | 3.0% | 50.0 | N/A | 19.5 | C |
| | 5 | Merritt Rd MP 13.980 | Tuckaleechee Pk MP 17.020 | 3.04 | 19,620 | 0.100 | 1962 | 50 | 3.0% | 50.0 | N/A | 11.6 | B |
| | 6 | Tuckaleechee Pk MP 17.020 | Tuckaleechee Pk MP 17.320 | 0.30 | 21,930 | 0.100 | 2193 | 55 | 5.0% | 53.0 | N/A | 16.1 | B |
| | 7 | Tuckaleechee Pk MP 17.320 | Melrose Station Rd MP 20.020 | 2.70 | 20,220 | 0.100 | 2022 | 55 | 5.0% | 53.0 | N/A | 12.8 | B |
| | 8 | Melrose Station Rd MP 20.020 | Foothills Pkwy MP 22.400 | 2.38 | 13,580 | 0.100 | 1358 | 55 | 5.0% | 53.0 | N/A | 8.5 | A |
| Hall Road (SR 35) | 1 | Alcoa Hwy (SR 115/US 129) MP 0.000 | Bessemer St MP 1.520 | 1.52 | 21,720 | 0.100 | 2172 | 45 | 2.0% | 45.0 | N/A | 16.0 | B |
| | 2 | Bessemer St MP 1.520 | E. Broadway/Old Knoxville Hwy (SR 33) MP 2.590 | 1.07 | 26,660 | 0.100 | 2666 | 35 | 2.0% | | | | |
| Washington Street (SR 35) | 1 | E. Broadway/Old Knoxville Hwy (SR 33) MP 2.590 | US 411 (SR 35) MP 2.820 | 0.23 | 25,610 | 0.100 | 2561 | 30 | 3.0% | | | | |
| | 2 | US 411 (SR 35) MP 0.000 | Lamar Alexander Pkwy (SR 73/US 321) MP 0.160 | 0.16 | 36,200 | 0.100 | 3620 | 30 | 2.0% | | | | |
| US 411 (SR 35) | 1 | Washington St (SR 35) MP 2.820 | S. Everett High Rd MP 3.690 | 0.87 | 13,490 | 0.110 | 1484 | 40 | 3.0% | | | | |
| | 2 | S. Everett High Rd MP 3.690 | Westfield Dr 4.527 | 0.84 | 13,220 | 0.100 | 1322 | 45 | 3.0% | 23.4 | 79.3 | N/A | E |
| | 3 | Westfield Dr 4.527 | Hitch Rd 7.254 | 2.73 | 13,220 | 0.100 | 1322 | 45 | 3.0% | 23.2 | 79.3 | N/A | E |
| | 4 | Hitch Rd 7.254 | End of Study Area 7.990 | 0.74 | 8,750 | 0.100 | 875 | 45 | 7.0% | 25.9 | 71.5 | N/A | E |

Table 8: 2015 Build Corridor (Alternative D) Level of Service (cont.)

| Route | Section | Begin Milepoint | End Milepoint | Section Length (miles) | 2015 ADT | K-Factor | 2015 DHV | Posted Speed Limit (MPH) | % Trucks and Buses | Estimated Travel Speed (MPH) | % Time Spent Following | Density (pc/mi/ln) | LOS |
|---|---------|---|---|------------------------|----------|----------|----------|--------------------------|--------------------|------------------------------|------------------------|--------------------|-----|
| E. Broadway / Old Knoxville Highway (SR 33) | 1 | Beginning of Study Area MP 7.854 | Montgomery Lane MP 10.201 | 2.35 | 38,960 | 0.100 | 3896 | 50 | 9.0% | 49.2 | N/A | 32.4 | D |
| | 2 | Montgomery Lane MP 10.201 | Hall Rd MP 12.340 | 2.14 | 20,390 | 0.100 | 2039 | 30 | 9.0% | | | | |
| | 3 | Hall Rd MP 12.340 | Wildwood Rd MP 14.206 | 1.87 | 12,820 | 0.100 | 1282 | 30 | 3.0% | | | | |
| | 4 | Wildwood Rd MP 14.206 | Hunt Rd MP 15.470 | 1.26 | 12,860 | 0.100 | 1286 | 40 | 3.0% | | | | |
| | 5 | Hunt Rd MP 15.470 | Pellissippi Pky MP 15.920 | 0.45 | 30,940 | 0.110 | 3403 | 40 | 4.0% | | | | |
| | 6 | Pellissippi Pky MP 15.920 | Sam Houston School Rd MP 16.370 | 0.45 | 18,680 | 0.110 | 2055 | 40 | 2.0% | | | | |
| | 7 | Sam Houston School Rd MP 16.370 | County Line MP 20.660 | 4.29 | 7,530 | 0.120 | 904 | 50 | 4.0% | 33.9 | 73.1 | N/A | E |
| Alcoa Highway (SR 115 / US 129) | 1 | Broadway Ave MP 10.450 | Lamar Alexander Pkwy (SR 73/US 321) MP 11.340 | 0.89 | 32,000 | 0.100 | 3200 | 50 | 10.0% | 49.0 | N/A | 25.9 | C |
| | 2 | Lamar Alexander Pkwy (SR 73/US 321) MP 11.340 | Louisville Rd (MP 13.020) | 2.94 | 47,680 | 0.100 | 4768 | 55 | 8.0% | 53.2 | N/A | 31.2 | D |
| | 3 | Louisville Rd (MP 13.020) | Hall Rd (SR 35) MP 14.280 | 1.26 | 44,570 | 0.100 | 4457 | 55 | 8.0% | 53.8 | N/A | 28.3 | D |
| | 4 | Hall Rd (SR 35) MP 14.280 | Hunt Rd MP 15.020 | 0.74 | 63,780 | 0.070 | 4465 | 55 | 8.0% | 52.4 | N/A | 34.5 | D |
| | 5 | Hunt Rd MP 15.020 | Relocated Alcoa Hwy MP 16.000 | 0.98 | 62,470 | 0.100 | 6247 | 50 | 8.0% | 45.8 | N/A | - | F |
| | 6 | Relocated Alcoa Hwy MP 16.000 | Pellissippi Pky MP 17.660 | 2.64 | 33,780 | 0.100 | 3378 | 50 | 8.0% | 45.8 | N/A | 23.4 | C |
| | 7 | Pellissippi Pky MP 17.660 | County Line MP 20.400 | 2.74 | 31,190 | 0.110 | 3431 | 55 | 8.0% | 51.8 | N/A | 22.3 | C |
| Sam Houston | 1 | SR 33 MP 0.000 | Wildwood Rd MP 2.650 | 2.65 | 15,740 | 0.160 | 2518 | 50 | 2.0% | 27.0 | 94.4 | N/A | F |
| Peppermint Road | 1 | Wildwood Rd MP 0.000 | Sevierville Rd MP 1.100 | 1.10 | 20,890 | 0.150 | 3134 | 50 | 2.0% | - | 98.2 | N/A | F |
| Hitch Road | 1 | Sevierville Rd MP 1.202 | Davis Ford Rd MP 0.000 | 1.20 | 13,880 | 0.150 | 2082 | 50 | 1.0% | 30.8 | 90.3 | N/A | E |
| Helton Road | 1 | Davis Ford Rd MP 0.875 | Lamar Alexander Pkwy MP 0.000 | 0.88 | 13,880 | 0.150 | 2082 | 50 | 1.0% | 30.8 | 90.3 | N/A | E |
| Tuckaleechee Pike | 1 | Lamar Alexander Pkwy 4.490 | Hubbard School Rd MP 4.189 | 0.30 | 2,860 | 0.110 | 315 | 50 | 1.0% | 41.2 | 51.6 | N/A | D |
| Relocated Alcoa Highway | 1 | Alcoa Highway (SR 115 / US 129) | Pellissippi Pky | Not Determined | 33,570 | 0.100 | 3357 | 55 | 8.0% | 52.4 | N/A | 17.3 | B |
| | 2 | Pellissippi Pky | Alcoa Highway (SR 115 / US 129) | Not Determined | 44,720 | 0.100 | 4472 | 55 | 8.0% | 52.4 | N/A | 23.0 | C |

Table 9: 2035 Build Corridor (Alternatives A/C) Levels of Service

| Route | Section | Begin Milepoint | End Milepoint | Section Length (miles) | 2035 ADT | K-Factor | 2035 DHV | Posted Speed Limit (MPH) | % Trucks and Buses | Estimated Travel Speed (MPH) | % Time Spent Following | Density (pc/mi/ln) | LOS |
|--|---------|---|---|------------------------|----------|----------|----------|--------------------------|--------------------|------------------------------|------------------------|--------------------|-----|
| Wildwood Road | 1 | E. Broadway/Old Knoxville Hwy (SR 33) MP 0.000 | Reservoir Rd MP 1.309 | 1.31 | 4,720 | 0.110 | 519 | 45 | 2.0% | 31.8 | 58.6 | N/A | C |
| | 2 | Reservoir Rd MP 1.309 | Sam Houston School Rd MP 2.650 | 1.34 | 4,720 | 0.110 | 519 | 45 | 2.0% | 31.8 | 58.6 | N/A | C |
| | 3 | Sam Houston School Rd MP 2.650 | End of Study Area MP 4.740 | 2.09 | 4,720 | 0.110 | 519 | 45 | 2.0% | 31.8 | 58.6 | N/A | C |
| Pellissippi Parkway | 1 | Topside Rd MP 0.810 | Alcoa Hwy (SR 115/US 129) MP 2.240 | 1.43 | 63,690 | 0.120 | 7643 | 60 | 7.0% | 57.5 | N/A | - | F |
| | 2 | Alcoa Hwy (SR 115/US 129) MP 2.240 | Relocated Alcoa Highway MP 3.240 | 1.00 | 28,410 | 0.130 | 3693 | 60 | 5.0% | 57.5 | N/A | 19.2 | C |
| | 3 | Relocated Alcoa Highway MP 3.240 | E. Broadway/Old Knoxville Hwy (SR 33) MP 4.710 | 1.47 | 76,720 | 0.130 | 9974 | 60 | 5.0% | 57.5 | N/A | - | F |
| | 4 | E. Broadway/Old Knoxville Hwy (SR 33) MP 4.710 | US 411 (SR 35) | Not Determined | 63,380 | 0.130 | 8239 | 60 | 2.0% | 57.5 | N/A | - | F |
| | 5 | US 411 (SR 35) | Lamar Alexander Pkwy (SR 73 / US 321) | Not Determined | 52,880 | 0.130 | 6874 | 60 | 2.0% | 56.4 | N/A | 34.9 | D |
| | 6 | Lamar Alexander Pkwy (SR 73 / US 321) | South of Lamar Alexander Pkwy (SR 73 / US 321) | Not Determined | 16,980 | 0.130 | 2207 | 60 | 2.0% | 57.5 | N/A | 11.0 | A |
| Lamar Alexander Parkway (SR 73 / US 321) | 1 | Beginning of Study Area MP 8.250 | Alcoa Hwy (SR 115/US 129) MP 10.570 | 2.32 | 45,980 | 0.110 | 5058 | 55 | 7.0% | 53.8 | N/A | 27.1 | D |
| | 2 | Alcoa Hwy (SR 115/US 129) MP 10.570 | E. Broadway/Old Knoxville Hwy (SR 33) MP 11.650 | 1.08 | 37,320 | 0.100 | 3732 | 45 | 6.0% | 45.0 | N/A | 22.1 | D |
| | 3 | E. Broadway/Old Knoxville Hwy (SR 33) MP 11.650 | Jones Ave MP 12.526 | 0.87 | 49,000 | 0.100 | 4900 | 40 | 6.0% | | | | |
| | 4 | Jones Ave MP 12.520 | Merritt Rd MP 13.980 | 1.46 | 34,190 | 0.100 | 3419 | 50 | 3.0% | 50.0 | N/A | 13.9 | C |
| | 5 | Merritt Rd MP 13.980 | Tuckaleechee Pk MP 17.020 | 3.04 | 34,560 | 0.100 | 3456 | 50 | 3.0% | 50.0 | N/A | 19.6 | C |
| | 6 | Tuckaleechee Pk MP 17.020 | Tuckaleechee Pk MP 17.320 | 0.30 | 42,820 | 0.100 | 4282 | 55 | 4.0% | 53.0 | N/A | 31.5 | D |
| | 7 | Tuckaleechee Pk MP 17.320 | Melrose Station Rd MP 20.020 | 2.70 | 37,000 | 0.100 | 3700 | 55 | 5.0% | 53.0 | N/A | 23.3 | C |
| | 8 | Melrose Station Rd MP 20.020 | Foothills Pkwy MP 22.400 | 2.38 | 19,940 | 0.100 | 1994 | 55 | 5.0% | 53.0 | N/A | 12.6 | B |
| Hall Road (SR 35) | 1 | Alcoa Hwy (SR 115/US 129) MP 0.000 | Bessemer St MP 1.520 | 1.52 | 17,730 | 0.100 | 1773 | 45 | 2.0% | 45.0 | N/A | 13.1 | B |
| | 2 | Bessemer St MP 1.520 | E. Broadway/Old Knoxville Hwy (SR 33) MP 2.590 | 1.07 | 21,520 | 0.100 | 2152 | 35 | 2.0% | | | | |
| Washington Street (SR 35) | 1 | E. Broadway/Old Knoxville Hwy (SR 33) MP 2.590 | US 411 (SR 35) MP 2.820 | 0.23 | 22,090 | 0.100 | 2209 | 30 | 3.0% | | | | |
| | 2 | US 411 (SR 35) MP 0.000 | Lamar Alexander Pkwy (SR 73/US 321) MP 0.160 | 0.16 | 33,060 | 0.100 | 3306 | 30 | 2.0% | | | | |
| US 411 (SR 35) | 1 | Washington St (SR 35) MP 2.820 | S. Everett High Rd MP 3.690 | 0.87 | 14,920 | 0.110 | 1641 | 40 | 3.0% | | | | |
| | 2 | S. Everett High Rd MP 3.690 | Westfield Dr 4.527 | 0.84 | 13,610 | 0.100 | 1361 | 45 | 3.0% | 23.1 | 80.1 | N/A | E |
| | 3 | Westfield Dr 4.527 | Hitch Rd 7.254 | 2.73 | 13,610 | 0.100 | 1361 | 45 | 3.0% | 22.9 | 80.1 | N/A | E |
| | 4 | Hitch Rd 7.254 | End of Study Area 7.990 | 0.74 | 10,650 | 0.100 | 1065 | 45 | 7.0% | 25.2 | 74.0 | N/A | E |

Table 9: 2035 Build Corridor (Alternatives A/C) Levels of Service (cont.)

| Route | Section | Begin Milepoint | End Milepoint | Section Length (miles) | 2035 ADT | K-Factor | 2035 DHV | Posted Speed Limit (MPH) | % Trucks and Buses | Estimated Travel Speed (MPH) | % Time Spent Following | Density (pc/mi/ln) | LOS |
|---|---------|---|---|------------------------|----------|----------|----------|--------------------------|--------------------|------------------------------|------------------------|--------------------|-----|
| E. Broadway / Old Knoxville Highway (SR 33) | 1 | Beginning of Study Area MP 7.854 | Montgomery Lane MP 10.201 | 2.35 | 46,770 | 0.100 | 4677 | 50 | 9.0% | 47.1 | N/A | 40.6 | E |
| | 2 | Montgomery Lane MP 10.201 | Hall Rd MP 12.340 | 2.14 | 30,080 | 0.100 | 3008 | 30 | 9.0% | | | | |
| | 3 | Hall Rd MP 12.340 | Wildwood Rd MP 14.206 | 1.87 | 18,550 | 0.100 | 1855 | 30 | 3.0% | | | | |
| | 4 | Wildwood Rd MP 14.206 | Hunt Rd MP 15.470 | 1.26 | 18,350 | 0.100 | 1835 | 40 | 3.0% | | | | |
| | 5 | Hunt Rd MP 15.470 | Pellissippi Pky MP 15.920 | 0.45 | 74,860 | 0.110 | 8235 | 40 | 4.0% | | | | |
| | 6 | Pellissippi Pky MP 15.920 | Sam Houston School Rd MP 16.370 | 0.45 | 27,280 | 0.110 | 3001 | 40 | 2.0% | | | | |
| | 7 | Sam Houston School Rd MP 16.370 | County Line MP 20.660 | 4.29 | 27,280 | 0.120 | 3274 | 50 | 2.0% | - | 99.1 | N/A | F |
| Alcoa Highway (SR 115 / US 129) | 1 | Broadway Ave MP 10.450 | Lamar Alexander Pkwy (SR 73/US 321) MP 11.340 | 0.89 | 37,250 | 0.100 | 3725 | 50 | 10.0% | 48.8 | N/A | 30.2 | D |
| | 2 | Lamar Alexander Pkwy (SR 73/US 321) MP 11.340 | Louisville Rd (MP 13.020) | 2.94 | 53,740 | 0.100 | 5374 | 55 | 8.0% | 52.0 | N/A | 36.0 | E |
| | 3 | Louisville Rd (MP 13.020) | Hall Rd (SR 35) MP 14.280 | 1.26 | 44,430 | 0.100 | 4443 | 55 | 8.0% | 53.9 | N/A | 28.2 | D |
| | 4 | Hall Rd (SR 35) MP 14.280 | Hunt Rd MP 15.020 | 0.74 | 60,970 | 0.070 | 4268 | 55 | 8.0% | 54.2 | N/A | 26.1 | D |
| | 5 | Hunt Rd MP 15.020 | Relocated Alcoa Hwy MP 16.000 | 0.98 | 67,780 | 0.100 | 6778 | 50 | 8.0% | 45.8 | N/A | - | F |
| | 6 | Relocated Alcoa Hwy MP 16.000 | Pellissippi Pky MP 17.660 | 2.64 | 39,980 | 0.100 | 3998 | 50 | 8.0% | 45.8 | N/A | 27.7 | D |
| | 7 | Pellissippi Pky MP 17.660 | County Line MP 20.400 | 2.74 | 30,120 | 0.110 | 3313 | 55 | 8.0% | 51.8 | N/A | 21.5 | C |
| Sam Houston | 1 | SR 33 MP 0.000 | Wildwood Rd MP 2.650 | 2.65 | - | - | - | - | - | - | - | - | - |
| Peppermint Road | 1 | Wildwood Rd MP 0.000 | Sevierville Rd MP 1.100 | 1.10 | - | - | - | - | - | - | - | - | - |
| Hitch Road | 1 | Sevierville Rd MP 1.202 | Davis Ford Rd MP 0.000 | 1.20 | - | - | - | - | - | - | - | - | - |
| Helton Road | 1 | Davis Ford Rd MP 0.875 | Lamar Alexander Pkwy MP 0.000 | 0.88 | - | - | - | - | - | - | - | - | - |
| Tuckaleechee Pike | 1 | Lamar Alexander Pkwy 4.490 | Hubbard School Rd MP 4.189 | 0.30 | - | - | - | - | - | - | - | - | - |
| Relocated Alcoa Highway | 1 | Alcoa Highway (SR 115 / US 129) | Pellissippi Pky | Not Determined | 36,690 | 0.100 | 3669 | 55 | 8.0% | 52.4 | N/A | 18.9 | C |
| | 2 | Pellissippi Pky | Alcoa Highway (SR 115 / US 129) | Not Determined | 65,930 | 0.100 | 6593 | 55 | 8.0% | 50.6 | N/A | 35.1 | E |

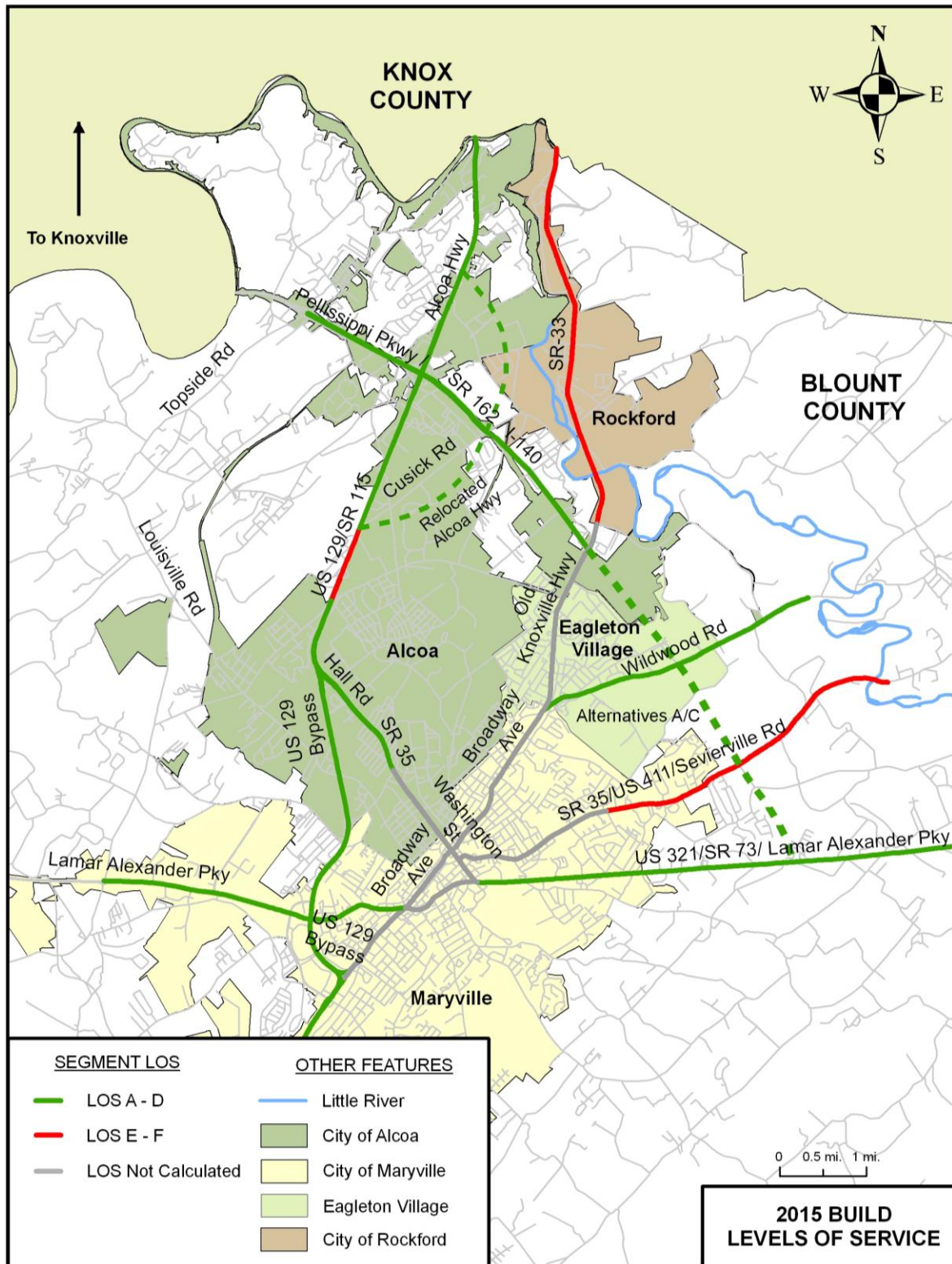
Table 10: 2035 Build Corridor (Alternative D) Level of Service

| Route | Section | Begin Milepoint | End Milepoint | Section Length (miles) | 2035 ADT | K-Factor | 2035 DHV | Posted Speed Limit (MPH) | % Trucks and Buses | Estimated Travel Speed (MPH) | % Time Spent Following | Density (pc/mi/ln) | LOS |
|--|---------|---|---|------------------------|----------|----------|----------|--------------------------|--------------------|------------------------------|------------------------|--------------------|-----|
| Wildwood Road | 1 | E. Broadway/Old Knoxville Hwy (SR 33) MP 0.000 | Reservoir Rd MP 1.309 | 1.31 | 15,520 | 0.110 | 1707 | 45 | 2.0% | 23.5 | 85.4 | N/A | E |
| | 2 | Reservoir Rd MP 1.309 | Sam Houston School Rd MP 2.650 | 1.34 | 15,520 | 0.110 | 1707 | 45 | 2.0% | 23.5 | 85.4 | N/A | E |
| | 3 | Sam Houston School Rd MP 2.650 | End of Study Area MP 4.740 | 2.09 | 8,050 | 0.110 | 886 | 45 | 3.0% | 29.2 | 70.1 | N/A | D |
| Pellissippi Parkway | 1 | Topside Rd MP 0.810 | Alcoa Hwy (SR 115/US 129) MP 2.240 | 1.43 | 59,740 | 0.120 | 7169 | 60 | 7.0% | 52.6 | N/A | 41.8 | E |
| | 2 | Alcoa Hwy (SR 115/US 129) MP 2.240 | Relocated Alcoa Highway MP 3.240 | 1.00 | 41,990 | 0.130 | 5459 | 60 | 5.0% | 57.5 | N/A | 28.3 | D |
| | 3 | Relocated Alcoa Highway MP 3.240 | E. Broadway/Old Knoxville Hwy (SR 33) MP 4.710 | 1.47 | 61,800 | 0.130 | 8034 | 60 | 5.0% | 57.5 | N/A | - | F |
| Lamar Alexander Parkway (SR 73 / US 321) | 1 | Beginning of Study Area MP 8.250 | Alcoa Hwy (SR 115/US 129) MP 10.570 | 2.32 | 35,290 | 0.110 | 3882 | 55 | 7.0% | 54.0 | N/A | 23.4 | C |
| | 2 | Alcoa Hwy (SR 115/US 129) MP 10.570 | E. Broadway/Old Knoxville Hwy (SR 33) MP 11.650 | 1.08 | 34,260 | 0.100 | 3426 | 45 | 6.0% | 45.0 | N/A | 25.8 | C |
| | 3 | E. Broadway/Old Knoxville Hwy (SR 33) MP 11.650 | Jones Ave MP 12.526 | 0.87 | 45,190 | 0.100 | 4519 | 40 | 6.0% | | | | |
| | 4 | Jones Ave MP 12.520 | Merritt Rd MP 13.980 | 1.46 | 32,100 | 0.100 | 3210 | 50 | 3.0% | 50.0 | N/A | 24.2 | C |
| | 5 | Merritt Rd MP 13.980 | Tuckaleechee Pk MP 17.020 | 3.04 | 32,540 | 0.100 | 3254 | 50 | 3.0% | 50.0 | N/A | 19.3 | C |
| | 6 | Tuckaleechee Pk MP 17.020 | Tuckaleechee Pk MP 17.320 | 0.30 | 36,740 | 0.100 | 3674 | 55 | 5.0% | 52.9 | N/A | 26.9 | D |
| | 7 | Tuckaleechee Pk MP 17.320 | Melrose Station Rd MP 20.020 | 2.70 | 37,550 | 0.100 | 3755 | 55 | 5.0% | 53.0 | N/A | 23.7 | C |
| | 8 | Melrose Station Rd MP 20.020 | Foothills Pkwy MP 22.400 | 2.38 | 20,490 | 0.100 | 2049 | 55 | 5.0% | 53.0 | N/A | 12.9 | B |
| Hall Road (SR 35) | 1 | Alcoa Hwy (SR 115/US 129) MP 0.000 | Bessemer St MP 1.520 | 1.52 | 23,160 | 0.100 | 2316 | 45 | 2.0% | 45.0 | N/A | 17.1 | B |
| | 2 | Bessemer St MP 1.520 | E. Broadway/Old Knoxville Hwy (SR 33) MP 2.590 | 1.07 | 28,160 | 0.100 | 2816 | 35 | 2.0% | | | | |
| Washington Street (SR 35) | 1 | E. Broadway/Old Knoxville Hwy (SR 33) MP 2.590 | US 411 (SR 35) MP 2.820 | 0.23 | 28,360 | 0.100 | 2836 | 30 | 3.0% | | | | |
| | 2 | US 411 (SR 35) MP 0.000 | Lamar Alexander Pkwy (SR 73/US 321) MP 0.160 | 0.16 | 40,030 | 0.100 | 4003 | 30 | 2.0% | | | | |
| US 411 (SR 35) | 1 | Washington St (SR 35) MP 2.820 | S. Everett High Rd MP 3.690 | 0.87 | 14,920 | 0.110 | 1641 | 40 | 3.0% | | | | |
| | 2 | S. Everett High Rd MP 3.690 | Westfield Dr 4.527 | 0.84 | 13,550 | 0.100 | 1355 | 45 | 3.0% | 23.1 | 80.0 | N/A | E |
| | 3 | Westfield Dr 4.527 | Hitch Rd 7.254 | 2.73 | 13,550 | 0.100 | 1355 | 45 | 3.0% | 23.0 | 80.0 | N/A | E |
| | 4 | Hitch Rd 7.254 | End of Study Area 7.990 | 0.74 | 10,280 | 0.100 | 1028 | 45 | 7.0% | 25.4 | 73.1 | N/A | E |

Table 10: 2035 Build Corridor (Alternative D) Level of Service (cont.)

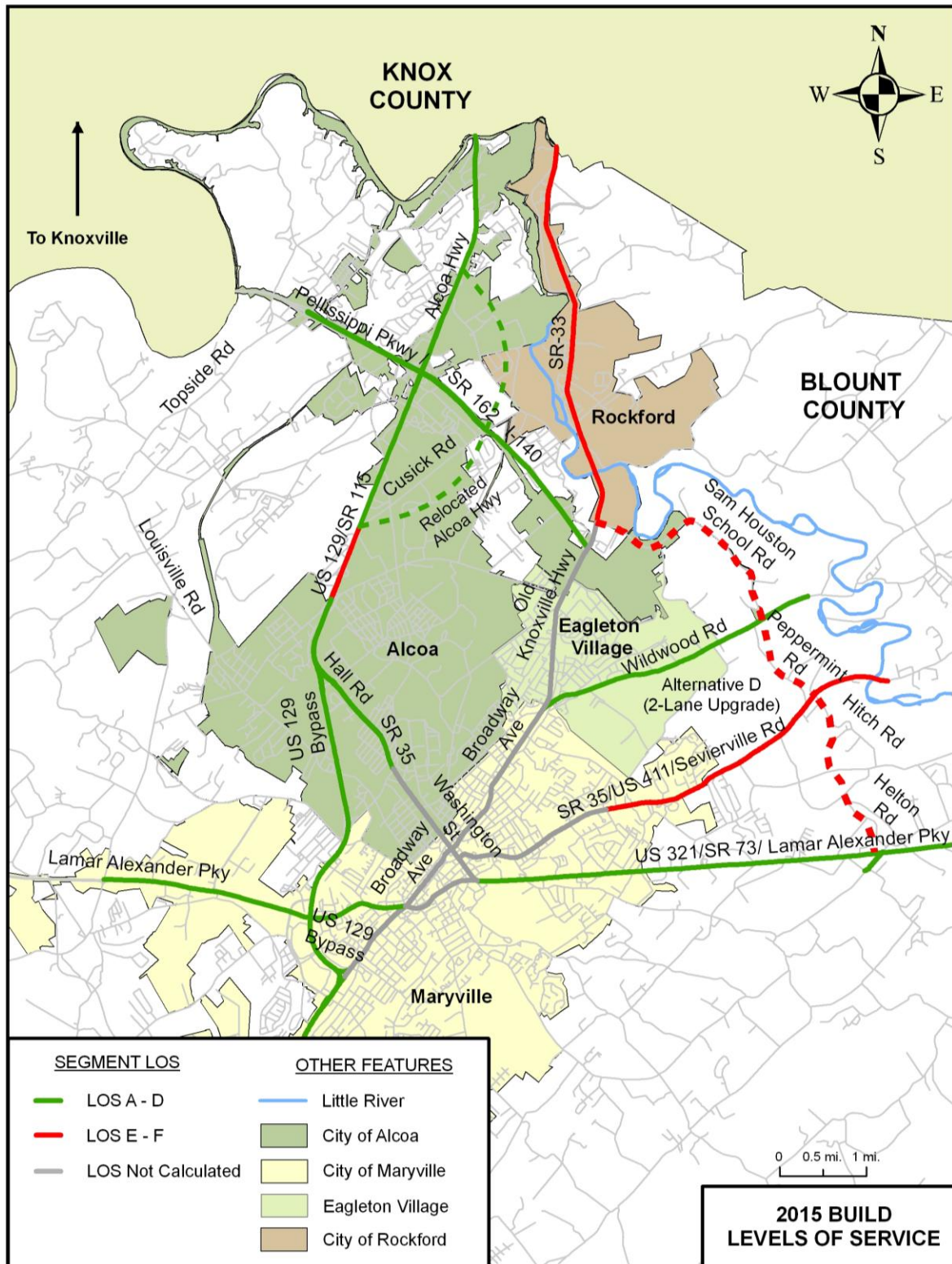
| Route | Section | Begin Milepoint | End Milepoint | Section Length (miles) | 2035 ADT | K-Factor | 2035 DHV | Posted Speed Limit (MPH) | % Trucks and Buses | Estimated Travel Speed (MPH) | % Time Spent Following | Density (pc/mi/ln) | LOS |
|---|---------|---|---|------------------------|----------|----------|----------|--------------------------|--------------------|------------------------------|------------------------|--------------------|-----|
| E. Broadway / Old Knoxville Highway (SR 33) | 1 | Beginning of Study Area MP 7.854 | Montgomery Lane MP 10.201 | 2.35 | 46,770 | 0.100 | 4677 | 50 | 9.0% | 47.1 | N/A | 40.6 | E |
| | 2 | Montgomery Lane MP 10.201 | Hall Rd MP 12.340 | 2.14 | 29,740 | 0.100 | 2974 | 30 | 9.0% | | | | |
| | 3 | Hall Rd MP 12.340 | Wildwood Rd MP 14.206 | 1.87 | 24,400 | 0.100 | 2440 | 30 | 3.0% | | | | |
| | 4 | Wildwood Rd MP 14.206 | Hunt Rd MP 15.470 | 1.26 | 23,550 | 0.100 | 2355 | 40 | 3.0% | | | | |
| | 5 | Hunt Rd MP 15.470 | Pellissippi Pky MP 15.920 | 0.45 | 61,210 | 0.110 | 6733 | 40 | 4.0% | | | | |
| | 6 | Pellissippi Pky MP 15.920 | Sam Houston School Rd MP 16.370 | 0.45 | 32,790 | 0.110 | 3607 | 40 | 2.0% | | | | |
| | 7 | Sam Houston School Rd MP 16.370 | County Line MP 20.660 | 4.29 | 18,870 | 0.120 | 2264 | 50 | 4.0% | 23.8 | 92.4 | N/A | E |
| Alcoa Highway (SR 115 / US 129) | 1 | Broadway Ave MP 10.450 | Lamar Alexander Pkwy (SR 73/US 321) MP 11.340 | 0.89 | 38,700 | 0.100 | 3870 | 50 | 10.0% | 48.5 | N/A | 31.6 | D |
| | 2 | Lamar Alexander Pkwy (SR 73/US 321) MP 11.340 | Louisville Rd (MP 13.020) | 2.94 | 55,120 | 0.100 | 5512 | 55 | 8.0% | 51.6 | N/A | 37.2 | E |
| | 3 | Louisville Rd (MP 13.020) | Hall Rd (SR 35) MP 14.280 | 1.26 | 47,940 | 0.100 | 4794 | 55 | 8.0% | 53.3 | N/A | 30.8 | D |
| | 4 | Hall Rd (SR 35) MP 14.280 | Hunt Rd MP 15.020 | 0.74 | 68,550 | 0.070 | 4799 | 55 | 8.0% | 51.5 | N/A | 37.7 | E |
| | 5 | Hunt Rd MP 15.020 | Relocated Alcoa Hwy MP 16.000 | 0.98 | 69,210 | 0.100 | 6921 | 50 | 8.0% | 45.8 | N/A | - | F |
| | 6 | Relocated Alcoa Hwy MP 16.000 | Pellissippi Pky MP 17.660 | 2.64 | 49,800 | 0.100 | 4980 | 50 | 8.0% | 45.0 | N/A | 35.1 | E |
| | 7 | Pellissippi Pky MP 17.660 | County Line MP 20.400 | 2.74 | 44,380 | 0.110 | 4882 | 55 | 8.0% | 50.7 | N/A | 32.3 | D |
| Sam Houston | 1 | SR 33 MP 0.000 | Wildwood Rd MP 2.650 | 2.65 | 20,840 | 0.160 | 3334 | 50 | 2.0% | - | 99.1 | N/A | F |
| Peppermint Road | 1 | Wildwood Rd MP 0.000 | Sevierville Rd MP 1.100 | 1.10 | 27,550 | 0.150 | 4133 | 50 | 2.0% | - | 100.0 | N/A | F |
| Hitch Road | 1 | Sevierville Rd MP 1.202 | Davis Ford Rd MP 0.000 | 1.20 | 21,850 | 0.150 | 3278 | 50 | 1.0% | - | 98.9 | N/A | F |
| Helton Road | 1 | Davis Ford Rd MP 0.875 | Lamar Alexander Pkwy MP 0.000 | 0.88 | 21,850 | 0.150 | 3278 | 50 | 1.0% | - | 98.9 | N/A | F |
| Tuckaleechee Pike | 1 | Lamar Alexander Pkwy 4.490 | Hubbard School Rd MP 4.189 | 0.30 | 4,760 | 0.110 | 524 | 50 | 1.0% | 40.5 | 58.7 | N/A | D |
| Relocated Alcoa Highway | 1 | Alcoa Highway (SR 115 / US 129) | Pellissippi Pky | Not Determined | 33,430 | 0.100 | 3343 | 55 | 8.0% | 52.4 | N/A | 17.3 | B |
| | 2 | Pellissippi Pky | Alcoa Highway (SR 115 / US 129) | Not Determined | 49,160 | 0.100 | 4916 | 55 | 8.0% | 52.4 | N/A | 25.3 | C |

Figure 7: 2015 Segment Build Alternative A/C Levels of Service



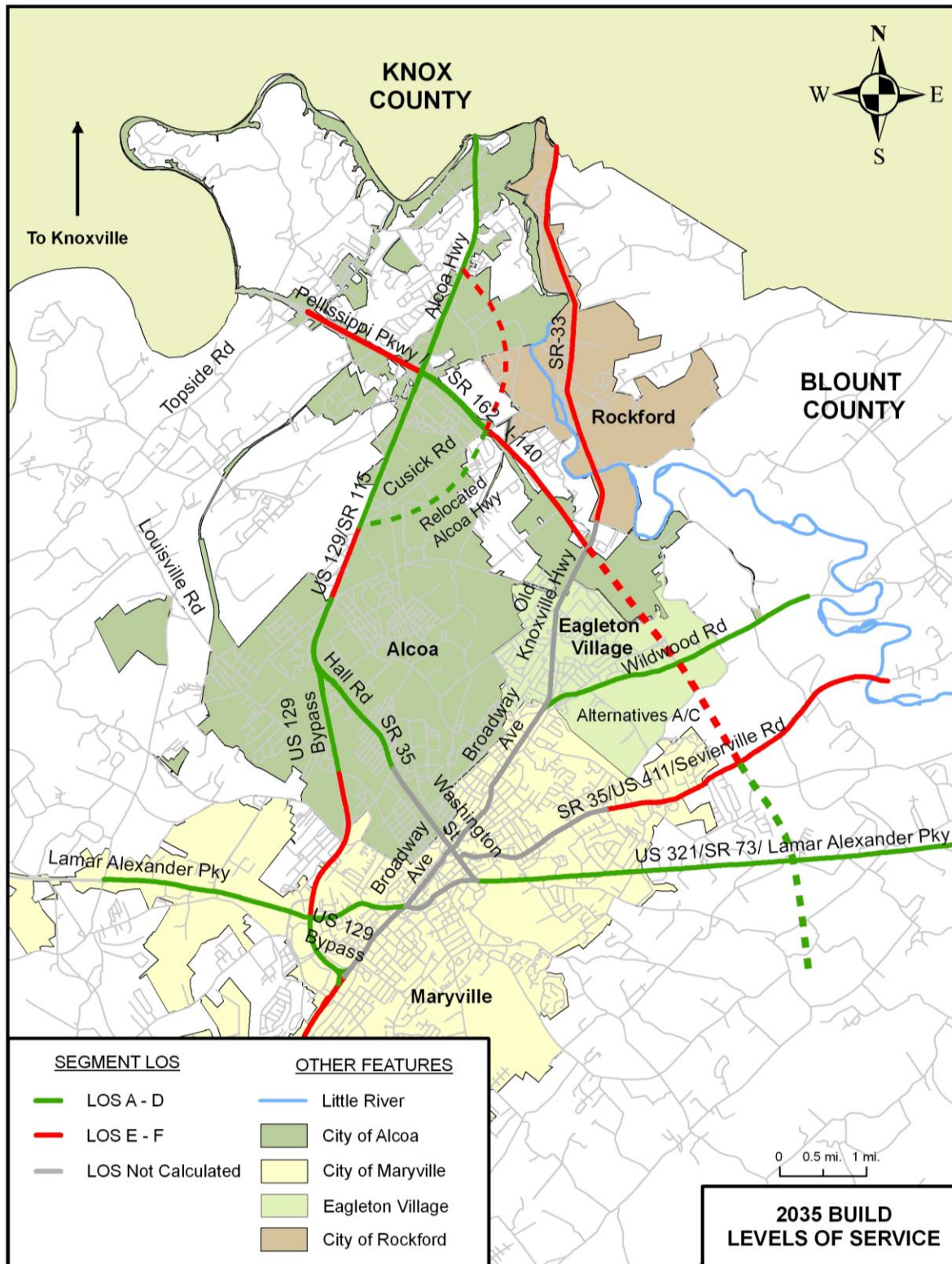
Note: The Relocated Alcoa Highway and Pellissippi Parkway Extension is shown for conceptual purposes only; no specific alignment or location has been determined.

Figure 8: 2015 Segment Build Alternative D Levels of Service



Note: The Relocated Alcoa Highway is shown for conceptual purposes only; no specific alignment or location has been determined.

Figure 9: 2035 Segment Build Alternative A/C Levels of Service



Note: The Relocated Alcoa Highway and Pellissippi Parkway Extension is shown for conceptual purposes only; no specific alignment or location has been determined.

3.5 Summary of Corridor Level of Service Results

To assist in the comparison of alternatives, the following tables were developed. **Table 11** lists the levels of service for the proposed alternatives (Alternatives A/C and D) compared to the No-Build Alternative. **Table 12** lists the corresponding levels of service for the other study area roadways for the No-Build Alternative as well as the Build Alternatives (A/C and D).

Table 11: Alternative Corridor Levels of Service Summary

| Route | Section | Begin Milepoint | End Milepoint | Existing | 2015 No-Build | 2035 No-Build | 2015 Build Alternative A/C | 2035 Build Alternative A/C | 2015 Build Alternative D | 2035 Build Alternative D |
|--|---------|---------------------------------------|---|----------------|----------------|----------------|----------------------------|----------------------------|--------------------------|--------------------------|
| Pellissippi Parkway | 1 | Topside Rd | Alcoa Hwy (SR 115/US 129) | C | D | F | D | F | C | E |
| | 2 | Alcoa Hwy (SR 115/US 129) | Relocated Alcoa Hwy | A | B | D | B | C | B | D |
| | 3 | Relocated Alcoa Hwy | E. Broadway / Old Knoxville Hwy (SR 33) | A | C | F | D | F | D | F |
| | 4 | E. Broadway/Old Knoxville Hwy (SR 33) | US 411 (SR 35) | Not Determined | Not Determined | Not Determined | C | F | Not Determined | Not Determined |
| | 5 | US 411 (SR 35) | Lamar Alexander Pkwy (SR 73/US 321) | Not Determined | Not Determined | Not Determined | B | D | Not Determined | Not Determined |
| | 6 | Lamar Alexander Pkwy (SR 73/US 321) | End of Study Area | Not Determined | Not Determined | Not Determined | Not Determined | A | Not Determined | Not Determined |
| Sam Houston School Rd/Peppermint Rd/Hitch Rd/Helton Rd | 1 | SR 33 | Wildwood Rd | C | C | D | Not Determined | Not Determined | F | F |
| | 2 | Wildwood Rd | Sevierville Rd | A | B | B | Not Determined | Not Determined | F | F |
| | 3 | Sevierville Rd | Davis Ford Rd | A | A | A | Not Determined | Not Determined | E | F |
| | 4 | Davis Ford Rd | Lamar Alexander Pkwy | A | A | A | Not Determined | Not Determined | E | F |
| | 5 | Lamar Alexander Pkwy | Hubbard School Rd | Not Determined | B | B | Not Determined | Not Determined | D | D |

Table 12: Study Area Roadway Corridor Levels of Service Summary

| Route | Section | Begin Milepoint | End Milepoint | Existing | 2015 No-Build | 2035 No-Build | 2015 Build Alternative A/C | 2035 Build Alternative A/C | 2015 Build Alternative D | 2035 Build Alternative D |
|---|---------|---|---|----------------|---------------|---------------|----------------------------|----------------------------|--------------------------|--------------------------|
| Wildwood Road | 1 | E. Broadway / Old Knoxville Hwy (SR 33) | Reservoir Rd | C | C | C | C | C | D | E |
| | 2 | Reservoir Rd | Sam Houston School Rd | C | C | C | C | C | D | E |
| | 3 | Sam Houston School Rd | End of Study Area | A | C | C | C | C | C | D |
| Lamar Alexander Parkway (SR 73 / US 321) | 1 | Beginning of Study Area | Alcoa Hwy (SR 115 / US 129) | B | C | D | C | D | B | C |
| | 2 | Alcoa Hwy (SR 115 / US 129) | E. Broadway / Old Knoxville Hwy (SR 33) | C | C | D | C | D | C | C |
| | 3 | E. Broadway / Old Knoxville Hwy (SR 33) | Jones Ave | | | | | | | |
| | 4 | Jones Ave | Meritt Rd | B | C | D | B | C | C | C |
| | 5 | Meritt Rd | Tuckaleechee Pk | A | B | C | B | C | B | C |
| | 6 | Tuckaleechee Pk | Tuckaleechee Pk | A | B | B | C | D | B | D |
| | 7 | Tuckaleechee Pk | Melrose Station Rd | A | B | C | B | C | B | C |
| | 8 | Melrose Station Rd | Foothills Pkwy | A | A | B | A | B | A | B |
| Hall Road (SR 35) | 1 | Alcoa Hwy (SR 115 / US 129) | Bessemer St | B | B | B | B | B | B | B |
| | 2 | Bessemer St | E. Broadway / Old Knoxville Hwy (SR 33) | | | | | | | |
| Washington Street (SR 35) | 1 | E. Broadway / Old Knoxville Hwy (SR 33) | US 411 (SR 35) | | | | | | | |
| | 2 | US 411 (SR 35) | Lamar Alexander Pkwy (SR 73 / US 321) | | | | | | | |
| US 411 (SR 35) | 1 | Washington St (SR 35) | S. Everett High Rd | | | | | | | |
| | 2 | S. Everett High Rd | Westfield Dr | E | E | E | E | E | E | E |
| | 3 | Westfield Dr | Hitch Rd | E | E | E | E | E | E | E |
| | 4 | Hitch Rd | End of Study Area | E | E | E | E | E | E | E |
| E. Broadway / Old Knoxville Highway (SR 33) | 1 | Beginning of Study Area | Montgomery Lane | C | D | E | D | E | D | E |
| | 2 | Montgomery Lane | Hall Rd | | | | | | | |
| | 3 | Hall Rd | Wildwood Rd | | | | | | | |
| | 4 | Wildwood Rd | Hunt Rd | | | | | | | |
| | 5 | Hunt Rd | Pellissippi Pkwy | | | | | | | |
| | 6 | Pellissippi Pkwy | Sam Houston School Rd | | | | | | | |
| | 7 | Sam Houston School Rd | County Line | E | E | F | E | F | E | E |
| Alcoa Highway (SR 115 / US 129) | 1 | Broadway Ave | Lamar Alexander Pkwy (SR 73 / US 321) | C | D | D | C | D | C | D |
| | 2 | Lamar Alexander Pkwy (SR 73 / US 321) | Louisville Rd | C | D | E | D | E | D | E |
| | 3 | Louisville Rd | Hall Rd (SR 35) | C | D | D | C | D | D | D |
| | 4 | Hall Rd (SR 35) | Hunt Rd | D | E | E | D | D | D | E |
| | 5 | Hunt Rd | Cusick Rd | E | F | F | F | F | F | F |
| | 6 | Cusick Rd | Pellissippi Pkwy | E | C | D | C | D | C | E |
| | 7 | Pellissippi Pkwy | County Line | D | B | C | C | C | C | D |
| Relocated Alcoa Highway | 1 | Alcoa Hwy (SR 115 / US 129) | Pellissippi Pky | Not Determined | B | C | B | C | B | B |
| | 2 | Pellissippi Pky | Alcoa Highway (SR 115 / US 129) | Not Determined | D | D | C | E | C | C |

The following observations are made regarding the analysis provided in the previous tables:

- A review of the traffic operations under the No-Build scenario shows that traffic operations remain generally at an acceptable LOS (LOS D) or better on Lamar Alexander Parkway (US 321/SR 73) through 2035. Traffic operations also remain at or better than a LOS D on the local roads that would be used for Alternative D. Traffic operations decline on existing Pellissippi Parkway to below a desirable LOS just west of Alcoa Highway and between the Relocated Alcoa Highway and SR 33 in the year 2035. There are also poor traffic operations (below a LOS D) on Alcoa Highway in all analysis years. The specific sections that have a poor LOS change slightly due to the Relocated Alcoa Highway (i.e. improve near the new roadway and worsen slightly just south of the new roadway).
- Comparing the No-Build Alternative to the Build Alternatives (A/C and D) for the year 2015, there is little change in LOS among the three alternatives for Wildwood Road, Pellissippi Parkway, and Lamar Alexander Parkway (US 321/SR 73). All operate at or above an acceptable LOS.
- In 2015, traffic operations improve slightly on Alcoa Highway between Hall and Hunt Roads under both Build scenarios. This improvement can be attributed in part to the new Relocated Alcoa Highway project.
- For Alternative D in 2015, Sam Houston School Road, Peppermint Road, Hitch Road, and Helton Road all fall to LOS E and F.
- In 2035, Pellissippi Parkway has poor operations for the segments west of Alcoa Highway and between the Relocated Alcoa Highway and SR 33 for all three scenarios. In Build Alternative A/C, the new section of Pellissippi Parkway between SR 33 and US 411 is projected to operate at a LOS F.

To estimate the year when traffic operations drop to below the LOS D threshold for the section of the proposed Pellissippi Parkway Extension between SR 33 and US 411, **Table 13** was created. According to this analysis, this section of the Pellissippi Parkway Extension is projected to drop from LOS D to LOS E in the year 2029. It will reach LOS F in the year 2034.

- For Build Alternative D, several sections of Alcoa Highway and Wildwood Road would operate at a poor LOS (below LOS D). By comparison, these sections would operate acceptably under the No-Build and Build Alternative A/C in the year 2035.
- Sam Houston School Road, Peppermint Road, Hitch Road, and Helton Road all operate at a poor LOS in the year 2035 for Build Alternative D. The two lanes along these roadways as included in this alternative do not have the capacity to accommodate the additional traffic under the Build scenario.

Table 13: Failure Year for the Proposed Pellissippi Parkway Extension (Alternative A/C) between SR 33 and US 411

| Year | Volume | DHV | LOS |
|-------------|---------------|--------------|----------|
| 2015 | 36,660 | 4,766 | C |
| 2016 | 37,672 | 4,897 | C |
| 2017 | 38,713 | 5,033 | C |
| 2018 | 39,782 | 5,172 | C |
| 2019 | 40,880 | 5,314 | D |
| 2020 | 42,009 | 5,461 | D |
| 2021 | 43,169 | 5,612 | D |
| 2022 | 44,361 | 5,767 | D |
| 2023 | 45,586 | 5,926 | D |
| 2024 | 46,845 | 6,090 | D |
| 2025 | 48,138 | 6,258 | D |
| 2026 | 49,467 | 6,431 | D |
| 2027 | 50,833 | 6,608 | D |
| 2028 | 52,237 | 6,791 | D |
| 2029 | 53,679 | 6,978 | E |
| 2030 | 55,162 | 7,171 | E |
| 2031 | 56,685 | 7,369 | E |
| 2032 | 58,250 | 7,572 | E |
| 2033 | 59,858 | 7,782 | E |
| 2034 | 61,511 | 7,996 | F |
| 2035 | 63,210 | 8,217 | F |

4.0 INTERSECTION LEVEL OF SERVICE ANALYSIS

A level of service analysis was also conducted at the intersection level for the No-Build Alternative and Build Alternatives (Alternatives A/C and D) for the years 2015 and 2035. Existing (2006) levels of service were determined for comparison purposes. The methodology and results are presented in the following sections.

4.1 Study Area Intersections

Traffic operations at the following existing intersections are likely to be impacted by the proposed Pellissippi Parkway Extension. **Figure 11** shows the location of each intersection, indicated by number as shown below.

1. SR 115 / US 129 @ I-140 / Pellissippi Parkway (Interchange)
2. SR 115 / US 129 @ SR 35 (Interchange)
3. SR 115 / US 129 @ SR 73 / US 321 (Signalized)
4. SR 33 / US 411 @ SR 15 / US 129 (Interchange)
5. SR 33 @ I-140 / Pellissippi Parkway (STOP Controlled)
6. SR 33 @ Wildwood Road (Signalized)
7. SR 33 / E. Broadway Avenue @ SR 35 / S. Washington Street (Signalized)
8. SR 33 @ SR 73 / US 321 (Signalized)
9. SR 35 / S. Washington Street @ Sevierville Road (Signalized)
10. S. Washington Street / SR 35 @ High Street / SR 35 (Signalized)
11. S. Washington Street @ SR 73 / US 321 (Signalized)
12. SR 73 / US 321 @ SR 335 / Old Glory Road (Signalized)

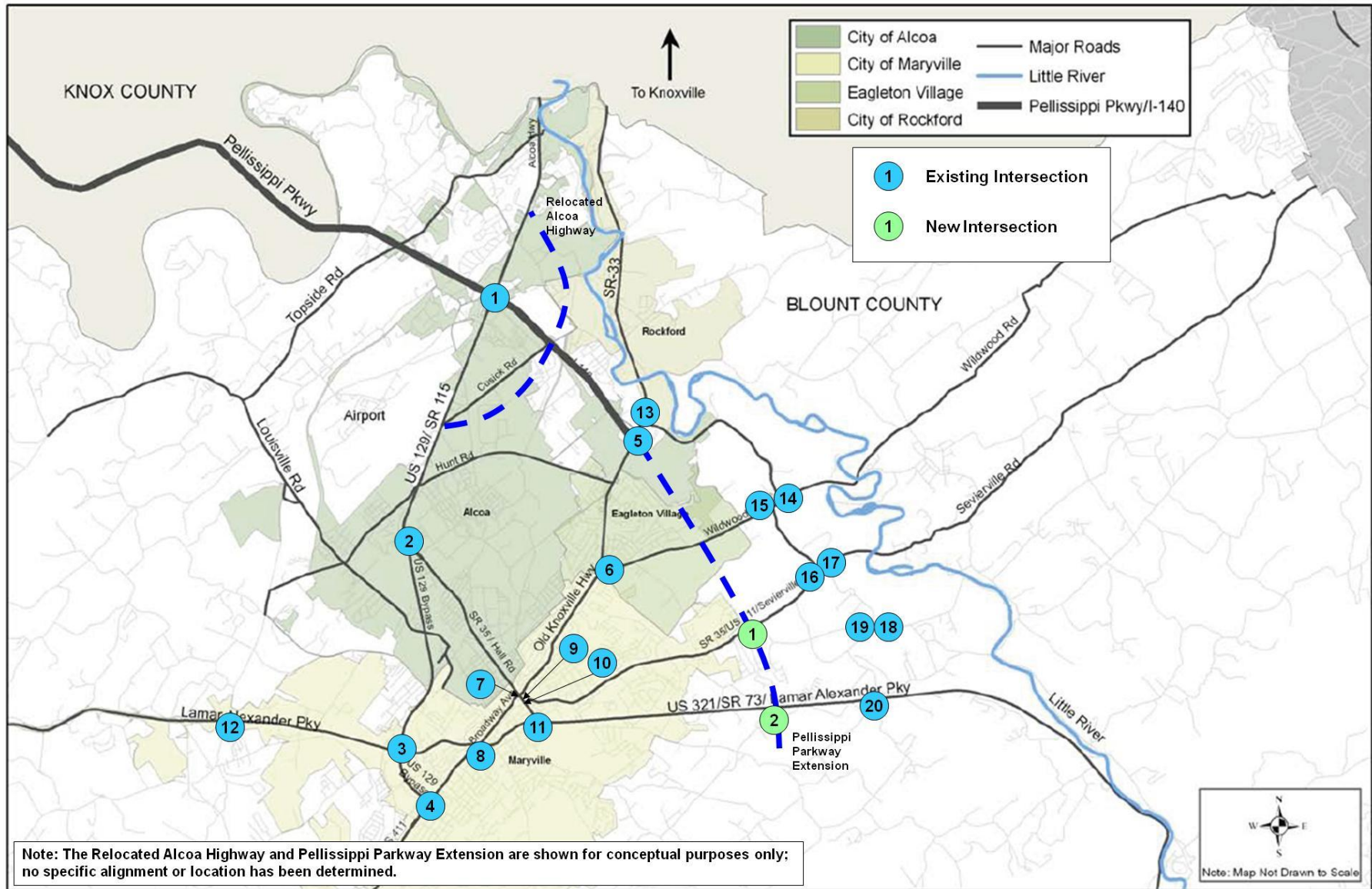
Three existing intersections that currently operate as an interchange without signal control were not evaluated as part of the level of service analysis (Intersections 1, 2 and 4 above). The highway segments surrounding the interchanges were evaluated as part of the previous segment analysis and provide an operational analysis.

The intersection of SR 33 at I-140 / Pellissippi Parkway is currently STOP controlled; however, a traffic signal is approved by TDOT for this location. Therefore, this intersection was evaluated as a STOP controlled intersection for the existing (2006) scenario and as a signalized intersection for the No-Build Alternative and Build Alternative D in the future years of 2015 and 2035. For the Build Alternative A/C, it was assumed that a typical diamond interchange would be created, thereby resulting in two new intersections. As this evaluation is for the planning stages of this project and no final design has been completed, the necessary traffic control and lane configuration to make the intersections operate at an acceptable level of service (if possible) was assumed. For both scenarios, the right turn movement from SR 33 to Pellissippi Parkway was assumed to have a separate ramp and would not be directed through the intersection to access Pellissippi Parkway.

In addition, two new intersections would be created by the proposed Pellissippi Parkway Extension. **Figure 11** shows the location of each new intersection, indicated by number as shown below.

1. Pellissippi Parkway Extension @ SR 35 / US 411 / Sevierville Road
2. Pellissippi Parkway Extension @ US 321

Figure 11: Intersection Location Map



For this analysis, a typical diamond interchange has been assumed for the Pellissippi Parkway Extension at SR 35 / US 411 / Sevierville Road interchange, resulting in the creation of two new intersections. Levels of service and delay were calculated for similar scenarios as discussed above for the SR 33 / I-140 interchange. The Pellissippi Parkway Extension at US 321 may include directional loop ramps and was not evaluated at this time.

As part of the Alternative D analysis, several intersections would be impacted and were included in the analysis. The following intersections were evaluated for the existing and No-Build Scenarios. **Figure 11** shows the location of each intersection, indicated by number as shown below:

- 13. SR 33 @ Sam Houston School Road (Signalized)
- 14. Sam Houston School Road @ Wildwood Road (STOP Controlled)
- 15. Peppermint Road @ Wildwood Road (STOP Controlled)
- 16. SR 35 / US 411 / Sevierville Road @ Peppermint Road (STOP Controlled)
- 17. SR 35 / US 411 / Sevierville Road @ Hitch Road / Peppermint Hills Drive (STOP Controlled)
- 18. Davis Ford Road @ Helton Road (STOP Controlled)
- 19. Davis Ford Road @ Hitch Road (STOP Controlled)
- 20. SR 73 / US 321 @ Helton Road / Tuckaleechee Pike (STOP Controlled)

Several of these intersections would be realigned as part of Alternative D and form the following intersections:

- 14/15. Wildwood Road @ Peppermint Road / Sam Houston School Road
- 16/17. SR 35 / US 411 / Sevierville Road @ Peppermint Road / Hitch Road
- 18/19. Davis Ford Road @ Hitch Road / Helton Road
- 20. SR 73 / US 321 @ Helton Road / Tuckaleechee Pike

4.2 Methodology

For this analysis, the Highway Capacity Software Plus package (HCS+) was used to assess the peak period traffic operating conditions. This software package implements the Highway Capacity Manual (HCM) intersection analysis method. For each study intersection, average vehicle delays were calculated as well as the resulting levels of service (LOS). For intersections, the Highway Capacity Manual 2000 defines levels of service based on the average delay due to signal or STOP control as shown in **Table 14**.

Table 14: LOS Criteria for Intersections

| LOS | Signalized Intersections Control Delay (seconds per vehicle) | Unsignalized Intersections Control Delay (seconds per vehicle) |
|-----|--|--|
| A | ≤ 10 | ≤ 10 |
| B | >10 – 20 | >10 – 15 |
| C | >20 – 35 | >15 – 25 |
| D | >35 – 55 | >25 – 35 |
| E | >55 – 80 | >35 – 50 |
| F | >80 | >50 |

Source: Highway Capacity Manual (2000)

In general terms, a facility is considered to have reached its physical capacity at LOS E. TDOT typically uses LOS D as the threshold for acceptable traffic service for all but the more rural roads. Because of the urban character of the study area, LOS D is used as the threshold. Operations below this threshold are noted as undesirable and warrant improvement. LOS D corresponds to ≤ 55 seconds of delay per vehicle at a signalized intersection and ≤ 35 seconds of delay at an unsignalized intersection. (Refer to the HCM for more detail.)

4.3 Intersection Level of Service Results

Using the existing (2006 / 2008) and forecasted traffic volumes (2015 and 2035) from the Traffic Forecast Study completed for this project, intersection levels of service were developed for the existing (2006 / 2008), 2015 and 2035 No-Build, and the 2015 and 2035 Build (Alternatives A/C and D) scenarios. Intersection lane configurations were provided by Sain Associates, Inc. for several of the intersections. For the remaining existing intersections, data was compiled from aerial photography mapping and the TRIMS Blount County Database. For the existing signalized intersections, signal timings were provided by the City of Maryville Public Works Department. Optimized signal timings were assumed for intersections with a new traffic signal. **Tables 15 through 25** show the intersection levels of service for each scenario.

Table 15: 2006 / 2008 Existing Intersection Levels of Service

| Intersection | Type | Approach | AM | LOS | PM | LOS |
|--|--------------------|-------------------|------------------|----------|------------------|----------|
| | | | Avg. Delay (sec) | | Avg. Delay (sec) | |
| 3: SR 115 / US 129 @ SR 73 / US 321 | Signalized | Eastbound | 59.3 | E | 227.1 | F |
| | | Westbound | 42.9 | D | 56.0 | E |
| | | Northbound | 836.2 | F | 119.6 | F |
| | | Southbound | 33.0 | C | 174.0 | F |
| | | Whole Int. | 388.5 | F | 141.6 | F |
| 5: SR 33 @ I-140 | STOP Controlled | Eastbound | 1531.0 | F | 851.7 | F |
| | | Northbound | 30.5 | D | 11.3 | B |
| | | Southbound | - | - | - | - |
| 6: SR 33 @ Wildwood Road | Signalized | Westbound | 60.7 | E | 52.1 | D |
| | | Northbound | 54.4 | D | 131.2 | F |
| | | Southbound | 50.3 | D | 84.9 | F |
| | | Whole Int. | 54.5 | D | 100.6 | F |
| 7: SR 33 / E. Broadway Avenue @ SR 35 / S. Washington Street | Signalized | Eastbound | 38.7 | D | 50.1 | D |
| | | Westbound | 52.7 | D | 70.5 | E |
| | | Northbound | 38.3 | D | 36.9 | D |
| | | Southbound | 26.1 | C | 49.1 | D |
| | | Whole Int. | 36.9 | D | 48.1 | D |
| 8: SR 33 @ SR 73 / US 321 | Signalized | Eastbound | 51.2 | D | 650.2 | F |
| | | Westbound | 22.7 | C | 39.4 | D |
| | | Northbound | 642.8 | F | 156.8 | F |
| | | Southbound | 35.6 | D | 104.4 | F |
| | | Whole Int. | 228.6 | F | 270.8 | F |
| 9: SR 35 / S. Washington Street @ Sevierville Road | Signalized | Eastbound | 27.7 | C | 39.2 | D |
| | | Westbound | 37.2 | D | 48.2 | D |
| | | Northbound | 14.9 | B | 12.3 | B |
| | | Southbound | 14.3 | B | 14.2 | B |
| | | Whole Int. | 17.1 | B | 17.1 | B |
| 10: S. Washington Street / SR 35 @ High Street / SR 35 | Signalized | Eastbound | 35.6 | D | 38.1 | D |
| | | Westbound | 98.6 | F | 68.8 | E |
| | | Northbound | 18.0 | B | 36.0 | D |
| | | Southbound | 7.2 | A | 19.2 | B |
| | | Whole Int. | 26.3 | C | 31.2 | C |
| 11: S. Washington Street @ SR 73 / US 321 | Signalized | Eastbound | 45.2 | D | 170.9 | F |
| | | Westbound | 30.0 | C | 41.9 | D |
| | | Northbound | 22.7 | C | 28.7 | C |
| | | Southbound | 45.8 | D | 136.8 | F |
| | | Whole Int. | 34.5 | C | 95.2 | F |
| 12: SR 73 / US 321 @ SR 335 / Old Glory Road | Signalized | Eastbound | 241.0 | F | 168.4 | F |
| | | Westbound | 181.6 | F | 171.4 | F |
| | | Northbound | 26.7 | C | 25.1 | C |
| | | Southbound | 28.2 | C | 30.4 | C |
| | | Whole Int. | 153.3 | F | 120.9 | F |

Table 15: 2006 / 2008 Existing Intersection Levels of Service (cont.)

| Intersection | Type | Approach | AM | LOS | PM | LOS |
|--|--------------------|------------|------------------|-----|------------------|-----|
| | | | Avg. Delay (sec) | | Avg. Delay (sec) | |
| 13: SR 33 @ Sam Houston School Road | Signalized | Westbound | 17.5 | B | 11.6 | B |
| | | Northbound | 19.1 | B | 21.2 | C |
| | | Southbound | 23.1 | C | 26.9 | C |
| | | Whole Int. | 19.5 | B | 22.3 | C |
| 14: Sam Houston School Road @ Wildwood Road | STOP Controlled | Eastbound | 9.0 | A | 7.7 | A |
| | | Westbound | - | - | - | - |
| | | Southbound | 12.9 | B | 12.3 | B |
| 15: Peppermint Road @ Wildwood Road | STOP Controlled | Eastbound | - | - | - | - |
| | | Westbound | 7.8 | A | 8.2 | A |
| | | Northbound | 11.1 | B | 12.3 | B |
| 16: SR 35 / US 411 / Sevierville Road @ Peppermint Road | STOP Controlled | Eastbound | 9.0 | A | 8.1 | A |
| | | Westbound | - | - | - | - |
| | | Southbound | 21.5 | C | 22.2 | C |
| 17: SR 35 / US 411 / Sevierville Road @ Hitch Road / Peppermint Hills Drive | STOP Controlled | Eastbound | 8.3 | A | 7.8 | A |
| | | Westbound | 7.9 | A | 8.5 | A |
| | | Northbound | 20.2 | C | 17.1 | C |
| | | Southbound | 11.4 | B | 12.4 | B |
| 18: Davis Ford Road @ Hitch Road | STOP Controlled | Eastbound | 7.5 | A | 7.4 | A |
| | | Westbound | - | - | - | - |
| | | Southbound | 10.1 | B | 9.6 | A |
| 19: Davis Ford Road @ Helton Road | STOP Controlled | Eastbound | - | - | - | - |
| | | Westbound | 7.3 | A | 7.3 | A |
| | | Northbound | 8.7 | A | 8.6 | A |
| 20: SR 73 / US 321 @ Helton Road / Tuckaleechee Pike | STOP Controlled | Eastbound | 11.3 | B | 9.2 | A |
| | | Westbound | 9.6 | A | 10.7 | B |
| | | Northbound | 16.5 | C | 17.4 | C |
| | | Southbound | 89.9 | F | 32.7 | D |

Table 16: 2015 No-Build Intersection Levels of Service

| Intersection | Type | Approach | AM | LOS | PM | LOS |
|--|------------|-------------------|------------------|----------|------------------|----------|
| | | | Avg. Delay (sec) | | Avg. Delay (sec) | |
| 3: SR 115 / US 129 @ SR 73 / US 321 | Signalized | Eastbound | 298.4 | F | 649.2 | F |
| | | Westbound | 69.0 | E | 211.2 | F |
| | | Northbound | 1425.0 | F | 484.1 | F |
| | | Southbound | 35.1 | D | 536.0 | F |
| | | Whole Int. | 703.2 | F | 460.0 | F |
| 5: SR 33 @ I-140 | Signalized | Eastbound | 751.8 | F | 1460.0 | F |
| | | Northbound | 2725.0 | F | 2504.0 | F |
| | | Southbound | 3418.0 | F | 3344.0 | F |
| | | Whole Int. | 2227.0 | F | 2224.0 | F |
| 6: SR 33 @ Wildwood Road | Signalized | Westbound | 70.6 | E | 53.8 | D |
| | | Northbound | 71.4 | E | 382.7 | F |
| | | Southbound | 58.8 | E | 261.2 | F |
| | | Whole Int. | 66.7 | E | 284.9 | F |
| 7: SR 33 / E. Broadway Avenue @ SR 35 / S. Washington Street | Signalized | Eastbound | 46.5 | D | 63.9 | E |
| | | Westbound | 88.6 | F | 128.9 | F |
| | | Northbound | 60.7 | E | 47.0 | D |
| | | Southbound | 27.6 | C | 78.6 | E |
| | | Whole Int. | 52.7 | D | 73.1 | E |
| 8: SR 33 @ SR 73 / US 321 | Signalized | Eastbound | 268.9 | F | 1165.0 | F |
| | | Westbound | 37.8 | D | 287.9 | F |
| | | Northbound | 1451.0 | F | 608.4 | F |
| | | Southbound | 39.0 | D | 314.5 | F |
| | | Whole Int. | 571.5 | F | 631.4 | F |
| 9: SR 35 / S. Washington Street @ Sevierville Road | Signalized | Eastbound | 27.8 | C | 39.7 | D |
| | | Westbound | 38.8 | D | 50.1 | D |
| | | Northbound | 15.8 | B | 13.1 | B |
| | | Southbound | 15.0 | B | 15.6 | B |
| | | Whole Int. | 17.9 | B | 18.3 | B |
| 10: S. Washington Street / SR 35 @ High Street / SR 35 | Signalized | Eastbound | 37.1 | D | 40.1 | D |
| | | Westbound | 244.9 | F | 149.8 | F |
| | | Northbound | 18.5 | B | 40.5 | D |
| | | Southbound | 7.5 | A | 28.0 | C |
| | | Whole Int. | 47.2 | D | 45.3 | D |
| 11: S. Washington Street @ SR 73 / US 321 | Signalized | Eastbound | 287.0 | F | 531.3 | F |
| | | Westbound | 31.3 | C | 55.4 | E |
| | | Northbound | 222.3 | F | 370.6 | F |
| | | Southbound | 204.2 | F | 585.2 | F |
| | | Whole Int. | 235.1 | F | 459.4 | F |
| 12: SR 73 / US 321 @ SR 335 / Old Glory Road | Signalized | Eastbound | 484.1 | F | 226.9 | F |
| | | Westbound | 239.2 | F | 380.1 | F |
| | | Northbound | 27.9 | C | 25.8 | C |
| | | Southbound | 29.2 | C | 33.0 | C |
| | | Whole Int. | 271.8 | F | 220.4 | F |

Table 16: 2015 No-Build Intersection Levels of Service (cont.)

| Intersection | Type | Approach | AM | LOS | PM | LOS |
|--|--------------------|------------|------------------|-----|------------------|-----|
| | | | Avg. Delay (sec) | | Avg. Delay (sec) | |
| 13: SR 33 @ Sam Houston School Road | Signalized | Westbound | 37.9 | D | 21.4 | C |
| | | Northbound | 42.9 | D | 22.1 | C |
| | | Southbound | 19.3 | B | 33.2 | C |
| | | Whole Int. | 36.2 | D | 26.7 | C |
| 14: Sam Houston School Road @ Wildwood Road | STOP Controlled | Eastbound | 9.4 | A | 7.7 | A |
| | | Westbound | - | - | - | - |
| | | Southbound | 13.8 | B | 13.2 | B |
| 15: Peppermint Road @ Wildwood Road | STOP Controlled | Eastbound | - | - | - | - |
| | | Westbound | 7.8 | A | 8.3 | A |
| | | Northbound | 11.5 | B | 13.1 | B |
| 16: SR 35 / US 411 / Sevierville Road @ Peppermint Road | STOP Controlled | Eastbound | 9.3 | A | 8.2 | A |
| | | Westbound | - | - | - | - |
| | | Southbound | 26.7 | D | 28.8 | D |
| 17: SR 35 / US 411 / Sevierville Road @ Hitch Road / Peppermint Hills Drive | STOP Controlled | Eastbound | 8.4 | A | 7.9 | A |
| | | Westbound | 7.9 | A | 8.7 | A |
| | | Northbound | 24.2 | C | 19.2 | C |
| | | Southbound | 12.1 | B | 12.5 | B |
| 18: Davis Ford Road @ Hitch Road | STOP Controlled | Eastbound | 7.5 | A | 7.4 | A |
| | | Westbound | - | - | - | - |
| | | Southbound | 10.3 | B | 9.7 | A |
| 19: Davis Ford Road @ Helton Road | STOP Controlled | Eastbound | - | - | - | - |
| | | Westbound | 7.4 | A | 7.3 | A |
| | | Northbound | 8.7 | A | 8.6 | A |
| 20: SR 73 / US 321 @ Helton Road / Tuckaleechee Pike | STOP Controlled | Eastbound | 11.9 | B | 9.4 | A |
| | | Westbound | 9.9 | A | 11.3 | B |
| | | Northbound | 20.6 | C | 19.5 | C |
| | | Southbound | 142.8 | F | 44.6 | E |

Table 17: 2035 No-Build Intersection Levels of Service

| Intersection | Type | Approach | AM | LOS | PM | LOS |
|--|------------|-------------------|------------------|----------|------------------|----------|
| | | | Avg. Delay (sec) | | Avg. Delay (sec) | |
| 3: SR 115 / US 129 @ SR 73 / US 321 | Signalized | Eastbound | 798.1 | F | 1275.0 | F |
| | | Westbound | 400.1 | F | 715.5 | F |
| | | Northbound | 2266.0 | F | 1054.0 | F |
| | | Southbound | 40.9 | D | 1068.0 | F |
| | | Whole Int. | 1245.0 | F | 1014.0 | F |
| 5: SR 33 @ I-140 | Signalized | Eastbound | 2834.0 | F | 3362.0 | F |
| | | Northbound | 6540.0 | F | 5813.0 | F |
| | | Southbound | 6419.0 | F | 7328.0 | F |
| | | Whole Int. | 5384.0 | F | 5103.0 | F |
| 6: SR 33 @ Wildwood Road | Signalized | Westbound | 997.2 | F | 123.0 | F |
| | | Northbound | 1244.0 | F | 2111.0 | F |
| | | Southbound | 990.3 | F | 1878.0 | F |
| | | Whole Int. | 1091.0 | F | 1729.0 | F |
| 7: SR 33 / E. Broadway Avenue @ SR 35 / S. Washington Street | Signalized | Eastbound | 56.1 | E | 86.8 | F |
| | | Westbound | 145.7 | F | 203.2 | F |
| | | Northbound | 126.6 | F | 75.4 | E |
| | | Southbound | 28.9 | C | 135.9 | F |
| | | Whole Int. | 88.2 | F | 118.7 | F |
| 8: SR 33 @ SR 73 / US 321 | Signalized | Eastbound | 1061.0 | F | 2047.0 | F |
| | | Westbound | 167.3 | F | 644.1 | F |
| | | Northbound | 2311.0 | F | 1024.0 | F |
| | | Southbound | 57.6 | E | 840.2 | F |
| | | Whole Int. | 1125.0 | F | 1189.0 | F |
| 9: SR 35 / S. Washington Street @ Sevierville Road | Signalized | Eastbound | 27.9 | C | 39.9 | D |
| | | Westbound | 40.2 | D | 52.0 | D |
| | | Northbound | 16.5 | B | 13.8 | B |
| | | Southbound | 15.5 | B | 16.9 | B |
| | | Whole Int. | 18.6 | B | 19.3 | B |
| 10: S. Washington Street / SR 35 @ High Street / SR 35 | Signalized | Eastbound | 38.6 | D | 42.5 | D |
| | | Westbound | 912.2 | F | 782.5 | F |
| | | Northbound | 21.4 | C | 361.8 | F |
| | | Southbound | 8.9 | A | 38.3 | D |
| | | Whole Int. | 136.5 | F | 224.6 | F |
| 11: S. Washington Street @ SR 73 / US 321 | Signalized | Eastbound | 825.6 | F | 1713.0 | F |
| | | Westbound | 113.5 | F | 1914.0 | F |
| | | Northbound | 578.2 | F | 734.6 | F |
| | | Southbound | 1044.0 | F | 1660.0 | F |
| | | Whole Int. | 732.8 | F | 1290.0 | F |
| 12: SR 73 / US 321 @ SR 335 / Old Glory Road | Signalized | Eastbound | * | F | 475.4 | F |
| | | Westbound | 402.3 | F | 733.4 | F |
| | | Northbound | 34.1 | C | 27.9 | C |
| | | Southbound | 34.0 | C | 55.2 | E |
| | | Whole Int. | * | F | 429.9 | F |

*Delay too high to calculate

Table 17: 2035 No-Build Intersection Levels of Service (cont.)

| Intersection | Type | Approach | AM | LOS | PM | LOS |
|--|-----------------|------------|------------------|-----|------------------|-----|
| | | | Avg. Delay (sec) | | Avg. Delay (sec) | |
| 13: SR 33 @ Sam Houston School Road | Signalized | Westbound | 767.1 | F | 482.7 | F |
| | | Northbound | 662.5 | F | 111.7 | F |
| | | Southbound | 97.5 | F | 317.7 | F |
| | | Whole Int. | 552.1 | F | 223.1 | F |
| 14: Sam Houston School Road @ Wildwood Road | STOP Controlled | Eastbound | 11.1 | B | 8.0 | A |
| | | Westbound | - | - | - | - |
| | | Southbound | 22.8 | C | 20.1 | C |
| 15: Peppermint Road @ Wildwood Road | STOP Controlled | Eastbound | - | - | - | - |
| | | Westbound | 8.1 | A | 8.9 | A |
| | | Northbound | 14.3 | B | 18.6 | C |
| 16: SR 35 / US 411 / Sevierville Road @ Peppermint Road | STOP Controlled | Eastbound | 10.5 | B | 8.6 | A |
| | | Westbound | - | - | - | - |
| | | Southbound | 137.0 | F | 179.0 | F |
| 17: SR 35 / US 411 / Sevierville Road @ Hitch Road / Peppermint Hills Drive | STOP Controlled | Eastbound | 8.9 | A | 8.2 | A |
| | | Westbound | 8.2 | A | 9.4 | A |
| | | Northbound | 82.9 | F | 32.6 | D |
| | | Southbound | 13.4 | B | 17.0 | C |
| 18: Davis Ford Road @ Hitch Road | STOP Controlled | Eastbound | 7.5 | A | 7.5 | A |
| | | Westbound | - | - | - | - |
| | | Southbound | 11.3 | B | 10.3 | B |
| 19: Davis Ford Road @ Helton Road | STOP Controlled | Eastbound | - | - | - | - |
| | | Westbound | 7.4 | A | 7.4 | A |
| | | Northbound | 8.9 | A | 8.7 | A |
| 20: SR 73 / US 321 @ Helton Road / Tuckaleechee Pike | STOP Controlled | Eastbound | 15.3 | C | 10.6 | B |
| | | Westbound | 11.8 | B | 14.9 | B |
| | | Northbound | 143.1 | F | 52.2 | F |
| | | Southbound | 1985.0 | F | 97.0 | F |

Table 18: 2015 Build (Alternatives A/C) Intersection Levels of Service

| Intersection | Type | Approach | AM | LOS | PM | LOS |
|--|------------|-------------------|------------------|----------|------------------|----------|
| | | | Avg. Delay (sec) | | Avg. Delay (sec) | |
| 3: SR 115 / US 129 @ SR 73 / US 321 | Signalized | Eastbound | 243.8 | F | 580.1 | F |
| | | Westbound | 56.8 | E | 152.2 | F |
| | | Northbound | 1329.0 | F | 420.3 | F |
| | | Southbound | 34.4 | C | 439.4 | F |
| | | Whole Int. | 647.0 | F | 387.1 | F |
| 6: SR 33 @ Wildwood Road | Signalized | Westbound | 59.9 | E | 51.9 | D |
| | | Northbound | 53.6 | D | 119.6 | F |
| | | Southbound | 49.9 | D | 80.4 | F |
| | | Whole Int. | 53.9 | D | 93.6 | F |
| 7: SR 33 / E. Broadway Avenue @ SR 35 / S. Washington Street | Signalized | Eastbound | 34.7 | C | 42.6 | D |
| | | Westbound | 39.7 | D | 49.5 | D |
| | | Northbound | 31.4 | C | 31.9 | C |
| | | Southbound | 24.7 | C | 31.6 | C |
| | | Whole Int. | 31.2 | C | 35.6 | D |
| 8: SR 33 @ SR 73 / US 321 | Signalized | Eastbound | 175.7 | F | 1004.0 | F |
| | | Westbound | 34.3 | C | 266.2 | F |
| | | Northbound | 1421.0 | F | 596.3 | F |
| | | Southbound | 37.8 | D | 255.8 | F |
| | | Whole Int. | 536.0 | F | 562.4 | F |
| 9: SR 35 / S. Washington Street @ Sevierville Road | Signalized | Eastbound | 27.5 | C | 38.9 | D |
| | | Westbound | 36.0 | D | 46.7 | D |
| | | Northbound | 14.1 | B | 11.6 | B |
| | | Southbound | 13.7 | B | 12.8 | B |
| | | Whole Int. | 16.4 | B | 16.0 | B |
| 10: S. Washington Street / SR 35 @ High Street / SR 35 | Signalized | Eastbound | 36.5 | D | 39.3 | D |
| | | Westbound | 172.1 | F | 105.1 | F |
| | | Northbound | 18.3 | B | 38.5 | D |
| | | Southbound | 7.4 | A | 24.0 | C |
| | | Whole Int. | 36.7 | D | 38.1 | D |
| 11: S. Washington Street @ SR 73 / US 321 | Signalized | Eastbound | 321.3 | F | 594.7 | F |
| | | Westbound | 32.0 | C | 72.0 | E |
| | | Northbound | 185.2 | F | 323.6 | F |
| | | Southbound | 303.6 | F | 730.2 | F |
| | | Whole Int. | 247.3 | F | 494.3 | F |
| 12: SR 73 / US 321 @ SR 335 / Old Glory Road | Signalized | Eastbound | 457.7 | F | 221.5 | F |
| | | Westbound | 232.1 | F | 366.6 | F |
| | | Northbound | 27.8 | C | 25.7 | C |
| | | Southbound | 29.1 | C | 32.7 | C |
| | | Whole Int. | 258.8 | F | 213.5 | F |

Table 19: 2015 Build (Alternatives A/C) New SR 33 at I-140 Intersection Levels of Service

| Intersection | Type / Scenario | Approach | AM | LOS | PM | LOS |
|---|--|-------------------|------------------|----------|------------------|-----------|
| | | | Avg. Delay (sec) | | Avg. Delay (sec) | |
| SR 33 @ I-140 North of Pellissippi Pkwy | Signalized; Dual Turn Lanes for Each Direction and Dual NB/SB Through Lanes | Westbound | 51.5 | D | 29.1 | C |
| | | Northbound | 23.3 | C | 15.1 | B |
| | | Southbound | 53.4 | D | 19.5 | B |
| | | Whole Int. | 34.2 | C | 17.7 | B |
| SR 33 @ I-140 South of Pellissippi Pkwy | Signalized; Dual SB Lefts, Single EB Left, Triple EB Rights, and Dual NB/SB Through Lanes | Eastbound | 61.7 | E | 63.2 | E |
| | | Northbound | 65.4 | E | 74.4 | E |
| | | Southbound | 14.1 | B | 28.4 | C |
| | | Whole Int. | 53.4 | D | 59.2 | E* |

*The intersection level of service could be improved to an acceptable level if the eastbound right turns were allowed to operate in a free-flow manner and thereby not controlled by the signal.

Table 20: 2015 Build (Alternatives A/C) New US 411 at I-140 Intersection Levels of Service

| Intersection | Type / Scenario | Approach | AM | LOS | PM | LOS |
|---|---|-------------------|------------------|----------|------------------|----------|
| | | | Avg. Delay (sec) | | Avg. Delay (sec) | |
| US 411 @ I-140 West of Pellissippi Pkwy | Signalized; Exclusive WB Left Turn Lane and SB Left and Right Turn Lane | Eastbound | 34.9 | C | 47.6 | D |
| | | Westbound | 17.1 | B | 27.5 | C |
| | | Southbound | 20.9 | C | 21.4 | C |
| | | Whole Int. | 27.6 | C | 30.6 | C |
| US 411 @ I-140 East of Pellissippi Pkwy | Signalized; Exclusive EB Left Turn Lane Only | Eastbound | 30.9 | C | 19.3 | B |
| | | Westbound | 10.8 | B | 10.9 | B |
| | | Northbound | 28.0 | C | 27.2 | C |
| | | Whole Int. | 27.4 | C | 19.4 | B |

Table 21: 2035 Build (Alternatives A/C) Intersection Levels of Service

| Intersection | Type | Approach | AM | LOS | PM | LOS |
|--|------------|-------------------|------------------|----------|------------------|----------|
| | | | Avg. Delay (sec) | | Avg. Delay (sec) | |
| 3: SR 115 / US 129 @ SR 73 / US 321 | Signalized | Eastbound | 782.0 | F | 1257.0 | F |
| | | Westbound | 369.3 | F | 679.4 | F |
| | | Northbound | 2242.0 | F | 1038.0 | F |
| | | Southbound | 39.8 | D | 1006.0 | F |
| | | Whole Int. | 1225.0 | F | 978.7 | F |
| 6: SR 33 @ Wildwood Road | Signalized | Westbound | 346.5 | F | 62.4 | E |
| | | Northbound | 536.6 | F | 1192.0 | F |
| | | Southbound | 349.1 | F | 1015.0 | F |
| | | Whole Int. | 421.5 | F | 955.9 | F |
| 7: SR 33 / E. Broadway Avenue @ SR 35 / S. Washington Street | Signalized | Eastbound | 39.7 | D | 51.8 | D |
| | | Westbound | 56.6 | E | 76.1 | E |
| | | Northbound | 39.1 | D | 37.4 | D |
| | | Southbound | 26.2 | C | 52.1 | D |
| | | Whole Int. | 38.0 | D | 50.5 | D |
| 8: SR 33 @ SR 73 / US 321 | Signalized | Eastbound | 867.0 | F | 1998.0 | F |
| | | Westbound | 360.7 | F | 642.7 | F |
| | | Northbound | 2357.0 | F | 1056.0 | F |
| | | Southbound | 57.1 | E | 832.4 | F |
| | | Whole Int. | 1144.0 | F | 1178.0 | F |
| 9: SR 35 / S. Washington Street @ Sevierville Road | Signalized | Eastbound | 27.6 | C | 39.3 | D |
| | | Westbound | 37.4 | D | 48.4 | D |
| | | Northbound | 15.0 | B | 12.4 | B |
| | | Southbound | 14.4 | B | 14.3 | B |
| | | Whole Int. | 17.2 | B | 17.2 | B |
| 10: S. Washington Street / SR 35 @ High Street / SR 35 | Signalized | Eastbound | 35.9 | D | 38.7 | D |
| | | Westbound | 414.0 | F | 323.6 | F |
| | | Northbound | 19.9 | B | 111.5 | F |
| | | Southbound | 8.0 | A | 22.2 | C |
| | | Whole Int. | 68.5 | E | 84.0 | F |
| 11: S. Washington Street @ SR 73 / US 321 | Signalized | Eastbound | 688.8 | F | 1383.0 | F |
| | | Westbound | 49.7 | D | 1164.0 | F |
| | | Northbound | 618.6 | F | 789.9 | F |
| | | Southbound | 829.7 | F | 1379.0 | F |
| | | Whole Int. | 664.6 | F | 1123.0 | F |
| 12: SR 73 / US 321 @ SR 335 / Old Glory Road | Signalized | Eastbound | * | F | 489.8 | F |
| | | Westbound | 411.2 | F | 751.2 | F |
| | | Northbound | 34.6 | C | 28.1 | C |
| | | Southbound | 34.3 | C | 57.2 | E |
| | | Whole Int. | * | F | 441.1 | F |

*Delay too high to calculate

Table 22: 2035 Build (Alternatives A/C) New SR 33 at I-140 Intersection Levels of Service

| Intersection | Type / Scenario | Approach | AM | LOS | PM | LOS |
|---|--|-------------------|------------------|----------|------------------|----------|
| | | | Avg. Delay (sec) | | Avg. Delay (sec) | |
| SR 33 @ I-140 North of Pellissippi Pkwy | Signalized; Dual Turn Lanes for Each Direction and Dual NB/SB Through Lanes | Westbound | 274.4 | F | 166.0 | F |
| | | Northbound | 181.4 | F | 197.5 | F |
| | | Southbound | 250.0 | F | 119.1 | F |
| | | Whole Int. | 215.4 | F | 172.9 | F |
| SR 33 @ I-140 South of Pellissippi Pkwy | Signalized; Dual SB Lefts, Single EB Left, Triple EB Rights, and Dual NB/SB Through Lanes | Eastbound | 329.0 | F | 302.9 | F |
| | | Northbound | 364.3 | F | 421.2 | F |
| | | Southbound | 18.3 | B | 39.1 | D |
| | | Whole Int. | 269.9 | F | 279.0 | F |

Table 23: 2035 Build (Alternatives A/C) New US 411 at I-140 Intersection Levels of Service

| Intersection | Type / Scenario | Approach | AM | LOS | PM | LOS |
|---|---|-------------------|------------------|----------|------------------|----------|
| | | | Avg. Delay (sec) | | Avg. Delay (sec) | |
| US 411 @ I-140 West of Pellissippi Pkwy | Signalized; Exclusive WB Left Turn Lane and SB Left and Right Turn Lane | Eastbound | 34.5 | C | 50.5 | D |
| | | Westbound | 19.0 | B | 24.9 | C |
| | | Southbound | 20.9 | C | 27.4 | C |
| | | Whole Int. | 26.6 | C | 34.5 | C |
| US 411 @ I-140 East of Pellissippi Pkwy | Signalized; Exclusive EB Left Turn Lane Only | Eastbound | 38.2 | D | 19.8 | B |
| | | Westbound | 10.1 | B | 10.7 | B |
| | | Northbound | 37.6 | D | 29.5 | C |
| | | Whole Int. | 34.0 | C | 20.6 | C |

Table 24: 2015 Build (Alternative D) Intersection Levels of Service

| Intersection | Type | Approach | AM | LOS | PM | LOS |
|--|------------|-------------------|------------------|----------|------------------|----------|
| | | | Avg. Delay (sec) | | Avg. Delay (sec) | |
| 3: SR 115 / US 129 @ SR 73 / US 321 | Signalized | Eastbound | 261.8 | F | 649.3 | F |
| | | Westbound | 59.0 | E | 1173.0 | F |
| | | Northbound | 1361.0 | F | 78.4 | E |
| | | Southbound | 34.5 | C | 296.2 | F |
| | | Whole Int. | 665.2 | F | 575.8 | F |
| 5: SR 33 @ I-140 | Signalized | Eastbound | 1763.0 | F | 2841.0 | F |
| | | Northbound | 2636.0 | F | 1977.0 | F |
| | | Southbound | 3697.0 | F | 4064.0 | F |
| | | Whole Int. | 2528.0 | F | 2757.0 | F |
| 6: SR 33 @ Wildwood Road | Signalized | Westbound | 67.4 | E | 53.3 | D |
| | | Northbound | 66.4 | E | 328.5 | F |
| | | Southbound | 56.6 | E | 217.4 | F |
| | | Whole Int. | 63.2 | E | 242.7 | F |
| 7: SR 33 / E. Broadway Avenue @ SR 35 / S. Washington Street | Signalized | Eastbound | 56.1 | D | 67.1 | E |
| | | Westbound | 131.9 | F | 180.2 | F |
| | | Northbound | 176.1 | F | 301.0 | F |
| | | Southbound | 28.5 | C | 251.0 | F |
| | | Whole Int. | 103.1 | F | 234.3 | F |
| 8: SR 33 @ SR 73 / US 321 | Signalized | Eastbound | 203.2 | F | 669.0 | F |
| | | Westbound | 118.9 | F | 657.2 | F |
| | | Northbound | 2079.0 | F | 1342.0 | F |
| | | Southbound | 37.0 | D | 463.6 | F |
| | | Whole Int. | 814.6 | F | 790.0 | F |
| 9: SR 35 / S. Washington Street @ Sevierville Road | Signalized | Eastbound | 27.8 | C | 28.2 | C |
| | | Westbound | 38.4 | D | 36.0 | D |
| | | Northbound | 15.5 | B | 16.7 | B |
| | | Southbound | 14.7 | B | 20.4 | C |
| | | Whole Int. | 17.6 | B | 20.4 | C |
| 10: S. Washington Street / SR 35 @ High Street / SR 35 | Signalized | Eastbound | 46.6 | D | 265.0 | F |
| | | Westbound | 952.4 | F | 1806.0 | F |
| | | Northbound | 20.3 | C | 29.4 | C |
| | | Southbound | 9.0 | A | 226.3 | F |
| | | Whole Int. | 148.0 | F | 323.0 | F |
| 11: S. Washington Street @ SR 73 / US 321 | Signalized | Eastbound | 597.1 | F | 626.2 | F |
| | | Westbound | 44.1 | D | 62.4 | E |
| | | Northbound | 261.2 | F | 312.6 | F |
| | | Southbound | 826.3 | F | 2625.0 | F |
| | | Whole Int. | 470.9 | F | 1014.0 | F |
| 12: SR 73 / US 321 @ SR 335 / Old Glory Road | Signalized | Eastbound | 808.0 | F | 301.9 | F |
| | | Westbound | 286.8 | F | 493.7 | F |
| | | Northbound | 29.6 | C | 26.4 | C |
| | | Southbound | 30.4 | C | 38.1 | D |
| | | Whole Int. | 421.9 | F | 285.7 | F |

Table 24: 2015 Build (Alternative D) Intersection Levels of Service (cont.)

| Intersection | Type | Approach | AM | LOS | PM | LOS |
|--|-----------------|------------|------------------|-----|------------------|-----|
| | | | Avg. Delay (sec) | | Avg. Delay (sec) | |
| 13: SR 33 @ Sam Houston School Road | Signalized | Westbound | 341.0 | F | 110.8 | F |
| | | Northbound | 121.1 | F | 351.2 | F |
| | | Southbound | 18.8 | B | 20.2 | B |
| | | Whole Int. | 188.3 | F | 197.2 | F |
| New (15/16): Wildwood Road @ Peppermint Road / Sam Houston School Road | STOP Controlled | Eastbound | 8.3 | A | 8.0 | A |
| | | Westbound | 10.3 | B | 9.1 | A |
| | | Northbound | 4064.0 | F | 1487.0 | F |
| | | Southbound | 5697.0 | F | 1980.0 | F |
| New (16/17): SR 35 / US 411 / Sevierville Road @ Peppermint Road / Hitch Road | STOP Controlled | Eastbound | 12.8 | B | 11.3 | B |
| | | Westbound | 8.5 | A | 8.3 | A |
| | | Northbound | 26527.0 | F | 11142.0 | F |
| | | Southbound | 22757.0 | F | 9846.0 | F |
| New (18/19): Davis Ford Road @ Hitch Road / Helton Road | STOP Controlled | Eastbound | 7.7 | A | 7.6 | A |
| | | Westbound | 7.8 | A | 7.7 | A |
| | | Northbound | 545.6 | F | 289.5 | F |
| | | Southbound | 353.6 | F | 155.5 | F |
| 20: SR 73 / US 321 @ Helton Road / Tuckaleechee Pike | STOP Controlled | Eastbound | 160.0 | F | 38.6 | E |
| | | Westbound | 12.9 | B | 11.3 | B |
| | | Northbound | * | F | 42941.0 | F |
| | | Southbound | * | F | 24882.0 | F |

*Delay too high to calculate

Table 25: 2035 Build (Alternative D) Intersection Levels of Service

| Intersection | Type | Approach | AM | LOS | PM | LOS |
|--|------------|-------------------|------------------|----------|------------------|----------|
| | | | Avg. Delay (sec) | | Avg. Delay (sec) | |
| 3: SR 115 / US 129 @ SR 73 / US 321 | Signalized | Eastbound | 703.9 | F | 1208.0 | F |
| | | Westbound | 308.2 | F | 1888.0 | F |
| | | Northbound | 2114.0 | F | 441.3 | F |
| | | Southbound | 38.8 | D | 784.5 | F |
| | | Whole Int. | 1140.0 | F | 1117.0 | F |
| 5: SR 33 @ I-140 | Signalized | Eastbound | 4193.0 | F | 5664.0 | F |
| | | Northbound | 6837.0 | F | 4089.0 | F |
| | | Southbound | 7499.0 | F | 9877.0 | F |
| | | Whole Int. | 6051.0 | F | 6054.0 | F |
| 6: SR 33 @ Wildwood Road | Signalized | Westbound | 910.7 | F | 104.6 | F |
| | | Northbound | 1176.0 | F | 2026.0 | F |
| | | Southbound | 928.2 | F | 1794.0 | F |
| | | Whole Int. | 1020.0 | F | 1653.0 | F |
| 7: SR 33 / E. Broadway Avenue @ SR 35 / S. Washington Street | Signalized | Eastbound | 93.5 | F | 151.9 | F |
| | | Westbound | 272.7 | F | 180.5 | F |
| | | Northbound | 400.7 | F | 301.0 | F |
| | | Southbound | 31.9 | C | 251.0 | F |
| | | Whole Int. | 215.8 | F | 243.7 | F |
| 8: SR 33 @ SR 73 / US 321 | Signalized | Eastbound | 817.9 | F | 1352.0 | F |
| | | Westbound | 232.3 | F | 864.0 | F |
| | | Northbound | 2611.0 | F | 1696.0 | F |
| | | Southbound | 43.5 | D | 951.6 | F |
| | | Whole Int. | 1192.0 | F | 1211.0 | F |
| 9: SR 35 / S. Washington Street @ Sevierville Road | Signalized | Eastbound | 27.9 | C | 28.5 | C |
| | | Westbound | 41.1 | D | 37.1 | D |
| | | Northbound | 16.6 | B | 18.3 | B |
| | | Southbound | 15.6 | B | 25.1 | C |
| | | Whole Int. | 18.7 | B | 23.4 | C |
| 10: S. Washington Street / SR 35 @ High Street / SR 35 | Signalized | Eastbound | 41.4 | D | 115.7 | F |
| | | Westbound | 1215.0 | F | 2238.0 | F |
| | | Northbound | 22.5 | C | 84.7 | F |
| | | Southbound | 10.2 | B | 162.2 | F |
| | | Whole Int. | 178.3 | F | 332.7 | F |
| 11: S. Washington Street @ SR 73 / US 321 | Signalized | Eastbound | 826.8 | F | 958.1 | F |
| | | Westbound | 167.0 | F | 379.5 | F |
| | | Northbound | 522.9 | F | 572.8 | F |
| | | Southbound | 1124.0 | F | 3122.0 | F |
| | | Whole Int. | 726.7 | F | 1343.0 | F |
| 12: SR 73 / US 321 @ SR 335 / Old Glory Road | Signalized | Eastbound | * | F | 560.9 | F |
| | | Westbound | 460.4 | F | 824.8 | F |
| | | Northbound | 40.6 | D | 29.0 | C |
| | | Southbound | 37.0 | D | 83.6 | F |
| | | Whole Int. | * | F | 490.9 | F |

*Delay too high to calculate

Table 25: 2035 Build (Alternative D) Intersection Levels of Service (cont.)

| Intersection | Type | Approach | AM | LOS | PM | LOS |
|---|--------------------|------------|------------------|-----|------------------|-----|
| | | | Avg. Delay (sec) | | Avg. Delay (sec) | |
| 13: SR 33 @ Sam Houston School Road | Signalized | Westbound | 1075.0 | F | 454.6 | F |
| | | Northbound | 2119.0 | F | 770.2 | F |
| | | Southbound | 457.4 | F | 1419.0 | F |
| | | Whole Int. | 1397.0 | F | 850.0 | F |
| New (14/15): Wildwood Road @ Peppermint Road / Sam Houston School Road | STOP Controlled | Eastbound | 8.4 | A | 8.0 | A |
| | | Westbound | 13.4 | B | 10.6 | B |
| | | Northbound | 11076.0 | F | 3386.0 | F |
| | | Southbound | 17387.0 | F | 4760.0 | F |
| New (16/17): SR 35 / US 411 / Sevierville Road @ Peppermint Road / Hitch Road | STOP Controlled | Eastbound | 15.3 | C | 12.7 | B |
| | | Westbound | 9.0 | A | 8.7 | A |
| | | Northbound | * | F | 42370.0 | F |
| | | Southbound | * | F | 32909.0 | F |
| New (18/19): Davis Ford Road @ Hitch Road / Helton Road | STOP Controlled | Eastbound | 7.9 | A | 7.7 | A |
| | | Westbound | 8.6 | A | 8.3 | A |
| | | Northbound | 3042.0 | F | 1746.0 | F |
| | | Southbound | 3451.0 | F | 1969.0 | F |
| 20: SR 73 / US 321 @ Helton Road / Tuckaleechee Pike | STOP Controlled | Eastbound | 2558.0 | F | 1180.0 | F |
| | | Westbound | 27.3 | D | 17.8 | C |
| | | Northbound | * | F | * | F |
| | | Southbound | * | F | * | F |

*Delay too high to calculate

Table 26 provides a summary of the intersection level of service.

Many of the intersections currently operate at a poor LOS (LOS E or F) with some additional intersections having failing operations by the year 2035 (Washington Street at High Street and SR 33 at Sam Houston School Road) in the No-Build scenario. The stop controlled intersections evaluated along Sam Houston School Road, Peppermint Road, Hitch Road, and Helton Road generally operate at an acceptable LOS in the No-Build scenario with some poor operations beginning in the year 2035 for some approaches.

Based on this analysis, there are no intersections where the construction of the Pellissippi Parkway Extension (Build Alternative A/C) would degrade the level of service. There are a few intersections where the proposed project would improve the level of service. The locations include:

- Improvement at the intersection of SR 33 at Wildwood Road for the year 2015 during the AM peak period – the LOS is improved to a LOS D from a LOS E, which is at the threshold for acceptable operations.
- Improvements for SR 33 / E. Broadway Avenue at SR 35 / S. Washington Street intersection for 2015 and 2035 for both peak periods.

There is an improvement for the year 2015 at the intersection of SR 33 and I-140 (Pellissippi Parkway); however, this improvement is a result of improvements at the new ramp intersections including signaling both intersections and adding turn lanes and dual northbound/southbound through lanes. Additional improvements were evaluated for the 2035 Build scenario; however, it was not possible to achieve an acceptable LOS (i.e. LOS D) for this intersection.

For all the re-aligned intersections as part of Alternative D, the LOS for both 2015 and 2035 is poor given the high traffic volumes projected to use the intersections. As this project is in the planning phase, no specific design plans have been developed for these intersections and they were evaluated as stop controlled intersections as well as signalized to determine the best possible operations and to determine if it was possible to achieve an acceptable LOS. Providing turn lanes where appropriate and signaling the intersections still resulted in a poor LOS. The through volumes are high enough to cause the intersections to operate at capacity and result in long delays. To reduce delay through the intersection, additional capacity would be required in the form of additional through lanes. Leaving the intersections unsignalized allows for acceptable operations on the major street (i.e. Wildwood Road, US 411, Davis Ford Road, and US 321) but causes significant delay on the side streets (i.e. Peppermint Road, Hitch Road, Helton Road, and Tuckaleechee Pike). Therefore, the results were presented for the stop controlled scenario since it was possible to achieve some acceptable levels of service. If Alternative D is selected as the preferred alternative, additional analysis may be required to determine the appropriate intersection configuration and traffic control for the newly re-aligned intersections.

Level of service results are not presented for Build Alternative A/C for the eastern intersections located along Build Alternative D (i.e. along Sam Houston School Road, Peppermint Road, Hitch Road, and Helton Road). It was assumed that the traffic operations would be similar to the No-Build Alternative or possibly better if traffic volumes are reduced on the local roads with the extension in place.

Table 26: Existing Intersection Levels of Service Summary

| Intersection | AM | | | | | | | PM | | | | | | |
|---|----------|---------------|---------------|----------------------------|----------------------------|--------------------------|--------------------------|----------|---------------|---------------|----------------------------|----------------------------|--------------------------|--------------------------|
| | Existing | 2015 No-Build | 2035 No-Build | 2015 Build Alternative A/C | 2035 Build Alternative A/C | 2015 Build Alternative D | 2035 Build Alternative D | Existing | 2015 No-Build | 2035 No-Build | 2015 Build Alternative A/C | 2035 Build Alternative A/C | 2015 Build Alternative D | 2035 Build Alternative D |
| SR 115 / US 129 @ SR 73 / US 321 | F | F | F | F | F | F | F | F | F | F | F | F | F | F |
| SR 33 @ I-140 | F | F | F | D | F | F | F | F | F | F | E | F | F | F |
| SR 33 @ Wildwood Rd | D | E | F | D | F | E | F | F | F | F | F | F | F | F |
| SR 33 / E. Broadway Ave @ SR 35 / S. Washington St | D | D | F | C | D | F | F | D | E | F | D | D | F | F |
| SR 33 @ SR 73 / US 321 | F | F | F | F | F | F | F | F | F | F | F | F | F | F |
| SR 35 / S. Washington St @ Sevierville Rd | B | B | B | B | B | B | B | B | B | B | B | B | C | C |
| S. Washington St / SR 35 @ High St / SR 35 | C | D | F | D | E | F | F | C | D | F | D | F | F | F |
| S. Washington St @ SR 73 / US 321 | C | F | F | F | F | F | F | F | F | F | F | F | F | F |
| SR 73 / US 321 @ SR 335 / Old Glory Rd | F | F | F | F | F | F | F | F | F | F | F | F | F | F |
| SR 33 @ Sam Houston School Road | B | D | F | Not Provided | Not Provided | F | F | C | C | F | Not Provided | Not Provided | F | F |
| Sam Houston School Road @ Wildwood Road | B | B | C | Not Provided | Not Provided | Realigned | Realigned | B | B | C | Not Provided | Not Provided | Realigned | Realigned |
| Peppermint Road @ Wildwood Road | B | B | B | Not Provided | Not Provided | Realigned | Realigned | B | B | C | Not Provided | Not Provided | Realigned | Realigned |
| SR 35 / US 411 / Sevierville Road @ Peppermint Road | C | D | F | Not Provided | Not Provided | Realigned | Realigned | C | D | F | Not Provided | Not Provided | Realigned | Realigned |
| SR 35 / US 411 / Sevierville Road @ Hitch Road / Peppermint Hills Drive | C | C | F | Not Provided | Not Provided | Realigned | Realigned | C | C | D | Not Provided | Not Provided | Realigned | Realigned |
| Davis Ford Road @ Hitch Road | B | B | B | Not Provided | Not Provided | Realigned | Realigned | A | A | B | Not Provided | Not Provided | Realigned | Realigned |
| Davis Ford Road @ Helton Road | A | A | A | Not Provided | Not Provided | Realigned | Realigned | A | A | A | Not Provided | Not Provided | Realigned | Realigned |
| SR 73 / US 321 @ Helton Road / Tuckaleechee Pike | F | F | F | Not Provided | Not Provided | F | F | D | E | F | Not Provided | Not Provided | F | F |

The delay associated with the level of service is another measure to determine changes in traffic operations. Delay is a measure of the additional travel time experienced by a driver through an intersection. The average delay per movement is shown on the previous tables (Tables 15-25), which detail intersection level of service. To provide a summary of the impacts associated with the Build Alternative A/C and Build Alternative D, the delay for the each alternative was compared to the No-Build Alternative. Tables 27 and 28 summarize the expected change in the amount of delay (in terms of seconds of delay) at key intersections in the design year 2035 for each Build Alternative in comparison with the No-Build Alternative. Figures 12 and 13 display the percentage difference in delay between the No-Build and the Build Alternatives at those intersections in 2035.

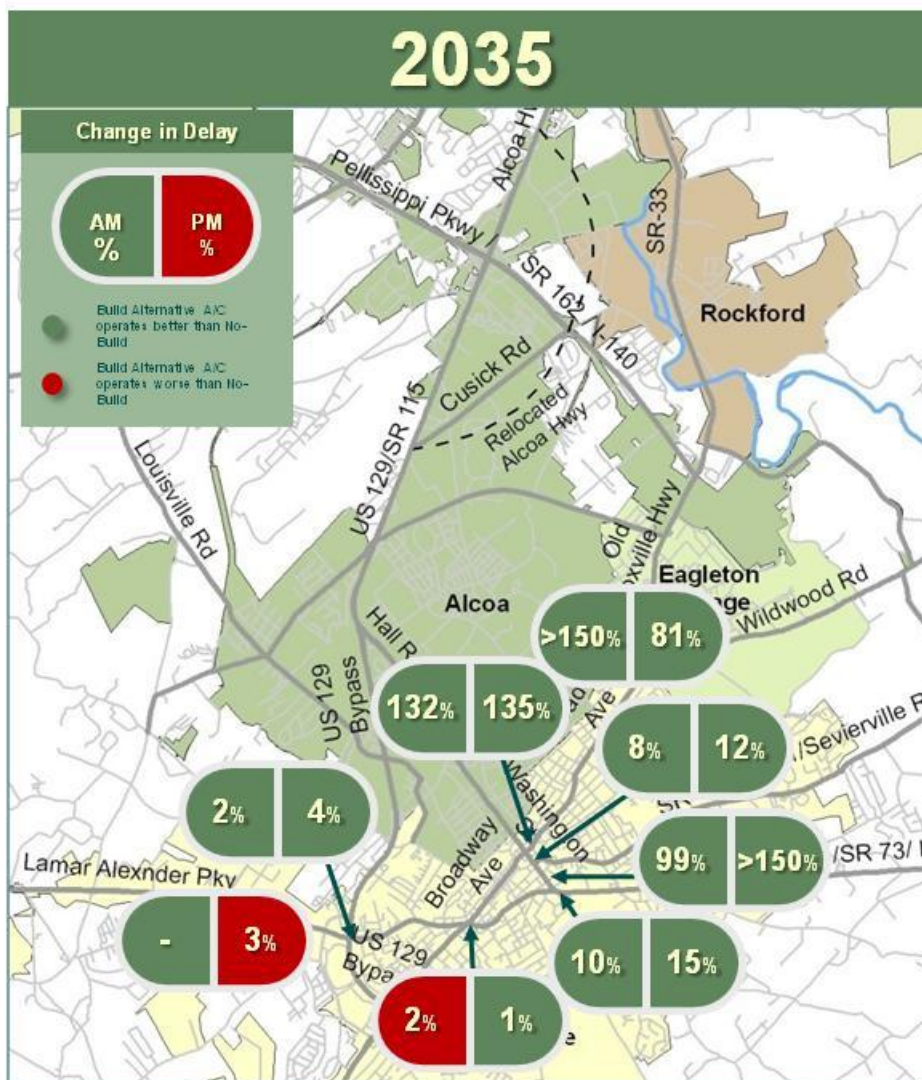
Table 27: 2035 Intersection Delay Change for Alternative A/C Compared to No-Build

| Intersection | 2035 | |
|---|--|------------------------------|
| | AM Change in Delay (seconds) | PM Change in Delay (seconds) |
| SR 115/US 129 @ SR 73/US 321 | 20.0 | 35.3 |
| SR 33 @ Wildwood Rd | 669.5 | 773.1 |
| SR 33/E Broadway Ave @ SR 35/S. Washington St | 50.2 | 68.2 |
| SR 33 @ SR 73/US 321 | 19.0 | 11.0 |
| SR 35/S. Washington St @ Sevierville Rd | 1.4 | 2.1 |
| S. Washington St/SR 35 @ High St/SR 35 | 68.0 | 140.6 |
| S. Washington St. @ SR 73.US 321 | 68.2 | 167.0 |
| SR 73/US 321 @ SR 335/Old Glory Rd | - | 11.2 |
| | Build Alternatives A/C operates better than No-Build | |
| | Build Alternatives A/C operates worse than No-Build | |

Table 28: 2035 Intersection Delay Change for Alternative D Compared to No-Build

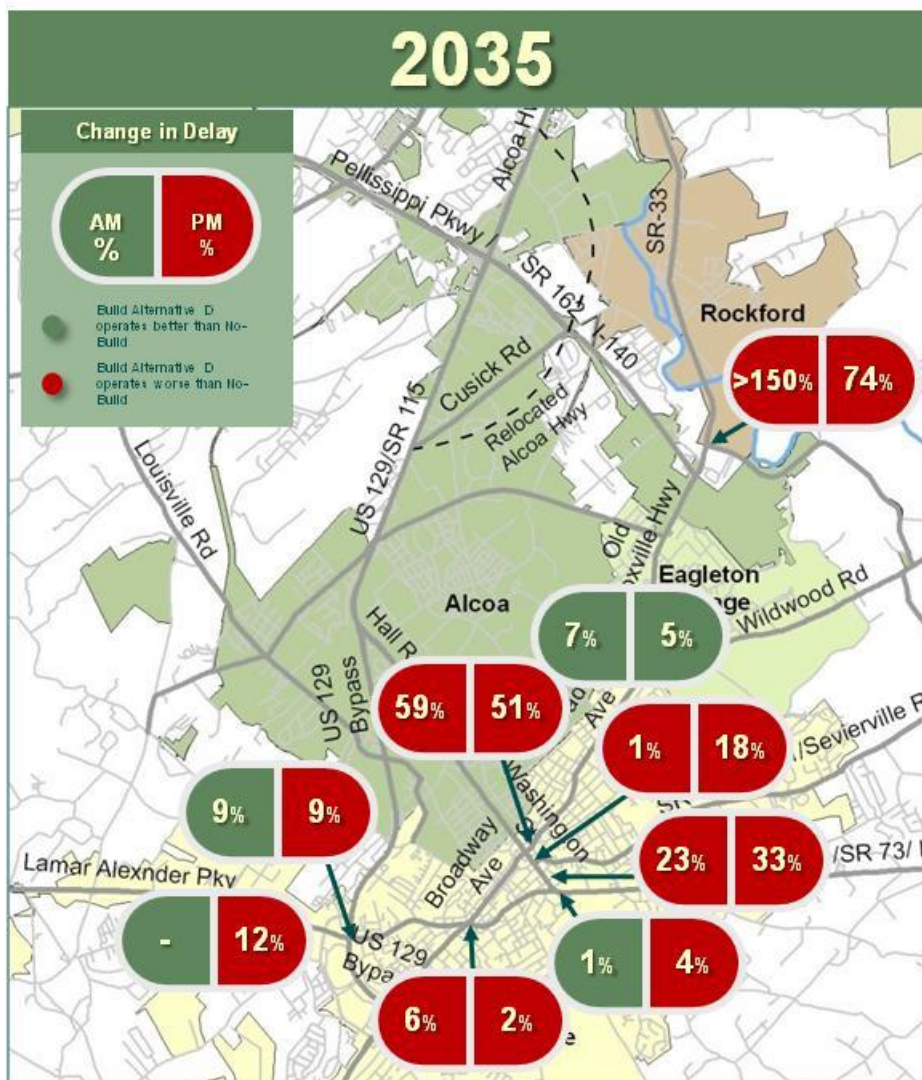
| Intersection | 2035 | |
|---|---|------------------------------|
| | AM Change in Delay (seconds) | PM Change in Delay (seconds) |
| SR 115/US 129 @ SR 73/US 321 | 105.0 | -103.0 |
| SR 33 @ Wildwood Rd | 71.0 | 76.0 |
| SR 33/E Broadway Ave @ SR 35/S. Washington St | -127.6 | -125.0 |
| SR 33 @ SR 73/US 321 | -67.0 | -22.0 |
| SR 35/S. Washington St @ Sevierville Rd | -0.1 | -4.1 |
| S. Washington St/SR 35 @ High St/SR 35 | -41.8 | -108.1 |
| S. Washington St. @ SR 73.US 321 | 6.1 | -53.0 |
| SR 73/US 321 @ SR 335/Old Glory Rd | - | -61.0 |
| SR 33 @ Sam Houston School Road | -844.9 | -626.9 |
| | Build Alternative D operates better than No-Build | |
| | Build Alternative D operates worse than No-Build | |

Figure 12: 2035 Intersection Delay Comparisons for Alternative A/C



As shown in **Table 27** and **Figure 12**, Alternative A/C shows substantial improvement in delay in most of the intersections in the Alcoa / Maryville core. The improvements range from 1% reduction in delay to over 150% reduction in delay (compared to the No-Build). In actual terms of seconds of delay, these improvements correspond to a reduction in delay of between 11 seconds and 141 seconds over the No-Build. Of the eight intersections examined, only two would operate worse under Alternative A/C compared with the No-Build Alternative, one during the morning peak and another during the afternoon peak.

Figure 13: 2035 Intersection Delay Comparisons for Alternative D



As shown in **Table 28** and **Figure 13**, under Alternative D, most of the intersections in the Maryville core experience increased delay, ranging from 2% to 59% increase in delay compared to the No-Build Alternative. This corresponds to an increase in delay (from the No-Build Alternative) of between 1 second and 128 seconds. Of the nine total intersections examined, five would experience worse delay during the morning and afternoon peak hours, and three would experience increased delays in the afternoon peak hour. The most extreme increase in delay would occur at the SR 33 at Sam Houston School Road intersection, where the increase in delay would be between 627 and 845 seconds during the peak hours (representing a 74% to over 150% increase in delay from the No-Build Alternative).

A single intersection, SR 33 at Wildwood Road, would experience a 5 to 7% improvement in delay with Alternative D compared to the No-Build Alternative in 2035.

5.0 SUMMARY OF CHANGES

Following the publications of the DEIS in 2010, TDOT conducted additional analysis of traffic operations in order to address comments received and to provide the most comparable traffic operations analysis between the alternatives. The changes that have been made to the Traffic Operations Technical Report in response to the comments include:

- Forecasted volumes for the No-Build scenario for the segment of US 129 north of US 321 were modified, due to an incorrectly reported base volume from the regional travel demand model in the original study.
- For clarification, additional forecasted volumes and truck percentage were reported for the segment of US 129 between SR 35 and Louisville Road.
- For clarification, additional forecasted volumes and truck percentage were reported for the segment of US 129 between Relocated Alcoa Highway and SR 335.
- To be comparable, more detailed traffic forecasts were provided for Alternative D and for the existing roads that comprise Alternative D.
- To display these volume changes, figures depicting forecasted traffic volumes and truck percentages for both the Build (Alternatives A/C and D) and No-Build scenarios were included in the traffic report.
- The level of service calculations were revised to take into account the changes to the traffic forecasts as stated previously.
- In addition to showing levels of service to define traffic operations changes between the Build and No-Build scenarios, the percent reduction or increase in delay was examined for both build scenarios in the year 2035.
 - Overall, the Build Alternative (A/C) shows a substantial reduction in delay compared to the No-Build at most study area intersections, with the reduction in delay ranging from 1% (corresponding to 11 seconds less than the No-Build Alternative) to over 150% (corresponding to 141 seconds less than the No-Build Alternative).
 - For most key intersections, Build Alternative D shows a moderate increase in delay, ranging from 2% (a 1-second increase over the No-Build) to 59% (a 128-second increase over the No-Build). One intersection (SR 33 at Sam Houston School Road) is predicted to experience rather extreme increases in delay by 2035 under Alternative D, ranging from 74% (a 627 second increase over the No-Build) to over 150% increase (a 845 second increase over the No-Build) during the peak hours.

APPENDIX

Pellissippi Parkway Extension Traffic Forecast Revisions

(October 7, 2010, revised February 11, 2011)



sain associates

244 West Valley Avenue, Suite 200 Birmingham, Alabama 35209

MEMORANDUM

TO: Brandon Darks, TDOT Project Planning
FROM: Becky White
DATE: October 7, 2010
SUBJECT: Pellissippi Parkway Extension
Traffic Forecast Revisions

Attached for approval are revised traffic forecast volumes for the Pellissippi Parkway Extension project. The forecast revisions were prepared in response to a discussion between TDOT staff, Sain Associates, PB America, and the Knoxville TPO that took place on September 13, 2010. In that conference, the group discussed comments by the City of Alcoa related to traffic analyses presented in the Draft Environmental Impact Statement for Pellissippi Parkway Extension. The Knoxville TPO noted that there had been a labeling error in the original model outputs provided to Sain for the segment of US 129 between US 321 and Hall Road. The group agreed that Sain Associates' Traffic Forecast Study, dated October 17, 2007, should be revised as follows:

- Modify forecasted volumes for the "Without PPE" scenario for the segment of US 129 north of US 321. The modification is based on receiving a corrected base volume from the regional travel demand model to replace the incorrectly reported base volume that was used in the original study. Also modify the forecasted volumes for the intersection of US 129 @ US 321 for the "Without PPE" scenario.
- For the purpose of clarification, add forecasted volumes for the segment of US 129 between SR 35 and Louisville Road. No volumes for this segment were included in the 2007 Traffic Forecast Study. Modify the forecasted volumes for the intersection of US 129 @ SR 35 to account for the additional segment volume.
- For the purpose of clarification, add forecasted volumes for the segment of US 129 between Relocated Alcoa Highway and SR 335. No volumes for this segment were included in the 2007 Traffic Forecast Study.

Revised traffic volumes are illustrated on the attached figures. On the "AADT Segment Volumes Without Pellissippi Parkway Extension" figure, volumes were added or revised on the following segments:

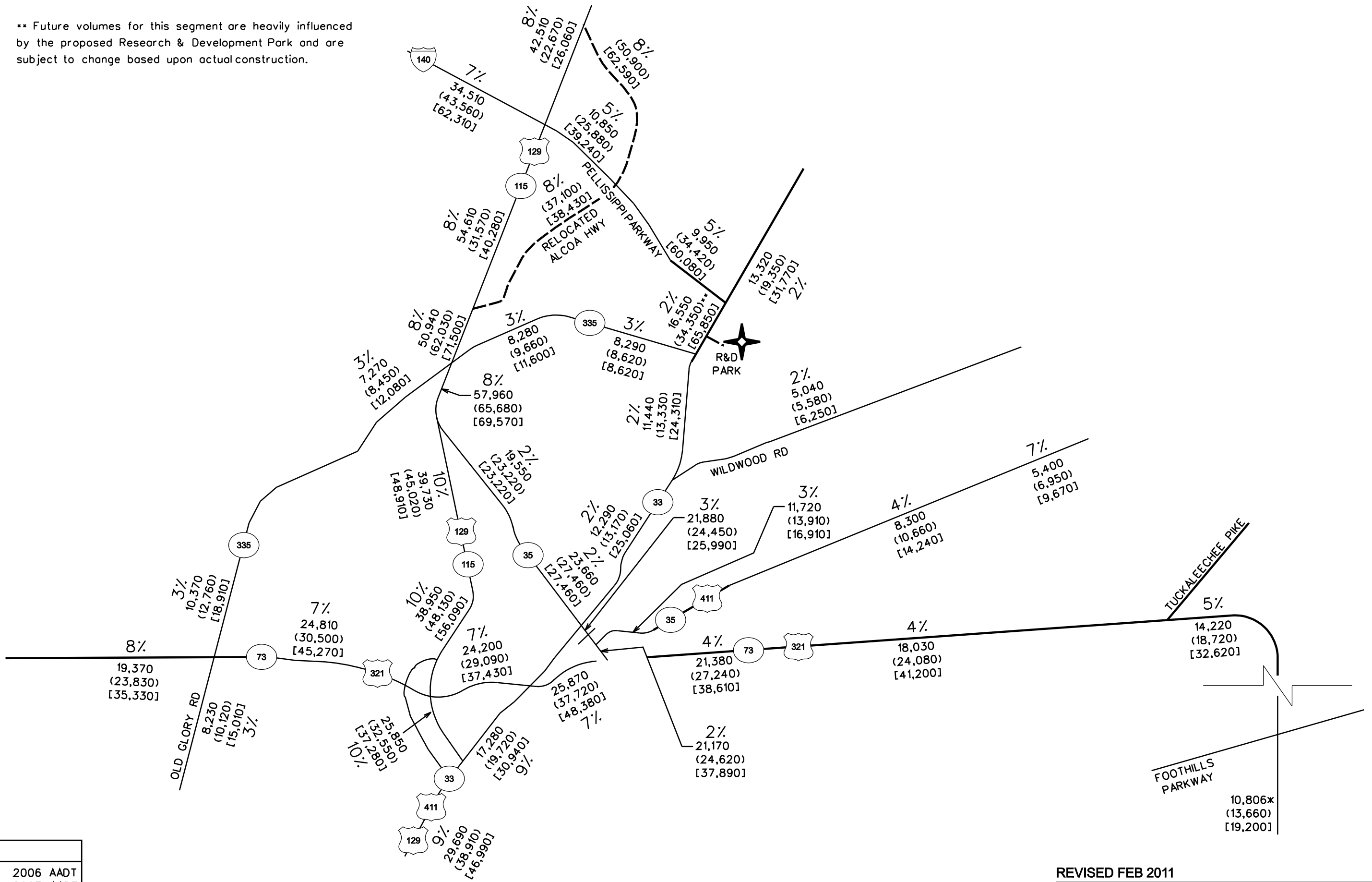
- US 129 between Relocated Alcoa Highway and SR 335
- US 129 between SR 335 and SR 35
- US 129 south of SR 35
- US 129 north of US 321.

On the "AADT Segment Volumes With Pellissippi Parkway Extension" figure, volumes were added or revised on the following segments:

- US 129 between Relocated Alcoa Highway and SR 335
- US 129 between SR 335 and SR 35
- US 129 south of SR 35.



** Future volumes for this segment are heavily influenced by the proposed Research & Development Park and are subject to change based upon actual construction.



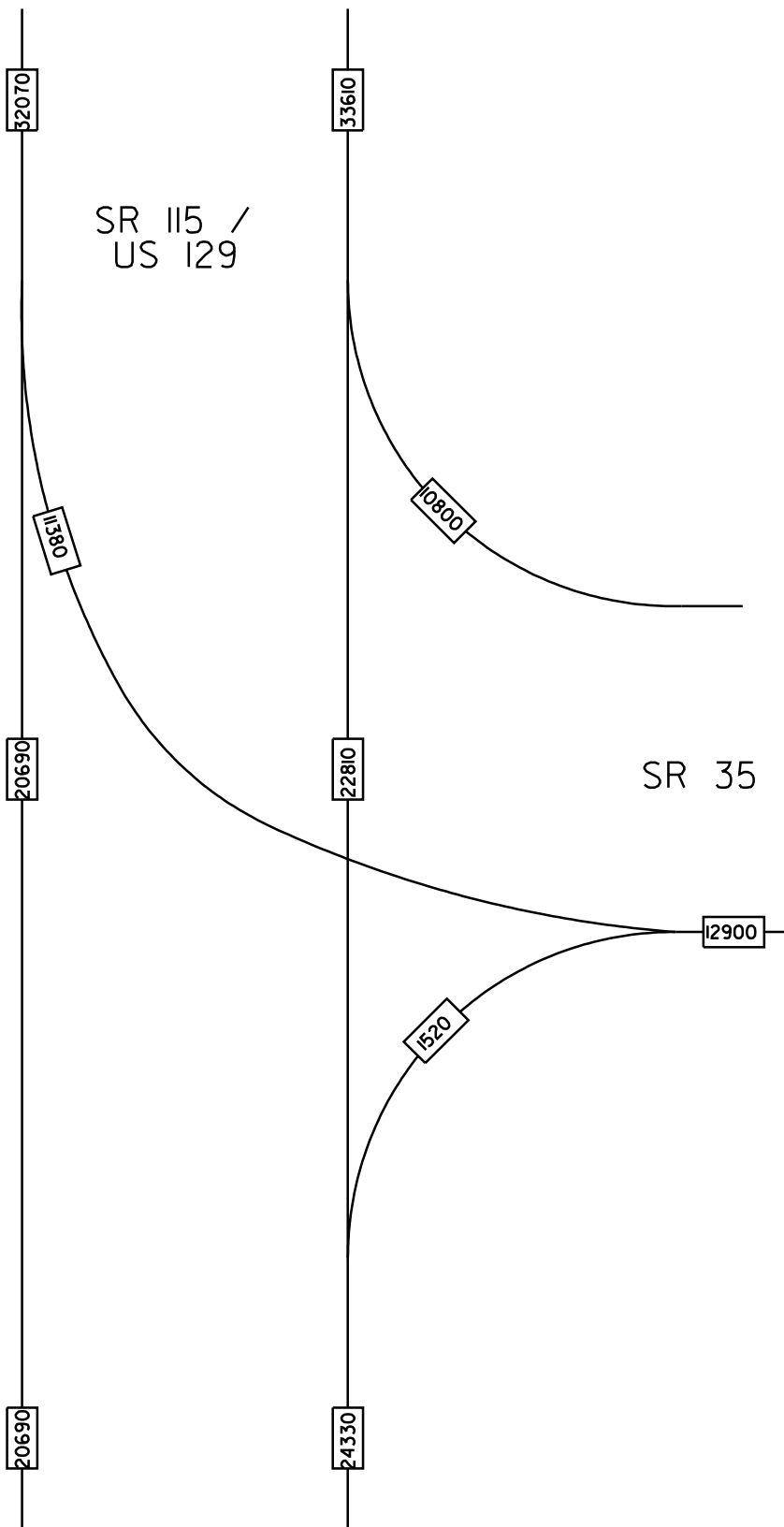
| LEGEND | |
|---------|-------------|
| 00000 | - 2006 AADT |
| 00000* | - 2007 AADT |
| (00000) | - 2015 AADT |
| [00000] | - 2035 AADT |
| X% | - % TRUCKS |

REVISED FEB 2011

AADT SEGMENT VOLUMES WITHOUT PELLISSIPPI PARKWAY EXTENSION



NOT TO SCALE

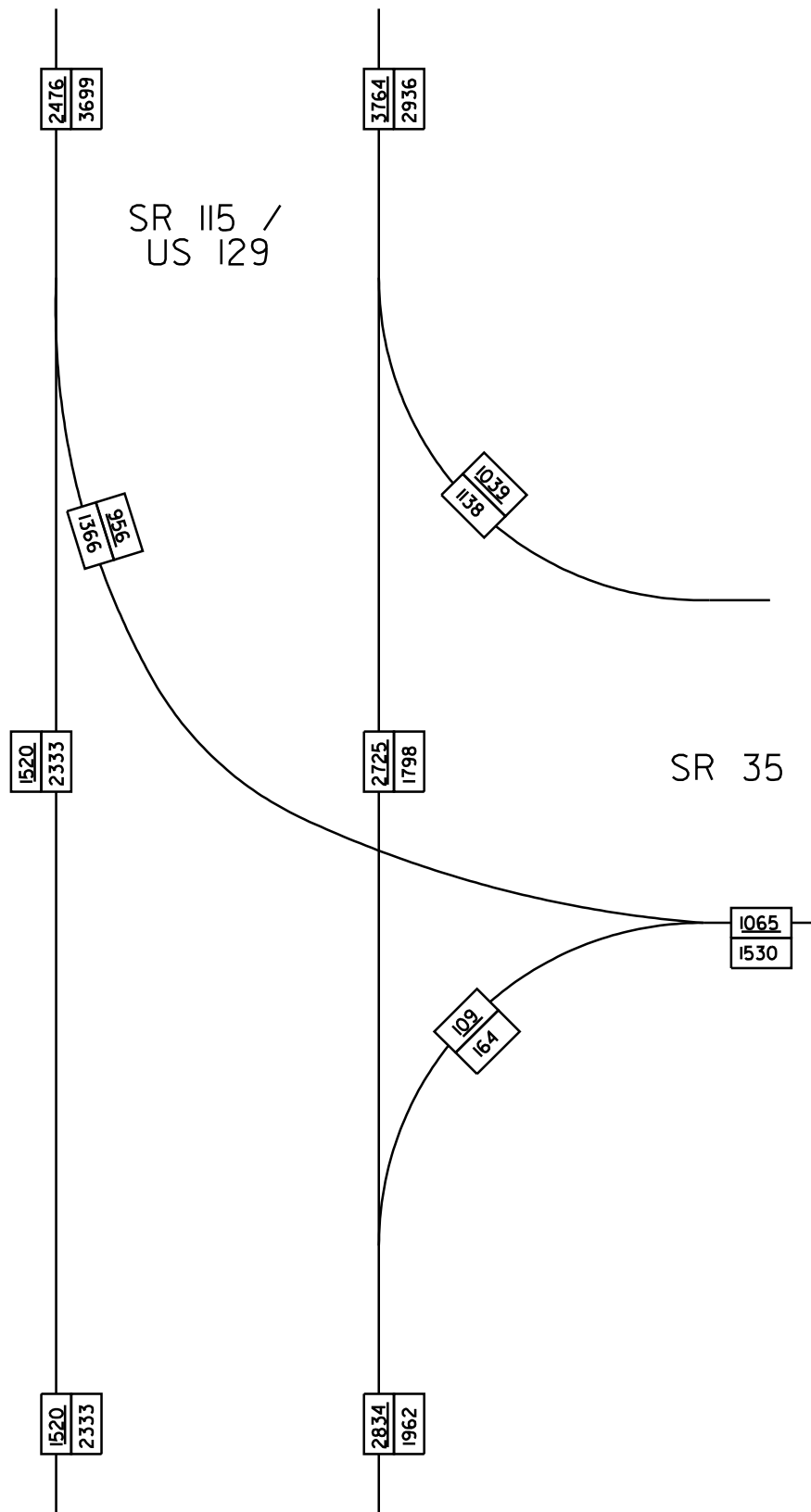


2015 AADT NO PPE

SR 115/US 129 @ SR 35



NOT TO SCALE

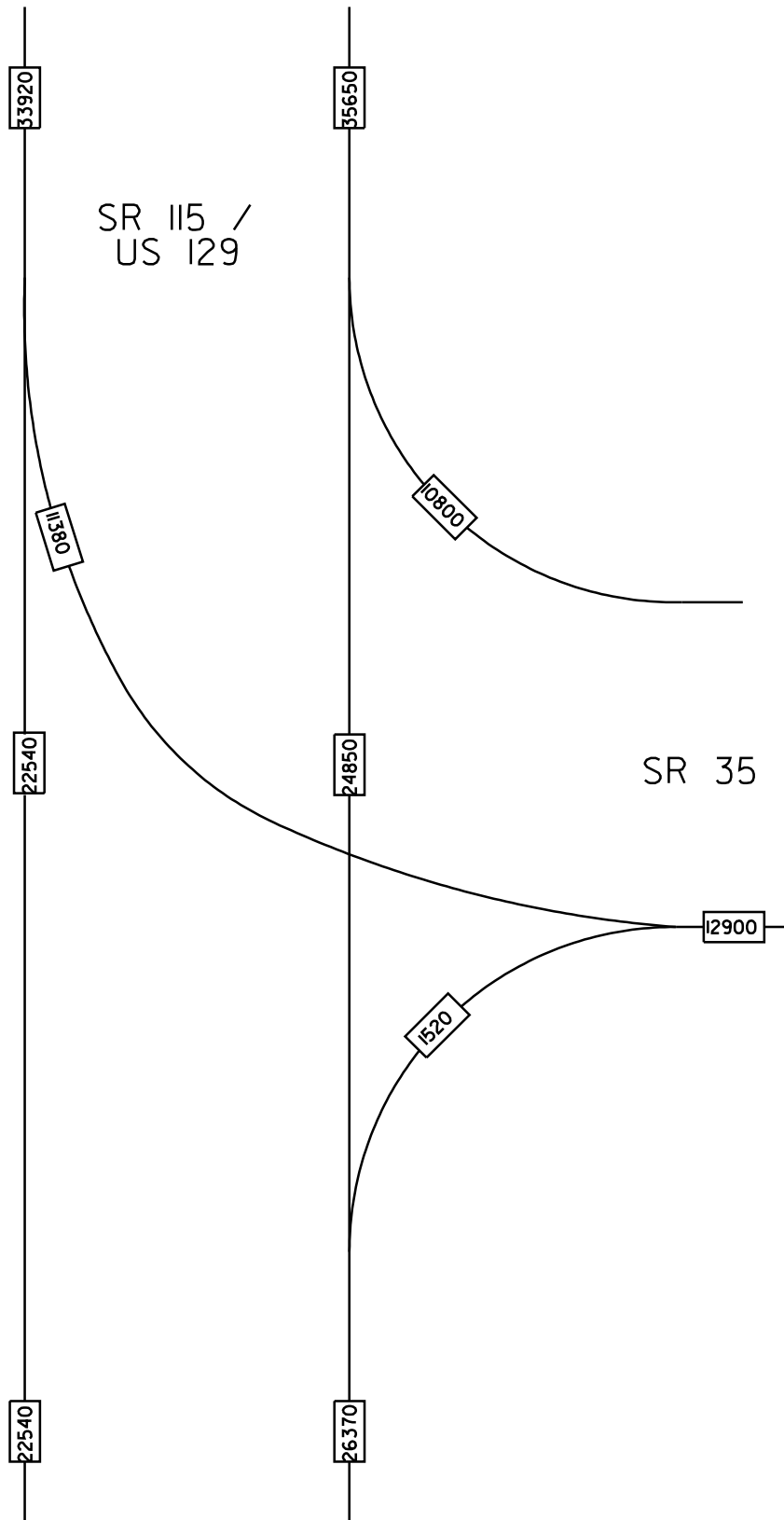


2015 DHV NO PPE
AM / PM

SR 115/US 129 @ SR 35



NOT TO SCALE

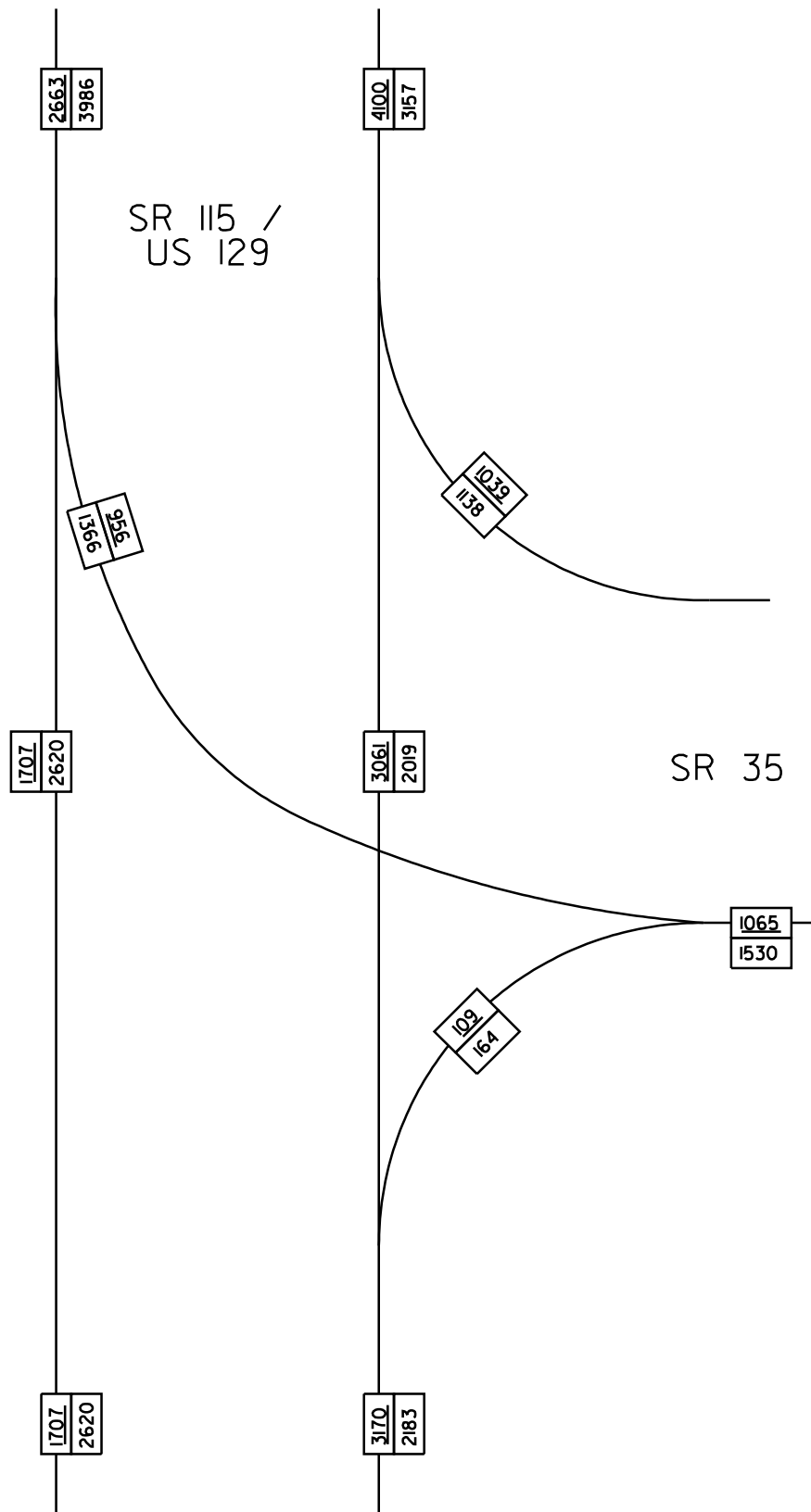


2035 AADT NO PPE

SR 115/US 129 @ SR 35



NOT TO SCALE

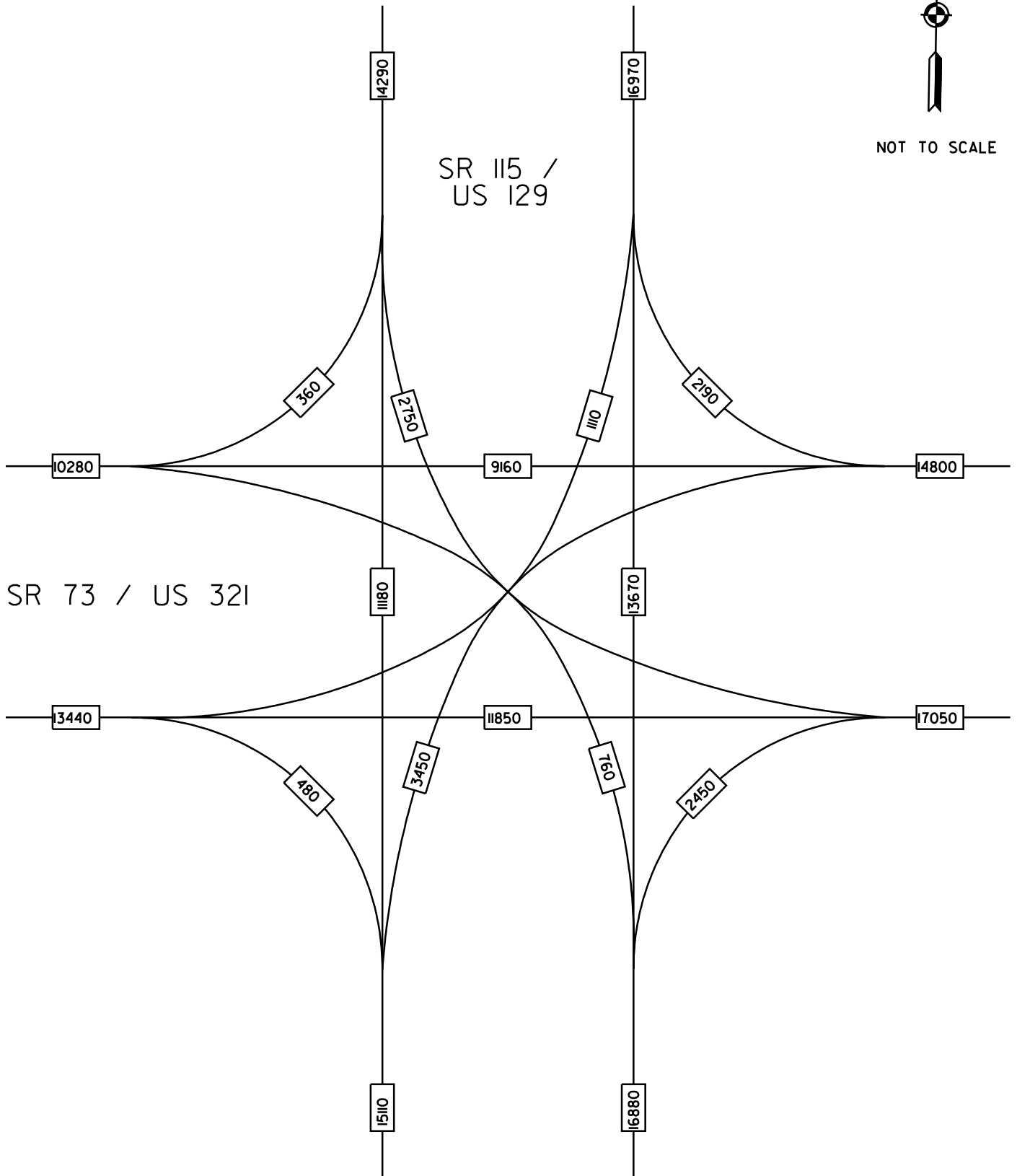


2035 DHV NO PPE
AM / PM

SR 115/US 129 @ SR 35



NOT TO SCALE

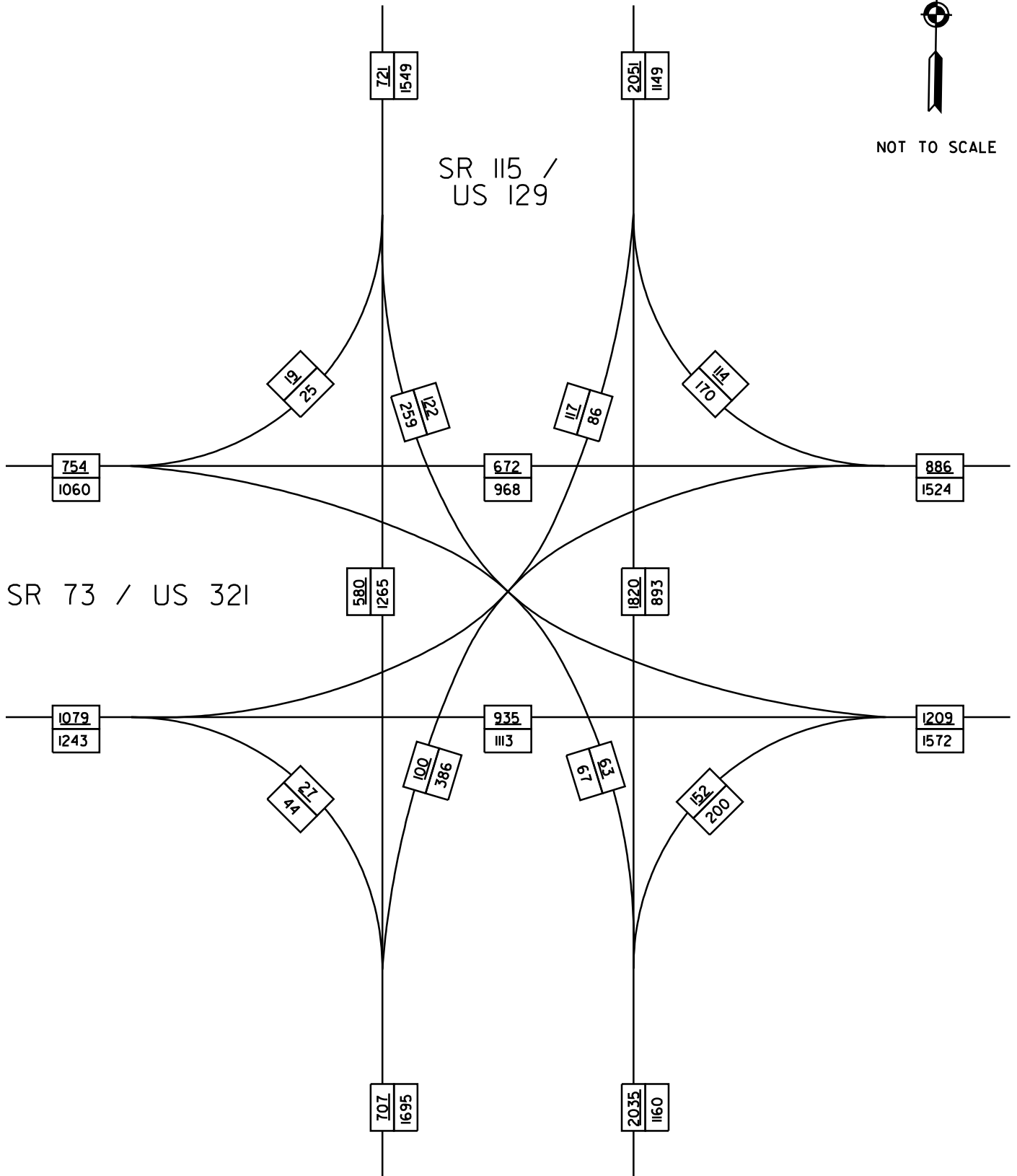


2015 AADT NO PPE

SR 115/US 129 @ SR 73/US 321



NOT TO SCALE



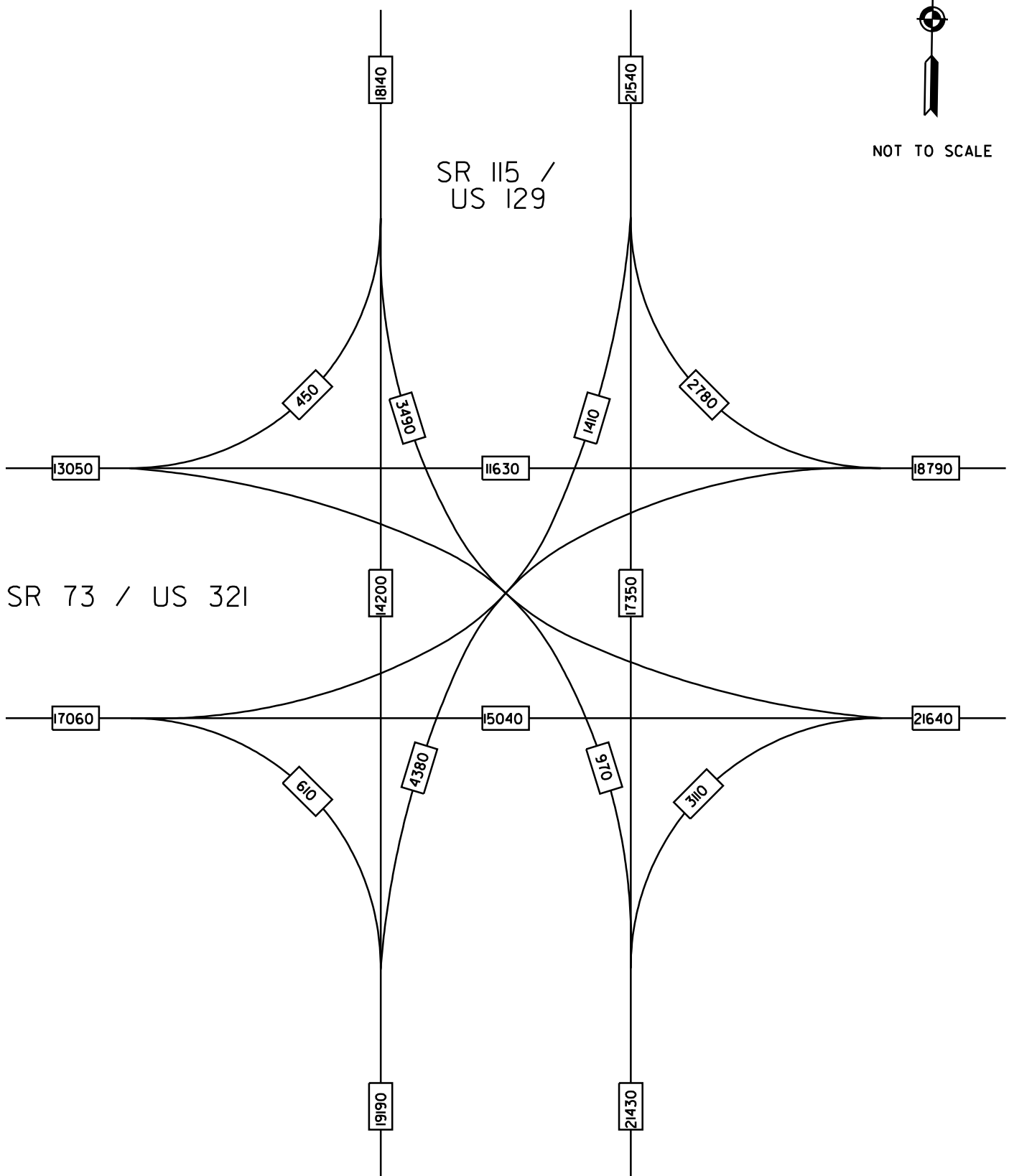
2015 DHV NO PPE
AM / PM

SR 115/US 129 @ SR 73/US 321



NOT TO SCALE

SR 115 /
US 129



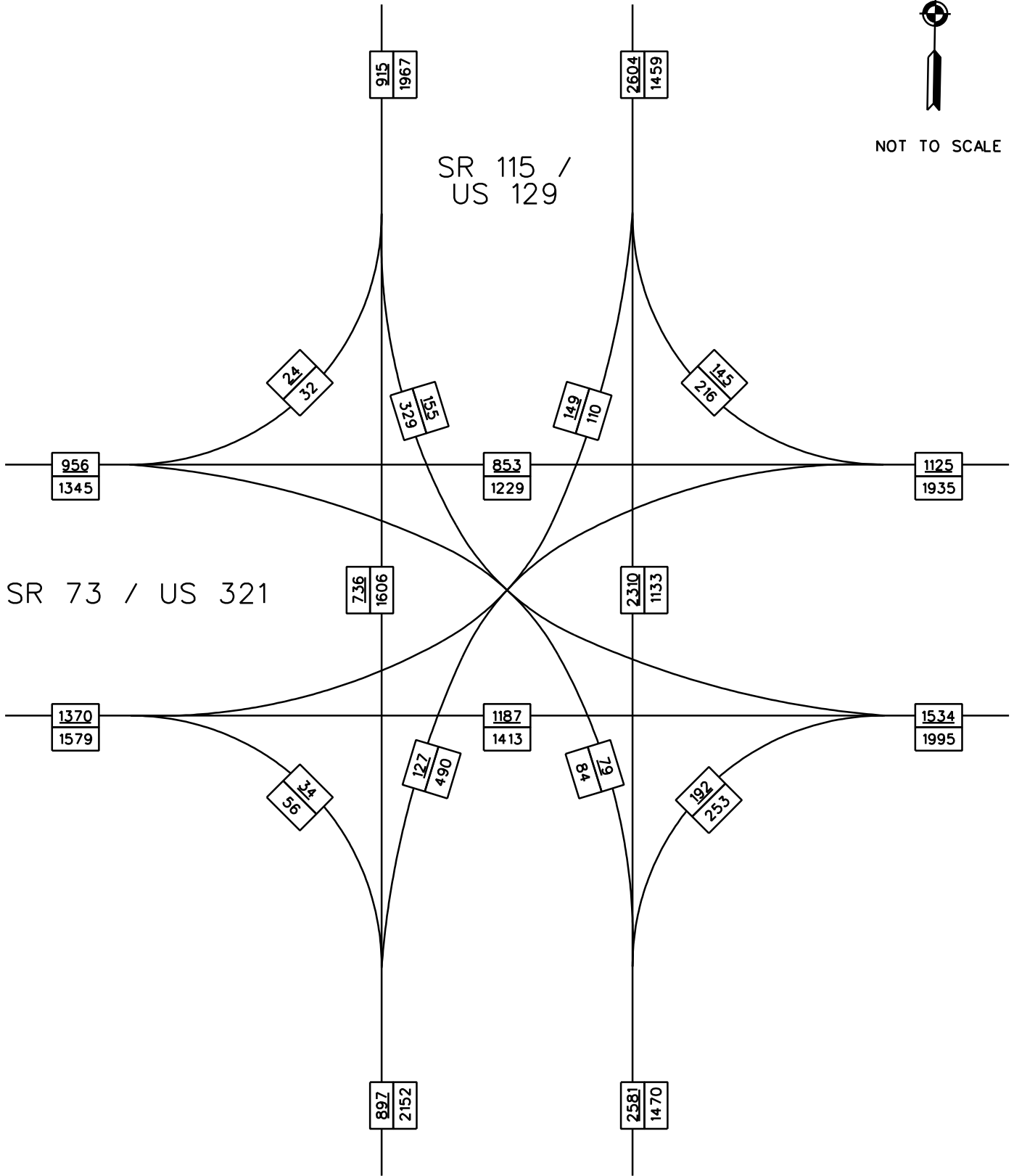
2035 AADT NO PPE

SR 115/US 129 @ SR 73/US 321



NOT TO SCALE

SR 115 /
US 129



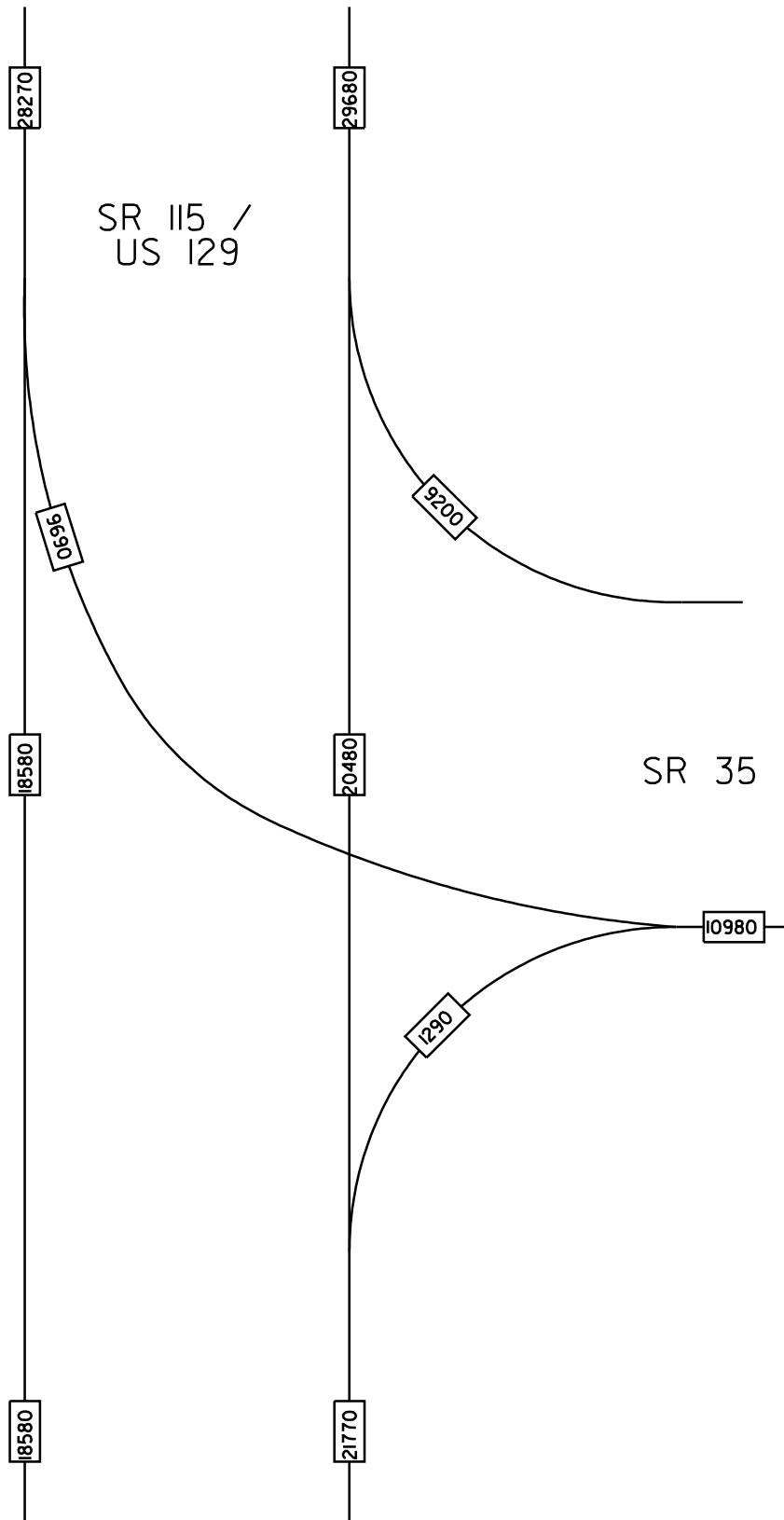
SR 73 / US 321

2035 DHV NO PPE
AM / PM

SR 115/US 129 @ SR 73/US 321



NOT TO SCALE

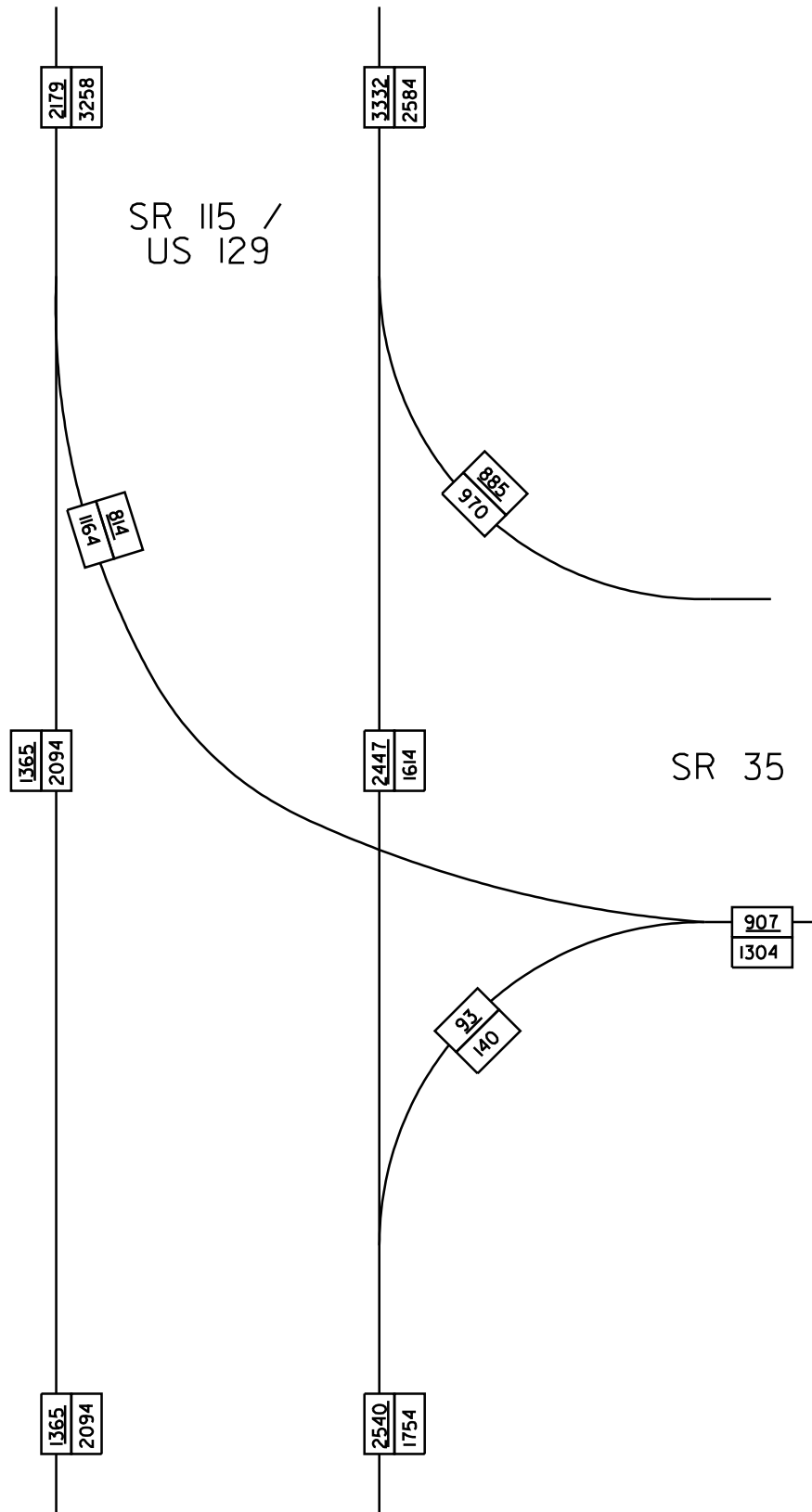


2015 AADT WITH PPE

SR 115/US 129 @ SR 35



NOT TO SCALE

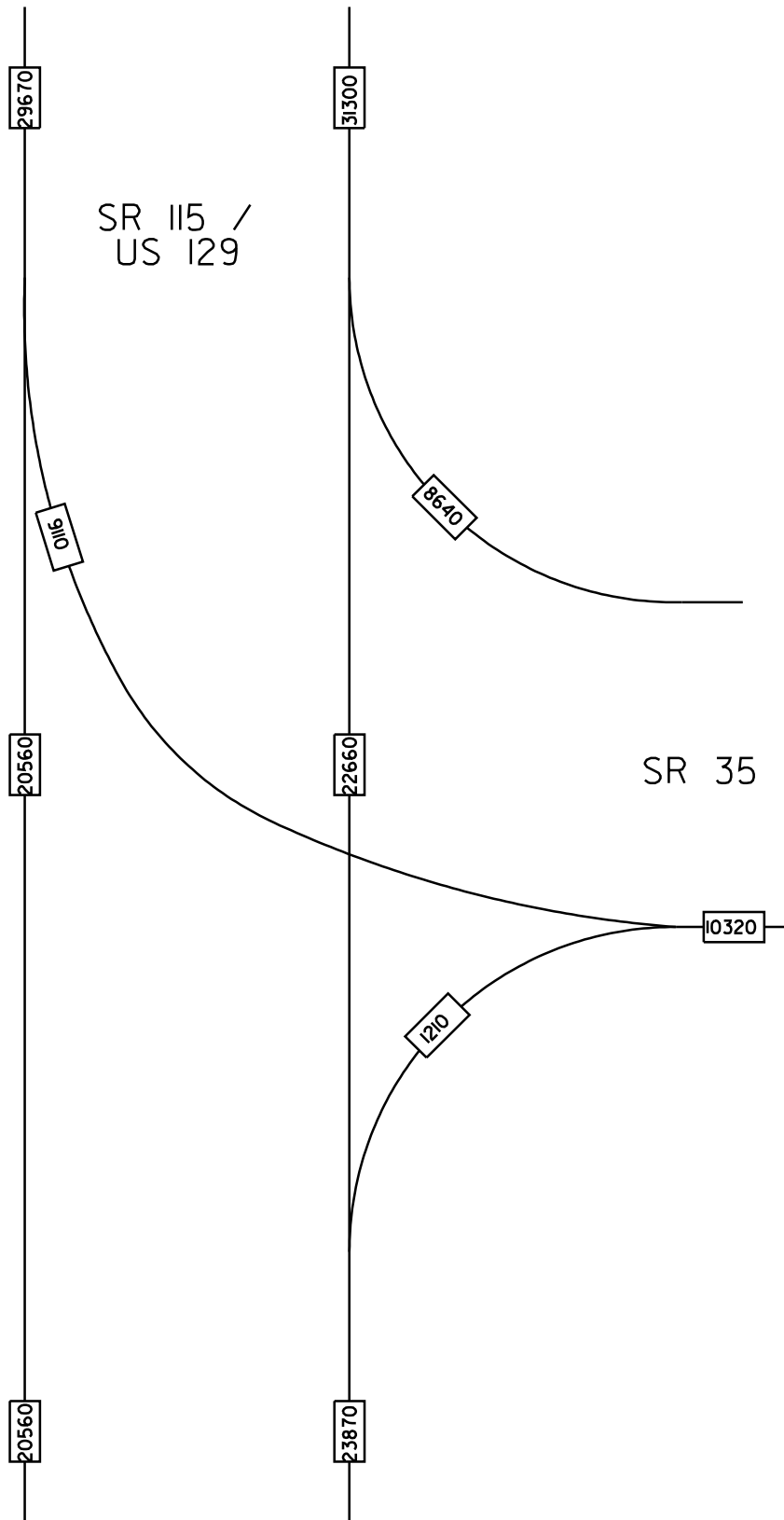


2015 DHV WITH PPE
AM / PM

SR 115/US 129 @ SR 35



NOT TO SCALE

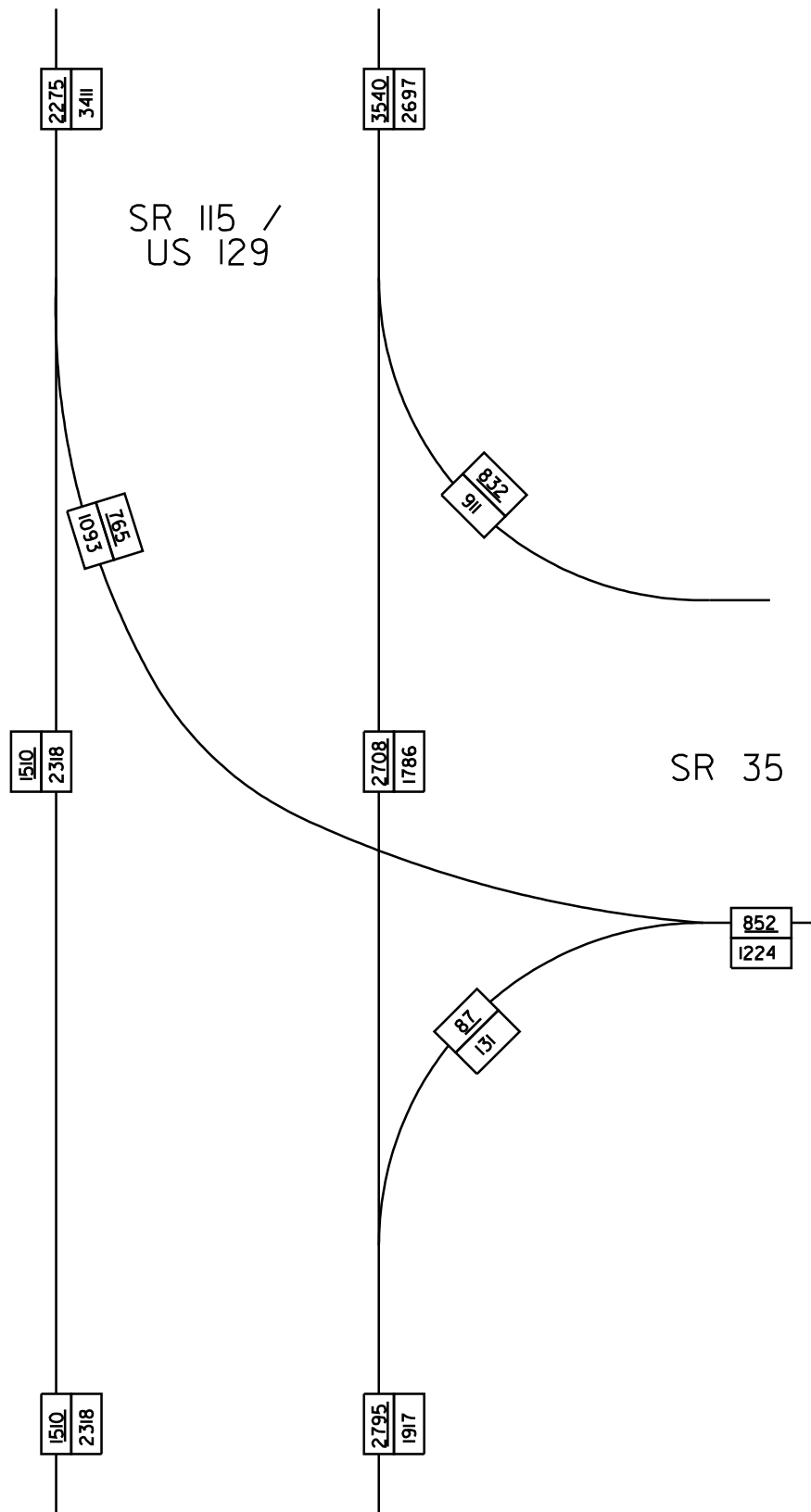


2035 AADT WITH PPE

SR 115/US 129 @ SR 35



NOT TO SCALE



2035 DHV WITH PPE
AM / PM

SR 115/US 129 @ SR 35