

## SECTION E KENTUCKY HIGHWAYS

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As explained in the main Alliance Report, the specific highways determined to comprise the LATTs Strategic Highway System were identified using a series of criteria to help identify a network of highways which had the greatest significance regarding trade with Latin America. The 22,859-mile mainline LATTs Strategic Highway System shown in Exhibit E-1 is the result of this process.

More than seven percent of the mainline LATTs Strategic Highway System (1,632 miles) is located in Kentucky (Exhibit E-2). The Kentucky components<sup>1</sup> include the following:

- ▶ All of Kentucky's 762 miles of interstate highways, including:
  - ▶ I-24 through the western portion of the commonwealth
  - ▶ I-64, an important interstate highway between Louisville and Norfolk
  - ▶ I-65, a major north-south interstate linking Louisville with Nashville, Montgomery and Mobile
  - ▶ I-71, linking Cincinnati and Louisville
  - ▶ I-75, a major north-south interstate linking Cincinnati, Knoxville, Atlanta, Tampa and Miami
- ▶ Several urban interstates, including routes I-264, I-265, I-275, and I-471
- ▶ 870 miles of non-interstate National Highway System (NHS) facilities
- ▶ U.S. 23 from the Ohio State Line to the Virginia State Line through the eastern portion of the state (120 miles), part of Corridor 12 (Ohio to Charleston, SC). This section traverses very rugged terrain and is mostly four-laned, with partial access control. It is also part of Congressional High Priority Corridor 5 (I-73/74) between Sault Ste. Marie, MI and Charleston, SC.
- ▶ The Edward T. Breathitt (Pennyrile), the Purchase and the Wendell H. Ford (Western Kentucky) Parkway are part of LATTs Corridor 18 (Laredo to Indianapolis) and Congressional High Priority Corridor 18. These facilities are all multi-laned with full access control.

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<sup>1</sup> Mileage, number of lanes, pavement condition and other data reported herein were taken from the HPMS Database, as discussed subsequently, and may differ from information in other databases.

Exhibit E-1  
LATTS STRATEGIC HIGHWAY SYSTEM

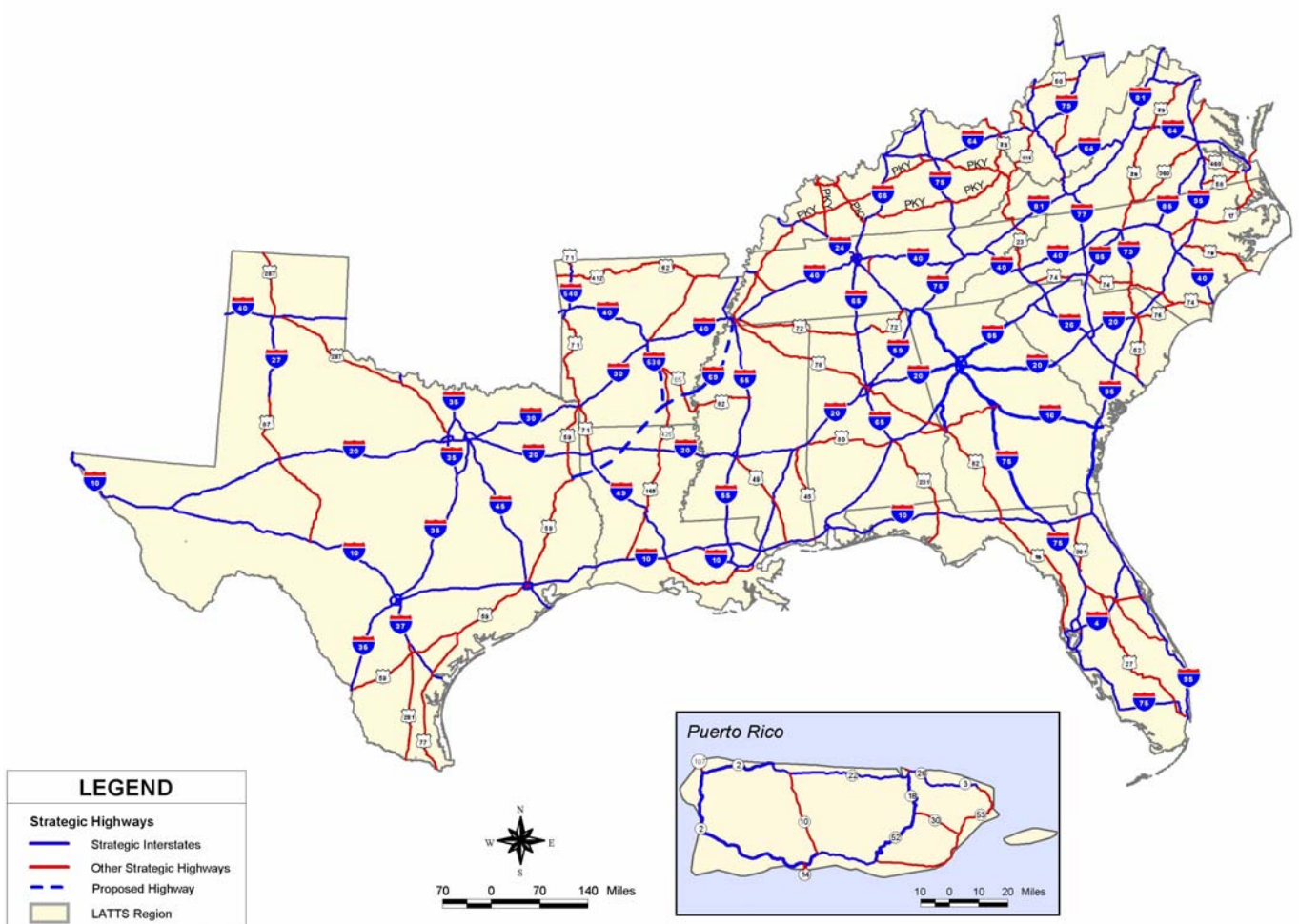
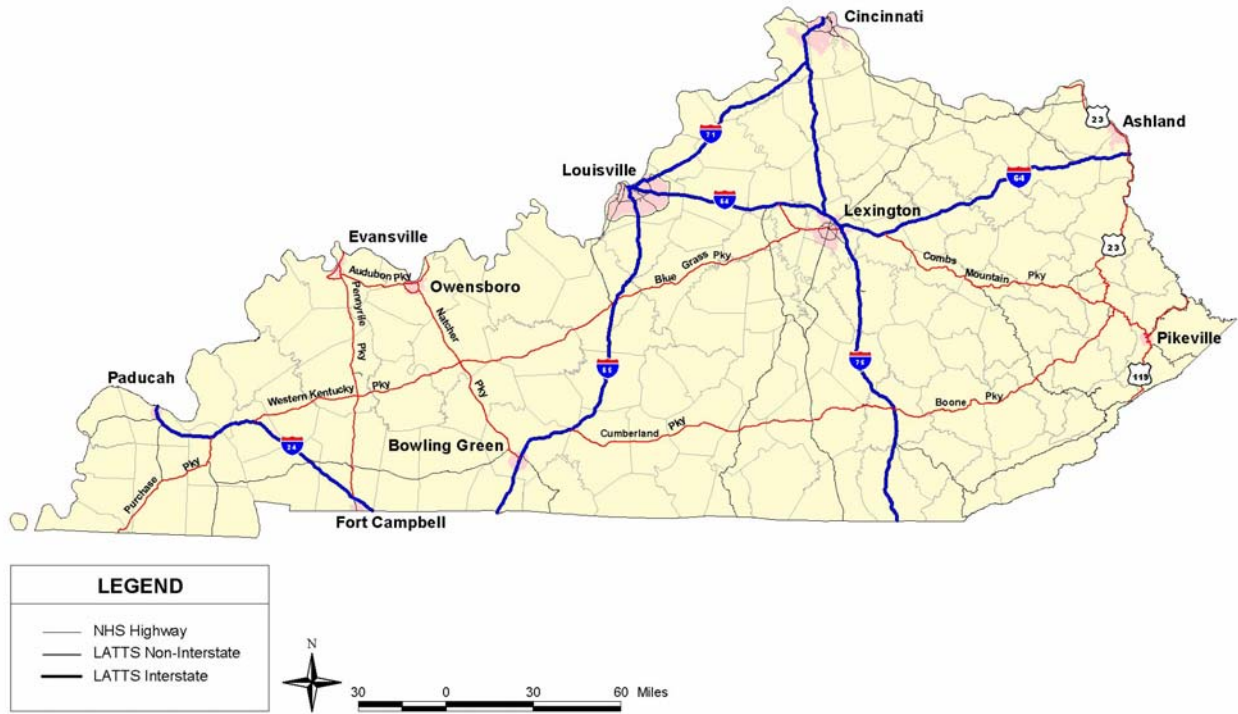


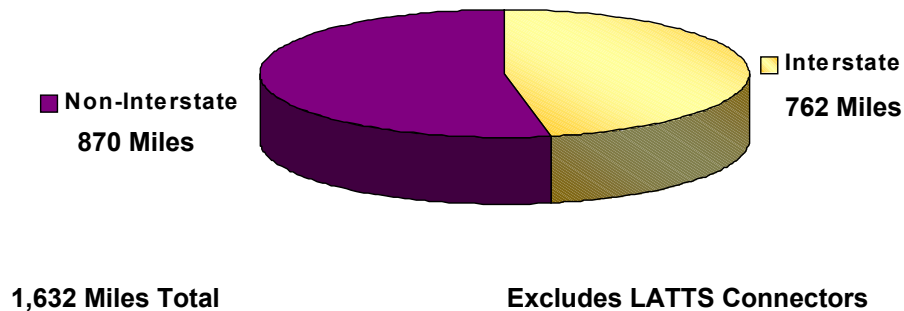
Exhibit E-2  
KENTUCKY LATTS HIGHWAY SYSTEM



- ▶ The Audubon, Daniel Boone, Bert T. Combs (Mountain), Louie B. Nunn (Cumberland), Natcher, and Edward T. Breathitt (Pennyrile) Parkways and a section of U.S. 119 are part of Corridor 23 (Evansville to Charleston, WVA). Most of these facilities are multi-laned, most with full access control. Several of the parkways (Natcher, Cumberland, and Boone) are toll facilities.
- ▶ LATTs connectors linking a LATTs Strategic Highway with a LATTs airport or waterport were included in the Strategic Highway System. However, because of database differences, it was not possible to analyze LATTs connectors in the same manner and to the same level of detail as for mainline highways. LATTs connectors are discussed at the conclusion of Section E.

Exhibit E-3 displays the composition of Kentucky's portion of the LATTs highways by system.

**Exhibit E-3**  
**LATTs MAINLINE STRATEGIC HIGHWAY SYSTEM – KENTUCKY PORTION**



## LATTS HIGHWAYS VS. LATTS TRADE CORRIDORS

The 22,859 miles of “mainline” LATTS Strategic Highways were grouped into 25 LATTS Trade Corridors (Exhibit E-4). The Trade Corridors were established using logical origins/destinations and assigning each highway to only one corridor. Each corridor was assigned a number (1-25) and was referred to by the primary highway within the corridor (i.e., I-40). Portions of six LATTS Trade Corridors cross Kentucky, including:

- ▶ Corridor 5 (I-24/75) – South Florida to Illinois
- ▶ Corridor 6 (I-65) – Cincinnati to Mobile
- ▶ Corridor 12 (I-26, U.S. 23) – Ohio to Charleston, SC
- ▶ Corridor 15 (I-64) – Louisville to Norfolk
- ▶ Corridor 18 (U.S. 59, U.S. 51) – Indianapolis to Laredo
- ▶ Corridor 23 (U.S. 119, Kentucky Parkways) – Evansville to Charleston, WVA

## HIGHWAY DATABASES

Two main sources of data were used for the analysis of highway investment. The first one, the Highway Performance Monitoring System (HPMS), includes information about the characteristics and conditions of public highways. The second source of data was the LATTS estimates of current and forecasts of future Latin America trade flows.

### HPMS Database

The HPMS database was selected for the LATTS analyses of highway system investment needs because (1) it covered the entire Alliance Region, (2) it employs a consistent format and data definitions and (3) no additional primary data collection was necessary. Nevertheless, it was recognized that (1) the data is time sensitive (i.e., since the latest available information at the time of these analyses was for 1997, it is expected that improvements and additions will have occurred subsequently) (2) the HPMS database may have minor differences relative to other databases that individual Alliance members might use for their own planning and system management purposes and (3) information is not always available for every segment of the LATTS Strategic Highway System.



For this study, only that portion of the HPMS database corresponding to the selected LATTs Strategic Highway Network was utilized. For Kentucky, the LATTs HPMS database consisted of 585 records describing 1,563 miles of highway on the LATTs Strategic Highway Network.

### **Trade Flows**

As explained in the main Alliance report, 1996 and expected 2020 trade volumes with Latin America were estimated and the portion of this trade that would be using highway facilities was translated into truck flows. The truck flows were then assigned to specific highway facilities using GIS generated shortest time paths. The LATTs truck traffic assignment was then merged with the LATTs HPMS database for further analysis.

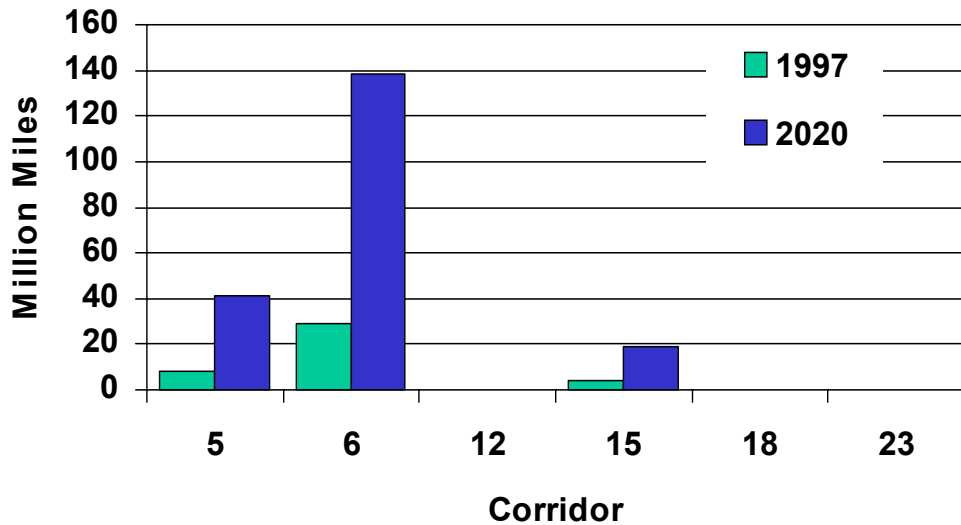
The LATTs procedure for assigning truck flows is appropriate for a macro-scale study such as LATTs. Nevertheless, it should be noted that the procedure produces approximations which may vary slightly from actual conditions. That is, an all-or-nothing assignment on the basis of shortest time paths favors high speed facilities and likely under estimates flows on facilities with lower speeds. In reality, a modest amount of truck flows could choose a lower speed path for a variety of unique reasons. Also, some LATTs trucks undoubtedly will travel on facilities other than those included in the LATTs Strategic Highway System (e.g., a local road to reach a warehouse or plant). Despite these circumstances, the LATTs procedure is deemed to be sufficiently valid for purposes of a regional transportation study.

As a result of this assignment methodology, 712 miles of the Strategic Highway Network in Kentucky were shown to carry LATTs truck traffic. All 712 miles are interstate highways.

### **LATTs TRUCK TRAFFIC IN KENTUCKY**

The LATTs highway database was used to quantify the LATTs truck traffic in terms of annual Vehicle Miles of Travel (VMT) and to compare LATTs truck traffic to total truck traffic (LATTs and others). Results of this analysis by corridor for 1997 and 2020 are illustrated in Exhibit E-5. More detailed information is presented in Exhibit E-6.

**Exhibit E-5  
LATTS ANNUAL TRUCK VMT IN KENTUCKY**



Of the six LATTS corridors crossing Kentucky, only three received an assignment of LATTS truck traffic. They are comprised of interstates as opposed to U.S. Routes. One of the corridors not assigned LATTS traffic in Kentucky, Corridor 23 (KY Parkways, U.S. 119) was not assigned any LATTS traffic in any Alliance member.

Corridor 6 (I-65 from Mobile, AL to Cincinnati, OH) was assigned the most LATTS traffic in terms of VMT, 138 million miles respectively in 2020, and in terms of average annual daily truck volume, 1,551 LATTS trucks.

**Exhibit E-6  
KENTUCKY LATTS TRUCK TRAFFIC**

Corridor/ Functional Class	Length (Miles)	1997 Annual Truck VMT (Million Miles)				2020 Annual Truck VMT (Million Miles)			
		All Trucks Full Network	All Trucks Part. Network(1)	LATTS Trucks Only	LATTS Percent (2)	All Trucks Full Network	All Trucks Part. Network(1)	LATTS Trucks Only	LATTS Percent (2)
<b>5</b>	<b>I-75, I-24</b>	<b>South Florida to Illinois</b>							
R.Interstate	215.69	626.58	612.00	5.06	0.8%	1,036.24	1,012.47	26.92	2.7%
U.Interstate	94.04	349.13	303.06	2.97	1.0%	604.75	525.65	14.13	2.7%
<b>TOTAL</b>	<b>309.73</b>	<b>975.71</b>	<b>915.06</b>	<b>8.03</b>	<b>0.9%</b>	<b>1,641.00</b>	<b>1,538.11</b>	<b>41.05</b>	<b>2.7%</b>
<b>6</b>	<b>I-65</b>	<b>Mobile, AL to Cincinnati, OH</b>							
R.Interstate	172.03	710.96	710.96	23.99	3.4%	1,263.90	1,263.90	113.53	9.0%
U.Interstate	72.51	259.03	220.21	5.14	2.3%	463.74	397.11	24.91	6.3%
<b>TOTAL</b>	<b>244.54</b>	<b>969.98</b>	<b>931.17</b>	<b>29.13</b>	<b>3.1%</b>	<b>1,727.64</b>	<b>1,661.01</b>	<b>138.44</b>	<b>8.3%</b>
<b>12</b>	<b>I-26, US 23</b>	<b>Charleston, SC to Ohio</b>							
R.Other PA	114.10	142.38	-	-	0.0%	235.64	-	-	0.0%
U.Other PA	6.07	4.04	-	-	0.0%	5.80	-	-	0.0%
<b>TOTAL</b>	<b>120.17</b>	<b>146.42</b>	<b>-</b>	<b>-</b>	<b>0.0%</b>	<b>241.44</b>	<b>-</b>	<b>-</b>	<b>0.0%</b>
<b>15</b>	<b>I-64</b>	<b>Louisville, KY to Norfolk, VA</b>							
R.Interstate	148.21	273.21	273.21	2.23	0.8%	447.30	447.30	11.10	2.5%
U.Interstate	59.91	136.27	129.37	1.76	1.4%	234.68	222.84	8.12	3.6%
<b>TOTAL</b>	<b>208.13</b>	<b>409.48</b>	<b>402.58</b>	<b>3.99</b>	<b>1.0%</b>	<b>681.99</b>	<b>670.14</b>	<b>19.22</b>	<b>2.9%</b>
<b>18</b>	<b>US 59, US 51</b>	<b>Laredo, TX to Indianapolis, IN</b>							
R.Other PA	243.61	168.89	-	-	0.0%	279.60	-	-	0.0%
U.Other Fwy.	15.13	11.47	-	-	0.0%	17.99	-	-	0.0%
U.Other PA	0.59	0.40	-	-	0.0%	0.57	-	-	0.0%
<b>TOTAL</b>	<b>259.32</b>	<b>180.76</b>	<b>-</b>	<b>-</b>	<b>0.0%</b>	<b>298.17</b>	<b>-</b>	<b>-</b>	<b>0.0%</b>
<b>23</b>	<b>KY Parkways, US 119</b>	<b>Evansville, IN to Charleston, WV</b>							
R.Other PA	391.84	171.09	-	-	0.0%	283.30	-	-	0.0%
U.Other Fwy.	23.73	16.79	-	-	0.0%	26.44	-	-	0.0%
U.Other PA	5.45	2.18	-	-	0.0%	3.13	-	-	0.0%
<b>TOTAL</b>	<b>421.02</b>	<b>190.06</b>	<b>-</b>	<b>-</b>	<b>0.0%</b>	<b>312.87</b>	<b>-</b>	<b>-</b>	<b>0.0%</b>
<b>ALL CORRIDORS</b>									
R.Interstate	535.94	1,610.75	1,596.17	31.28	2.0%	2,747.45	2,723.67	151.55	5.6%
R.Other PA	749.55	482.36	-	-	0.0%	798.54	-	-	0.0%
U.Interstate	226.45	744.43	652.64	9.87	1.5%	1,303.18	1,145.59	47.16	4.1%
U.Other Fwy.	38.85	28.26	-	-	0.0%	44.44	-	-	0.0%
U.Other PA	12.11	6.62	-	-	0.0%	9.50	-	-	0.0%
<b>TOTAL</b>	<b>1,562.91</b>	<b>2,872.41</b>	<b>2,248.81</b>	<b>41.15</b>	<b>1.8%</b>	<b>4,903.10</b>	<b>3,869.26</b>	<b>198.71</b>	<b>5.1%</b>

Notes: (1) Total truck VMT for highways carrying LATTS traffic only.  
(2) Percentage calculated based on Partial Network.

Of all LATTS truck traffic in Kentucky, 76 percent was assigned to the rural interstate system and 24 percent to the urban interstate system. The percentage of LATTS trucks to total trucks is expected to grow from 2 percent in 1997 to 5 percent in 2020 on those highways assigned LATTS traffic (from 1 to 4 percent for the entire LATTS Strategic Network). This growth in LATTS share of total truck traffic is due to the fact that LATTS truck traffic is expected to increase 4.8 fold between 1997 and 2020 while overall truck traffic would increase by 1.7 fold only. The highest share of LATTS truck to total trucks is 8.3 percent on Corridor 6 (I-65 from Mobile, AL to Cincinnati, OH).

## IMPACT MEASURES

The purpose of the highway analysis portion of this study was to quantify the LATTs Strategic Network total investment needs and the incremental investment needs that could be attributed to LATTs truck traffic specifically. Because of the macro-scale nature of this study, the investment needs analysis focused on capacity and pavement resurfacing needs.

In order to identify needs due to expected traffic (cars and trucks) other than LATTs and needs specifically attributable to LATTs traffic, two sets of capacity and pavement needs were estimated. First, future needs were estimated based on the “normal” traffic as defined by the HPMS database which includes AADT, truck percentages, and growth rate. Future needs were estimated a second time with the same HPMS traffic plus the “additional” LATTs truck traffic above and beyond the traffic that would be estimated using the “normal” growth. The difference in needs between the two was considered the incremental needs due to growth in LATTs traffic.

Minimum tolerable conditions (MTCs) for both congestion (capacity) and pavement conditions were applied uniformly to all segments of the LATTs Strategic Highway System. These MTCs are described in more detail in the main Alliance report and are summarized below.

- ▶ Capacity needs were based on Level of Service (LOS) not exceeding:
  - ▶ LOS C for rural highways
  - ▶ LOS D for urban highways
- ▶ Pavement resurfacing needs were based on the following minimum pavement condition rating:
  - ▶ Interstate type facilities: PSR 3.0
    - Other facilities: PSR 2.5

The LATTs minimum tolerable conditions are in no way intended to replicate or replace values that individual members of the Alliance might consider to be more appropriate for their circumstances. The LATTs MTCs were established for this study so as to be consistent for all the Alliance members.

To price the identified capacity or pavement needs, the same unit costs were used consistently throughout the Alliance Region. These unit costs were provided by the FHWA and correspond to 1997 national averages. To maintain consistency throughout the Region, no attempt was made to tailor these unit costs to each state beyond the stratification provided by the FHWA.

## CAPACITY NEEDS

A needs analysis model was developed to analyze capacity needs for 1997 and 2020. For the year 2020, capacity needs with and without the “additional” LATTs traffic were estimated. The model was then applied to every one of the HPMS records comprising the Kentucky LATTs highway database and the results were summarized. This model applied the same methodology, outlined in the main Alliance report, and found in the HPMS Analytical Package, to calculate capacity needs. The results reflect the information contained in the HPMS Database and do not consider any improvements that may have occurred subsequently or any planned improvements.

Detailed results for Kentucky are presented in Exhibit E-7. The total number of Kentucky LATTS Strategic Highway Network road miles with capacity deficiencies in 1997 and 2020 are shown in columns 4 through 6. For 2020, the amount of capacity deficiencies with and without the “additional” LATTS traffic is shown.

These analyses indicate that 295 LATTS roadway miles in Kentucky, or 19 percent of the Kentucky portion of the LATTS Strategic Network, have existing capacity problems. The analyses also show that the majority of the capacity deficiencies will occur in the next 20 years unless capacity is added.

**Exhibit E-7  
KENTUCKY CAPACITY INVESTMENT NEEDS**

Corridor/ Functional Class	Length (Miles)	Existing Lane Miles	Capacity Analysis								
			Deficient Mileage			2020 Needed Lane Miles		2020 Cost in \$Million			
			1997	2020 W/O LATTs Added Traffic	2020 With LATTs Added Traffic	Base	With LATTs Added Traffic	Base	With LATTs Added Traffic	% Increase Due to LATTs	
<b>5</b>	<b>I-75, I-24</b>		<b>South Florida to Illinois</b>								
R.Interstate	215.69	896.87	59.79	140.53	140.53	326.88	328.74	349	349	0.2%	
U.Interstate	94.04	498.45	8.95	63.98	63.98	245.69	249.84	853	867	1.7%	
<b>TOTAL</b>	<b>309.73</b>	<b>1,395.32</b>	<b>68.74</b>	<b>204.51</b>	<b>204.51</b>	<b>572.56</b>	<b>578.58</b>	<b>1,201</b>	<b>1,216</b>	<b>1.3%</b>	
<b>6</b>	<b>I-65</b>		<b>Mobile, AL to Cincinnati, OH</b>								
R.Interstate	172.03	735.46	68.48	172.03	172.03	363.06	365.14	411	412	0.2%	
U.Interstate	72.51	354.70	12.78	65.53	65.53	258.55	261.19	897	907	1.0%	
<b>TOTAL</b>	<b>244.54</b>	<b>1,090.16</b>	<b>81.26</b>	<b>237.56</b>	<b>237.56</b>	<b>621.61</b>	<b>626.33</b>	<b>1,308</b>	<b>1,318</b>	<b>0.8%</b>	
<b>12</b>	<b>I-26, US 23</b>		<b>Charleston, SC to Ohio</b>								
R.Other PA	114.10	425.60	22.98	45.39	45.39	90.78	90.78	179	179	0.0%	
U.Other PA	6.07	24.29	1.56	2.36	2.36	4.72	4.72	10	10	0.0%	
<b>TOTAL</b>	<b>120.17</b>	<b>449.89</b>	<b>24.54</b>	<b>47.75</b>	<b>47.75</b>	<b>95.50</b>	<b>95.50</b>	<b>190</b>	<b>190</b>	<b>0.0%</b>	
<b>15</b>	<b>I-64</b>		<b>Louisville, KY to Norfolk, VA</b>								
R.Interstate	148.21	592.86	11.08	60.91	60.91	121.82	121.82	137	137	0.0%	
U.Interstate	59.91	311.06	24.30	43.30	43.30	243.83	252.94	846	878	3.7%	
<b>TOTAL</b>	<b>208.13</b>	<b>903.92</b>	<b>35.38</b>	<b>104.21</b>	<b>104.21</b>	<b>365.65</b>	<b>374.76</b>	<b>983</b>	<b>1,015</b>	<b>3.2%</b>	
<b>18</b>	<b>US 59, US 51</b>		<b>Laredo, TX to Indianapolis, IN</b>								
R.Other PA	243.61	974.43	-	-	-	-	-	-	-	0.0%	
U.Other Fwy.	15.13	60.50	-	-	-	-	-	-	-	0.0%	
U.Other PA	0.59	2.36	-	-	-	-	-	-	-	0.0%	
<b>TOTAL</b>	<b>259.32</b>	<b>1,037.30</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>0.0%</b>	
<b>23</b>	<b>KY Parkways, US 11</b>		<b>Evansville, IN to Charleston, WV</b>								
R.Other PA	391.84	1,321.80	83.55	90.98	90.98	197.94	197.94	251	251	0.0%	
U.Other Fwy.	23.73	92.85	-	-	-	-	-	-	-	0.0%	
U.Other PA	5.45	15.43	1.59	2.23	2.23	4.47	4.47	8	8	0.0%	
<b>TOTAL</b>	<b>421.02</b>	<b>1,430.08</b>	<b>85.14</b>	<b>93.22</b>	<b>93.22</b>	<b>202.40</b>	<b>202.40</b>	<b>259</b>	<b>259</b>	<b>0.0%</b>	
<b>ALL CORRIDORS</b>											
R.Interstate	535.94	2,225.19	139.35	373.47	373.47	811.76	815.71	896	898		
R.Other PA	749.55	2,721.83	106.53	136.37	136.37	288.71	288.71	430	430	0.0%	
U.Interstate	226.45	1,164.22	46.03	172.81	172.81	748.06	763.96	2,597	2,652	2.1%	
U.Other Fwy.	38.85	153.35	-	-	-	-	-	-	-	0.0%	
U.Other PA	12.11	42.09	3.15	4.60	4.60	9.19	9.19	18	18	0.0%	
<b>TOTAL</b>	<b>1,562.91</b>	<b>6,306.68</b>	<b>295.06</b>	<b>687.25</b>	<b>687.25</b>	<b>1,857.72</b>	<b>1,877.57</b>	<b>3,941</b>	<b>3,998</b>	<b>1.4%</b>	

With the expected “normal” growth (as defined by the HPMS database), a total of 687 road miles or 44 percent of the LATTs network will have congestion problems by 2020. The “additional” LATTs trucks are not expected to increase the number of deficient miles. However, widening of certain sections will be required where capacity deficiencies already exist. The majority of the congestion problems in Kentucky are due

almost solely to expected overall growth in total traffic. However, unless these capacity needs are met, LATTs truck traffic will be affected by these capacity deficiencies regardless of the source of traffic. As congestion increases, LATTs trucks like other traffic, will experience lower operating speeds, frequent speed changes, lower reliability, and increased operating costs.

Based on the HPMS expected growth in traffic, nearly \$3.9 billion will be required in the next 20 years to address congestion problems on the Kentucky portion of the LATTs Strategic Network. As noted in Exhibit E-8, the “additional” LATTs traffic will bring that total to \$4.0 billion, a 1.4 percent increase. The dollar increase in capacity needs due to LATTs traffic is lower than the corresponding increase in terms of needed lane miles because a majority of LATTs truck traffic occurs on rural highways which are less expensive to improve than urban highways.

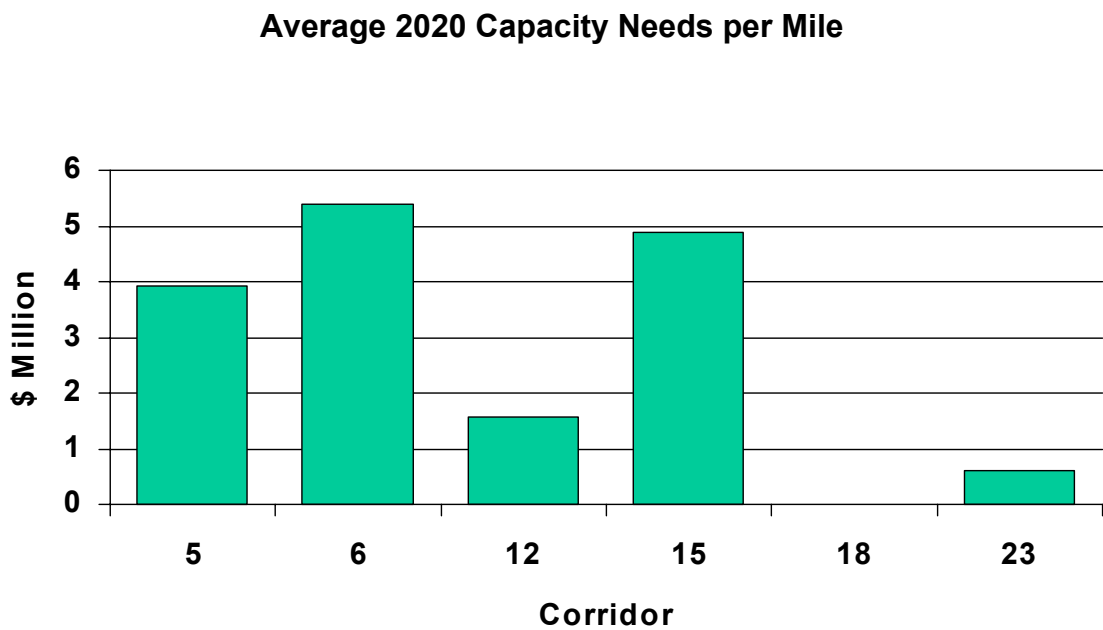
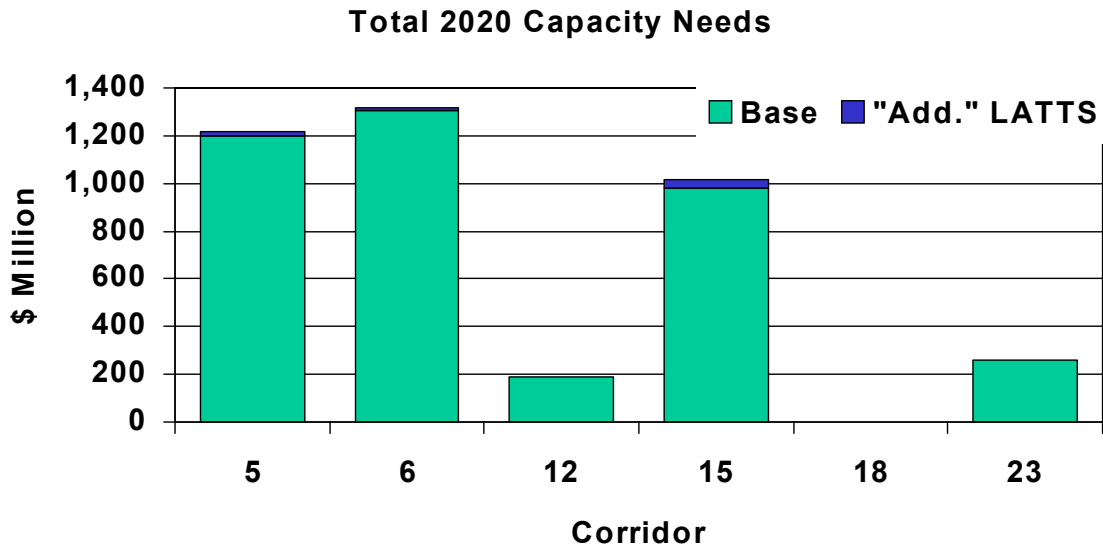
**Exhibit E-8**  
**KENTUCKY 2020 CAPACITY NEEDS**  
**LATTs Strategic Network**

	<u>Deficient Miles</u>	<u>% of Total Miles</u>	<u>Needs (Billion)</u>
“Normal” Growth	687	44%	\$3.9
“Additional” LATTs Traffic	0	0%	\$0.1
Total	687	44%	\$4.0

Capacity needs by corridor are illustrated in Exhibit E-9. Corridor 6 (I-65 from Mobile, AL to Cincinnati, OH), has the highest capacity needs, \$1.3 billion by 2020, followed by Corridor 5 (I-75/I-24 from Florida to Illinois) with \$1.2 billion capacity needs and Corridor 15 (I-64 from Louisville, KY to Norfolk, VA) with \$1.0 billion. The other corridors in Kentucky have much lower capacity needs. The average capacity needs per mile by corridor is also displayed in Exhibit E-9.

It should be noted that by 2020, 97 percent of Corridor 6 in Kentucky will require capacity improvements. Corridor 6 is also expected to carry the majority of LATTs truck traffic in Kentucky.

**Exhibit E-9  
KENTUCKY STRATEGIC HIGHWAY NETWORK  
Capacity Needs by Corridor**



It should be noted that by 2020, 73 percent of Corridor 1 (I-95/I-4 from South Florida to Washington D.C.) and 65 percent of Corridor 2 in Kentucky will require capacity improvements. Proportionally, Corridor 1 is also expected to have the highest incremental needs due to LATTs “additional” traffic, 20.1 percent.

### **PAVEMENT NEEDS**

For purposes of this study, average annual pavement needs in 2020 were estimated. The number of years it would take for the pavement to deteriorate from new in 2020 to a deficient PSR rating (as defined by the minimum tolerable conditions presented earlier) was calculated for each highway segment. As an indicator of the existing condition of the network, pavement deficiencies were identified for 1997.

Pavements typically are designed to last for a fairly long time. However, as they age and are subjected to traffic loads, they deteriorate. The pavement life measure used in these analyses is dependent on the amount of traffic using the highway and, more specifically, truck traffic (car traffic is a factor in the pavement deterioration rate but it has far less impact). The type of pavement (for example high flexible versus high rigid) is also an important factor affecting pavement deterioration rates. The pavement type on each highway segment, as indicated by the 1997 HPMS database, was used in the estimation of the deterioration rates. The number of lanes indicated for 1997 was used in the calculation of pavement deterioration rate and resurfacing costs. No attempt was made to measure the impact on pavement needs of adding lanes to address the congestion problems identified earlier. Finally, the HPMS-AP methodology for deteriorating pavement was applied in this study. It is based on the concept of 18Kip Equivalent Single Axle Loads. Weather condition or type of subsoil can also influence pavement deterioration rates but, for this study, no other factors beyond traffic and pavement type were used to differentiate pavement deterioration rates between sections.

Each highway segment pavement life was calculated twice. An initial calculation was made using the “base” car and truck traffic from the Kentucky HPMS database. The second calculation was made with the “additional” LATTs traffic added to it. The difference in the two pavement lives is a measure of the impact of LATTs traffic.

Results of the Kentucky pavement needs analysis for the LATTs Strategic Highway Network are presented in Exhibit E-10. Based on the HPMS data, about 22 percent or 349 miles of the Kentucky overall LATTs Strategic Highway Network had existing (1997) pavement deficiencies. (This may reflect data quality or data interpretation problems with the 1997 HPMS data.) Based on the recorded information, the pavement deficiencies were heavily concentrated on the interstate system used by LATTs trucks. More than 29 percent of the rural interstate system and 35 percent of the urban interstate system had existing pavement deficiencies.

**Exhibit E-10  
KENTUCKY PAVEMENT RESURFACING INVESTMENT NEEDS**

Corridor/ Functional Class	Length (Miles)	Existing Lane Miles	Pavement Analysis					
			1997 Deficient Mileage	2020 Pavement Life (Years)		2020 Average Annual Cost (\$1,000)		
				W/O LATTS Added Traffic	With LATTS Added Traffic	W/O LATTS Added Traffic	With LATTS Added Traffic	% Increase Due to LATTS
<b>5</b>	<b>I-75, I-24</b>		<b>South Florida to Illinois</b>					
R.Interstate	215.69	896.87	57.92	5.9	5.7	19,684	19,902	1.1%
U.Interstate	94.04	498.45	32.45	4.6	4.6	24,466	24,529	0.3%
<b>TOTAL</b>	<b>309.73</b>	<b>1,395.32</b>	<b>90.37</b>	<b>5.4</b>	<b>5.3</b>	<b>44,150</b>	<b>44,431</b>	<b>0.6%</b>
<b>6</b>	<b>I-65</b>		<b>Mobile, AL to Cincinnati, OH</b>					
R.Interstate	172.03	735.46	48.99	4.2	4.1	19,560	19,820	1.3%
U.Interstate	72.51	354.70	20.77	4.5	4.5	17,297	17,390	0.5%
<b>TOTAL</b>	<b>244.54</b>	<b>1,090.16</b>	<b>69.76</b>	<b>4.3</b>	<b>4.2</b>	<b>36,857</b>	<b>37,210</b>	<b>1.0%</b>
<b>12</b>	<b>I-26, US 23</b>		<b>Charleston, SC to Ohio</b>					
R.Other PA	114.10	425.60	7.04	10.9	10.9	4,103	4,103	0.0%
U.Other PA	6.07	24.29	-	14.2	14.2	231	231	0.0%
<b>TOTAL</b>	<b>120.17</b>	<b>449.89</b>	<b>7.04</b>	<b>11.1</b>	<b>11.1</b>	<b>4,334</b>	<b>4,334</b>	<b>0.0%</b>
<b>15</b>	<b>I-64</b>		<b>Louisville, KY to Norfolk, VA</b>					
R.Interstate	148.21	592.86	48.77	8.6	8.6	8,444	8,466	0.3%
U.Interstate	59.91	311.06	25.75	4.8	4.8	14,440	14,467	0.2%
<b>TOTAL</b>	<b>208.13</b>	<b>903.92</b>	<b>74.53</b>	<b>7.3</b>	<b>7.3</b>	<b>22,884</b>	<b>22,933</b>	<b>0.2%</b>
<b>18</b>	<b>US 59, US 51</b>		<b>Laredo, TX to Indianapolis, IN</b>					
R.Other PA	243.61	974.43	59.24	7.8	7.8	9,829	9,829	0.0%
U.Other Fwy.	15.13	60.50	-	4.7	4.7	2,675	2,675	0.0%
U.Other PA	0.59	2.36	-	10.9	10.9	29	29	0.0%
<b>TOTAL</b>	<b>259.32</b>	<b>1,037.30</b>	<b>59.24</b>	<b>7.7</b>	<b>7.7</b>	<b>12,534</b>	<b>12,534</b>	<b>0.0%</b>
<b>23</b>	<b>KY Parkways, US 11</b>		<b>Evansville, IN to Charleston, WV</b>					
R.Other PA	391.84	1,321.80	43.78	11.2	11.2	10,123	10,123	0.0%
U.Other Fwy.	23.73	92.85	2.05	8.1	8.1	2,710	2,710	0.0%
U.Other PA	5.45	15.43	2.12	14.5	14.5	152	152	0.0%
<b>TOTAL</b>	<b>421.02</b>	<b>1,430.08</b>	<b>47.95</b>	<b>11.0</b>	<b>11.0</b>	<b>12,984</b>	<b>12,984</b>	<b>0.0%</b>
<b>ALL CORRIDORS</b>								
R.Interstate	535.94	2,225.19	155.68	6.1	6.0	47,688	48,189	1.1%
R.Other PA	749.55	2,721.83	110.06	9.9	9.9	24,055	24,055	0.0%
U.Interstate	226.45	1,164.22	78.98	4.6	4.6	56,203	56,386	0.3%
U.Other Fwy.	38.85	153.35	2.05	6.7	6.7	5,385	5,385	0.0%
U.Other PA	12.11	42.09	2.12	14.1	14.1	413	413	0.0%
<b>TOTAL</b>	<b>1,562.91</b>	<b>6,306.68</b>	<b>348.89</b>	<b>7.5</b>	<b>7.5</b>	<b>133,744</b>	<b>134,427</b>	<b>0.5%</b>

Future (2020) pavement needs are summarized in Exhibit E-11. Pavement life for the Kentucky portion of the LATTS Strategic Highway Network will average 7.5 years in 2020 with and without the “additional” LATTS truck traffic. The annual resurfacing costs for the Kentucky portion of the LATTS Strategic Highway Network is estimated to be about \$134 million with and without LATTS “additional” truck traffic. The analyses suggest that pavement resurfacing needs in Kentucky are not materially impacted by LATTS truck traffic.

**Exhibit E-11  
KENTUCKY 2020 PAVEMENT NEEDS  
LATTS Strategic Network**

	<b>Pavement Life (Years)</b>	<b>Annual Resurfacing Cost (\$Million)</b>
“Normal” Growth	7.5	\$133.7
With “Additional” LATTS Traffic	7.5	\$134.4

## OPERATING SPEEDS

Truck operating speed was chosen as a key study performance measure for the LATTs Strategic Highway Network. Truck operating speeds were estimated for each LATTs roadway segment based on the conditions of the roadway, including roadway geometry and alignment, pavement condition, speed limit and traffic volumes. The operating speed calculation for each sample segment or link was based on the methodology of the HPMS Analytical Package used by FHWA to estimate highway needs.

Two types of operating speeds were calculated. One was the average daily operating speed and the other was the peak hour operating speed as defined by the peak hour factor or "K" factor for each road segment. Because it is not known when a truck would travel over a specific highway section during the peak hour, the peak hour operating speed assumed that every section was traveled during peak hour. As a result, the calculated peak hour speed and travel time for an entire corridor is probably somewhat overstated, as it is unlikely that a truck would travel every section during peak hour conditions.

Truck operating speeds were calculated for each LATTs roadway section. Operating speeds over a combination of segments were then calculated by adding travel time and distance for each segment and calculating the new speed.

Truck operating speeds on the Kentucky portion of the LATTs Strategic Highway Network are presented on Exhibit E-12. In this exhibit, Kentucky truck operating speeds estimates are presented by functional class. The total lengths of all the segments, which were used in the analysis of the corridor, are listed first. This is followed by items describing the characteristics of the segments, including average number of lanes, speed limit, and AADT. The purpose of listing these items is to facilitate better understanding of the calculated operating speeds. For example, two/three-lane highways have lower operating speeds than equivalent four-lane highways because of passing difficulties. Similarly, low speed limits will result in low operating speeds on facilities no matter what the road conditions are.

Average daily and peak period speeds/travel times for trucks also are presented for the base year (1997). Further, truck operating speeds are listed twice for year 2020. The first time, truck operating speeds were calculated assuming the base growth rate, i.e. the growth rate indicated by the HPMS database. The second time, truck operating speeds were calculated with the LATTs "additional" traffic. Overall results for the entire corridor within Kentucky are then listed, as well as the overall time required to travel the entire corridor. By comparing these speed and travel time values (based on present conditions), it is possible to determine which facilities are most efficient today, which facilities are going to experience deteriorating conditions due to traffic growth regardless of LATTs impact, and finally which facilities are going to be most affected by LATTs traffic.

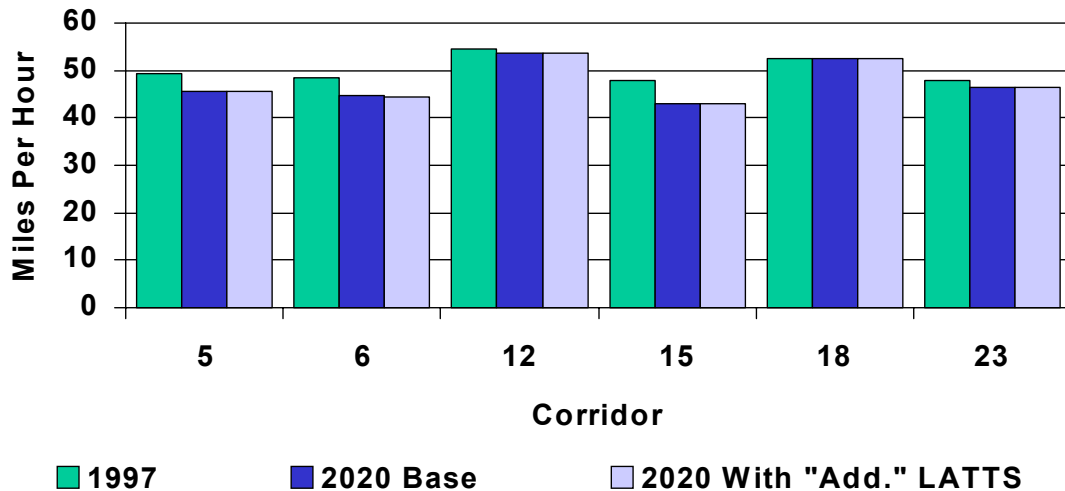
**Exhibit E-12  
KENTUCKY TRUCK OPERATING SPEEDS**

Corridor/ Functional Class	Length (Miles)	Average No. Lane	Speed Limit (MPH)	Average 1997 AADT	1997 Truck Speed (MPH)		2020 Truck Speed (MPH) W/O Added LATTs Traffic		2020 Truck Speed (MPH) With Added LATTs Traffic	
					Daily Average	Peak Hour	Daily Average	Peak Hour	Daily Average	Peak Hour
<b>5</b>	<b>I-75, I-24</b>				<b>South Florida to Illinois</b>					
R.Interstate	215.70	4.2	64.8	29,155	50.3	43.6	48.0	32.9	48.0	32.7
U.Interstate	94.00	5.3	59.9	59,334	47.5	37.8	41.2	20.2	41.2	20.2
<b>TOTAL</b>	<b>309.70</b>	<b>4.5</b>	<b>63.3</b>	<b>38,317</b>	<b>49.4</b>	<b>41.7</b>	<b>45.7</b>	<b>27.6</b>	<b>45.7</b>	<b>27.5</b>
<b>Time (HR)</b>					<b>6.3</b>	<b>7.4</b>	<b>6.8</b>	<b>11.2</b>	<b>6.8</b>	<b>11.3</b>
<b>6</b>	<b>I-65</b>				<b>Mobile, AL to Cincinnati, OH</b>					
R.Interstate	172.00	4.3	65.0	33,143	49.0	45.9	47.6	27.8	47.3	27.1
U.Interstate	72.50	4.9	59.6	64,683	47.7	33.9	39.1	16.4	38.9	16.4
<b>TOTAL</b>	<b>244.50</b>	<b>4.5</b>	<b>63.3</b>	<b>42,495</b>	<b>48.6</b>	<b>41.6</b>	<b>44.7</b>	<b>23.1</b>	<b>44.5</b>	<b>22.7</b>
<b>Time (HR)</b>					<b>5.0</b>	<b>5.9</b>	<b>5.5</b>	<b>10.6</b>	<b>5.5</b>	<b>10.8</b>
<b>12</b>	<b>I-26, US 23</b>				<b>Charleston, SC to Ohio</b>					
R.Other PA	114.10	3.7	55.0	10,915	54.4	52.8	53.6	41.4	53.6	41.4
U.Other PA	6.10	4.0	55.0	25,370	54.0	33.3	53.3	31.8	53.3	31.8
<b>TOTAL</b>	<b>120.20</b>	<b>3.7</b>	<b>55.0</b>	<b>11,645</b>	<b>54.4</b>	<b>51.3</b>	<b>53.6</b>	<b>40.8</b>	<b>53.6</b>	<b>40.8</b>
<b>Time (HR)</b>					<b>2.2</b>	<b>2.3</b>	<b>2.2</b>	<b>2.9</b>	<b>2.2</b>	<b>2.9</b>
<b>15</b>	<b>I-64</b>				<b>Louisville, KY to Norfolk, VA</b>					
R.Interstate	148.20	4.0	65.0	22,042	49.0	48.5	48.8	39.7	48.8	39.1
U.Interstate	59.90	5.2	57.3	73,443	45.3	25.1	33.3	18.0	33.3	18.0
<b>TOTAL</b>	<b>208.10</b>	<b>4.3</b>	<b>62.6</b>	<b>36,839</b>	<b>47.9</b>	<b>38.3</b>	<b>43.0</b>	<b>29.5</b>	<b>43.0</b>	<b>29.2</b>
<b>Time (HR)</b>					<b>4.3</b>	<b>5.4</b>	<b>4.8</b>	<b>7.1</b>	<b>4.8</b>	<b>7.1</b>
<b>18</b>	<b>US 59, US 51</b>				<b>Laredo, TX to Indianapolis, IN</b>					
R.Other PA	243.60	4.0	64.8	9,289	52.4	52.4	52.4	52.4	52.4	52.4
U.Other Fwy.	15.10	4.0	65.0	10,609	51.5	51.5	51.5	51.5	51.5	51.5
U.Other PA	0.60	4.0	65.0	8,410	48.8	48.8	48.8	48.8	48.8	48.8
<b>TOTAL</b>	<b>259.30</b>	<b>4.0</b>	<b>64.8</b>	<b>9,364</b>	<b>52.4</b>	<b>52.4</b>	<b>52.4</b>	<b>52.4</b>	<b>52.4</b>	<b>52.4</b>
<b>Time (HR)</b>					<b>5.0</b>	<b>5.0</b>	<b>5.0</b>	<b>5.0</b>	<b>5.0</b>	<b>5.0</b>
<b>23</b>	<b>KY Parkways, US 119</b>				<b>Evansville, IN to Charleston, WV</b>					
R.Other PA	391.80	3.4	59.4	8,060	48.1	43.6	46.7	41.5	46.7	41.5
U.Other Fwy.	23.70	3.9	61.1	12,991	52.3	52.3	52.3	51.0	52.3	51.0
U.Other PA	5.50	2.8	53.0	12,252	27.0	21.0	24.2	20.8	24.2	20.8
<b>TOTAL</b>	<b>421.00</b>	<b>3.4</b>	<b>59.4</b>	<b>8,392</b>	<b>47.9</b>	<b>43.4</b>	<b>46.4</b>	<b>41.4</b>	<b>46.4</b>	<b>41.4</b>
<b>Time (HR)</b>					<b>8.8</b>	<b>9.7</b>	<b>9.1</b>	<b>10.2</b>	<b>9.1</b>	<b>10.2</b>

All corridors had average daily truck operating speeds around 50 MPH in 1997. The projected growth in traffic between 1997 and 2020 will reduce these operating speeds by 4 to 5 MPH in the three corridors assigned LATTs traffic i.e. Corridors 5 (I-75/I-24 from South Florida to Illinois), 6 (I-65 from Mobile, AL to Cincinnati, OH), and 15 (I-64 from Louisville, KY to Norfolk, VA).

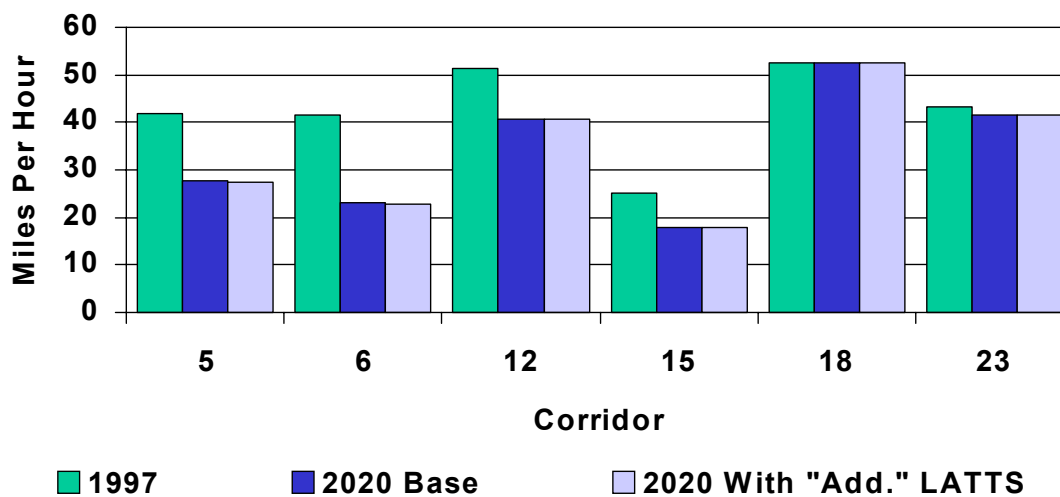
The impact of the “additional” LATTs traffic on average daily truck travel speeds appears negligible, less than 0.2 MPH in all corridors, as shown in Exhibit E-13.

**Exhibit E-13**  
**KENTUCKY STRATEGIC HIGHWAY NETWORK**  
**Average Daily Truck Operating Speeds**



The expected traffic growth in Kentucky LATTs corridor will affect “peak hour” speeds more significantly, up to 18 MPH for Corridor 6 (I-65 from Mobile, AL to Cincinnati, OH) as illustrated in Exhibit E-14.

**Exhibit E-14**  
**KENTUCKY STRATEGIC HIGHWAY NETWORK**  
**“Peak-Hour” Truck Operating Speeds**



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## CONCLUSIONS FOR LATTS MAINLINE HIGHWAYS

- (1) LATTS truck traffic in Kentucky is expected to grow at a much higher rate than the rest of the traffic in the state. From 1997 to 2020, LATTS truck traffic will increase by 383 percent while all other traffic is expected to increase by 66 percent.
- (2) In Kentucky, Corridor 6 (I-65 from Mobile, AL to Cincinnati, OH) carries the most LATTS truck traffic representing about 8.3 percent of the corridor total truck traffic in 2020.
- (3) About 44 percent of the LATTS Strategic Highway Network in Kentucky will require additional capacity by 2020 at a cost of \$ 3.9 billion. Close to 89 percent of these capacity needs are for the interstate system (66 percent for the urban interstate system alone). Nearly all capacity needs are due to expected traffic volume growth in the commonwealth and not to LATTS trucks.
- (4) LATTS truck traffic will have a minor impact on the commonwealth highway investment needs for the Strategic Highway Network. By 2020, LATTS “additional” truck traffic is expected to result in:
  - ▶ 1.4% additional costs to address capacity needs.
  - ▶ 0.5% increase in annual pavement resurfacing costs.
- (5) If these investment needs are not met, the Kentucky portion of the LATTS Strategic Highway Network will experience significant deterioration in operating speeds especially during “peak hour.”

## WATERPORT AND AIRPORT INTERMODAL CONNECTORS

The focus of the highway analysis was, appropriately, on the mainline portion of the LATTS Strategic Highway System. This is the portion of the highway network carrying the vast majority of truck travel (vehicle miles) and has “needs” that could be quantified using existing databases. Additionally, the portion of the highway system connecting the LATTS mainline system with the LATTS waterports and airports also were assessed. While these highway intermodal connectors sometimes are overlooked, their deficiencies can significantly impact the efficient movement of vehicles, especially large trucks.

LATTS intermodal connectors are the highways that link the mainline LATTS Strategic System with LATTS intermodal facilities (waterports and airports). To avoid costly new data collection activities, a recently compiled database was used to conduct the connectors analysis. This database, the *NHS Connectors*, was populated by the state DOTs and compiled by the Federal Highway Administration. It includes a high quality sample of the LATTS intermodal connectors. However, it does not contain information for every LATTS intermodal connector. These analyses utilized information for those LATTS intermodal connectors for which information was available in the NHS connectors database at the time the analyzes were performed.

As noted in Exhibit E-15, Kentucky has four connectors for which information was available in the *NHS Inventory Database*. Two of these connectors are owned by municipalities and all are under KYTC’s planning jurisdiction.

**Exhibit E-15**  
**LATTS INTERMODAL CONNECTORS**

FACILITY ID	FACILITY NAME	LINK MILES	RURAL/URBAN DESIGNATION	OWNERSHIP	AGENCY
KY15P	Truck to Barge Coal Dock Cluster, Boyd County	2.3	Rural	State Highway	KYTC
KY3P	Owensboro Riverport	1.6	Urbanized (50k to 200k)	State Highway	KYTC
KY3P	Owensboro Riverport	0.4	Urbanized (50k to 200k)	Municipal Highway	KYTC
KY8A	Louisville International Airport	1.1	Urbanized (>200k)	Municipal Highway	KYTC

The following are the Kentucky facilities that have connectors for which information was not available in the inventory database:

- ▶ Lyons County Riverport
- ▶ Louisville and Jefferson Riverport
- ▶ Blue Grass Airport

#### **Pavement Problems**

Kentucky reported no connector pavement deficiencies.

#### **Geometric/Physical Problems**

All of the connectors in Kentucky reported shoulder deficiencies. In addition, the Boyd County connector (KY15P) reported having a travel way deficiency.

#### **At-Grade Railroad Crossing Problems**

Owensboro Riverport (KY3P) has a rough railroad crossing.

#### **Traffic Operations and Safety Problems**

All of Kentucky's LATTS connectors reported congestion problems associated with the junction with the NHS mainline.

#### **Commonwealth Summary**

Based on the available information, Kentucky intermodal connectors are generally in good physical condition. Connector/NHS mainline junction congestion issues are the most significant overall problem. Additionally, Kentucky's connectors reported a low number of common operational deficiencies.

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## INTELLIGENT TRANSPORTATION SYSTEMS (ITS)

While it is clear that improvements in highway infrastructure are required to achieve an economically efficient transportation system, truck operations also can be improved by the implementation of ITS. Transportation technologies help freight transport become more productive and more responsive to the needs of business enterprises, including those which are engaged in Latin American trade. Fortunately, a large portion of current work in the ITS arena is with commercial vehicle operations (CVO). Of significant relevance to LATTs is the Commercial Vehicle Information Systems and Networks (CVISN) that embodies a collection of information systems and communications networks that provide support to CVO.

The national ITS/CVO program encompasses numerous projects undertaken by the individual states. The national program is designed to encourage the development and implementation of technology to enhance the safe movement of commercial vehicles across the United States. There are four main areas within the national program and each of the individual states are striving to meet these goals:

- ▶ Safety Assurance – Programs and projects that are designed to assure the safety of commercial drivers, vehicles, and cargo.
- ▶ Credentials Administration – Programs and projects that are designed to improve the procedures and systems for managing motor carrier regulation.
- ▶ Electronic Screening – Programs and projects that are designed to facilitate the verification of size, weight, safety, and credentials information.
- ▶ Carrier Operations – Programs and projects that are designed to reduce congestion and manage the flow of commercial vehicle traffic.

Most of the Alliance member states have completed some type of ITS/CVO Business Plan. Many of these documents are living documents and are continually being updated and revised. Since state's ITS/CVO plans are changing frequently, the information contained below is only a snapshot of ITS information available in early 2001.

### Kentucky ITS/CVO Plan

Kentucky is an active participant in the ITS/CVO arena. The State has numerous existing CVO projects and the Business Plan outlines an extensive ITS/CVO implementation plan. The Business Plan that Kentucky developed, *ITS/CVO Business Plan*, was designed to bring cohesion to several distinct and dramatic CVO improvement efforts underway within the Commonwealth of Kentucky<sup>2</sup> and to implement several new ITS/CVO technologies.

Currently the Commonwealth has a well organized and structured CVO system. The existing projects that the Commonwealth has are as follows:

- ▶ Safety Information Systems - Currently all safety inspections are completed by hand and then passed to the appropriate personnel being checked each time along the way. The data is ultimately hand entered into the SafetyNet Database for weekly

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<sup>2</sup> *ITS/CVO Business Plan, Kentucky, State of Kentucky, July 1998*

uploads onto the Motor Carrier Management Information System, a national database.

- ▶ IRP Process - The current method of registration requires that the applicant apply for Kentucky title and registration in person to the County Court Clerk's office in the county of residence or home base. The IRP application is then obtained and submitted to the IRP branch for processing. The appropriate information is entered into the IRP computer system and the appropriate fees are determined. Finally, the applicant pays the fees and the credentials are issued.
- ▶ IFTA Process - IFTA license applications are obtained through the Division of Motor Carriers and are filled either in person or by mail. Each year the license is renewed through the mail. The computer systems are updated on a daily basis with new information. This system then mails out the necessary tax reports to the carriers on a quarterly basis
- ▶ KIT Process - All carriers based in the commonwealth are required to obtain a Kentucky Intrastate Tax (KIT) license. This is provided free of charge but is renewed annually. The KIT license enables the Kentucky Division of Motor Carriers to mail the quarterly tax report to the motor carriers. This report summarizes fuel purchases and consumption during the quarter.
- ▶ KYU Process - All carriers over 60,000 pounds must obtain a KYU license from the Division of Motor Carriers. This allows the carrier to report Kentucky's Weight Distance Tax on a quarterly bases. Those carriers that fail to pay the taxes are stopped at the scales and placed out of service until the proper fees are paid.
- ▶ Overweight/Over Dimensional Permits Process - Permits are issued to those vehicles based on the width, height, length, gross weight, total number of axles, and axle weights. The vehicles are then routed according to these factors.
- ▶ For Hire Authority Process - The carrier fills out the necessary paperwork, pays the necessary fees and the credentials are issued.

Based on the above information, Kentucky currently has a number of CVO activities but none contain an ITS component. Most of these activities are related to the permitting and credentialing processes. These processes can be long and cumbersome, with most everything being handled by hand or mail and not electronically. With the development of the Business Plan, Kentucky hopes to transfer most of the existing CVO activities into electronic format.

The plan was developed under the coordination of the ITS/CVO Working Group. This group was composed of the Secretary of Transportation, Commissioner of Vehicle Regulation, Assistant to the State Highway Engineer, Chairs of the Motor Carrier Advisory Committee and the Motor Coach Advisory Committee, District FHWA/OMC representative, and the Director and selected staff from the University of Kentucky Transportation Center.

The goals that were established represent Kentucky's fundamental values and essential goals for the future. These goals are as follows 1) improve and streamline CVO, 2) continue Kentucky as a national leader in ITS/CVO, 3) conduct paperless CVO operations with timely, current, accurate and electronic information while maintaining security and privacy, 4) enhance CVO productivity, safety, and efficiency by eliminating unsafe and illegal operations and providing incentives for improved performance, 5)

integrate and coordinate ITS operations and Empower Kentucky, and 6) create a CVO system that is self-sufficient, uses multiple vendors, and is user friendly<sup>3</sup>.

The projects as set forth in the Business Plan all encompass the four national programs areas. But they have been tailored to fit Kentucky's needs and current state of ITS/CVO programming. The programs are as follows:

- ▶ (Empower) MVE Process Improvement - This project will allow for greater roadway enforcement to those motor carriers that are by-passing inspection stations. It will provide for greater enforcement by officers and better compliance by the carriers.
- ▶ Advantage CVO (I-75) - This project will produce a multi-state electronic screening system that will require fewer stops by compliant motor carriers traveling along the I-75 corridor from Florida to Canada.
- ▶ Registration, Taxation, and Permitting Improvements - This project will upgrade the registration, taxation, and permitting process through electronic application, employee cross-training, and improved compliance incentives.
- ▶ Electronic Screening - This project will allow those carriers that pass a screening process, based on safety history, registration and permitting records to by-pass the weigh and/or inspection stations.
- ▶ I-65 Electronic Screening Test - This project will design an electronic low cost, easily installed, and easily maintained electronic screening process.
- ▶ Institutional Issues Working Group - This group with 14 member states is dedicated to solving institutional issues of CVO as a collective group.
- ▶ Kentucky-Tennessee Joint Weigh Station Project - This project will develop weigh stations that are at the state border crossings. Thus, allowing both states to cooperatively inspect the motor carriers while only having one station on each side. This will reduce the costs for each state by only having to operate a joint station and not constructing individual state operated stations.
- ▶ CVISN Mainstreaming for Great Lakes and Southeast Regions - This project will mainstream the ITS/CVO Business Plan for these regions. Kentucky will support the business planning processes in these regions, support a regional business plan and prepare its own long-range plans.
- ▶ Mini-CVO IRP Joint State Test - This project will expand the electronic registration process for smaller commercial vehicles.
- ▶ Safety Information Systems - This will allow roadside stations to obtain current safety information for immediate roadside evaluation of carriers.
- ▶ Kentucky Statewide ITS Plan - This project allows for the continuing update of ITS deployment within the Commonwealth of Kentucky. All ongoing and future ITS projects will be managed through this plan.
- ▶ MAPS-Advantage CVO Interoperability Agreement - Carriers will be able to have one transponder that will communicate with either state system thus allowing weigh station clearance.
- ▶ Infrared Brake Testing Technology (IRISYSTEM) - This project will allow for quick electronic brake inspection at the weigh stations<sup>4</sup>.

In addition to the extensive ongoing activities in the administration category, there are limited activities planned for the credential administration and electronic screening

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<sup>3</sup> *ITS/CVO Business Plan, Kentucky, State of Kentucky, July 1998*

<sup>4</sup> *ITS/CVO Business Plan, Kentucky, State of Kentucky, July 1998*

categories. These activities rely on implementation of the above listed administration activities. In electronic screening, activities are planned for development of weigh stations and mobile weigh scales that include Electronic Screening systems. These stations would facilitate electronic communication of activity reports, citations, etc. CVISN concepts for these various roadside facilities include integration of a Roadside Operations Computer (ROC) and the ASPEN software being developed.

In the category of credential administration, activities are underway to develop a single Credentialing Interface (CI) that would interconnect all carriers, agencies, and local credentialing offices with the central credentialing office and computer systems. The CI would support all electronic interchanges between these offices.