

DISTRICT 10 ACCESSIBILITY AND CONNECTIVITY STUDY  
VARIOUS COUNTIES  
KYTC ITEM NO. N/A

## **APPENDIX E – KENTUCKY STATEWIDE TRAVEL DEMAND MODEL (KYSTM) NETWORK REVIEW AND UPDATES**

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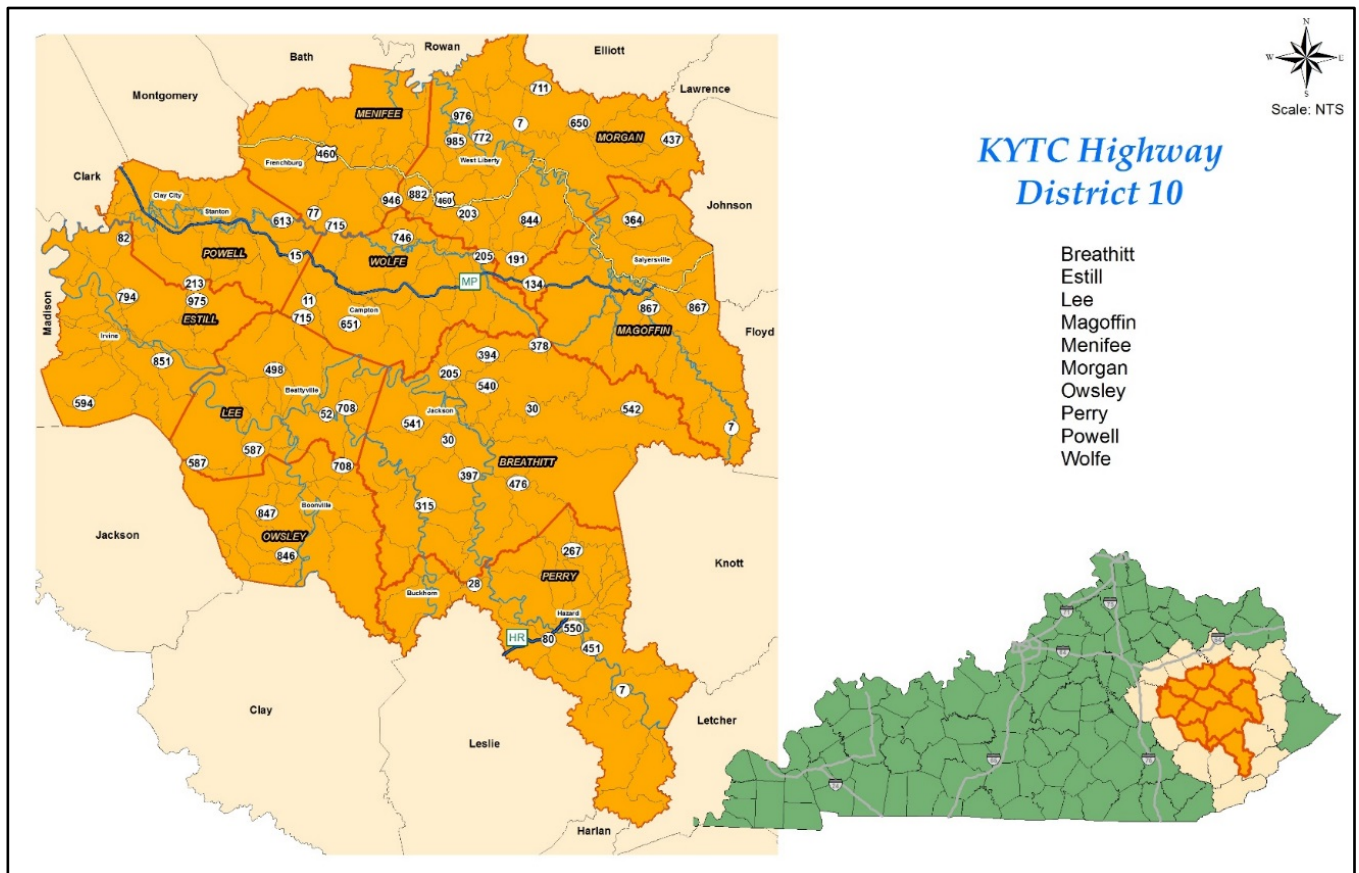
To:	Jayalakshmi Balaji, P.E. KYTC Division of Planning	From:	Len Harper, PE Stantec
File:	KYTC District 10 Accessibility and Connectivity Study	Date:	November 28, 2017

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**Reference: District 10 KYSTM Review and Proposed Updates**

## PROJECT INTRODUCTION

As part of a review of its statewide planning process, the KYTC Division of Planning has directed Stantec Consulting Services, Inc. (Stantec) and Palmer Engineering (Palmer) to conduct pilot studies to assess the accessibility and connectivity issues of individual KYTC districts, with an emphasis on strategies to improve safety and mobility within and around a specific district. Stantec will perform a review of District 10 in eastern Kentucky. The study area comprises the ten counties within District 10 and the fifteen counties surrounding it. The study area is shown in **Figure 1**.



**Figure 1. Study Area**

**Reference: District 10 KYSTM Review and Proposed Updates**

The primary analytic tool used to analyze potential improvements and strategies is the Kentucky Statewide Travel Model (KYSTM), the most recent version of which was provided to Stantec by KYTC for use on this project. An initial task of the analysis was a review of the KYSTM's road network and socioeconomic data for the counties within the study area. The model network was checked to ensure all new roadway improvements were reflected in the current network. County level household and population totals were checked with 2010 U.S. Census data and persons per household rates were checked for reasonableness. A memorandum detailing the review was submitted to KYTC in September 2017 and a revised summary is provided below based on KYTC's review. This memo also details the county meeting updates to the KYSTM network and socioeconomic data.

**Roadway Network Updates**

Stantec has compiled a list of roadway projects that have been completed since 2010 that could affect the free flow speed in the KYSTM (i.e. major widening, new routes, or major realignment). A comparison of previous versions of Kentucky's Highway Plan along with consultation with District 10 staff revealed five projects that have been constructed in District 10 since 2010 that could affect the KYSTM.

- Item No. 10-8503.00: Widen Mountain Parkway to four lanes from MP 43.100 to MP 46.200 in Wolfe County
- Item No. 10-117.01: Major reconstruction of US 460 from MP 10.234 to MP 13.752 in Menifee County
- Item No. 10-8301.00: Major reconstruction of KY 172 from MP 8.000 to MP 10.400 in Morgan County
- Item No. 10-8003.00: Major reconstruction of KY 172 from MP 10.400 to MP 13.000 in Morgan County
- Item No. 10-270.00: Realign and widen KY 15 to four lanes from MP 20.400 to MP 17.900 in Breathitt County

**Household Rate Adjustments**

Stantec compared the population and household values in the KYSTM's Traffic Analysis Zones (TAZ) in the study area to determine if any TAZs had illogical relationships between population and households. Stantec calculated the persons per household (PPH) rate of each TAZ and flagged all TAZs with PPH rates less than or greater than two standard deviations from the mean PPH rate of all TAZs in the KYSTM with PPH rates above 1 and less than 5. (Logically, households must include at least one person and an average PPH rate over five for an entire TAZ is extremely unlikely and most likely suggests the presence of non-household group populations such as jails or dormitories.) By establishing the upper and lower bounds at two standard deviations, normal variation in PPHs rates would be preserved while outliers would be identified. **Table 1** provides the descriptive statistics of the selected statewide zones used to establish the upper and lower limits for PPH rate adjustments.

**Reference: District 10 KYSTM Review and Proposed Updates**
**Table 1. Persons Per Household (PPH) Statistics**

PPH Statistics	2010	2040
Total Kentucky TAZs	4,624	
Select TAZs (PPH >1 and <5)	4,410	
Average PPH - Select	2.26	2.42
1 Standard Deviation	0.354	0.380
2 Standard Deviations	0.708	0.760
Lower PPH Limit	1.55	1.66
Upper PPH Limit	2.97	3.18

Based upon the upper and lower bounds for PPH as shown in Table 1, 27 TAZs within the study area were flagged. Three were within District 10 and the remaining TAZs were in adjacent counties. Of those 27 TAZs, 11 contained groups quarters – either prisons or college and universities. While these group populations are not associated with typical household populations, the KYSTM does not specify population type and similar group populations exist in other TAZs outside the study area. Further, the directive to maintain the county population totals as they are presently established in the KYSTM dictates that these populations remain included in TAZ population values. Therefore, the household values in these 11 TAZs were not changed and are highlighted in green in **Table 2**.

Nine of the TAZs flagged were within close proximity of the two-standard deviation threshold, most within one household of meeting the criteria. Aerial reviews of the TAZs confirmed that the household values were reasonably accurate at these nine locations and were therefore left unchanged. These nine zones are highlighted in grey in Table 2.

For the remaining seven TAZs flagged, aerial review did not reveal any explanatory factor for the outlying PPH rates. The household values for these TAZs, either in the 2010 base year or 2040 horizon year, were therefore adjusted to match the closest PPH rate within the bounds of two standard deviations. The seven TAZs with adjusted PPH rates and households are identified in yellow in Table 2.

TAZ 3076083 was deemed to have an irregular zone geometry. The TAZ is very narrow and contains a church and one single family home. As drawn, there can be no additional development. It does not have the households currently attributed to it. In order to maintain the county total population, all but one of the households were reassigned to the neighboring TAZ 3076081, which is the logical zone encompassing this rural and residentially developing area. These two zones are identified in Table 2 in orange.

**Reference: District 10 KYSTM Review and Proposed Updates**

**Table 2. TAZ Household Rate Review and Proposed Adjustments**

County	TAZ	2010					2040					Notes
		Population	Original PPH	Original House-holds	Adjusted PPH	Adjusted House-holds	Population	Original PPH	Original House-holds	Adjusted PPH	Adjusted House-holds	
Menifee	4083031	1446	1.07	1352	1.56	930	1167	2.28	511			Adjusted 2010
Morgan	4088121	2290	11.28	203			2152	11.70	184			County Detention Center
Perry	4097291	227	6.88	33			195	6.29	31			County Detention Center
Clark	4025381	23	1.35	17			26	2.00	13			Confirmed - No Change
Clay	4026181	2687	6.02	446			2051	6.37	322			Federal Prison
Elliott	4032021	1881	3.99	472			1920	4.78	402			State Correctional Complex
Knott	4060131	533	10.06	53			434	11.73	37			Alice Lloyd College
Madison	3076081	1238	2.60	476	2.60	501	1782	2.40	743	2.43	771	Reassigned
Madison	3076083	63	2.42	26	3.00	1	91	45.50	2	3.00	1	Reassigned
Madison	3076103	127	1.12	113	1.56	82	183	1.53	120	1.66	110	Adjusted 2010 & 2040
Madison	3076111	2046	9.61	213			2945	10.91	270			EKU
Madison	3076112	144	1.33	108	1.56	93	207	1.42	146	1.66	125	Adjusted 2010 & 2040
Madison	3076352	291	3.00	97			419	3.49	120			Berea College
Madison	3076382	1576	2.98	529			2268	3.42	663	3.18	714	Adjusted 2040
Madison	3076391	499	3.26	153			718	3.19	225			Berea College
Madison	3076443	415	0.00	0			597	0.00	0			Berea College
Madison	3076522	62	3.10	20			89	3.07	29			Confirmed - No Change
Madison	3076531	912	3.14	290			1313	3.29	399			EKU
Montgomery	4087021	60	3.16	19			89	2.97	30			Confirmed - No Change
Montgomery	4087311	50	4.55	11			74	4.35	17			Confirmed - No Change
Rowan	4103032	132	1.50	88			151	1.61	94			Confirmed - No Change
Rowan	4103033	3253	5.97	545			3732	6.61	565			Morehead State
Rowan	4103102	15	1.36	11			17	2.13	8			Confirmed - No Change
Rowan	4103162	10	3.33	3			11	2.75	4			Confirmed - No Change
Rowan	4103202	122	1.24	98	1.56	78	140	1.52	92	1.66	84	Adjusted 2010 & 2040
Rowan	4103211	57	1.12	51	1.56	37	65	2.32	28			Adjusted 2010
Rowan	4103212	97	1.54	63			111	2.41	46			Confirmed - No Change
Rowan	4103261	4	2.00	2			5	5.00	1			Confirmed - No Change
Rowan	4103271	5	0.63	8	1.56	3	6	3.00	2			Adjusted 2010

**County Meetings**

Stantec organized individual meetings with officials from each county within District 10 to solicit input on potential growth areas and determine local issues. The focus of the county meetings was not to specifically identify potential projects but to talk in general about issues and concerns within the individual counties. Four primary topics were discussed during the meetings:

1. **The general travel destinations of county residents** for jobs, healthcare, shopping, recreation, etc.
2. **The location of job growth, if any**, occurring in the county. A map from the KYSTM depicting the change in employment projections between 2017 and 2040 was presented to facilitate discussion. While total employment projections for each

**Reference: District 10 KYSTM Review and Proposed Updates**

- county were maintained at the county control levels defined by the Woods & Poole Economics projections originally included in the model, the distribution of jobs within the county was subject to revision based on the local input provided.
3. **The location of population growth, if any**, occurring in the county. A map from the KYSTM depicting the change in population projections between 2017 and 2040 was presented to facilitate discussion. While total population projections for each county were maintained at the county control levels defined by the Kentucky State Data Center projections included in the model, the distribution of population within the county was subject to revision based on the local input provided.
  4. **The top priorities, opportunities, or issues** each county has in terms of its accessibility and connectivity with its surrounding area.

Based on the input gathered from local officials at these meetings, potential growth areas or other areas for redistribution were identified to establish population, households, and jobs in the 2040 socioeconomic data within the KYSTM Traffic Analysis Zones (TAZ) file. The resulting changes are presented in the following section.

The ten county meetings are summarized below. Detailed meeting summaries can be found in **Appendix A**.

**Menifee County:**

**Location:** Gateway Area Development District (GADD) office in Morehead, KY

**Date:** July 10, 2017 at 1:00 p.m. EDT.

**Attendees:**

Rick Stiltner	Menifee County Judge Executive
Joshua Farrow	Gateway Area Development District
Larry Tackett	Gateway Area Development District
Gail Wright	Gateway Area Development District
Jason Blackburn	KYTC – District 10
Mikael Pelfrey	KYTC – Central Office Planning
Brian Aldridge	Stantec Consulting Services Inc.
Steve Farmer	Stantec Consulting Services Inc.
Len Harper	Stantec Consulting Services Inc.
Gary Sharpe	Palmer Engineering

**Summary:**

1. Menifee County residents are going to Mt. Sterling, Morehead, West Liberty, Georgetown, and Lexington for jobs, healthcare, shopping, and recreation.
2. The KYSTM forecasts 103 additional jobs between 2017 and 2040. The western part of the county will see higher job growth than the eastern part of the county.

**Reference: District 10 KYSTM Review and Proposed Updates**

3. The KYSTM forecasts a population decrease of 987 people between 2017 and 2040. The population near Means and Frenchburg is expected to remain flat due to development opportunities and utility infrastructure.
4. Improved access to Mt. Sterling and I-64 is Menifee County's top transportation priority. The next priority is to improve roadway geometrics on KY 36, KY 211, and KY 77.

**Morgan County:**

**Location:** Commercial Bank office in West Liberty, KY

**Date:** August 11, 2017 at 10:00 a.m. EDT.

**Attendees:**

Stanley Franklin	Morgan County Judge Executive
Mark Walter	Mayor-West Liberty
Joshua Farrow	Gateway Area Development District
Jason Blackburn	KYTC – District 10
Brian Aldridge	Stantec Consulting Services Inc.
Steve Farmer	Stantec Consulting Services Inc.

**Summary:**

1. Morgan County residents are going to Mt. Sterling, Morehead, Georgetown, Sandy Hook, Paintsville, Hazard, Ashland, and Pikeville for jobs, healthcare, shopping, and recreation.
2. The KYSTM forecasts 1,202 additional jobs between 2017 and 2040. Job growth will be centered around KY 205 near Wolfe County and US 460 near Ezel.
3. The KYSTM forecasts a population decrease of 686 people between 2017 and 2040, which is consistent with local observations.
4. The main transportation focus in the area is the need for improved access to I-64 and the Mountain Parkway. Improvements to US 460 in Menifee and Magoffin Counties, KY 172 in Johnson County, and KY 203 in Wolfe County would benefit commuters and travelers in Morgan County.

**Wolfe County:**

**Location:** KYTC District 10 office in Jackson, KY

**Date:** August 21, 2017 at 9:00 a.m. EDT.

**Attendees:**

Dennis Brooks	Wolfe County Judge Executive
Eunice Holland	KY River Area Development District
Jason Blackburn	KYTC – District 10
Brian Aldridge	Stantec Consulting Services Inc.
Len Harper	Stantec Consulting Services Inc.

**Reference: District 10 KYSTM Review and Proposed Updates**

**Summary:**

1. Wolfe County residents are traveling to Mt. Sterling, Jackson, Winchester, Lexington, and Richmond for jobs, healthcare, shopping, and recreation.
2. The KYSTM forecasts 499 additional jobs between 2017 and 2040. The area near Lee City should have a higher current employment and will see increased job growth. The western side of the county could also see significant job growth if a proposed adventure park is developed. Job growth near Hazel Green and Campton is not likely to occur.
3. The KYSTM forecasts a population increase of 284 people between 2017 and 2040, which is in line with local expectations.
4. Given the expansion of the Mountain Parkway and recent improvements to KY 205, transportation facilities are not preventing Wolfe County from growing.

**Owsley County:**

**Location:** KYTC District 10 office in Jackson, KY

**Date:** September 7, 2017 at 9:00 a.m. EDT.

**Attendees:**

Cale Turner	Owsley County Judge Executive
Eunice Holland	Kentucky River Area Development District
Jason Blackburn	KYTC – District 10
Brian Aldridge	Stantec Consulting Services Inc.
Len Harper	Stantec Consulting Services Inc.

**Summary:**

1. Owsley County residents are going to London, Corbin, Winchester, Mt. Sterling, Georgetown, Lexington, Beattyville, Jackson, Richmond, and Irvine for jobs, shopping, and recreation.
2. The KYSTM forecasts 242 additional jobs between 2017 and 2040. Although a saw mill in the area recently closed, more people are working from home due to the availability of high speed internet. More job growth is expected in the southern portion of the county near Major and Cow Creek.
3. The KYSTM forecasts a population decrease of 397 people between 2017 and 2040. The population near Booneville is expected to increase, with the area south of KY 11 expected to stay flat. The rest of the county is expected to see a decrease in population.
4. The main transportation focus in the county is to finish the KY 30 corridor.

**Perry County:**

**Location:** KYTC District 10 office in Jackson, KY

**Date:** September 7, 2017 at 2:30 p.m. EDT.



**Reference: District 10 KYSTM Review and Proposed Updates****Attendees:**

Scott Alexander	Perry County Judge Executive
Jason Blackburn	KYTC – District 10
Brian Aldridge	Stantec Consulting Services Inc.
Len Harper	Stantec Consulting Services Inc.

**Summary:**

1. Perry County residents are going to Georgetown, London, Lexington, and Pikeville for jobs, healthcare, shopping, and recreation.
2. The KYSTM forecasts 4,809 additional jobs between 2017 and 2040. The area near Hazard is expected to see a higher rate of job growth while the southern and western parts of the county will remain flat or see a decrease in jobs.
3. The KYSTM forecasts a population decrease of (-3,317) between 2017 and 2040. While the area near Hazard is expected to have a steady population, the southern part of the county is expected to see a decrease in population due to the loss of coal jobs. There are new developments on KY 15 near KY 80 which will likely allow for a steady population.
4. Completing the KY 15 corridor and widening the Mountain Parkway were identified as the most important transportation projects in Perry County.

**Estill County:****Location:** Estill County Courthouse in Irvine, KY**Date:** September 8, 2017 at 10:00 a.m. EDT.**Attendees:**

Wallace Taylor	Estill County Judge Executive
Chris Chaney	Bluegrass Area Development District
Jason Blackburn	KYTC – District 10
Brian Aldridge	Stantec Consulting Services Inc.
Graham Winchester	Stantec Consulting Services Inc.

**Summary:**

1. Estill County residents are going to Mt. Sterling, Winchester, Lexington, and Richmond for jobs, healthcare, shopping, and recreation.
2. The KYSTM forecasts 666 additional jobs between 2017 and 2040. Most of the employment growth in the county will be centered around Irvine. TAZ 4033041 is a large zone. Most of the jobs in TAZ 4033041 are in the southern portion, and therefore the centroid connectors should be concentrated in that area of the zone.
3. The KYSTM forecasts a population decrease of 1,593 people between 2017 and 2040, which is consistent with local expectations.

**Reference: District 10 KYSTM Review and Proposed Updates**

4. If the automotive plant were to be built, KY 52 would see an increase in traffic which would amplify the existing bottleneck issues. KY 52 would need safety and capacity improvements to accommodate the higher traffic volumes.

**Powell County:**

**Location:** Powell County Emergency Operations Center in Stanton, KY

**Date:** September 8, 2017 at 1:30 p.m. EDT.

**Attendees:**

James Anderson	Powell County Judge Executive
Chris Chaney	Bluegrass Area Development District
Pete Wearstler	Bluegrass Area Development District
Jason Blackburn	KYTC – District 10
Brian Aldridge	Stantec Consulting Services Inc.
Graham Winchester	Stantec Consulting Services Inc.

**Summary:**

1. Powell County residents are traveling to Lexington, Winchester, and Mt. Sterling for jobs, healthcare, shopping, and recreation.
2. The KYSTM forecasts 1,141 additional jobs between 2017 and 2040. The area near Slade has tourist attractions such as Natural Bridge and is expected to see a substantial growth in employment. The areas north of Slade and near Knowlton have higher current employment than the KYSTM indicates and will also see increased job growth. The areas near Vaughns Mill and Morris are likely to see a decrease in employment.
3. The KYSTM forecasts a population decrease of 1,336 people between 2017 and 2040. The areas near Clay City and Stanton are expected to have a steady population while the rest of the county will see a declining population.
4. Limited pedestrian access near Stanton and Clay City is a transportation issue in Powell County.

**Magoffin County:**

**Location:** Paul B. Hall Regional Medical Center in Paintsville, KY

**Date:** September 13, 2017 at 1:30 p.m. EDT.

**Attendees:**

Charles Hardin, MD	Magoffin County Judge Executive
Randy Risner	Logan Corporation-Local Business
Paul Lyon	Mineral Labs-Local Business
Joe Jacobs	Big Sandy Area Development District
Jason Blackburn	KYTC – District 10
Steve Farmer	Stantec Consulting Services Inc.

**Reference: District 10 KYSTM Review and Proposed Updates**

Len Harper

Stantec Consulting Services Inc.

**Summary:**

1. Magoffin County residents are going to Georgetown, Lexington, Paintsville, Ashland, Huntington, Pikeville, and Prestonsburg.
2. The KYSTM forecasts 571 additional jobs between 2017 and 2040. Job growth will be centered around the new industrial park at the Gifford Road interchange on the Mountain Parkway. This area, near Salyersville, and the western portion of the county will see higher than expected job growth while the areas near Fredville, Gunlock, and Logville will see a decline in employment.
3. The KYSTM forecasts a population decrease of 296 people between 2017 and 2040. The Mountain Parkway corridor, Salyersville, Ivyton, and Gifford will likely see population growth while the southern part of the county will see a population decline.
4. Completing the Mountain Parkway the main transportation need in the county, with spot improvements to KY 114 being the second priority.

**Breathitt County:**

**Location:** KYTC District 10 office in Jackson, KY

**Date:** September 18, 2017 at 11:30 a.m. EDT.

**Attendees:**

J.L. Smith	Breathitt County Judge Executive
Eunice Holland	Kentucky River Area Development District
Jason Blackburn	KYTC – District 10
Steve Farmer	Stantec Consulting Services Inc.
Len Harper	Stantec Consulting Services Inc.

**Summary:**

1. Breathitt County residents are going to Winchester, Georgetown, Lexington, Mt. Sterling, Cincinnati, and Hazard for jobs, healthcare, shopping, and recreation.
2. The KYSTM forecasts 1,646 additional jobs between 2017 and 2040. Most of the job growth in the county will be near Jackson, with the areas to the east and west seeing little employment growth.
3. The KYSTM forecasts a population decrease of 3,405 people between 2017 and 2040. The area near Jackson will have the most stable population over the next 20 years while the areas to the east and west will see a decline in population.
4. Completion of the KY 15 corridor was the main point of focus with KY 30 and KY 205 improvements being the next priorities.

**Reference: District 10 KYSTM Review and Proposed Updates****Lee County:****Location:** Lee County Courthouse in Beattyville, KY**Date:** September 20, 2017 at 10:00 a.m. EDT**Attendees:**

Steve Mays	Lee County Judge Executive
Eunice Holland	Kentucky River Area Development District
Jason Blackburn	KYTC – District 10
Brian Aldridge	Stantec Consulting Services Inc.
Len Harper	Stantec Consulting Services Inc.

**Summary:**

1. Lee County residents are going to Winchester, Georgetown, Lexington, Richmond, Jackson and Irvine for jobs, healthcare, shopping, and recreation.
2. The KYSTM forecasts 670 additional jobs between 2017 and 2040. There are several expected job boosters in Lee County: the prison in Beattyville reopening, retail growth along KY 11 south of Beattyville, the proposed Hollerwood Park, and a new medical center. The area near Beattyville will see the most job growth, with areas to the east and west seeing little job growth. TAZ 4065011 is a large zone. Because most of the jobs in TAZ 4065011 are in the eastern part of the zone, the centroid connectors for this TAZ should be located to the east.
3. The KYSTM forecasts a population decrease of 539 people between 2017 and 2040. Apartments and affordable housing are being built in Beattyville, which will increase population. Areas outside the city are expected to see population decline.
4. Completing the KY 30 corridor is the most important transportation issue in the area with KY 11 and a new alignment at Hat Holler Hill being the next most important.

**Proposed County Meeting Updates to KYSTM Socioeconomic Data**

The input from the county meetings was used to redistribute households and jobs in the KYSTM TAZs for both the model 2010 base year and the 2040 future horizon year. (To avoid confusion, interpolated 2017 current year and 2040 future year values for employment and population were presented at the county meetings.) These socioeconomic adjustments are shown in **Table 3** and **Table 4**. Maps presenting a geographical representation of this information can be found in the meeting summaries in **Appendix A**. The county wide total population and employment projections will remain the same, but the distribution of the population/households and jobs within the county and the TAZ's have been redistributed based on the local input provided.

**Reference: District 10 KYSTM Review and Proposed Updates**
**Table 3: District 10 Proposed Population Changes**

County	TAZ	2040 Population	Proposed 2040 Population	2040 Households	Proposed 2040 Households
Breathitt	4013111	829	497	319	191
Breathitt	4013121	340	460	150	203
Breathitt	4013131	477	646	181	245
Breathitt	4013071	690	935	301	408
Breathitt	4013031	614	832	239	324
Breathitt	4013041	688	932	292	396
Breathitt	4013011	614	282	244	112
Breathitt	4013141	647	315	272	132
Estill	4033061	1,446	1,627	620	698
Estill	4033081	1,390	1,565	588	664
Estill	4033011	755	577	318	243
Estill	4033021	699	521	308	230
Lee	4065011	1,389	1,209	632	550
Lee	4065061	1,103	1,260	407	465
Lee	4065071	1,722	1,925	480	606
Lee	4065041	509	449	246	217
Lee	4065031	940	820	409	357
Magoffin	4077051	747	707	336	318
Magoffin	4077041	1,051	1,081	429	441
Magoffin	4077121	952	982	396	408
Magoffin	4077011	1,033	1,063	498	512
Magoffin	4077091	1,562	1,592	656	669
Magoffin	4077071	1,182	1,142	532	514
Magoffin	4077081	924	884	391	374
Menifee	4083011	1,204	1,437	482	575
Menifee	4083021	1,195	1,266	531	563
Menifee	4083031	1,167	974	511	426
Menifee	4083051	671	560	279	233
Owsley	4095011	554	626	256	289
Owsley	4095041	1,095	1,217	434	482
Owsley	4095051	744	654	291	256
Owsley	4095071	73	99	36	49
Owsley	4095031	675	588	326	284
Owsley	4095021	616	526	268	229
Owsley	4095061	508	555	224	245
Perry	4097121	423	223	187	99
Perry	4097111	429	229	176	94
Perry	4097331	393	470	168	201

**Reference: District 10 KYSTM Review and Proposed Updates**

County	TAZ	2040 Population	Proposed 2040 Population	2040 Households	Proposed 2040 Households
Perry	4097251	600	706	260	306
Perry	4097431	1589	1804	631	716
Perry	4097301	1529	1736	622	706
Perry	4097101	374	424	177	201
Perry	4097461	1944	2208	910	1034
Perry	4097041	232	263	87	99
Perry	4097451	303	344	139	158
Perry	4097191	469	292	210	131
Perry	4097201	106	61	52	30
Perry	4097131	466	286	217	133
Perry	4097151	278	178	126	81
Perry	4097141	125	79	45	28
Perry	4097171	366	323	162	143
Powell	4099051	767	490	313	200
Powell	4099011	1,112	1,198	447	482
Powell	4099111	678	761	250	281
Powell	4099091	1,368	1,435	546	573
Powell	4099101	743	834	275	309
Powell	4099081	868	591	358	244
Powell	4099031	1,022	1,146	438	491
Powell	4099041	1,260	1,363	477	516

**Table 4: District 10 Proposed Employment Changes**

County	TAZ	2010 Employment	Proposed 2010 Employment	2040 Employment	Proposed 2040 Employment
Breathitt	4013111	349	186	508	175
Breathitt	4013121	1,566	1,898	2,168	3,321
Breathitt	4013031			2,168	1,660
Breathitt	4013141	310	141	442	130
Lee	4065011			533	583
Lee	4065061			781	881
Lee	4065041			272	172
Lee	4065031			125	75
Magoffin	4077021	0	18	0	75
Magoffin	4077101	162	144	185	130
Magoffin	4077041			1,308	1,378
Magoffin	4077061			98	68
Magoffin	4077071			112	82

**Reference: District 10 KYSTM Review and Proposed Updates**

County	TAZ	2010 Employment	Proposed 2010 Employment	2040 Employment	Proposed 2040 Employment
Magoffin	4077081			106	76
Menifee	4083011			193	212
Menifee	4083041			26	49
Menifee	4083021			1,322	1,289
Menifee	4083031			383	374
Owsley	4095011			3	32
Owsley	4095061			1	26
Owsley	4095021	0	16	0	45
Owsley	4095051	400	384	507	408
Perry	4097121			476	361
Perry	4097111			259	198
Perry	4097251			177	216
Perry	4097421			287	327
Perry	4097281			137	176
Perry	4097301			4787	4987
Perry	4097461			5066	5166
Perry	4097471			660	710
Perry	4097021			489	376
Perry	4097231			291	227
Perry	4097011			130	101
Perry	4097161			99	80
Perry	4097131			288	221
Powell	4099061			278	428
Powell	4099011	237	170	296	118
Powell	4099091	77	134	101	170
Powell	4099081			378	455
Powell	4099071	127	316	165	382
Powell	4099041	307	128	410	75
Wolfe	4119051			157	189
Wolfe	4119021	4	98	5	120
Wolfe	4119041	468	374	597	501
Wolfe	4119081			1,118	1,083
Wolfe	4119011			150	134

**Proposed County Meeting KYSTM Network Adjustment**

Stantec proposes limited network adjustments based on input with local officials. **Table 5** identifies the network link adjustments that are outcomes of the county meetings.

**Reference: District 10 KYSTM Review and Proposed Updates**
**Table 5: District 10 Proposed Network Adjustments**

County	TAZ	Link	Adjustment
Estill	4013111	40330402	Centroid connectors cut to concentrate traffic loading to populated area of Irvine
Estill	4013121	40330405	
Lee	4065011	40650106	Centroid connector connected to KY 399
Lee	4065011	40650103	Centroid connectors cut on unpopulated west side of zone; no logical connection
Lee	4065011	40650109	

**Next Steps**

The KYSTM will be updated based on input from the county meetings (once approved by KYTC Division of Planning) and finalized before future models are run. Once approved a single “growth” scenario will be developed based on the approved recommendations and this socioeconomic dataset will be used for all future model runs. All county changes shall be consolidated, in whole, and represent the final 2010 and 2040 scenario.

Stantec will build a series of networks reflecting three different funding scenarios for District 10:

- No-Build scenario will include no additional transportation improvements
- “Bust” scenario will represent minimum funding
- “Middlin’” scenario will represent a moderate/average funding level
- “Boom” scenario will represent the highest potential funding level

The overall amount of investment to be reflected by each scenario will be determined by KYTC. Stantec will work with District 10 and the Division of Planning to estimate project costs to determine candidate projects that can be included within each investment level. Each scenario will require the following elements:

- Coding the candidate transportation improvement projects into the network
- Inserting metadata describing the project(s) included in each investment level

KYSTM model runs for each of the scenarios outlined above will be made. The output will be verified to ensure coded transportation projects are accurately reflected and no errors are returned. For each modeled scenario, Stantec will generate 10-minute travel time contours out to 90 minutes centered on each county seat. The contours will be used to estimate the households and jobs (by type) accessible within each 10-minute travelshed.

Deliverables for this task will include model files/runs and a memo depicting the changes in datasets and details related to the funding scenarios listed above. The findings will then be presented at Project Team Meeting No. 3.





November 28, 2017  
Page 16 of 16

**Reference: District 10 KYSTM Review and Proposed Updates**

**STANTEC CONSULTING SERVICES INC.**

A handwritten signature in cursive script that reads "Leonard Harper".

Len Harper, PE  
Associate  
Phone: (859) 422-1846  
Len.Harper@stantec.com

cc: Jason Blackburn  
Mikael Pelfrey  
Scott Thomson

Enclosure: Appendix A - County Meeting Summaries