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Traffic Forecasting FAQs

Meet Our Forecasting and Modeling Team

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Traffic Forecasting FAQs

Can you explain some of the technical terms?

ADT: The Average Daily Traffic is the amount of traffic volume going past a point in one day. The raw volumes are adjusted with monthly and seasonal factors to represent the average day in a year. It should be noted that the only “true” ADT is one that comes from an automatic traffic recorder (ATR) that records data continuously.

AADTT: The Annual Average Daily Truck Traffic identifies the volume of truck traffic for one day (24-hour period) during a data reporting year. This data comes from classification count stations.

DHV: The Design Hour Volume is the volume unit that designers and planners most frequently use. It is based on the 30th highest hourly volume on a road in the year. The 30th highest hourly volume is a good cutoff point at which to design highways.

K-Factor: A proportion representing the percentage of Annual Average Daily Traffic (AADT) that occurs during the peak hour of traffic on a given road. Calculated by dividing the DHV by the ADT.

D-Factor: A proportion representing of a peak-hour traffic traveling in the heavier direction. Calculated by dividing the volume of traffic in the heavier direction by the total traffic volume during peak hour.



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Why are Traffic Forecasts Needed?

The main purpose of traffic forecasting is to facilitate the Cabinet's Six-Year Plan. Virtually every highway project needs a traffic forecast to help define the scope, the geometry of the project, and sometimes even help determine if a project is needed.

Examples of what forecasts help determine:

- the number of lanes
- the length or number of turning lanes
- the depth and type of pavement

Highway design and planning forecasts are usually based on estimates of traffic 20 years beyond the construction date. While no one knows the future, trained traffic forecasters and modelers use special tools and experience to estimate these numbers. Typical data items provided by forecasters include:

- current and future ADT
- current and future DHV
- current and future AADTT
- percentages of trucks by truck type

Traffic forecasts are also used for many other purposes including corridor planning, systems planning, and many special projects.



Traffic Forecasting FAQs

How do I request a traffic forecast?

To request a traffic forecast, fill out the [Traffic Forecast Request form \(TC 59-5\)](#). The form can be found on [KYTC's Traffic Forecasting](#) web page. Email the filled-out form to Jay Balaji (jayalakshmi.balaji@ky.gov).

The forecast request will be assigned to one of our team members, if necessary, they will reach out to you to schedule a quick scoping meeting to discuss any questions regarding the traffic forecast. If you have any questions about the form, please reach out to Jay Balaji.



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How long does it take to complete a traffic forecast?

The average forecast takes about six to eight weeks. Completion time will depend on the complexity of the project and the number of turn movements. The Traffic Forecast Request Form has three type of forecasts that can be selected:

- **Simple:** Low volume, low expected growth, no turning movements, no new counts. (≈ 2-4 weeks)
- **Moderate:** 1-4 turning movements, new counts, minimal demand modeling. (≈ 6-8 weeks)
- **Complex:** 5+ turning movements, new routes, substantial demand modeling. (≈ 3-6 months)

Most of the traffic forecasts are done by the Forecasting and Modeling Team, but some of the forecasts are done by statewide traffic forecasting consultants. That is decided based on the complexity of the forecast, timeline, and team availability to complete the forecast on time.

How do you do a traffic forecast?

Traffic forecasting is a complex process using many different tools. Some are listed below:

- Looking over population census data for the county and state
- Trend line analysis: extrapolation of current traffic patterns into the future: past behavior predicts future performance
- Trip generation: the use of standard trip rates based on land use studies
- Turning movement calculation: turning movements based on past or present data
- Traffic models: used to get an understanding of what future traffic conditions will look like; to get more information on our models visit Modeling FAQs brochure

For more information on the traffic forecasting process, see the latest [Traffic Forecasting Report](#).

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What data is needed for a traffic forecast?

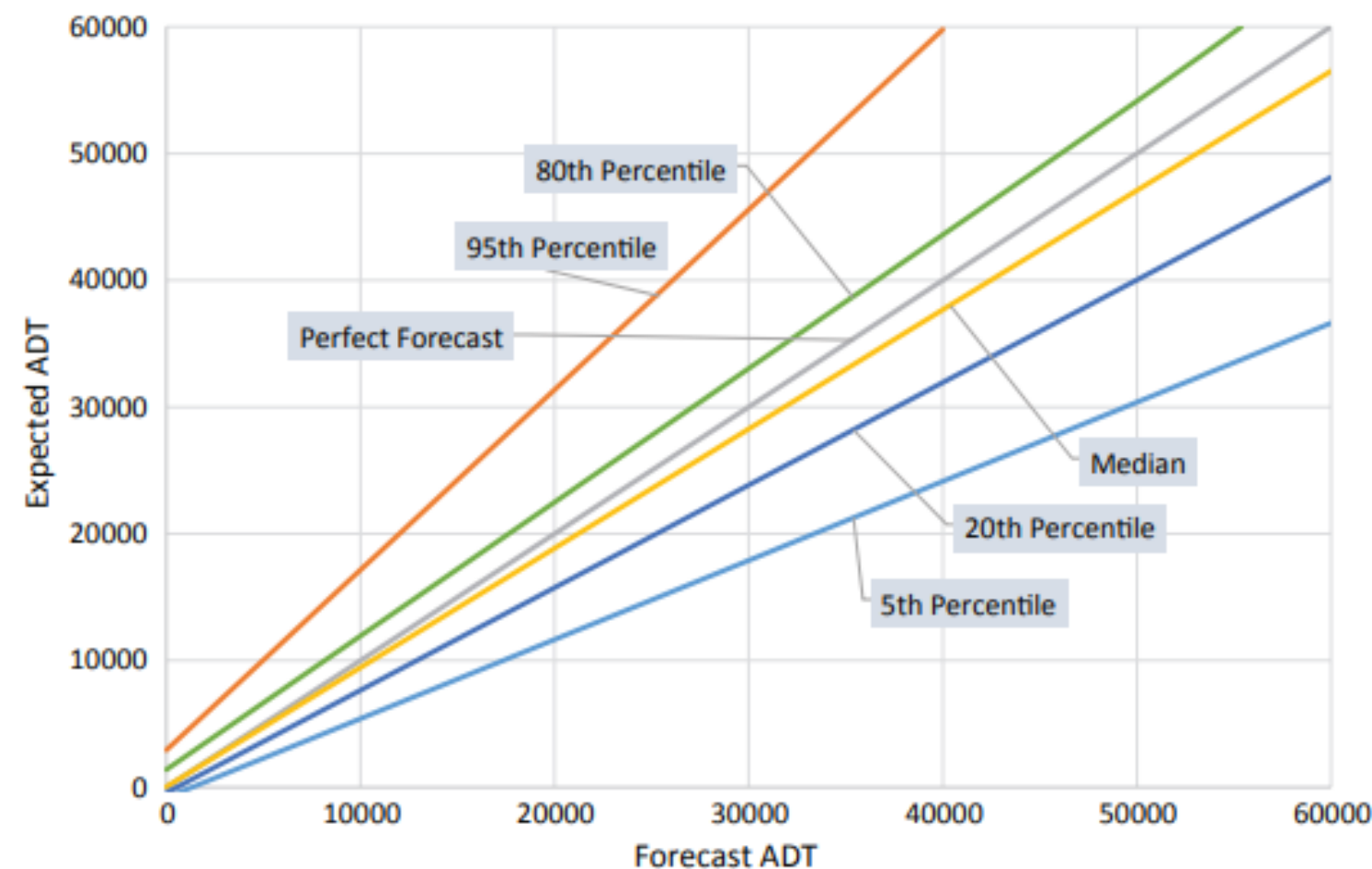
When it comes to traffic forecasts, the more data available the better. There are several types of data KYTC considers:

- Traffic monitoring data, traffic volume counts, vehicle classification data, and weigh-in-motion data. This data can be found at <https://transportation.ky.gov/Planning/Pages/Traffic-Counts.aspx>
- Special counts, such as turning movements, short-term hourly traffic volume, and daily class distribution volume. Data is provided to KYTC by request
- Coal haul data is used because of the enormous impact of coal trucks on pavement. This data can be found at <https://transportation.ky.gov/Planning/Pages/Coal-Haul-Highway-System.aspx>
- Population projections can be found at the Kentucky State Data Center: [Kentucky State Data Center | Centers & Institutes](#)
- Current-year employment data is provided by the Kentucky Education and Labor Cabinet and future employment data is obtained from Woods and Poole
- Trip data is obtained from special household surveys and from the Bureau of Transportation Statistics: <https://www.bts.gov>
- Land use data is obtained from county comprehensive plans, Area Development Districts, Highway District offices, and local officials
- Highway data such as lane width, number of lanes, and other geometric data is obtained primarily from the Highway Information System database
- StreetLight is a platform that provides transportation analytics that uses big data that comes from connected vehicles and mobile devices. StreetLight provides data such as AADT, turning movements, origin-destination, truck volume, speed, etc.



How accurate are traffic forecasts?

In general, the smaller the average daily traffic, the larger the error of the traffic forecast. The graph from NCHRP Report 934 shown below provides estimating range of uncertainty around the forecast. Errors associated with predicting traffic volumes may include future changing traffic patterns, traffic impacts due to development, unforeseen socioeconomic conditions, changing economy, new roads and diversion, etc. Some errors may be introduced through counting traffic, as it varies due to the day of the week, the month of the year, and other reasons. That is why the counts are adjusted with daily and monthly factors to account for those errors. The process of quality assurance of current traffic data is one of the most important tasks of the traffic forecaster's job.



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What if we do not agree with your forecasts?

The Division of Planning welcomes feedback at every stage of the traffic forecasting process. The traffic forecasting team will set up a scoping meeting before starting most forecasts to make sure that all the nuances are worked through. The team will continue communication throughout the process if any questions arise. Traffic forecasting is a cooperative process predicting a dynamic variable. With all the uncertainty involved in the process, it is very understandable that project stakeholders will have different points of view. If you have any questions or do not agree with something, please do not hesitate to reach out to us!

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What is new in traffic forecasting?

- New Traffic Forecast Form Request TC 59-5
- The Kentucky Statewide Traffic Model (KYSTM) has been updated to a new base year of 2020 and a new future year of 2050
- StreetLight ODME data has been implemented into the KYSTM along with some of our regional models
- KTC has developed a new [Traffic Forecasting Report](#)
- KYTC has developed a [KYTC TRAFFIC FORECAST REPORT DEVELOPMENT GUIDE](#)
- KTC has completed study on [Evaluating the Accuracy and Applicability of StreetLight Turning Movements Data](#)
- The Forecasting and Modeling Team has resumed Kentucky Model User Group (MUG) meetings. The first meeting after resuming was held on November 19th, 2024. More information can be found on the [Traffic Demand Modeling](#) web page
- Some of our regional models have been updated to a new base year and future year. More information can be found on the [Traffic Demand Modeling](#) web page
- New KYTC Traffic Forecasting Tool
- [KYTC Microsimulation Guidelines](#)

Traffic Forecasting FAQs

Contact Information

Kentucky Transportation Cabinet

Division of Planning

Forecasting and Modeling Team

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Helpful Materials:

- Traffic Forecasting Website:
<https://transportation.ky.gov/Planning/Pages/Traffic-Forecasting.aspx>
- [Traffic Forecasting Request Form](#)

