ITS - CMS TRAFFIC IMPROVEMENTS (FY 2016)
Total SLX Funding Request = $600,000 (Including 20% local match)

This funding will complement and enhance on-going traffic management efforts for Fiscal Year 2016 in compliance with the Regional ITS Architecture update and included in the Intelligent Transportation System Plan and Congestion Management Study recommendations. The Lexington – Fayette Urban County Government Division of Traffic Engineering continuously upgrades and enhances hardware, software, training and development in an effort to improve traffic flow and reduce congestion and delay during weekdays, evenings, weekends, special events, and incidents. The division staff is continually addressing congested traffic conditions through travel time studies utilizing Bluetooth devices, monitoring and evaluating timing plan changes, making changes in signal phasing, and equipment installation, operation and maintenance. The various travel time studies and monitoring and evaluation of signal timing plan changes require on-site investigation to address dynamic conditions within the community. Changes in signal phasing along Lexington's roadways often requires engineers and/or traffic signal technicians to meet with District and Central Office personnel, or others, to explain/discuss various strategies for the phase and equipment changes. Staff must use their personal vehicles for this work. The equipment upgrades or adjustments sometimes require additional labor/overtime by signal technicians. To lessen the impact of this work on lane blockages and improve motorist and technician safety, it is often performed on weekends or evenings during low volume travel times.

Among the necessary traffic signal system upgrades is the installation of advanced 2070 traffic signal controllers, countdown pedestrian signals, flashing yellow arrows, fiber optic cable for communications and data transfer, adaptive traffic signal control, radar units for reducing dilemma zones and other technologies to continually improve the capabilities of the traffic signal system and to enhance the safety for all system users. The 2070 controllers offer engineers more flexible signal timing including variable phasing options and potential vehicle to infrastructure application, mass transit priority and roadside weather information systems to better address congested traffic flow while improving traffic management, safety and efficiency. The 2070 controller is more durable in the field, lessening maintenance and electrical storm damage. In addition, the division proposes to continue the upgrade of pedestrian signals throughout the city to the countdown pedestrian signal. This signal enhances pedestrian safety as it provides the time remaining for them to safely cross a street. Included in these efforts is the further implementation of the flashing yellow arrow, audible traffic signals, IP addressable cameras and signal equipment, and illuminated street name signage, where appropriate.

The Lexington Traffic Management Center (TMC) responsibilities increase as congestion occurs throughout the community. As detailed below, further enhancements are planned to the traffic signal system and TMC to make the system more responsive, safe and efficient for motorists, bicyclists and pedestrians. The TMC desires to provide real-time and accurate traffic information in various formats to better inform and educate transportation system users during weekday peak travel periods, special events, holidays, and incidents. The addition of 'real-time' travel times will be utilized along major arterial routes. The 'real-time' travel times are connected directly and seamlessly into the Centracs central traffic system through a module developed by Econolite and TrafficCast called the BlueTOAD Module. The BlueTOAD modules monitor and record travel times via anonymous MAC addresses from Bluetooth devices within the vehicles traveling along each respective corridor.

The BlueTOAD Module not only can be used to obtain and relay travel times to the public, but it can also be used to define thresholds of congestion thereby actuating special responsive timing adjustments based on the measured speeds along a respective corridor. The Centracs system will be able to make adjustments based on monitored probe data without the necessity for human interaction. The BlueTOAD module devices are necessary for enhancing the efficiency and safety of the traffic signal system. Additional enhancements include transferring traffic surveillance technologies from analog cameras to fully digital cameras. The complete replacement and upgrade of the traffic surveillance system requires the procurement of computer servers for the TMC, as well as Ethernet switches and digital cameras at intersections along major arterials. Digital cameras provide: 1) The ability to be broadcast on the Internet for the traveling public to monitor;

2) Provide more traffic information coverage to the media community whereby reducing congestion along arterial roadways, and 3) Assist incident management efforts.

Staff skills will be enhanced through traffic and transportation related technical seminars, training, certification, travel and development.

Traffic signal system data collection, communication and vehicle detection will be enhanced at a number of locations throughout the community. Traffic signal system communication is crucial to the safe and efficient operation of the signal system and will be improved through the use of digital telephone and fiber optic cable. As previously mentioned, critically important vehicle detection will be improved through the use of video, radar, BlueTOAD, and in-pavement applications at various signal locations and provide up-to-date, reliable data. Some work may be performed by contractors as part of any projects/equipment effort.

SLX Funding Request = $480,000 + Local 20% Match = $120,000 = Total request of $600,000

Funding details:
Mileage - $3,500
Training - $5,000
Overtime - $45,000
Signal Projects/Equipment - $546,500
Total = $600,000

It is anticipated that activities included in this proposal will be completed by June 30, 2017.