



University of Kentucky
Kentucky Transportation Center
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To: Richard Dugas
Environmental Quality and Public Works Department Commissioner's Office
Lexington-Fayette Urban County Government
200 East Main Street
Lexington, KY. 40507

September 22, 2025

RE: Proposal for Lexington Street Sweeping Route Optimization.

Dear Mr. Dugas,

The Kentucky Transportation Center (KTC) proposes to assist the Lexington-Fayette Urban County Government (LFUCG) in meeting roadway maintenance challenges by developing an optimized system of routes for the city's street sweeping program. A network model of roads and paths involved in the street sweeping program will be created using Geographic Information Systems (GIS) software packages. Model outputs will be used to develop key performance measures pertaining to time and distance associated with each route. Optimization of the system will include identifying the appropriate number of trucks needed and developing specific daily truck routes that fulfill the program requirements. Initial results will be provided to LFUCG for review, and the resulting feedback will be used to develop the final results.

This proposal includes the following services listed below and will be in accordance with KTC's Standard Services Agreement.

- 1) Collect street sweeping program data and compile into GIS database.
- 2) Develop network model of roads in street sweeping program using ArcGIS Pro / Network Analyst toolsets.
- 3) Develop street sweeping model parameters and constraints.
- 4) Initial assessment of optimal number of vehicles needed to perform street sweeping according to the constraints. Initial deliverable includes calculations for the following metrics:
 - a. Total distance associated with the street sweeping program, including road lane miles, bike lane miles, and any other pathways included in the program.

- b. Determine what frequency of service can be achieved based on current resources.
 - c. Determine resources required to achieve targeted frequency of service.
 - d. Determine at what intervals in "Lane miles" or other metric before current service levels have to be decreased or additional resources are needed to maintain current levels.
- 5) Preliminary route development.
 - 6) Elicit feedback from LFUCG on initial proposed routes.
 - 7) Route revisions based upon feedback from LFUCG.
 - 8) Final results and deliverables. Final deliverables include route maps, lists of roads associated with each route, and supporting GIS data.

It is anticipated that the time frame for the delivery of these services is through June 30, 2026.

The proposed timeline for these services is as follows:

Task	2025			2026					
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
1									
2									
3									
4									
5									
6									
7									
8									

We propose to perform these services at a cost of \$58,559.

Salaries	\$ 51,232
Expenses - Travel	\$ 50
KTC Admin Cost (17%)	\$ 8,718
Total Cost	\$ 60,000

We sincerely thank you for the opportunity to serve the LFUCG. In the event that you accept our proposal, please sign below and return one signed copy back to KTC.

Sincerely,
Benjamin Blandford, PhD
Kentucky Transportation Center

Authorized Representative of LFUCG: _____

Date: _____

Standard Service Agreement

GOAL: Our goal is to produce an optimized model of street sweeping routes for LFUCG.

EXPLANATION OF PROCESS: Route optimization will be performed by building a network model of LFUCG street sweeping routes using available ArcGIS tools and platforms. Performance measures will be developed through the model to track optimization according to appropriate criteria, such as time and optimal number of needed trucks.

LIMITATIONS: The quality of our model will be limited by the accuracy and robustness of data we are able to obtain from LFUCG pertaining to the existing street sweeping fleet, facilities, and roadway network.

FINDINGS: Our findings are only an interpretation of how best to optimize the street sweeping routes used by LFUCG. The results of the optimized network model will be presented to LFUCG and the decision of how to proceed with the findings will ultimately be that of LFUCG.

DISCLAIMER: Our analysis will be based on our interpretation of the data collected and is provided solely for illustration and informational purposes. We do not warrant that our services, the data collected, or the resulting analysis will be free from errors or defects or that any such errors or defects will be corrected by us.

STANDARD OF CARE: The standard of care for all services provided will be the degree of care and skill ordinarily exercised by members of the subject profession practicing under similar circumstances at the same time and in the same locality.

PAYMENT: Statements for services will be submitted at KTC's option either upon completion of work or on a monthly basis. Statements will be e-mailed to the Client at the address on the Proposal and will be due net 30 unless otherwise stated in the accompanying proposal. Payments are to be made not later than 30 days following the date of the invoice. If payment is not so made, interest will be due on the amount of the statement at the rate of one and one-half percent (1.5%) per month from the date of the statement until the same is paid.