

K-TRAN RESEARCH PRE-PROPOSAL FY 2013

- I. **RESEARCH PROJECT TITLE:** Phase 2, Optimizing the Analysis of Routing Superloads/OSOW's to Sustain Efficient Corridors

- II. **RESEARCH PROBLEM STATEMENT:** The project by the same name (KSU-11-4) was submitted as a joint KTRAN/University Transportation Center (UTC) study and was funded by KDOT but not by the UTC; consequently, due to the limited funds the original scope had to be greatly diminished to more or less a "pilot project". However, the information that was collected, albeit limited, is providing some excellent insight into the issues faced by trucking firms that move superloads and OSOW shipments within and through the State and their relationship with roundabouts. Many individuals, both in the public and private sectors, believed that the main obstacle to efficient movement of oversized loads were the roundabouts that were being constructed. However, information that has been collected indicates that vertical clearance, diamond interchanges, curbs, removable signs, enhances at pedestrian crosswalks all limit the ability for over-length loads to make turns to varying degrees. This study will encompass all features, laws and policies impacting OSOW. While it is not usually feasible to remove structures with limited vertical clearance, it is feasible to either limit the construction of features that severely obstruct the movement of over-length loads from moving throughout the State, or develop policies to better control their movement. However, the cost-benefit to sustain or enhance the current accessibility by constructing accommodating measures should be determined based on the product's importance to the State's economy.

- III. **RESEARCH OBJECTIVES:** The purpose of this research is to determine the highways routes that will provide, or can be upgraded to provide, the ability to transport OSOW payloads of importance to the state's economy to all or most locations in the State. For those areas that cannot be accessed, this research will attempt to identify the limiting feature(s) so that policy makers can determine if it is economically feasible to remove or modify those features to improve accessibility.
Tasks:
 1. Determine the industries in Kansas with needs to haul OSOW vehicles of importance to the state's economy and the vehicle characteristics. Study current state policies that govern permitting vehicles.
 2. Develop size and the turning patterns and dimensions of typical OSOW vehicles/loads and determine the roadway geometric, structure and roadway appurtenances requirements needed to accommodate these loads.
 3. Using these requirements, translate the information from CANSYS into a traffic assignment network suitable for OSOW routing.

4. Develop paths from all or selected OSOW generating areas to all or selected OSOW terminal areas to determine limits of accessibility.
5. Write and present an interim report with the results of tasks 1 through 4. 5. Provide information to policy makers in the form of additional interim reports or meetings, as requested, if the proposed projects are to be undertaken before the research is complete.
6. Write a final report describing the routes or corridors that should not have restrictions constructed in order to preserve the accessibility to locations or areas of the state; routes or corridors that already have restrictions that limit the accessibility and the identification of the restriction.

IV: **ESTIMATE OF FUNDING AND RESEARCH PERIOD:** It is estimated that this research will cost \$59,000 and require 18 months to complete.

V: **URGENCY AND PAYOFF POTENTIAL:** Once built, features that limit the movement of OSOW loads are impractical and costly to remove. As there has been an emphasis on wind energy in Kansas and the fact that companies have moved or have been started in Kansas, there is an urgency to provide the ability for OSOW loads to move to potential wind farm locations as well as providing the atmosphere for other industries to locate in Kansas to serve Kansas and other states.

VI: **IMPLEMENTATION STRATEGY:** It is envisioned that KDOT administrators, policy makers, permitting personnel and designers will study and will begin to implement recommendations as soon as they are released.

VII: **PROJECT PERSONNEL:** Dr. Eugene Russell, P.E., Professor Emeritus and Dean Landman, P.E., Adjunct Professor will be co-investigators. Dean Landman had 35 years of experience working with statewide planning and vehicle routing problems. Both have considerable experience with OSOW loads and routing.

VIII. **SUBMISSION INFORMATION:**

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