

Raymore, Missouri – Lucy Webb Road and Dean Avenue Roundabout



R^3C Design Group, LLC provided roundabout analysis and layout expertise for the construction of a roundabout at the intersection of Lucy Webb Road and Dean Avenue in Raymore, Missouri. Dean Avenue is a major four lane north-south arterial in Raymore. Lucy Webb Road connects to Route 58 near the I-49 interchange and curves around to become a significant east-west collector for the city. The project was completed as part of a team led by Schlager and Associates. Raymore had completed the needs analysis for the roundabout prior to this team being involved in the project. However, the size, lane requirements and other geometric needs had not been finalized.

We displayed our **Responsibility** by determining the size of the roundabout required prior to even signing a contract. Using available traffic volumes, trip generations from proposed developments and making assumptions for adjoining vacant land, we developed a model to determine projected volumes for the current year and 20-year horizon. A sensitivity analysis was then completed as part of the Roundabout analysis and the design team determined that a single lane roundabout would suffice for the next 25 years. This saved the city considerable costs by minimizing right-of-way needs. Inherently single lane roundabouts are safer than dual lane roundabouts.

Even though a single lane roundabout was approved, the design team invested to develop a preliminary layout for a dual lane “hybrid” roundabout that was then overlaid with the single lane roundabout. Modifications were made to the single lane layout to come up with a flexible solution that could be changed to a dual lane roundabout with minimum hassles. This displayed our **Responsiveness** to client needs and desires.

Our **Client-focus** was displayed by delivering a design that was not only well-suited for current needs, but was adaptable and flexible for future growth requirements. This unique approach saved the city considerable costs and headaches by not requiring any additional right of way.

The RIGHT factors during this project are:

- Personal investments to determine ideal operating size of the roundabout.
- Sensitivity analysis to determine that a single lane roundabout would be sufficient for 25+ years.
- Developing a unique, hybrid single lane roundabout that incorporated elements from a dual lane roundabout for future expansion needs, if required.
- Considerable cost and time savings for the city because additional right-of-way needs were eliminated.
- Appropriate modifications to lanes on Dean Avenue were also completed to enhance end user experience.

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Construction cost: \$470,947
R^3C Design Fee: \$8,500