The successful implementation of Transportation Asset management (TAM) by local governments facilitates the optimization of limited resources. The use of a data-driven TAM program helps to identify and prioritize needs, identify and dedicate resources for the preservation of infrastructure, and provide policy decision makers with the data to support good decisions. In this project, a TAM program was implemented for the City of Grandview, Missouri. The implementation process included an examination of the current practices for TAM, review of TAM software systems, deployment of a TAM system, analysis of existing pavement and service request data, inventory of existing pavement condition, formulation of a pavement preservation plan, and development of a framework for sustainability. Pavement preservation plans were developed for both near-term (2016 to 2020) and long-term (2021 to 2040). A decision tree methodology was developed and utilized specific pavement treatments for the next five years. The long-term analysis assessed the possible impacts of a vote in 2021 to increase the sales tax to fund transportation projects. Recommendations for sustaining the TAM system were provided. The flexible framework developed can be used by other local communities to help local governments maximize limited resources.