

Master Sewer Plan Study---Town of Duncan

By: Phon Bouaphanh, Alejandro Del Solar, Cristiane Rosul, and David Watson

Industrial Advisor: Mr. Mike Hoy

Project Advisor: Dr. S. Gary Teng, P.E., CQE, CRE

ABSTRACT

Located in Spartanburg County, South Carolina, the Town of Duncan has an approximate population of 2,152 people and is expecting future residential and commercial developments. However, the existing sewer lines will not be able to carry the additional flow from the planned development, since the town of Duncan does not have a waste water treatment plant.

Since the Town of Duncan requested a Master Sewer Study for future development, the objective of this project was to determine and analyze alternatives for the master sewer plan study by gathering related information, developing & analyzing routes, size pipes & pumps, as well as estimating costs. As each alternative has proposed a different route for new sewer lines to handle the additional flow, the project compared four alternatives by considering different number of pumps, length of sewer lines, and total service area.

In order to evaluate and recommend the best option to be implemented by Town of Duncan, the project has considered cost estimating analysis and future growth capacity of each alternative. Based on that, the sewer plan presented on alternative 4 is the most cost-effective solution since it serves the largest area and with a feasible cost. In summary, the study presents maps depicting proposed locations and sewer lines, spreadsheets comparing costs, as well as the alternative comparative's analysis.