

## EXECUTIVE SUMMARY

PDG has prepared this Combined Sewer System Long-Term Control Plan on behalf of the Village of Payne. This Long-Term Control Plan submittal to the Ohio EPA does fulfill a requirement of the Village's NPDES permit along with state and federal regulations. PDG's objective was to evaluate and justify the most efficient and cost effective alternative for complying with Ohio's CSO Strategy.

Payne's wastewater treatment plant, built in 1970, has been designed for an average daily flow of .270 mgd. A review of the last several years of MORs indicates that the wastewater treatment sewer system and plant can handle over .450 mgd without concentration violations. It is in the best interest of the Village to maximize flows through the facility and in doing so, will decrease the number of CSO discharges. This is the present mode of operation – to fully utilize the capabilities of the existing system. However, in doing so, the loading calculations in some cases show violations and this must be addressed in future treatment alternatives.

Several alternatives were evaluated, including total separation of sanitary and storm sewers. Taking all things into account including, but not limited to, the Village's philosophy, proposed land use projections, antidegradation issues, alternative costs, and timing of the alternative projects brought the Village of Payne to the conclusion that the best approach would be to reduce the number of CSO events to four per year with the installation of an interceptor that would deliver combined sewage to a retention basin for storage and eventual treatment by means of the existing treatment facility. Alternative No. 2 is estimated at \$1,428,700 as compared to the sewer separation alternatives that ranged between \$3,704,220 for 5 years and \$4,736,559 for up to 20 years.

This approach is estimated to take ten (10) years once this LTCP has been approved. During the period of time, it is suggested that the Village consider additional sewer evaluation work and residential inspections in order to assure as much storm water will be removed from the "proposed" sewer system.

## SUMMARY AND RECOMMENDATIONS

### Summary

This CSO Long-Term Control Plan provided a general review of Ohio's Combined Sewer Overflow Strategy along with developing collection and treatment alternatives for meeting current National Pollutant Discharge Elimination System (NPDES) requirements.

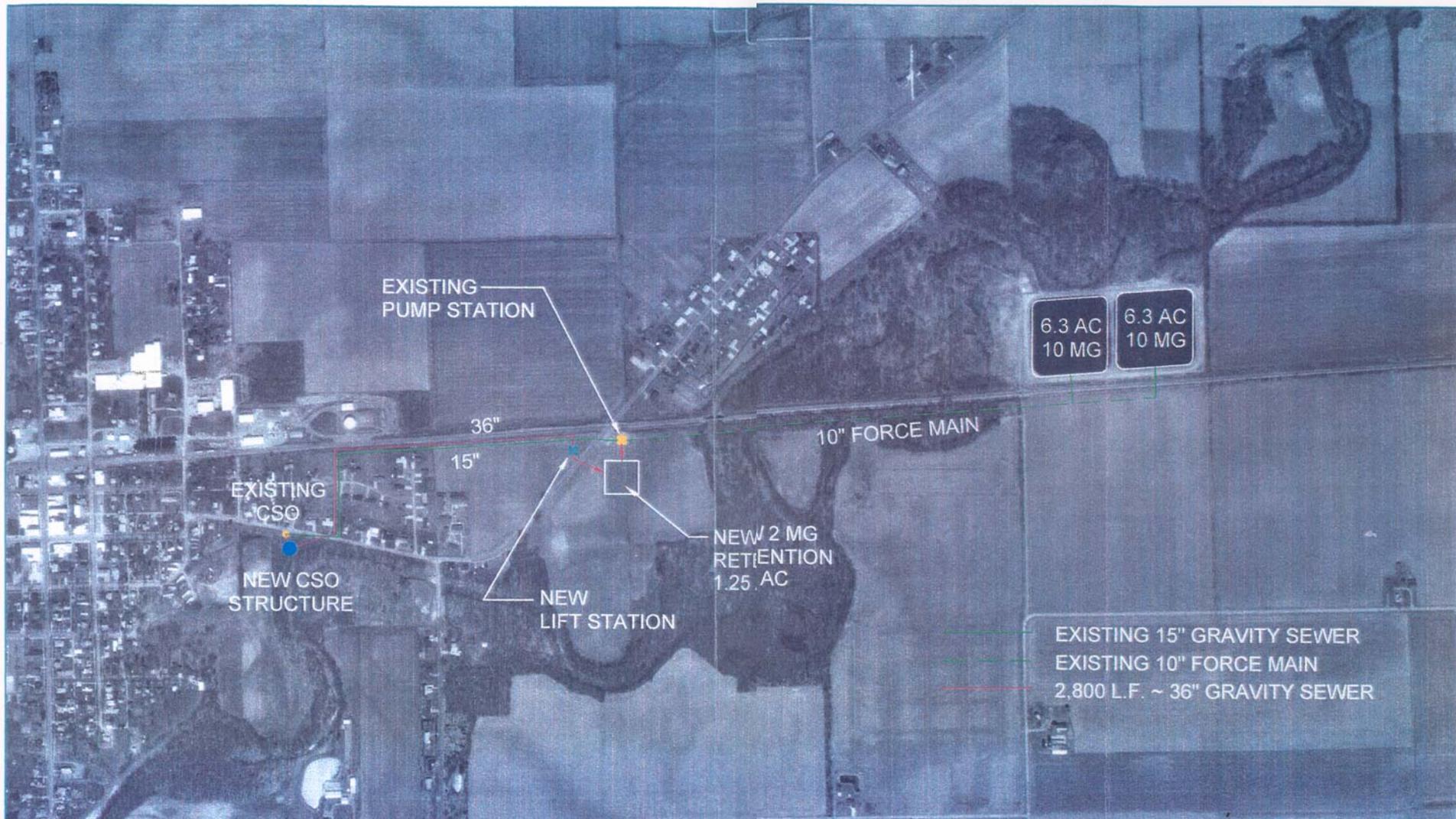
Two (2) sewer collection alternatives were developed and analyzed. Alternative No. 1 proposed the construction of a new separated sanitary sewer system which consists of constructing approximately 18,000 lineal feet of conventional gravity sewers. The cost for this option is at \$3,042,145 which includes an estimated cost of \$525,000 for residential and commercial building service connections and removal of non-sanitary flows. Alternative No. 2 included the construction of a CSO interceptor trunk sewer size (based on actual flow monitoring) which would collect storm event overflows from the one CSO and then transfer by gravity to a proposed pump station then into a retention basin. This water would then be released based into the existing lift station and be pumped to the existing wastewater treatment plant under controlled conditions for primary and secondary treatment. The cost totals \$1,058,400 and is summarized in Table 10 comparing the two alternatives.

TABLE 10  
IMPROVEMENT ALTERNATIVE ESTIMATED COST SUMMARY

Alternative No.	Description	Cost
1	Separate Sanitary Sewer System - No CSO	\$3,042,145
2	Transport, Retention, and Treatment - CSO Remains	\$1,058,400

### Recommendations

Based on the preliminary findings of this report and on-going discussions with Village officials, it is our recommendation that the Village of Payne consider as their combined sewer long-term strategy, Alternative No. 2 - the construction of the trunk interceptor sewer system and retention pond.



6.3 AC  
10 MG

6.3 AC  
10 MG

EXISTING 15" GRAVITY SEWER  
EXISTING 10" FORCE MAIN  
2,800 L.F. ~ 36" GRAVITY SEWER



REFERENCE:  
ACAD DWG  
R. JACKSON  
7/25/05

JOB #2090-016  
DATE SITE PLAN REV/090



**ALTERNATIVE TWO**  
SEWER SEPARATION WITH  
COLLECTION, RETENTION & BLEED BACK INTO  
EXISTING TREATMENT SYSTEM

PLATE SEVEN



VILLAGE OF PAYNE  
LONG-TERM CONTROL PLAN

