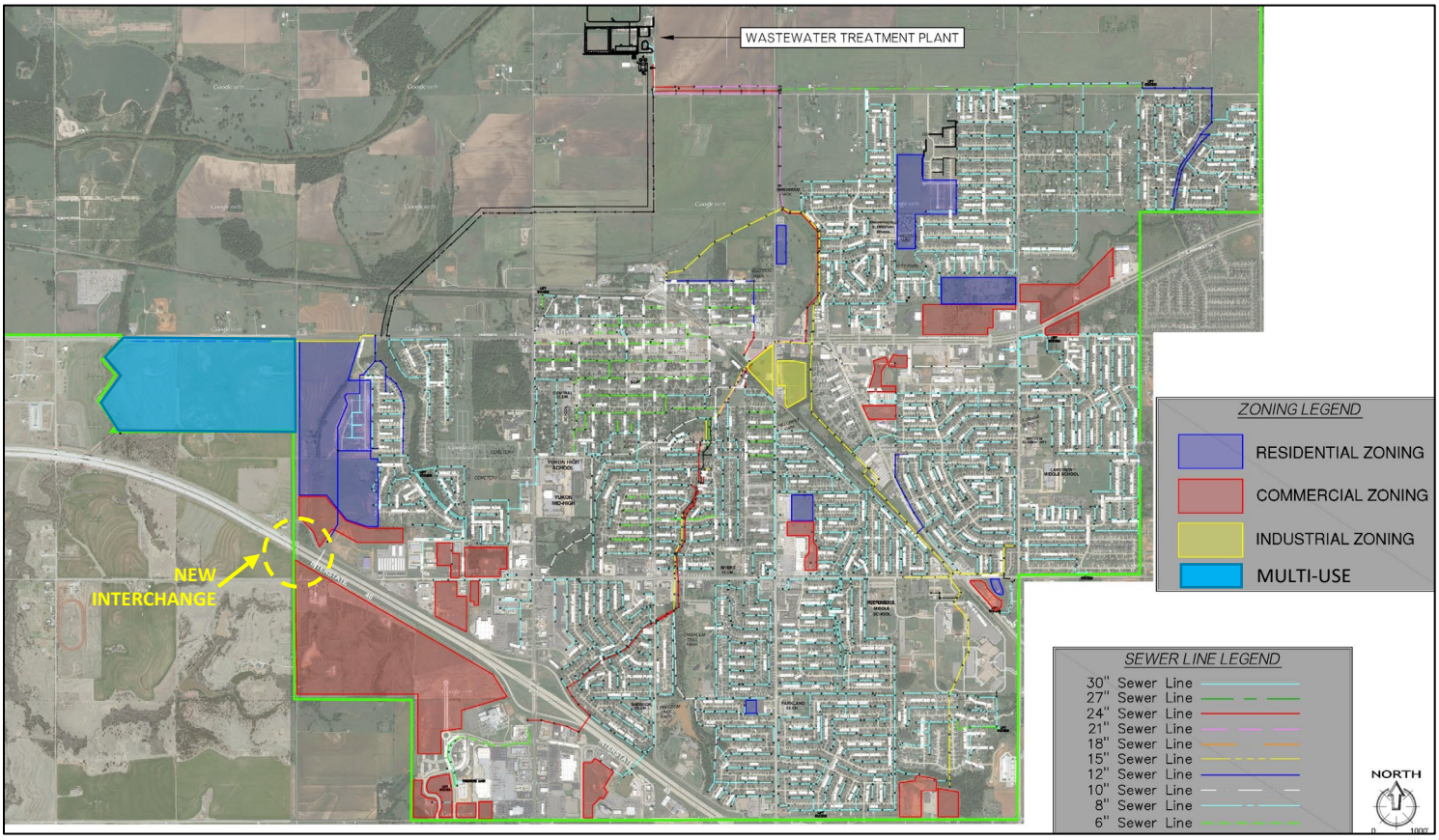
Yukon's BEST OKLAHOMA

The City of Yukon Requests Federal Aid To Increase The Capacity of Its Wastewater Treatment Plant

GROWTH

With Canadian County being the fastest growing county in the state, Yukon's population increased 17% since 2010. Yukon evaluated developable land for future sewer demands in Yukon City Limits. Additionally, Yukon has the potential of serving a few hundred acres immediately adjacent to the City of Yukon.

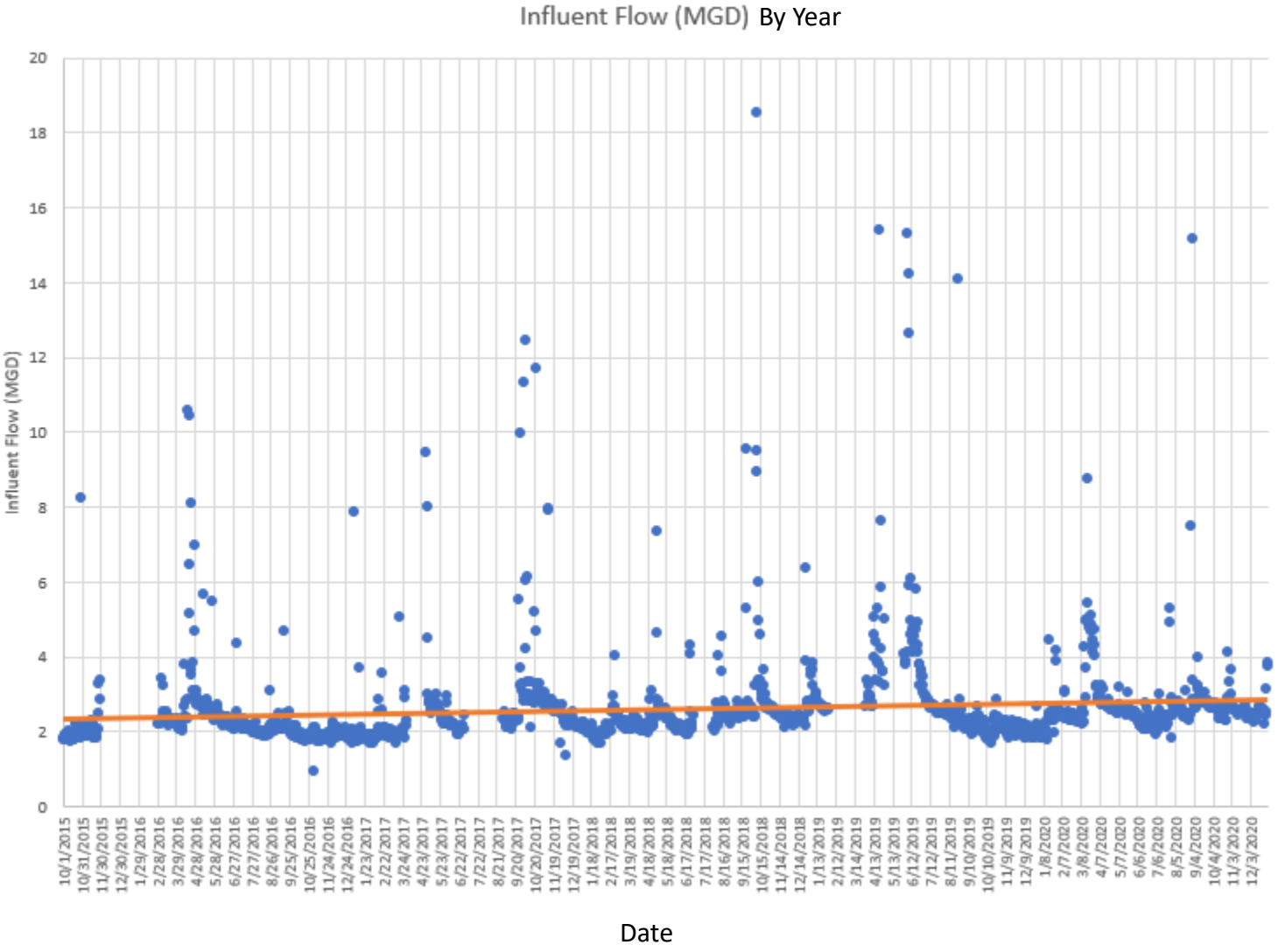


Yukon Developable Land

Yukon's growth rate was slightly less than Canadian County's 3.3% annual growth. To ease accessibility to the west side of the city, Yukon partnered with ODOT to construct the newly opened I-40/Frisco Road Interchange. With better access to the undeveloped land, Yukon anticipates its growth will mirror the future Canadian County growth rate.

SEWER DEMANDS

Wastewater generated within the City of Yukon is treated at the Yukon Wastewater Treatment Plant with a rated capacity of 3-million gallons per day (MGD). As Yukon's population has increased, so has its influent flow. The annual linear increase in influent flow is quickly approaching the plant capacity of 3.0 MGD.



Yukon projects its undeveloped property will add over 1 MGD in daily influent flows. The adjacent land could produce daily flows of over 0.4 MGD. Yukon anticipates that its influent flow will exceed 3.0 MGD plant capacity and will approach 4.5 MGD within ten years.

WASTEWATER TREATMENT PLANT & SURROUNDING FACILITIES

The plant was originally constructed in 1978. To utilize technologies, provide ease of maintenance, and replace aging equipment, Yukon constructed significant plant improvements in 1997, 2001, and 2014. Yukon's sustained growth trend requires Yukon to expand its plant capacity from 3.0 MGD to 5.0 MGD.

A preliminary study was performed identifying a change in process and modifications to the plant that minimizes disruption to the facility. The plant upgrades include influent pumping, flow control box, associated buildings and electrical, aeration blowers & diffusers, digester, secondary clarifier upgrade & equalization ponds, digester, belt press and back up generator. The study additionally identified surrounding facilities for improvements. During high flow conditions on the North Canadian River, the existing gravity flow effluent facility is inoperable. The existing effluent system is proposed for replacement. The cost opinion for all improvements is $8 million.

To provide flexibility in funding, Yukon identified project phasing over multiple years. The phasing allows annual $500,000 to $1,500,000 construction projects.

YUKON WWTP AND SURROUNDING FACILITIES PROJECT PHASING WITH COST OPINION

Phase 1	
Effluent Pumping & Piping	$700,000
Phase 2	
Influent Pumping	$600,000
Phase 3	
Flow Control Box	$500,000
Phase 4	
Buildings & Electrical	$550,000
Phase 5	
Aeration Blowers, Pipe, Diffusers & Instrumentation	$1,300,000
Phase 6	
Digester	$950,000
Phase7	
Secondary Clarifier	$450,000
Equalization Ponds	$320,000
	$770,000
Phase 8	
Plant & Digester	$700,000
Phase 9	
Belt Press	$1,250,000
Phase 10	
Back-up Generator	$750,000
Total	**$8,070,000**

REQUESTED FEDERAL FUNDING

During the wastewater plant and surrounding facilities evaluation, the existing outfall pipe from the wastewater plant to the North Canadian River was identified for improvements. Currently, the plant effluent gravity flows to the river through the outfall pipe. Under high flow conditions on the North Canadian River, the effluent cannot overcome the head in the river. During this event, all WWTP influent is pumped to the flow equalization pond. As the river recedes, the flow equalization pond is routed through the WWTP and then discharged to the river. The proposed effluent pump station and outfall pipe will greatly enhance the operation of the WWTP by allowing all effluent to be immediately discharged to the river, lessen the flow to the flow equalization pond during river high flow conditions, and minimize the risk of overtopping the flow equalization pond with untreated influent during extended high river flow conditions.

The City of Yukon identified the construction cost for the effluent pumping and piping at $700,000. Yukon will provide the preconstruction and 20% of the construction costs. Therefore, Yukon is requesting $560,000 for the remaining 80% of the construction cost.