6-CITIES ENERGY IMPACTS FORECASTING

STUDY SCOPE

The Western Dakota Energy Association (WDEA) cost-shared with each participating city to perform an Impacts Forecasting and Financial Gap Analysis for the six participating cities of Williston, Dickinson, Watford City, Stanley, Tioga, and Killdeer.

Although oil prices have dipped and development has slowed, cities throughout the Bakken are still anticipating significant future demands in necessary resources to serve the developing energy industry and population in Western ND.

This Study was intended to evaluate and quantify the core City needs including traditional capital infrastructure needs (water, sewer, roads, etc.) and identify City services and operational needs to keep up with the development pace.

The results of the study provide a 7-year financial roadmap for the City's capital and operational needs and quantify the financial impacts that are beyond each City's ability to support with local revenue streams *(i.e. identification of each Cities 7-year financial "gap")*.

POPULATION FORECASTS

- Population forecasts for the impacts analysis were based on adaptations from the workforce and population analyses performed by North Dakota State University (NDSU) with support by WDEA through VisionWest ND.
- The workforce and population analysis focused on county-level economic activity in the region and its effect on workforce and population through 2040.
- The scenarios included in the workforce and population analysis included three price ranges with three economic (oil) activity scenarios within each price scenario, for a total of nine scenarios. NDSU presented results on the moderate rig count and price scenario at low, moderate, and high price levels.
- The scenario ultimately analyzed for impacts forecasting was the moderate rig count and price (medium activity) scenario representing a moderate return to energy development in Western ND. This scenario includes WTI oil prices starting near $50/bbl in early 2017 and growing to near $70/bbl by 2020.
- The resulting County-level projections were adjusted to City-level results based on historic trends in city vs. county population capture rates and other county hub city benchmarks.

OPERATIONAL IMPACTS

- Considering the growth projected through 2023, operational increases were projected and analyzed to determine appropriate municipal service levels across impacted City departments.
- Existing operational service levels and identified growth projections that are expected to drive future operational service levels were identified for each City.
- Operational levels were analyzed based on key metrics of population, utility accounts, and centerline infrastructure miles. Infrastructure mile projections were based on average mile per population from 2013 – 2015. Similarly, future projections of utility accounts were based on average population per water account from 2013 – 2015.
- To make prudent projections, the study team reviewed and analyzed specific organization, staffing, and fleet inventories from multiple benchmark communities across the region with populations similar in size to each of the participating cities and their projected growth trajectory.
- Based on the results of the benchmarking analysis against the comparable communities, staffing and fleet needs were forecasted for key impacted city departments in order to effectively deliver services at desired levels of service into the future.

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CAPITAL IMPROVEMENT NEEDS

- Capital improvements needed to support projected growth were identified and prioritized by year of construction from 2017 to 2023.
- Capital improvements fall into categories of transportation, water, wastewater, stormwater, solid waste, and public facility needs (i.e. City Hall, Public Works, Airport, and Recreational)
- Where appropriate, preliminary funding sources were assigned to total projected infrastructure needs to offset total costs.

7-YEAR FUNDING GAP ANALYSIS

- Considering projected capital and operational revenue requirements across the 7-year timeframe, a multi-year revenue/expense model and cash flow projection was developed.
- The model was used to determine the 7-year financial "gap" for all capital and operational requirements for each City's major growth impacted funds.
- The modeling analysis also included a detailed review of each City's line item budgets in order to determine appropriate escalation factors for all growth impacted expense and revenue projections.
- Similarly, a detailed analysis of projected major revenue sources (i.e. Gross Production Tax, Sales Tax, property tax, and utility rate revenues) was completed, with appropriate escalation factors applied to minor revenue line items.

Considering all modeled revenue and expense projections, the resulting 2023 (cumulative 7-year) funding gaps for each City are as follows:

Williston: $181 million
Dickinson: $111 million
Watford City: $330 million
Stanley: $77 million
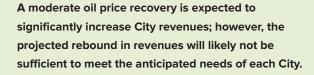**Tioga: $69 million**
Killdeer: $7 million

RESULTS SUMMARY &
KEY TAKE-AWAYS

The results of the study highlight that even at the tail end of a slow-down, an impending and likely oil price recovery will continue to place significant demands on the six Cities studied, with each City still facing aggressive population growth under a moderate oil price recovery scenario.

Past investments by the State and each City in trunk infrastructure such as transportation corridors, water supply, and wastewater treatment have positioned these cities for further growth.

A moderate oil price recovery is expected to significantly increase City revenues; however, the projected rebound in revenues will likely not be sufficient to meet the anticipated needs of each City.

Cities will remain heavily dependent on major revenue sources such as GPT and local sales taxes to offset projected demands.

Beyond these traditional major revenues, further unique funding and financing strategies will be required to fill the total funding gaps projected.

LOCAL + STATE
All future funding and financing strategies will require solutions at both the local and State level in order to address the forecasted needs of each City.

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