

### **Chicagoland Methane Recapture Project: Reducing GHG Emissions and Producing Renewable Natural Gas from Waste**

#### **Lead Applicant Information**

**Fox Metro Water Reclamation District**

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#### **Prepared For**

**Chicagoland Renewable Natural Gas Coalition**

# BUDGET NARRATIVE

## COMPREHENSIVE BUDGET TABLE

BUDGET BY YEAR							
COST-TYPE	CATEGORY	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	TOTAL
Direct Costs	Personnel						
	Project Administrator equal to 1 FTE at \$100,000 per year with salary increase	\$100,000	\$105,000	\$110,000	\$116,000	\$122,000	\$553,000
							\$0
							\$0
	TOTAL PERSONNEL	\$100,000	\$105,000	\$110,000	\$116,000	\$122,000	\$553,000
	Fringe Benefits						
	Full-time Employees @ 17% of salary	\$17,000	\$18,000	\$19,000	\$20,000	\$21,000	\$95,000
							\$0
							\$0
	TOTAL FRINGE BENEFITS	\$17,000	\$18,000	\$19,000	\$20,000	\$21,000	\$95,000
	Travel						
	Annual Conference including registration, airfare, hotel, per diem for 5 days	\$2,700	\$2,700	\$2,700	\$2,700	\$2,700	\$13,500
							\$0
	TOTAL TRAVEL	\$2,700	\$2,700	\$2,700	\$2,700	\$2,700	\$13,500
	Equipment						
	Gas Conditioning Equipment		\$7,000,000	\$14,700,000	\$7,718,000		\$29,418,000
	Regional Decant System Equipment		\$400,000	\$840,000	\$441,000		\$1,681,000
	Installation of Equipment		\$2,590,000	\$5,439,000	\$2,856,000		\$10,885,000
	Structure Modifications/Additions		\$3,500,000	\$7,350,000	\$3,859,000		\$14,709,000
	Mechanical Components		\$4,047,000	\$8,499,000	\$4,463,000		\$17,009,000
	Electrical Components		\$4,047,000	\$8,499,000	\$4,463,000		\$17,009,000
	Sitework		\$675,000	\$1,417,000	\$744,000		\$2,836,000
	Contractors General Conditions		\$3,339,000	\$7,012,000	\$3,682,000		\$14,033,000
	Local Utility Interconnect Facilities and Gas Pipeline		\$4,250,000	\$8,925,000	\$4,686,000		\$17,861,000
	Trailers for Trucking			\$3,750,000	\$3,938,000		\$7,688,000
	BABA Compliance		\$2,985,000	\$6,644,000	\$3,685,000		\$13,314,000
	Contingencies and Undefined Scope		\$4,925,000	\$10,962,000	\$6,081,000		\$21,968,000
							\$0
	TOTAL EQUIPMENT	\$0	\$37,758,000	\$84,037,000	\$46,616,000	\$0	\$168,411,000
	Supplies						
							\$0
							\$0
							\$0
							\$0
							\$0
							\$0
							\$0
	TOTAL SUPPLIES	\$0	\$0	\$0	\$0	\$0	\$0
	Contractual						
	Engineering Design for 9 entities	\$6,737,000	\$6,737,000				\$13,474,000
	Engineering Construction for 9 entities		\$3,369,000	\$6,737,000	\$3,369,000		\$13,475,000
	Public Outreach Consultant	\$50,000	\$53,000	\$56,000	\$59,000	\$62,000	\$280,000
							\$0
							\$0
	TOTAL CONTRACTUAL	\$6,787,000	\$10,159,000	\$6,793,000	\$3,428,000	\$62,000	\$27,229,000
	OTHER						
							\$0
							\$0
	TOTAL OTHER	\$0	\$0	\$0	\$0	\$0	\$0
	TOTAL DIRECT	\$6,906,700	\$48,042,700	\$90,961,700	\$50,182,700	\$207,700	\$196,301,500
Indirect Costs	Indirect Costs						
							\$0
	TOTAL INDIRECT	\$0	\$0	\$0	\$0	\$0	\$0

### REASONABLENESS OF COST

The budget structure was developed after consideration of all anticipated project components, activities, and requirements. Gas metering and valve equipment at the connection to Nicor's pipeline are included components of the Project budget. The Project requires the significant removal of moisture, hydrogen sulfide, siloxane, carbon dioxide, and volatile organic compounds (VOCs) to meet Nicor's gas quality requirements. This project offers a 12-year return on investment and nonmonetary advantages. The climate benefits generated from this project will be critical for addressing the immediate and future needs of the Chicago MSA as the Coalition anticipates a 37% growth in digester and landfill gas production to meet regional demands.

As noted previously, the overall budget to successfully implement the Project totals \$196,301,500 over a 5-year period, thus meeting the time constraints required by the CPRG. Each budget category is essential to the successful development, implementation, and long-term operations of the Project. Details for budget categories are described below.

**Personnel:** The project will employ one Project Administrator as a full-time employee (FTE) at an annual salary of \$100,000, with approximate wage adjustments of 5% for each project year. The total anticipated budget for Personnel is \$553,000. This Project Administrator will be responsible for ensuring that project milestones are reached on time and on budget. These efforts will be accomplished through daily collaborations with representatives from the Coalition and contractors employed to deliver the project. The Project Administrator will be the point of contact for engaging, as needed, with the Environmental Protection Agency (EPA) to discuss matters relevant to the Project in the context of the CPRG, as well as submitting required reports to the EPA and monitoring that all BABA and Davis-Bacon compliance activities are performed as required.

**Fringe Benefits:** The FTE Project Administrator will receive annual fringe benefits calculated at 17% of the total salary, totaling \$95,000 over the project's duration. The fringe benefit percentage is comprised of: Paid Time Off (PTO), earned at a rate of 3.07 hours per two-week period, holiday pay for the 11 annual federal holidays, health insurance benefits, retirement/401k contributions up to 5% match per paycheck, and life insurance contributions. These fringe benefits will be contributed towards the employee per two-week paycheck.

**Travel:** The Coalition anticipates sending the Project Administrator to an annual conference, which will cover matters relevant to the implementation and maintenance of the Project, with an annual budget of \$2,700 for a total cost of \$13,500 over five years. Takeaways from the conferences will be shared with appropriate Coalition personnel to ensure that all teams have the most updated information and context for delivering and operating the Project once it is complete. The budget consists of accommodations for airfare, hotel, dining per-diem, and conference registration fees. All costs will not exceed amounts above the GSA amounts for the regions in which the conference will be held.

**Equipment:** Equipment costs are the largest allocation of the Project budget at \$168,411,000, dispersed among the following 12 categories:

- **Gas Conditioning Equipment:** To be eligible for interconnection with the Nicor pipeline, gas produced by the project must be free of H<sub>2</sub>S, moisture, siloxane, volatile organic compounds (VOCs), and carbon dioxide. These stringent quality parameters require the purchase and installation of gas conditioning equipment necessary to meet the Nicor standards. Conditioning

- equipment will be purchased during years 2, 3, and 4, totaling \$29,418,000.
- **Regional Decant System Equipment:** These materials facilitate the injection of RNG into the pipeline at regional hubs for entities participating in the project but lacking a pipeline injection station. The Project expects a need for four decant stations, each costing approximately \$400,000 for a total of \$1,681,000 over the Project's duration.
  - **Installation of Equipment:** Once the gas conditioning and decant system materials are purchased, a budget totaling \$10,885,000 is allocated for services to install these items. Installation costs were calculated at 30% of material costs.
  - **Structure Modifications:** Several modifications are required to locate gas conditioning equipment and meet current codes/standards associated with digester gas handling. Modifications and new gas pipes will be included to reconnect the existing 4-inch and 10-inch pipes to and from Building DCM-3 and install a 4-inch pipe going to and from the gas sphere. A new pipe from Building DCM-3 is likely needed to convey digester gas in parallel with the existing 10-inch and 4-inch pipes. The total estimated price tag for structural modifications sums to \$14,709,000 with all relevant activities and expenditures occurring during years 2, 3, and 4 of the Project.
  - **Mechanical Components:** An array of mechanical components used to condition gas emissions are required and include hydrogen sulfide removal system, gas blower/moisture removal system, siloxane/VOC removal system, gas compression, carbon polishing system, carbon dioxide removal system, glycol chiller, ring injection compressor, and control systems. Each of these criteria has a subset of specific mechanical components that are required to connect various pieces of equipment, digesters, structures, and monitoring equipment. Mechanical components will be purchased at a cost of \$17,009,000 during years 2, 3, and 4 of the Project.
  - **Electrical Components:** This budget category summarizes the systems necessary to support the electrical functionality of the Project related to instrumentation, controls, monitoring, and the safety of the RNG system. The electrical systems will consist of a low-voltage power distribution system, programmable logic controller-based additions to the existing plant SCADA system, and various building electrical systems including power distribution and lighting and SCADA system and technology. Power distribution will consist of a motor control center that includes feeder breakers and motor controllers for the power and controlling processes and HVAC (Heating, Ventilation, and Air Conditioning) equipment. The SCADA system additions will consist of a remote terminal unit for monitoring and control of the various processes and building systems. A budget of \$17,009,000 is allocated to procure the necessary electrical systems required by the Project.
  - **Sitework:** A budget of \$2,836,000 has been established for work to provide appropriate facility roadways for RNG trucks, staging at regional hubs, new structures, restoration from pipe installation, and other matters related to site development. Sitework also encompasses accommodations to the H<sub>2</sub>S removal equipment, glycol chiller, and decant station.
  - **Contractor General Conditions:** A budget of \$14,033,000 is intended to employ a general contractor to ensure all supplies procured from mechanical, electrical, structural, integrator, and equipment suppliers required are compliant with Build America Buy America (BABA) regulations. The general contractor will coordinate with all relevant parties to ensure that all materials are installed, and project activities are performed in accordance with the Project specifications.
  - **Local Utility Interconnect Facilities and Gas Pipeline:** In order to provide a connection to the local utility gas main, a budget of \$17,861,000 will enable the Project to create four interconnects, each at an approximate cost of \$4,250,000.
  - **Trailers for Trucking:** During years 3 and 4, the Project will utilize a budget of \$7,688,000 to

allow entities without a pipeline injection station on site to fill and transport RNG to a regional hub. This budget assumes two trailers at the five facilities without interconnect at \$750,000 per trailer.

- **BABA Compliance:** All iron and steel materials, construction materials, and manufactured products used must be procured from suppliers in the United States and accompanied with a compliant certification letter. In order to meet this requirement, the Project has established a budget of \$13,314,000 to enable project delivery teams to provide a 10% cost buffer to source all relevant materials from domestic suppliers.
- **Contingencies and Undefined Scope:** Given the detailed design and innovative approach to interconnect with Nicor's gas pipeline, a budget of \$21,968,000 has been created to prudently prepare for any unknown situations that may arise through the project's 5-year construction period. This contingency represents 15% of the total budget.

**Contractual:** A budget of \$27,229,000 has been established to cover costs related to contractors employed to design and construct the Project.

- **Engineering Design:** Project construction will adhere to engineering designs for the nine wastewater treatment plants and landfill Coalition members. The Project intends to award a total of \$6,737,000 during each of the first two years for the development of engineering design specifications for a total sum of \$13,474,000. Design criteria include: Architectural design parameters, including life safety components such as exiting, fire-rated construction, railings and signage; Structural design parameters to account for wind, seismic, snow, earth and hydrostatic loads; Mechanical design parameters, generally in accordance with Illinois Administrative Code (IAC) Part 370 for sewage works and National Fire Protection Agency (NFPA) 820 for fire protection in wastewater treatment plants; HVAC parameters, including summer and winter temperature considerations and ventilation systems designed for hazardous locations to achieve negative pressure relative to adjacent spaces; and Electrical design parameters, as mentioned above.
- **Engineering Construction:** The Coalition will award contracts during years 2, 3, and 4 for the construction of the Project. Total anticipated contractual construction costs are \$13,475,000.
- **Public Outreach Consultant:** Vital to the success of the project is an informed community. As mentioned, the project seeks to reduce GHGs for residents and communities within the Chicago MSA identified as low-income and disadvantaged for environmental conditions and pollutants. The Coalition will hire a Public Outreach Consultant to proactively engage with these communities and stakeholders about the purpose and benefits produced by the Project. A budget of \$280,000 has been established to finance the fees associated with hiring the consultant and related public outreach efforts.

**In-Kind Operating & Maintenance Costs:** The coalition anticipates receiving \$11,992,000 towards in-kind costs for supplies and processes related to Operating and Maintenance (O&M) costs for the Project.

- **Additional Electricity For The 9 Facilities:** Project activities during years 3, 4, and 5 are anticipated to consume electricity at a rate of \$0.10/kWh for a combined cost budget of \$6,440,000.
- **Gas Conditioning Media Replacement:** Supplies necessary to condition digester gas to Nicor's quality standards using media-based removal systems. Media-based systems rely on chemical reactions, with compounds typically integrated into an organic, nonreactive media. These systems lower capital costs but require routine media removal and replacement. The Project

- anticipates expending \$1,250,000 during years 3, 4, and 5 of the project construction.
- Equipment Maintenance Fund: In anticipation of project-related equipment needing routine and unexpected maintenance repairs or updates, the Project has created a budget of \$1,000,000 to use as needed during years 3, 4, and 5 of project construction.
- Interconnection Fee At 4 Locations: Years 3, 4, and 5 will require interconnections into Nicor's piping infrastructure at a combined fee of \$2,500,000.
- Quarterly Gas Sampling: A budget of \$45,000 will be utilized during years 3, 4, and 5 to evaluate whether the condition of treated gas conforms to Nicor standards.
- Trucking – Hauling Contract: The Coalition will spend \$757,000 on contracts with trucking companies to transport project materials and supplies to and from the project site.

BUDGET BY YEAR							
COST-TYPE	CATEGORY	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	TOTAL
In-Kind Costs	<b>In-Kind Annual O&amp;M</b>						
	<i>Additional electricity for 9 facilities @ \$0.10/kWh</i>			\$1,288,000	\$2,576,000	\$2,576,000	\$6,440,000
	<i>Gas Conditioning Media Replacement</i>			\$250,000	\$500,000	\$500,000	\$1,250,000
	<i>Equipment Maintenance Fund</i>			\$200,000	\$400,000	\$400,000	\$1,000,000
	<i>Interconnection Fee at 4 Locations</i>			\$500,000	\$1,000,000	\$1,000,000	\$2,500,000
	<i>Quarterly Gas Sampling</i>			\$9,000	\$18,000	\$18,000	\$45,000
	<i>Trucking - Hauling Contract</i>		\$175,000	\$184,000	\$194,000	\$204,000	\$757,000
							\$0
	<b>Total In-Kind Annual O&amp;M</b>	\$0	\$175,000	\$2,431,000	\$4,688,000	\$4,698,000	\$11,992,000