



INTELLIGENT PIPELINE INTEGRITY PROGRAM

A proposal to the Oil & Gas Research Program

Bismarck, North Dakota

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Program Summary

- R&D program to advance emerging technology to prevent and detect gathering pipeline leaks
 - In direct response to Governor Burgum's challenge to eliminate pipeline leaks through innovation
 - Development and application of new technology
- iPIPE Consortium will do the following:
 - Amass funds needed to facilitate development and demonstration of emerging technology
 - Promote industry engagement and participation
 - Encourage industry-wide adoption of worthy technologies



Desired Outcomes

- Reduced frequency and severity of liquid gathering pipeline leaks
- Innovation through partnerships between industry and technology providers
- Multiple field demonstrations of new technology
- Successful demonstrations will lead to additional interest to join iPIPE
- Increase adoption of best practices and new technology
- Establish a pathway for new technologies to be recognized by regulating bodies as viable alternatives to traditional leak detection.
- Mitigate the impetus for additional regulations



Program Partners

EERC

- Coordinate program communications
- Generate NDIC quarterly and annual reports
- Coordinate executive committee
- Educate technology providers on Bakken specifics
- Coordinate vendor work scopes
- Contract with vendors
- Coordinate demonstration
- Observe demonstrations
- Analyze demonstration results
- Provide demonstration technical reports to members

Industry Members

- Serve on executive committee
- Select demonstrations
- Volunteer host sites
- Provide support to demonstration installation and execution
- Document reportable cost share to maximize leveraging of NDIC funds










Technology Providers

- Execute demonstrations
- Provide data to EERC for independent review and analysis
- Provide support to demonstration installation and execution
- Document reportable cost share to leverage NDIC funds

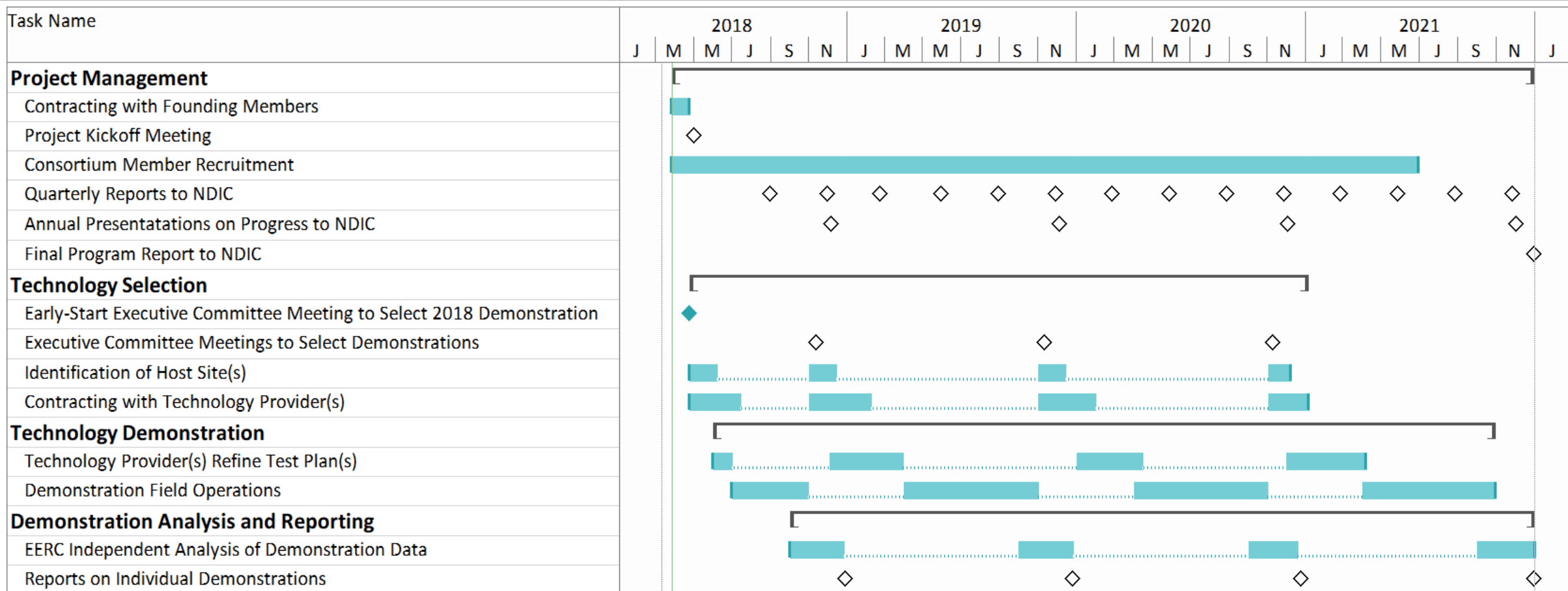




Technologies Evaluated May 1

	<p>DETECTION: Opportunistic data collection + AI</p>
	<p>DETECTION: UAV + advanced analytics + BVLOS</p>
  	<p>DETECTION: UAV + AI + novel sensor suite</p>
	<p>DETECTION/PREVENTION: Golf ball-sized free-floating sensor</p>
	<p>DETECTION: AI + multiple sensors</p>
	<p>DETECTION/PREVENTION: Fiberoptic leak and land movement detection</p>
	<p>DETECTION: Non-contact, Internet of Things monitoring of pipelines</p>

Program Schedule



Program Budget

Project-Associated Expense	NDIC Share	Applicant Share (cash)	Applicant Share (in-kind)	Other Project Sponsors Share
Project Management	\$446,000	\$93,000		
Contracts with Technology Providers	\$900,000	\$1,250,000		
Other Costs of Demonstration Execution			\$300,000	\$200,000
Independent Observation of Demonstrations	\$90,000	\$107,000		
Analysis of Demonstration Performance Data	\$85,000	\$89,000		
Reporting	\$79,000	\$75,000		
TOTAL	\$1,600,000	\$1,614,000	\$300,000	\$200,000

- Funding from additional memberships will accelerated R&D of technologies.
- Incremental state funding is proposed as program membership grows.
- NDIC portion will never exceed 50%.



Request for Incremental Funding

As additional members are recruited, the program requests incremental cost match from NDIC.

- For every four members recruited in 2019, additional industry cash of \$1M will be recruited.
- For every four members recruited in 2020, additional industry cash of \$0.8M will be recruited.
- For every four members recruited in 2021, additional industry cash of \$0.6M will be recruited.

The request to NDIC, contingent upon continuous recruitment is:

2019	2020	2021
\$1,000,000	\$800,000	\$600,000



A successful program could serve as a nationwide model for responsible state involvement in infrastructure integrity research and development.

Contact Information



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iPIPE

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