COMPANY SNAPSHOT

BlueConduit

2016			$2.3M	23
Founded	Basic needs – food, water, shelter, & energy	Water supply and irrigation systems	Revenue[1]	Employees

UEI verified business ✓

For-profit | Privately Held

What they offer	AI-powered predictive analytics for identifying lead service lines and optimizing water infrastructure management
Who they serve	Municipalities, water supply companies, and public health organizations responsible for managing and maintaining water systems
What they envision	A future where safe, reliable, affordable water is a reality for all
Competitive advantage	Resources & technology: Proprietary machine learning algorithms with >80% accuracy, widespread data infrastructure, and strong partnership network Capabilities: Expert team of scientists, engineers, designers and interactive mapping tools

Business model: B2B

Revenue model: Software subscription + one time fee

Headquarters: Ann Arbor, MI

Operations: USA & Canada

https://blueconduit.com/ | sales@blueconduit.com | (734) 519-0675 | 2531 Jackson Ave, Ann Arbor, MI 48103

1. Expected revenue for 2024 full year

URBAN ENTREPRENEURSHIP INITIATIVE

BUSINESS NARRATIVE

Leadership

Eric Schwartz, PhD

Co-founder

Data science background with PhD in Marketing, specializing in applying machine learning to water safety solutions.

Jake Abernethy, PhD

Co-founder

Computer science background, focusing on AI and optimization for predictive water infrastructure models

Summary

Company origins

BlueConduit was founded in 2016 in response to the Flint, Michigan water crisis. The company emerged from research conducted by University of Michigan faculty, who developed a machine learning model to predict the locations of lead service lines (LSLs) to optimize remediation efforts.

Value proposition and business model

They use data science and machine learning to help municipalities and water utilities identify and replace LSLs efficiently. The company operates on a contractual basis, often as a subcontractor to engineering firms, and charges fees based on city size and the number of homes. Their three-step process integrates various data sources to generate predictions, enabling cost-effective and targeted infrastructure improvement.

Challenges, progress, and future plans

Initially, BlueConduit faced market immaturity and regulatory uncertainty. However, policy changes and increased awareness have driven demand. The company now serves over 300 cities and aims to expand its predictive models to other infrastructural issues. They continue to focus on compliance, community engagement, and enhancing its technological offerings to support public health.

BUSINESS NARRATIVE

What was the spark or ‘aha’ moment behind your idea, and how did you know it was worth pursuing?

BlueConduit began during the Flint Water Crisis. "We developed a predictive model to prioritize homes for lead pipe removal, saving costs and making the process efficient." When other cities reached out to adopt the method, "it became clear the need was national, not just local."

How did your personal experiences or background shape your approach to solving this problem and make it uniquely yours?

"Our work emerged during the Flint crisis with University of Michigan researchers using machine learning to address infrastructure gaps." Community engagement shaped the approach. "We saw how ensuring data representativeness could help build equity into decisions."

What were the most defining challenges you faced, and how did they shape the way you approach your business today?

"Initially, regulatory uncertainty made it hard to prove our value." Breaking into the water industry was tough as it’s a tight-knit network. "We learned to build trust through accuracy, transparency, and efficiency, which remain critical in addressing the market’s needs."

What’s the most exciting thing coming up in the near future for your business?

"With utilities mandated to replace all lead lines within 10 years, demand for data-driven tools is surging." BlueConduit is "expanding its offerings beyond lead pipes" and focusing on "innovating water infrastructure decision-making to ensure sustainable and equitable outcomes."

COMMUNITY IMPACT

What they aim to solve

The problem of toxic lead in drinking supply and the need for clean, reliable, and affordable drinking water

Key statistics

28 million
people in the US were served by water systems with lead violations in 2018-2020

1%
of the global disease burden is caused by lead poisoning

44%
of schools in 12 US states had at least one water sample with lead

Results

Inventoried 5 million service lines across 300 that serve 10 million people

90-95%+ reduction in material identification spend for customers

~80% hit rate for excavation attempts in Flint from 2016-2017

URBAN ENTREPRENEURSHIP INITIATIVE

VALUE PROPOSITION

Who are their customers?

Market description

Municipal water utilities, regulators, engineering firms, community leaders, and residents

$1.5 B	$500M	$75M
TAM	SAM	SOM

Industry lifecycle

Growth

Audience pain points

Municipal water utilities
- Lack of accurate data
- High costs
- Compliance pressure and regulatory deadlines
- Unfamiliarity to new tools/technologies

Regulators & policy makers
- Compliance with lead remediation laws
- Inefficient funding allocation

Engineering firms
- Lack of robust predictive tools

Communities/Public
- Health concerns due to lead
- Lack of transparency

What do they offer?

Products

Proactive Lead Service Line (LSL) Management
AI driven predictions that provide clear, accurate, and easy-to-use insights on lead and pipe replacement needs

No Lead Validation
No-lead analysis and reports using locally tailored, statistical methods and reporting

Predictive Modeling for Water Mains
Identification of at-risk water mains using dynamic predictive modeling and data science

Services
- Service Line Inventory
- LSL Predictive Analytics
- LSL Replacement
- LSL Unknown Management
- LCRR/LCRI Compliance
- Water Mains PoF
- BC for Engineering Firms
- Research & Development

What do customers say?

Customer feedback

- **80-90%+** accurate predictions regarding lead total lines
- Flint and Toledo report millions of dollars in savings due to **avoided excavations** and **accelerated project timelines**
- **Potential to adjust pricing** as municipal clients are extremely price sensitive due to budget constraints
- **Potential to increase market awareness** to key players like construction firms and engineering companies

URBAN ENTREPRENEURSHIP INITIATIVE

BUSINESS MODEL

Key partnerships

Partner name	What they give	What they get
Esri	GIS software and geospatial solutions	Use of BlueConduit algorithms
Sourcewell	Procurement services for governments	Streamlined purchasing for clients
120Water	Water quality management tools	Efficient compliance management
NSF	Certification and public health support	Broader user base
HDR	Revenue from construction services	Data enabled construction projects
Tighe & Bond, Stantec, Arcadis	Revenue from consulting projects	Enhanced analytics for clients
Google.org	Financial and technical support	Advanced data tools
NRDC	Policy and legal expertise	Collaboration on lead remediation

Key resources

Proprietary predictive algorithms for lead service lines with >80% accuracy

Widespread data infrastructure comprising of cloud platforms, GIS tools, and public demographic data

Expert team of data scientists, engineers, customer service, and product designers

Interactive mapping tools to foster community transparency and stakeholder trust

Key activities

Develop and refine predictive models

Collect and analyze water and city data

Ensure compliance with EPA mandates

URBAN ENTREPRENEURSHIP INITIATIVE

FINANCIALS

Revenue streams

- Recurring subscription
- Startup fees
- Subcontracting for engineering & consulting firms
- Custom data analysis services

Funding history

Source	Type	Date	Amount
The Rockefeller Foundation	Grant	2022	$1M
Unknown	VC	2021	$250K
The Rockefeller Foundation	Grant	2020	$200K

Operational costs

- Software maintenance
- Cloud and GIS platform fees
- Training and development for staff & clients
- Employee salaries
- Ongoing R&D

Product pricing

Prices scale with:

- Size of water system
- Usage of BlueConduit products
- Level of implementation support required

Profitability

AI companies have gross margins of 50-60%, *which is lower than the range for traditional SaaS companies*

Capital investment

- Core technology and algorithm development
- Data acquisition
- Brand development
- Office setup

URBAN ENTREPRENEURSHIP INITIATIVE

COMPETITIVE LANDSCAPE

Who are their competitors?

- **Utility Cloud:** Asset management software for utilities to improve efficiency and safety
- **Xylem:** Water technology solutions for smarter water system management and infrastructure
- **Tetra Tech:** Environmental consulting firm offering water system management and lead remediation
- **AquaHacking:** Tech solutions for water challenges, including lead contamination
- **WaterSmart Software:** Platform for utilities to engage customers and manage water system efficiency
- **Manual pipe excavations**
- **State/federal surveys**

What are similar industries?

Environmental consulting services (NAICS code 541620*)

Data processing, hosting, and related services (NAICS code 518210*)

Surveying and mapping services (NAICS code 541370*)

SWOT analysis

Strengths

Proprietary machine learning algorithm for highly accurate, fast lead pipe detection.

A skilled team of data scientists, engineers, and designers.

Backed by reputable organizations like Google, Rockefeller Foundation, and Kresge Foundation.

Weaknesses

Heavy reliance on cloud infrastructure, increasing vulnerability to data breaches and cybersecurity risks.

Limited market awareness among key players like construction firms, slowing customer acquisition.

Opportunities

Growing government mandates for lead pipe replacements create high demand.

Opportunity to **expand offerings** to identify other infrastructure issues (E.g., water mains, asbestos, led paint).

Threats

Municipalities' **slow adoption of new technologies** can delay market penetration.

Changes in government funding or priorities could reduce demand for lead pipe replacement.

Industry Structure

Porter's 5 forces

1

Threat of new competitors

Low to medium

Barriers include proprietary machine learning and data infrastructure, but low-tech solutions and traditional firms can still enter the market

2

Threat of substitutes

High

Substitutes like manual inspections, GIS mapping, and other engineering firms offering lead detection or remediation services can be cost-effective alternatives to BlueConduit's tech

3

Rivalry among competitors

Moderate

Competition comes from engineering firms, software companies, and traditional construction methods. However, BlueConduit's predictive algorithms and data science give it a strong edge

4

Bargaining power of suppliers

Low

BlueConduit relies on software infrastructure (cloud, GIS, etc.), where multiple providers exist, keeping supplier power low. Their major asset is proprietary algorithms, not physical goods

5

Bargaining power of buyers

Moderate to high

Municipalities and large construction firms hold significant purchasing power, especially when budgets are constrained

SALES & MARKETING STRATEGY

How do they build relationships?

- **Transparency**: Interactive maps provide clear communication with communities and clients
- **Ongoing support**: Provides clients ongoing support with software and compliance needs
- **Customization:** Tailors solutions to meet client requirements
- **Equity focus:** Identify underserved communities and prioritize those most vulnerable to high lead levels

How do they sell and deliver?

- **Direct to municipal utilities:** Contracts with water utilities for LSL prediction and replacement
- **Subcontracting:** Integration of BlueConduit analytics into engineering and consulting projects
- **Government/Regulatory pathways:** Leveraging federal funding and regulatory compliance
- **Partnerships:** Collaborating with organizations in the industry to augment their offerings

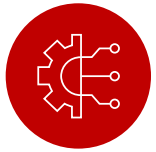
RISK FACTORS

Market risks

Competition: Low-cost alternatives like manual inspections or basic GIS tools could limit market share

Adoption Delays: Municipalities may be slow to adopt new technology, hindering BlueConduit's growth

Public Sector Reliance: Government-driven projects or in-house solutions may reduce demand for private services



Operational risks

AI training inconsistency: Inaccurate municipal data could reduce the accuracy of BlueConduit's predictive models

Cloud Dependency: Reliance on third-party cloud services exposes BlueConduit to potential security risks or disruptions

Financial risks

Dependence on Government Contracts: Reliance on public sector clients exposes BlueConduit to revenue fluctuations from changing budgets or policy priorities

Cost Overruns: Unforeseen project complexities or the need for additional resources may lead to budget overruns, reducing profit margins

Regulatory risks

Regulatory Shifts: Changes in lead-pipe remediation laws could impact demand or pricing for services

Compliance Challenges: Varying regulations across regions could lead to non-compliance risks or added costs

URBAN
ENTREPRENEURSHIP
INITIATIVE

ORGANIZATIONAL STRUCTURE

Team[1]

Co-Founders	Eric Schwartz, Jack Abernethy
CEO	Lorne Groe
President/COO	Ian Robinson
Chief data scientist	Jared Webb
VP of marketing and strategic initiatives	Elana Fox
VP of customer success	Roxcee Stacker
VP of sales	Kristy McGrath
Director of product	Abay Israel
Business development manager	Blair Forcet

1. As of November 2024 (Positions represent a snapshot in time and may not be up to date with recent changes)