

The background of the slide is a dark, grayscale photograph of a city street. In the center, the Cloud Gate sculpture (The Bean) is visible, reflecting the surrounding buildings. The street is lined with tall, multi-story buildings. The overall atmosphere is urban and modern.

# Chicago Underground Project Objectives and Approach

April 2017

# About UI Labs - City Digital

INNOVATION AT THE PHYSICAL-DIGITAL CONVERGENCE IN SMART CITIES

City Digital is a **collaborative partnership** among leading corporations, research institutions, and the public sector that:

- Establishes and **prioritizes critical areas** of need
- Develops **innovative** solutions
- Deploys **solutions leveraging Chicago** as a pilot test-bed
- Facilitates **scale-up and global implementation**



WATER &  
SANITATION



PHYSICAL  
INFRASTRUCTURE



ENERGY  
MANAGEMENT



TRANSPORTATION

# Underground Infrastructure Mapping

A REAL PROBLEM WITH A REAL MARKET

In the US, an underground infrastructure, such as pipes and cables for water, waste water, power, gas, oil, steam, and telecommunications, is **hit** on average every **60 seconds**. The total cost to the national economy is estimated to be **1.6 billion dollars**.



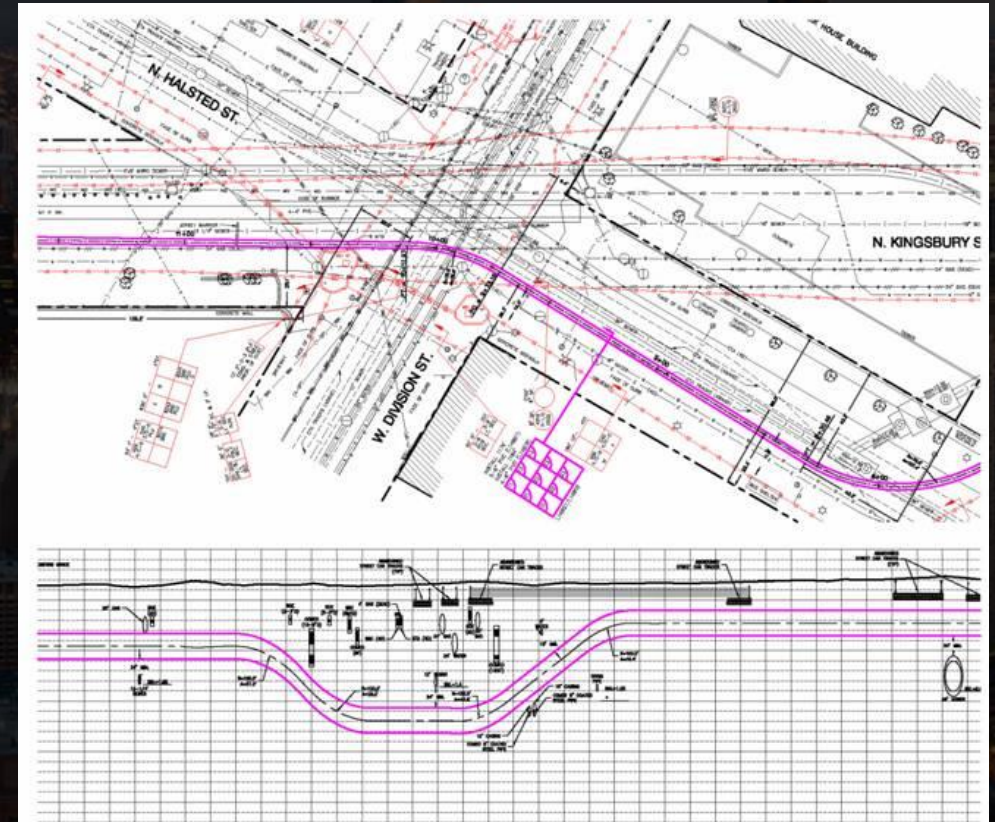
**\$1.6  
Billion**

Annual Cost from Accidents

# The Challenge

The problem is due to:

- Existing records are typically 15-30% off mark
- Existing records are incomplete (in Chicago, 90% don't have depth dimension)
- Maps are not updated after relocation of assets
- Underground assets are not mapped and digitally managed in a single database



# Return on Investment

Of Accurately Mapping the Underground Infrastructure



The rate of return for underground mapping projects ranges from 3.4X to 21X

# Chicago Pilot Overview

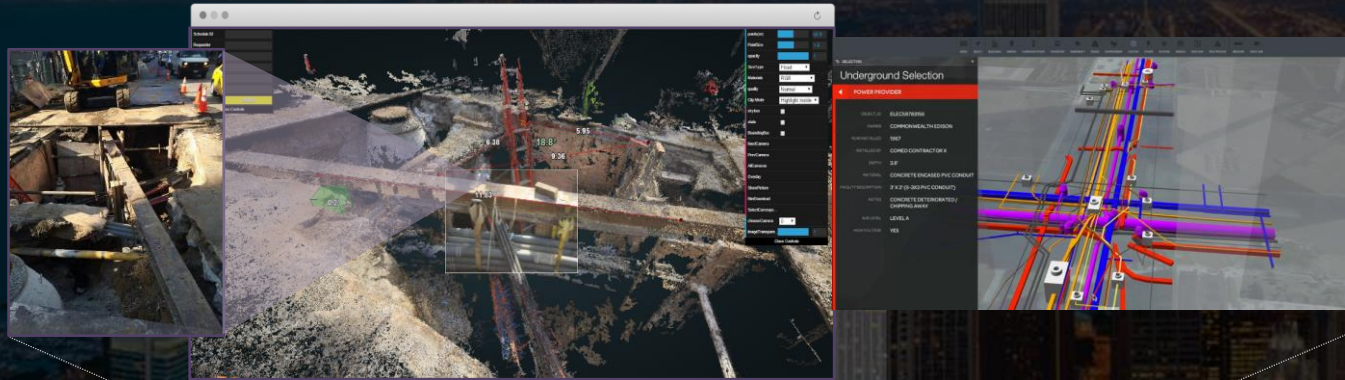
**Objective:** The Pilot project will deliver a self-building, self-maintaining, engineering grade, common, secure data platform of 2D/3D utility data scalable to support a city the size of Chicago.

The Pilot team will demonstrate to stakeholders (cities, utilities, construction firms) how the tool could potentially be used in real-world applications.

## Solution Partners:



# Chicago Pilot Overview



## User Interface

- view the infrastructure in the geographic area in 3D format
- **upload/download data** from/to CAD format



## GIS Data Platform

- Standardized GIS data
- Cloud-based
- Secure

# Chicago – Proof of Concept

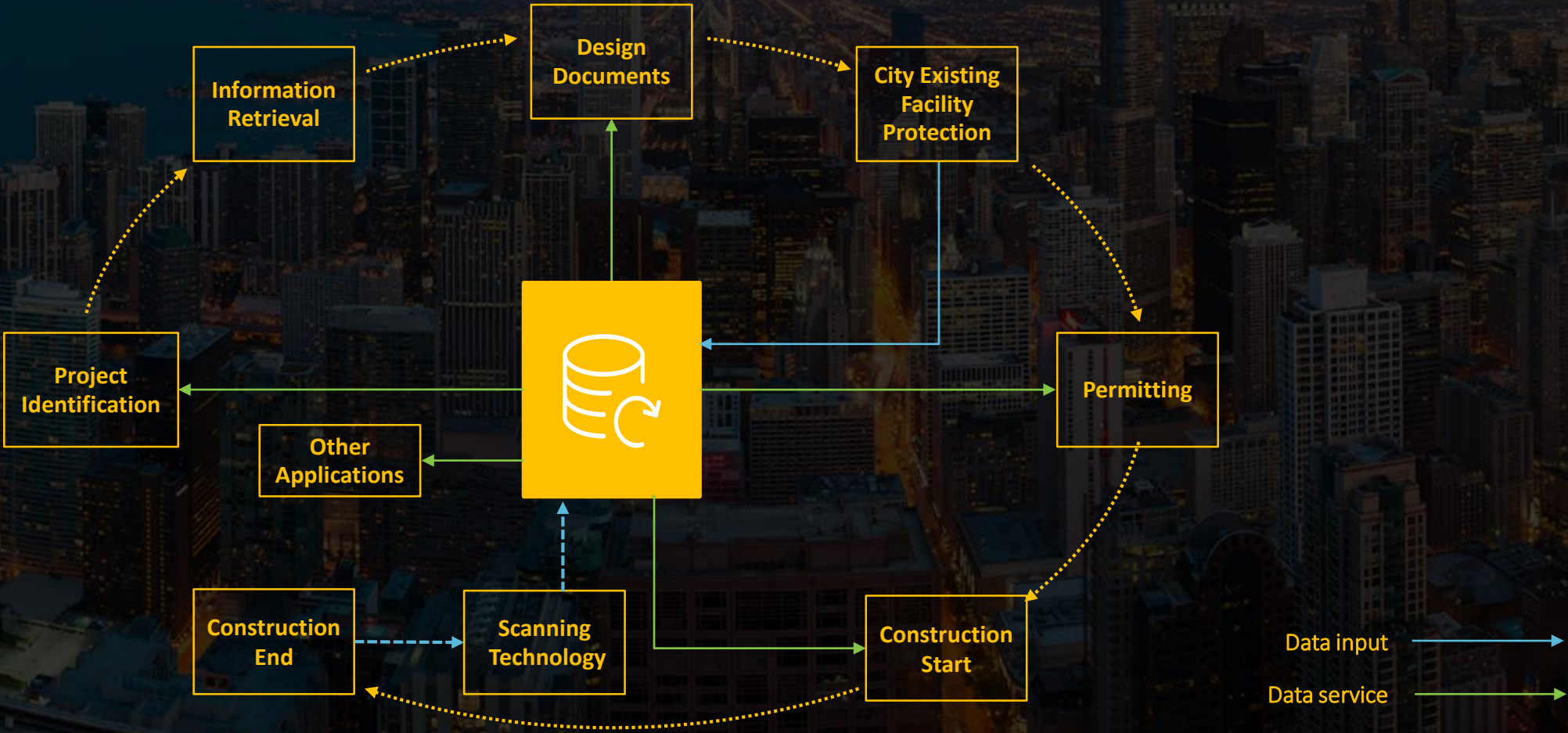


[Video Link](#)

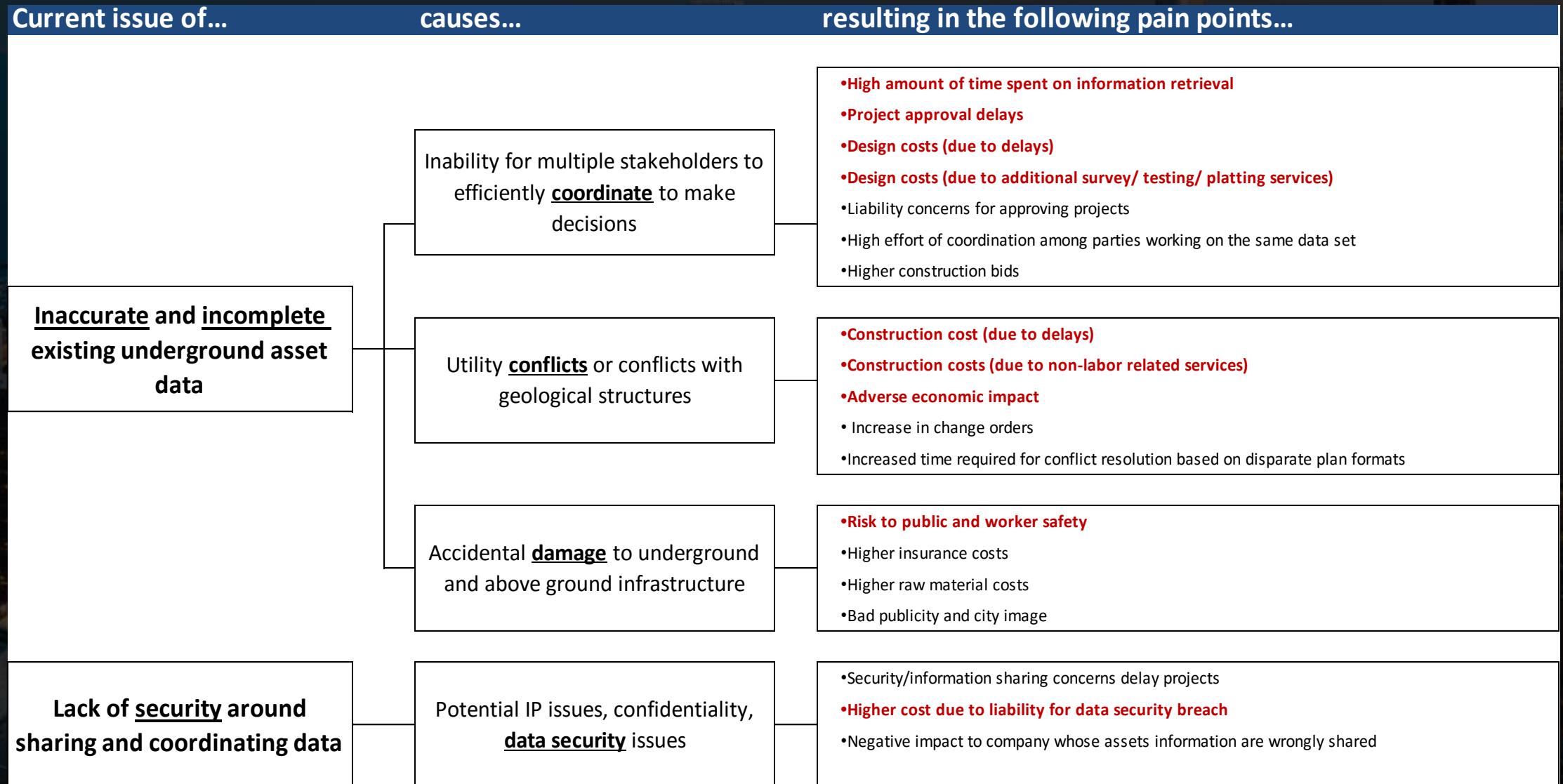


# Process & Governance

Mapping and scanning technologies are underpinned by new processes and data governance



# Value Proposition – Value Tree



# Value Proposition

Beyond financial benefits

