USER INSIGHTS

NYC Department of Buildings

Harvard Kennedy School DPI-663: Technology and Innovation in Government

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Section I: The Client
New York City Department of Buildings (NYC DoB)

NYC DoB Mission

WHAT

— **Regulate** the lawful use of one million+ buildings and construction sites in five boroughs.
— **Enforce** Construction Codes, Zoning Resolution, and State Multiple Dwelling Law.
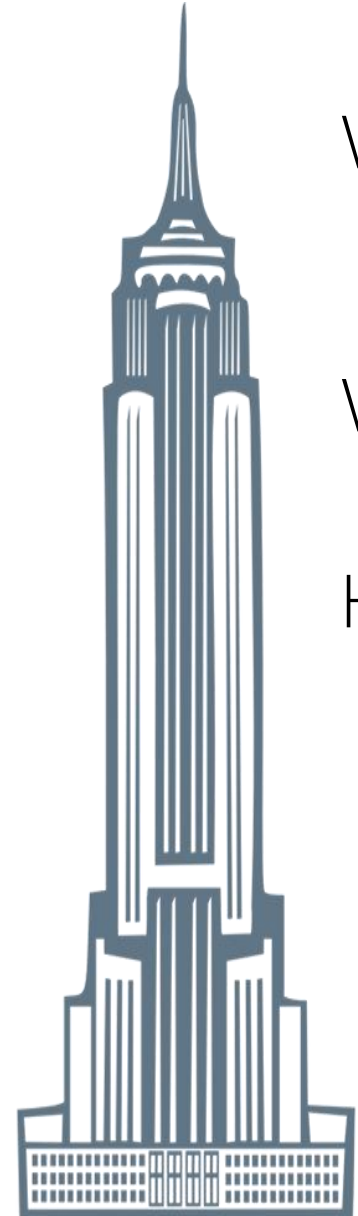
WHY

— **Promote the safety** of all people that build, work, and live in NY

HOW

— **Enforce** compliance with regulations and

— **Promote** worker and public safety through review and approval of building plans, permitting and licensing functions, and inspections.

— **Respond** to emergencies and **conduct professional analysis of accidents** to prevent future incidents

— **Conduct education and outreach programs** to provide the construction industry, property owners and tenants with a heightened understanding of safety awareness.

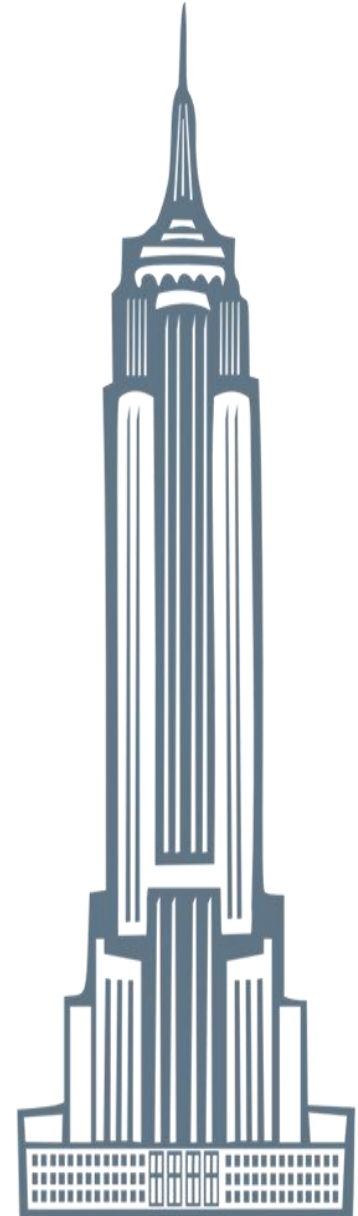*source: http://www1.nyc.gov/site/buildings/about/about.page*

NYC DoB About

1,037 **full time employees** in 2014 and a **$99 million budget**

104,087 **building permits issued** in 2015, a 22% increase from average

1,579 **full time employees** in 2017 and a **budget of $155** million;

commitment to 50% increase in staffing and budget over 3 years by Mayor de Blasio

source: http://council.nyc.gov/html/budget/2017/pre/810%20-%20Department%20of%20Buildings.pdf
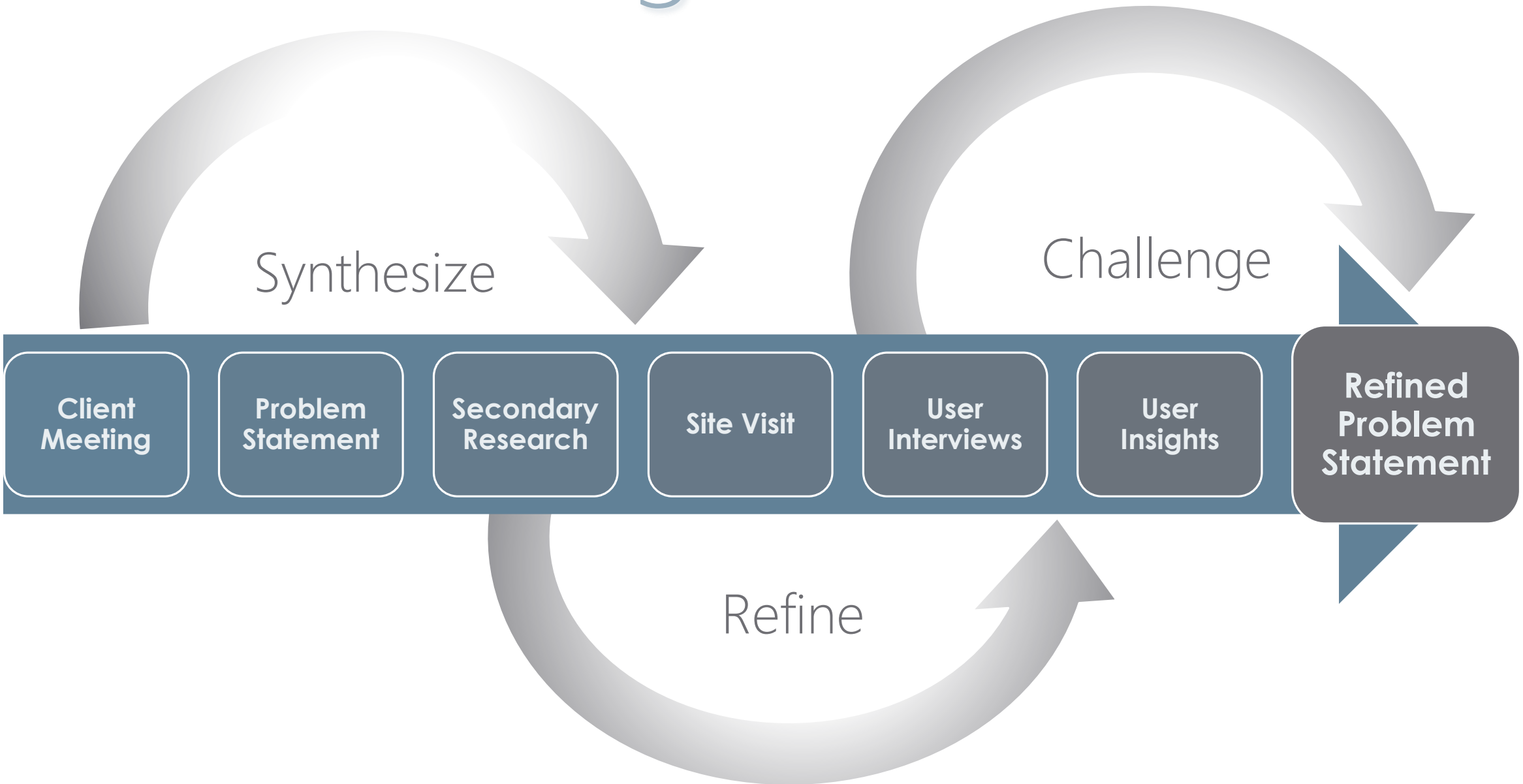
Initial **Problem Statement**

How do we help the New York City Department of Buildings use construction data to develop a predictive tool to help them take action to reduce injuries and fatalities from construction accidents?
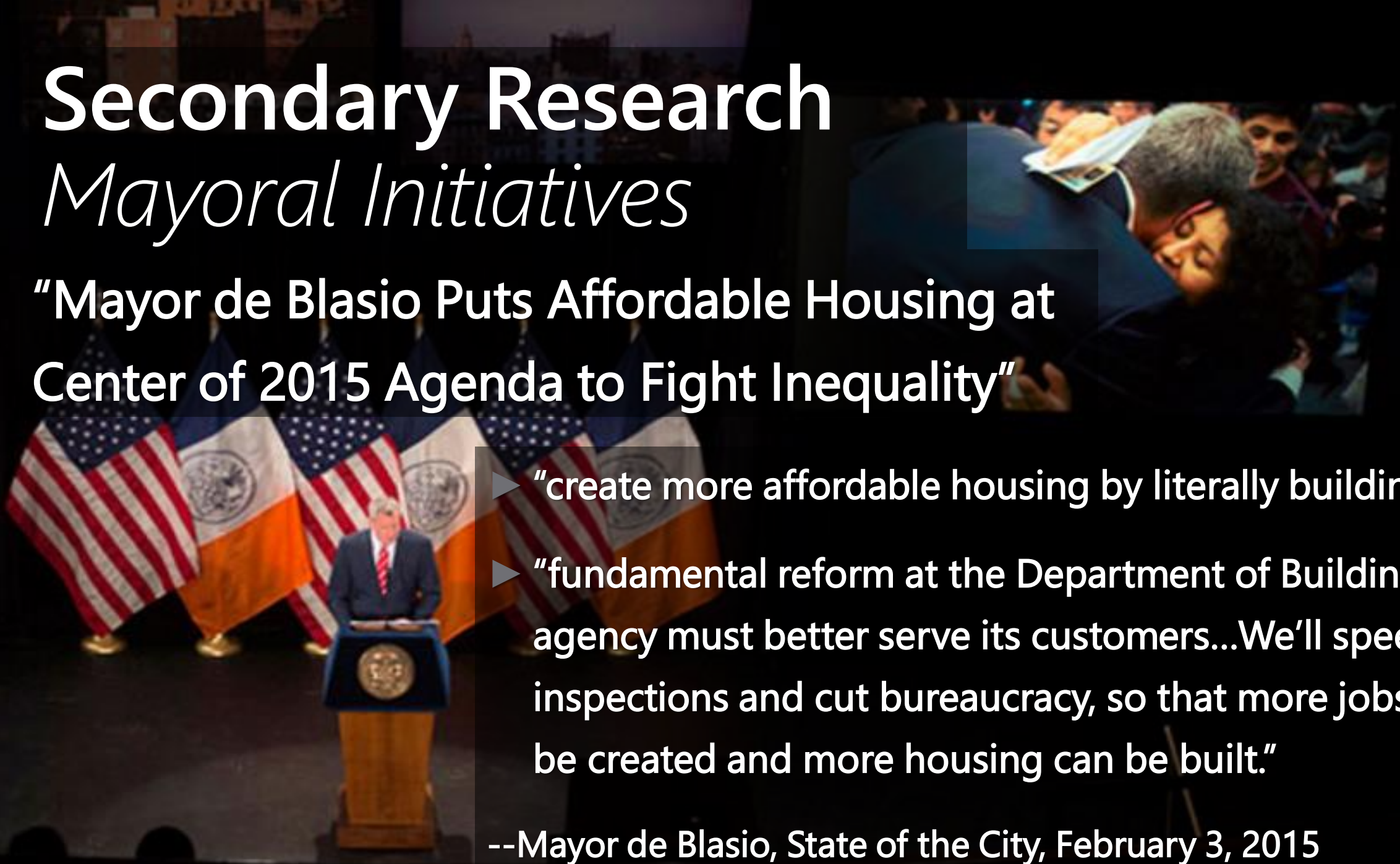
Section II: Research Methodology

Secondary Research
Mayoral Initiatives

"Mayor de Blasio Puts Affordable Housing at Center of 2015 Agenda to Fight Inequality"

► "create more affordable housing by literally building up"

► "fundamental reform at the Department of Buildings. This agency must better serve its customers...We'll speed up inspections and cut bureaucracy, so that more jobs can be created and more housing can be built."

--Mayor de Blasio, State of the City, February 3, 2015

Secondary Research
Safety Perception

"DOB has seen a large increase in the number of construction-related incidents. During the Fiscal 2016 reporting period, DOB reported 203 construction-related injuries and 181 construction-related accidents, an increase of 91 percent and 84 percent, respectively, over the same period in Fiscal 2015." [1]

1_http://council.nyc.gov/html/budget/2017/pre/8 10%20-%20Department%20of%20Buildings.pdf

Safety Lapses and Deaths Amid a Building Boom in New York

An increase in fatalities and injuries has mostly affected undocumented immigrant laborers and far exceeds the rate of new construction.

By DAVID W. CHEN   NOV. 26, 2015

Secondary Research
Political Pressure

POLITICONEW YORK beta

After fighting mayor's housing plan, labor comes up nearly empty

The New York Times

Council Bills Seek to Make Construction Less Perilous in New York City

THE WALL STREET JOURNAL.

De Blasio Housing Push Faces Hurdles as Neighbors, Politicians Raise Questions

Creation of 240,000 Units for New York City Centerpiece of Mayor's Plan

Secondary Research *Criticism*

New York City Comptroller
Scott M. Stringer

NEWS

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COMPTROLLER STRINGER DEMANDS DEPARTMENT OF BUILDINGS TAKE IMMEDIATE ACTION
ON CRANE AND WORKSITE SAFETY

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(**New York, NY**) – Five years after receiving a scathing report to dramatically improve crane safety, the New York City Department of Buildings failed to implement dozens of vital recommendations, according to a 2014 audit report and November 2015 follow up released today by New York City Comptroller Scott M. Stringer.

"Crane safety is a crisis, but the City has not treated it like one," Comptroller Stringer said. "There have been at least four significant crane collapses in New York City in just the past two and half years and yet dangerous, life-threatening conditions still exist. When cranes collapse, it shakes everyone's confidence that we live in a City where people can feel safe and build their families and businesses."

New York City
Client Site Visit

▶ **Reynaldo Cabrera**

Risk Management Officer

Department of Buildings

▶ **Dan Eschenasy**

Chief Structural Engineer

Department of Buildings

▶ **Sandra Nicholson**

Director of Research & Analysis

Department of Buildings

▶ **Joseph Ventour**

Chief of Special Operations

Department of Buildings

▶ **Dr. Amen Ra Mashariki**

Chief Analytics Officer

Mayor's Office of Data Analytics

▶ **Lindsay Mollineaux**

Deputy Director

Mayor's Office of Data Analytics

User Interview Questions

1. What is the data collection process for construction site accidents?

2. What actions should the DoB take to help prevent construction incidents?
   a) How is the data being analyzed? By whom?

3. How will the DoB manage and evaluate responses?
   a) How is the data being used?
   b) What types of indicators are useful for DoB management?

User Research

Inspectors

Office of Risk Management

Emergency Operations Center

Management

Communications

Construction Workers

General Public

Contractors & Site Safety Managers

14

INTERVIEWS

Section III: Key Findings

1 Insight: Organizational role in construction safety unclear

► No management demand for safety data
— DoB is less interested in actually improving site safety, and more interested in justifying current level, or unclear on role of safety vs. OSHA.
— Clarify role & resp. of DoB vs. OSHA.

► DoB performance metrics focused on throughput (e.g. time).
— Mgmt. has not set safety goals.

► Code inspectors are dis-incentivized to report safety issues.
— Esp. with serious issues.

► Public reporting…months later, no outside accountability for DoB.

► Not clear public info. published on website.

► Institutional knowledge about unsafe behaviors & practices.
— Email is still king.
— What do we look for? ("we"…Analysts or Inspectors?)
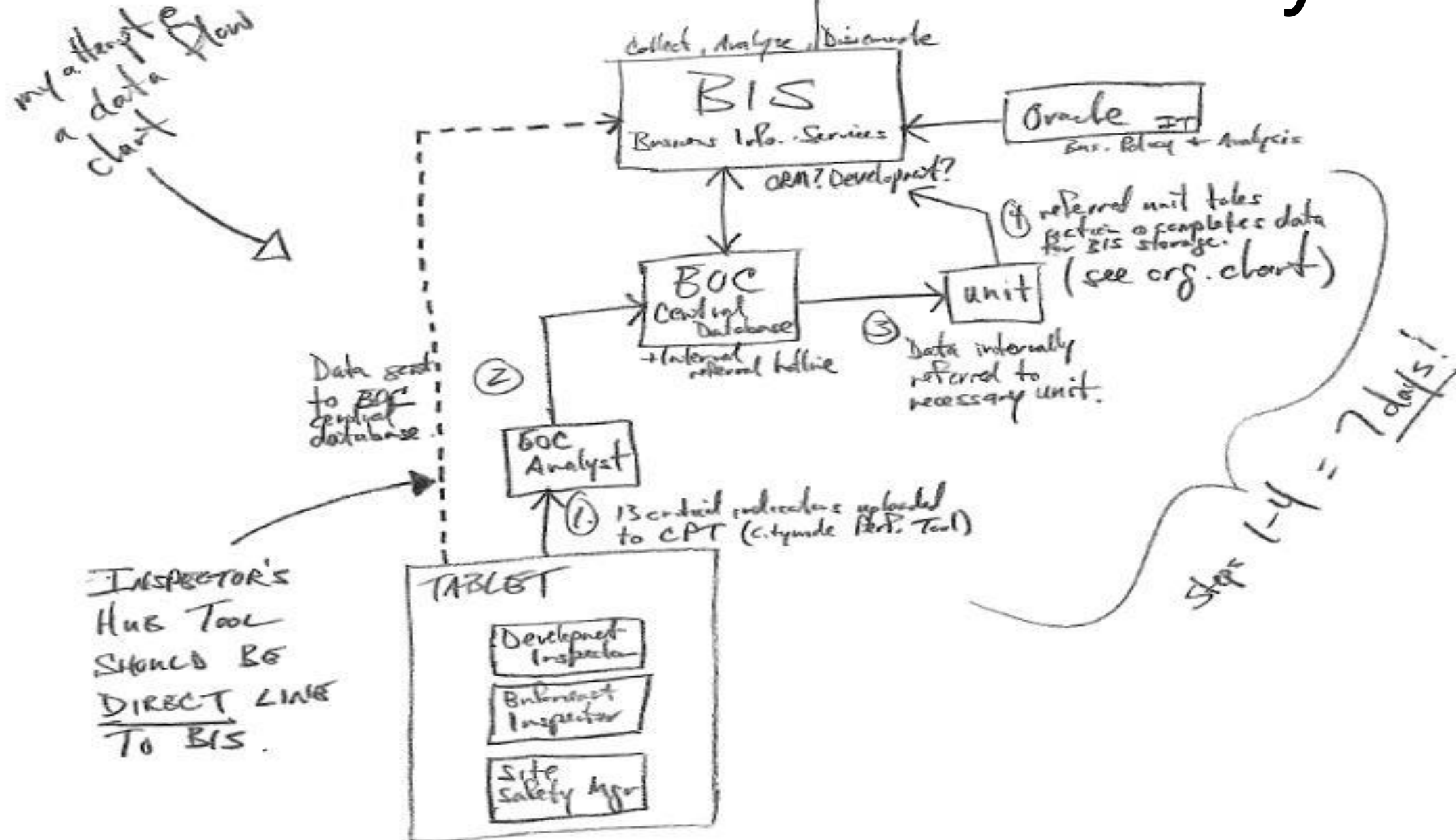
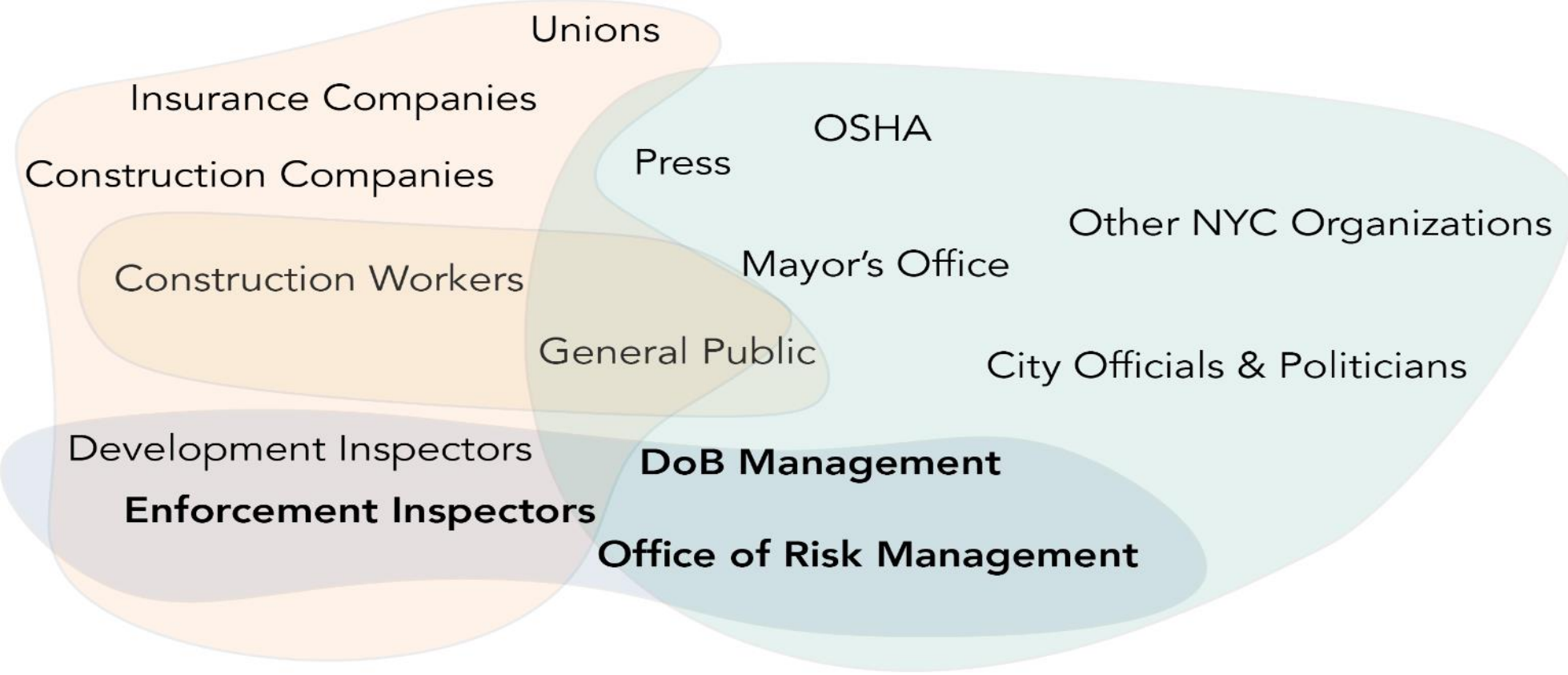# Insight: No standardized process for collection of accident data

► Ad hoc, imperfect data categorization -> Matched to Org.

► No standard operating procedures (SOP) for capturing incident info.

► One person knows/uses the incident database -> which is confusing, cryptic, messy, unclear.

► Incidents don't fit into discrete categories -> Categorization & Training
— Supervisors don't know how to categorize
— Categorization is based on org. structure

► No link between BINs (permit-job-accident).

► No accountability to units for data entry.

3 Insight: Dept. of Buildings uses data and technology, but not for safety

► Only 311 complaint data on open NYC data port.

► Enforcement activities driven by complaints.

► DoB doesn't measure effectiveness of sweeps.

Stakeholder Map

Revised **Problem Statement**

How do we enable management at the New York City Department of Buildings to make better informed risk-mitigation decisions while better articulating safety?

Section V: Next Steps

DEMAND FOR SAFETY

- Other NYC Orgs
- Site Const. Workers
- Public
- Press

People

OSHA

TOP MANAGEMENT VISION

- Safety Guidance
- Data Driven Performance Metrics
- I-Level Accountability
- Clarify Responsibility of DoB vs. OSHA

Business

Technology

IMPROVE THE DATA

- Quality
- Collection
- Categorization
- Centralization

Prototype