



NYC



SOLVING THE UNDERGROUND

NON-INTRUSIVE IMAGING PLATFORM

Detangling the Subsurface in NYC & other Dense Urban Environments

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INTRODUCTIONS



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THE IMPACT OF UTILITY-RELATED DELAYS IN NYC

\$5-7M

Per mile on major corridor utility investigations in NYC

\$350-500M

Additional annual costs accrued across City projects due to utility complications

65-70%

Of major NYC infrastructure projects delayed by >3 months due to unexpected utility conflicts

60-80%

Of utility investigation work is duplicated for adjacent projects that serve the same NYC corridors

\$1.2M

Daily economic impact of utility-related street closures in Manhattan

4.2

Utility-related work stoppages across NYC infrastructure projects on average

CASE STUDY: YORK AVENUE WATER MAIN RECONSTRUCTION

Context

Records & drawings provided by utility owners **did not accurately reflect the underground reality**, resulting in a nearly 6-year delay on a 2-block project

\$7.4M

Original Project Cost

\$28.4M

Actual Project Cost

5.9 Years

Of project delay due to utility challenges

11

Schedule extensions; ALL utility-related



EARLY AND ACCURATE UTILITY MANAGEMENT: COMPOUND ROI

Greater cost certainty

From procurement (reduce contingencies by 10–30%¹), to construction (reduced change orders and delay claims)



>\$22 saved for every \$1 spent on early SUE²

\$11,626.03: the average utility related change order for projects in urban locations with average daily traffic >6000³



Accelerate project schedule

Make data-driven design and resource allocation decisions; realize >30% time savings⁴ and reduce community impact



*Having quality utility data to develop interface management plans **as early as possible** is critical to realize the largest return on investment for **urban projects**⁵*

¹ Open Geospatial Consortium, OGC Underground Infrastructure Concept Study Engineering Report

² Pennsylvania Department of Transportation and Federal Highway Administration

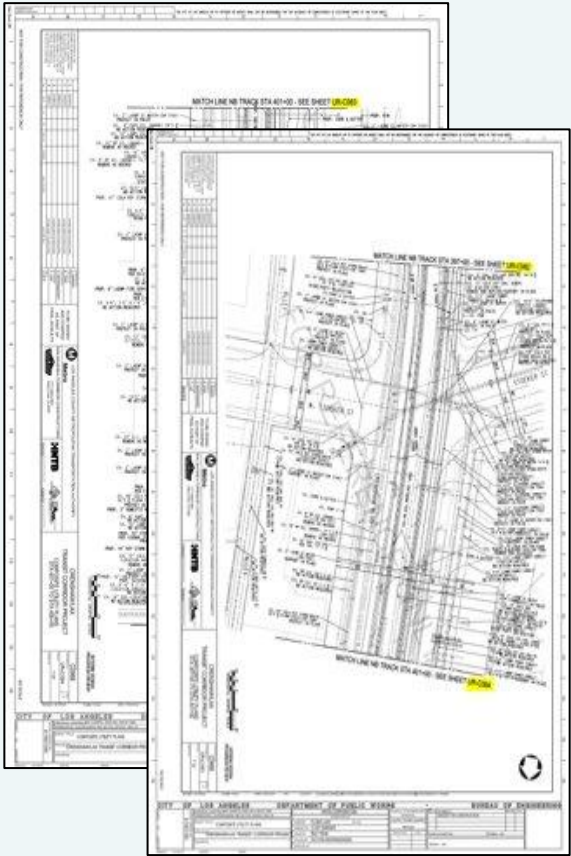
³ Louisiana Department of Transportation and Development

⁴ Puget Sound Energy

⁵ Massachusetts Bay Transportation Authority

STATUS QUO UTILITY MAPPING APPROACH

INACCURATE / INCOMPLETE RECORDS



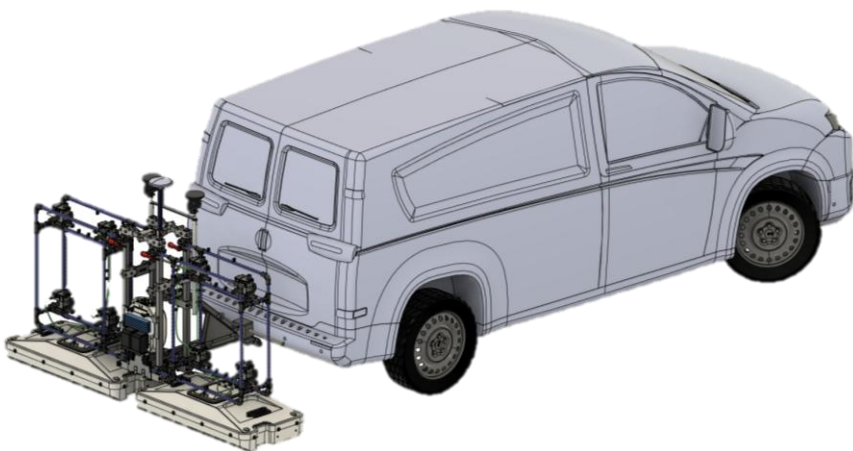
'FOLLOW THE LINE' OPS APPROACH



RELIANCE ON UNCERTAIN VISUAL HINTS

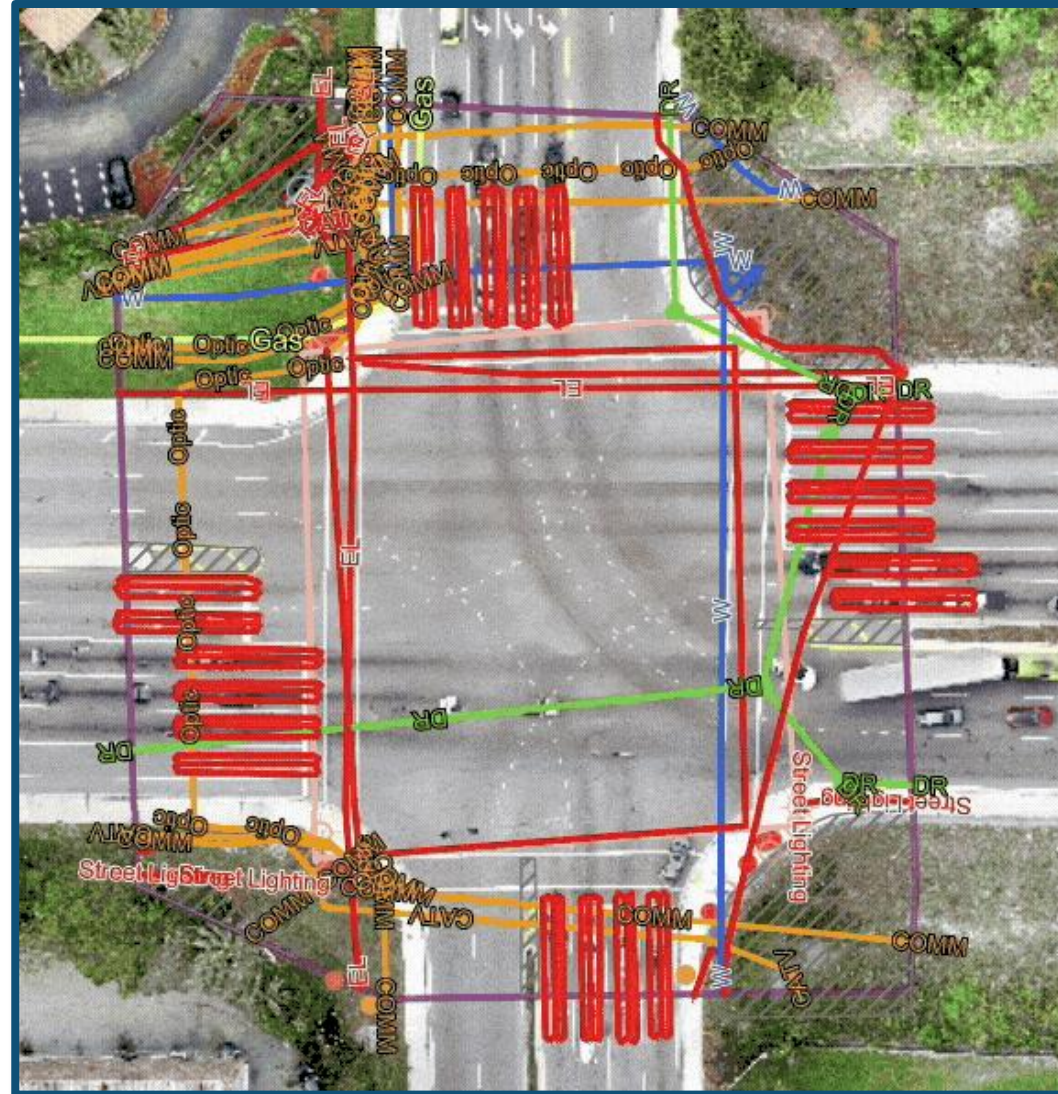


PLATFORMS FOR ALL TERRAINS – TAILORED TO EACH PROJECT



EXODIGO FINDINGS COMPARED TO TRADITIONAL METHOD

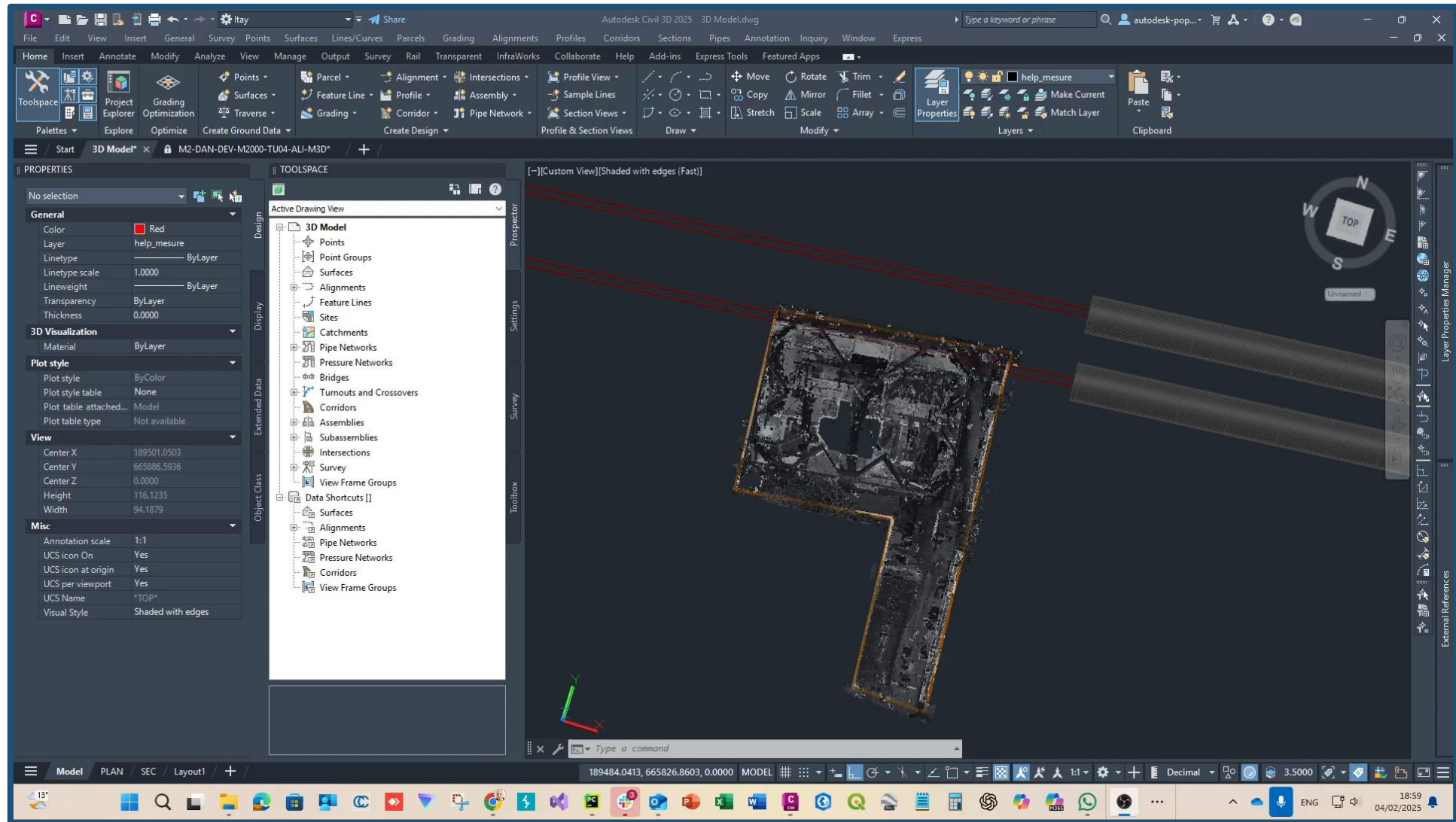
FLORIDA DOT – BOYNTON BEACH AND I-95 GATEWAY BOULEVARD INTERCHANGE DESIGN



3-D UTILITY CONFLICT VISUALIZATION



ADDITIONAL SUBSURFACE MAPPING





THANK YOU!

exodigo

EXPERIENCE AND PRESENCE IN NYC

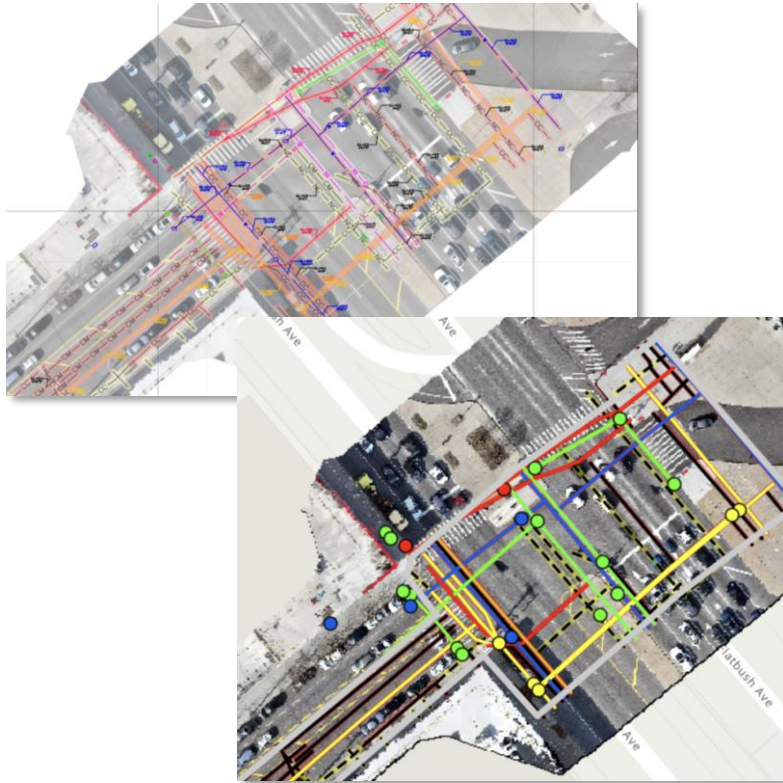
nationalgrid

HNTB stv

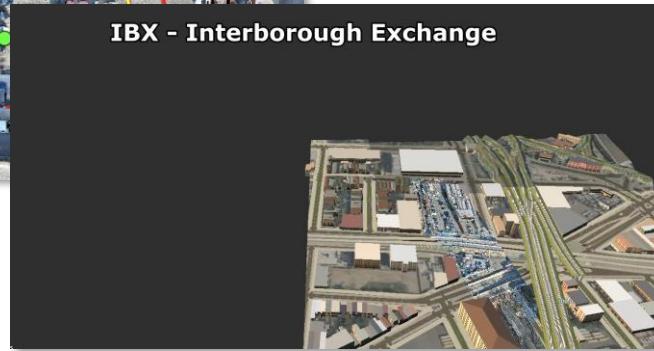
The Gateway
Trans-Hudson
Partnership



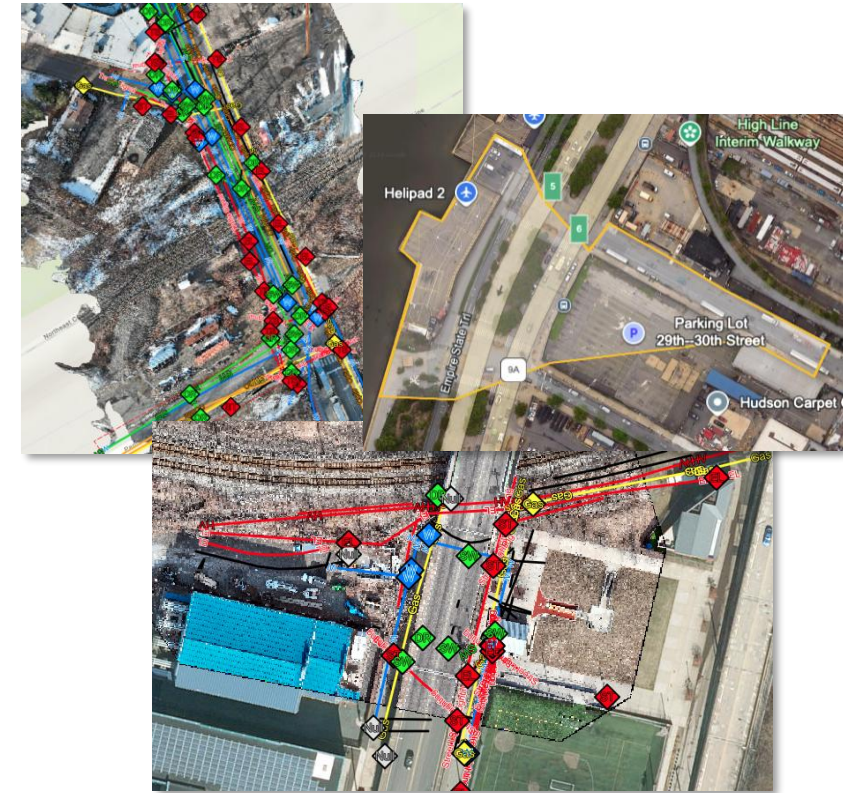
AECOM WSP PARSONS BRINCKERHOFF STV 100 Years



NG Gas Line Extension in Brooklyn, NY



IBX East NY/Atlantic Ave



Gateway Hudson Tunnel Construction