

Know What's Below: Accurate Maps Protect People and Plant

- **Title:** Protecting What's Below: In Pursuit of the Ninety One Billion Dollar Prize
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Introduction

- **The Urgent Issue:** Over 2,000 injuries and 400 fatalities have occurred in North America from accidental underground infrastructure contact in the last two decades.
- **Impact:** An estimated \$91 billion negative economic impact annually in US alone is caused by the lack of clear accurate and trustworthy buried asset location information.
- **Objective:** Improve current damage prevention practices by allowing the seamless exchange of information between stakeholders involved in working on or near buried infrastructure.



Photo by Edewaa Foster on Unsplash

Current Damage Prevention Practices

- **North American One Call Centers:** the communication conduit between excavators and utility owners to support utility damage prevention.
- **Process:** Excavator contacts One Call, One Call informs Utilities, Utility Companies mark buried infrastructure locations if needed, Excavator ensures no damage.



Challenges of the Current Process

- **Statistics:** 1,400 line strikes daily in North America.
- **Human Cost:** Fatalities and significant injuries.
- **Direct and Societal Impacts:** Damage costs, work delays, loss of services, traffic disruptions, business disruptions.
- **Inefficiencies:** Costs associated with lack of trustworthy actionable information.
 - Reliance of excavators on accurate buried infrastructure location depiction.
 - Potential delays in response from utility owners.
 - In current locate process little to no value is added.



Gas Line strike in Missouri – Photo by Springfield News-Leader

Comparison with Other Countries

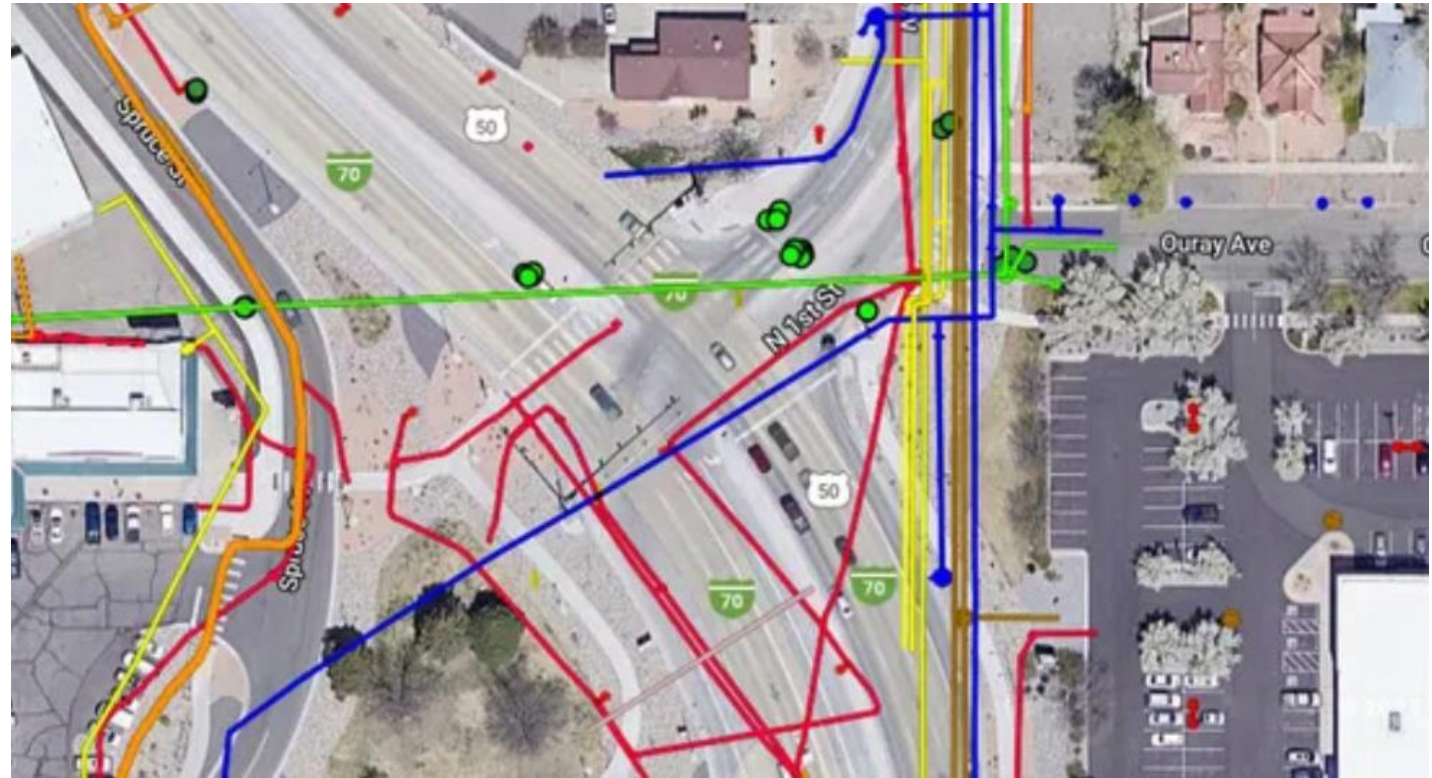
- **Japan:** Annually less than 150 line strikes. 1.2 line strikes per million residents.
- **Canada:** Annually over 10,400 line strikes. 267 line strikes per million residents.
- **US:** Annually over 233,000 line strikes. Over **690** line strikes per million residents.



Construction crew strikes water main, creates Frankford geyser: as seen on Action News Mornings

The Role of Accurate Mapping

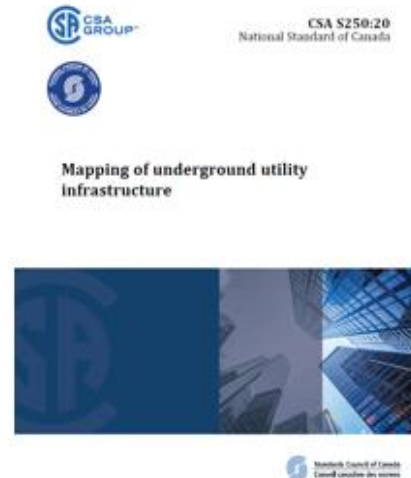
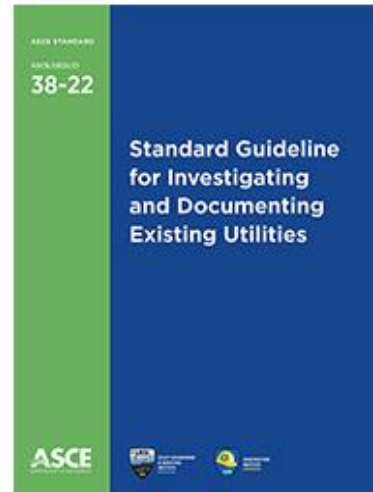
- **Accurate Maps:** Critical for reducing damage by providing situational awareness.
- **Recommendation:** 2021 CGA's Next Practices Pathways Report identified the need for access to accurate maps.
- **Mapping Standards:** Various standards developed for mapping underground infrastructure.



Example of field-verified utility location data collected on the CDOT Central 70 Highway

Location Data Exchange Requirements

- **Requirement:** Provide a secure bidirectional data exchange between utility owners, designers, damage prevention stakeholders, and Emergency Responders.
- **Format:** Data exchange will utilize common geospatial file formats to reduce the need for transformation.
- **Accuracy:** Where specified, the data collected in the field must meet or exceed the requirements needed to meet the governing data collection standards (i.e. ASCE 38-22, ASCE 75-22 and CSA S250:20)



Case Study: Colorado DOT Project

- **Project:** CDOT gathered and manually conflated utility locations for Central 70 Highway project.
- **Process:** Confirmed precise utility locations during design phase and pre-construction site investigation work.
- **Results:** Less redesign, lower bid prices, over 90% reduction in damages, reduced construction costs, fewer project delays due to line strikes.

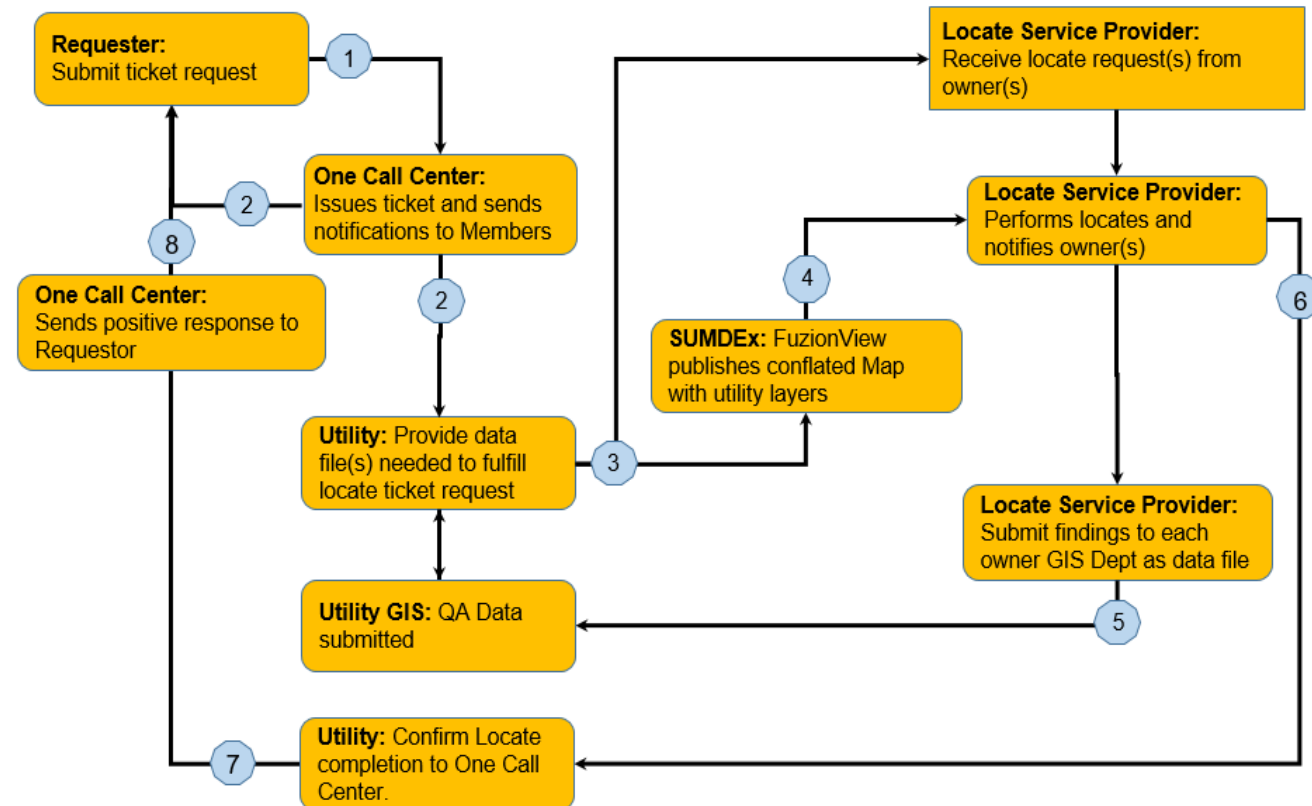


Central 70 Hwy in Denver – screenshot from Colorado DOT website

What is the SUMDEx Initiative

- **Project Intent:** Employ a free application (FuzionView) developed by Gopher State One Call (MN811) to support the exchange of buried infrastructure location data to improve damage prevention capabilities.
- **Basic Process:** FuzionView enhances current One Call process by using the One Call ticket as the vehicle to exchange utility map data between stakeholders.
- **Benefits:** Advances project safety, cost, and schedule performance by obtaining legacy infrastructure location records from owners and providing field-verified location data back to each owner to confirm or update the accuracy of those records.

Locate Request SUMDEx Process



Conclusion

- **Summary:** Accurate maps and data exchanges will enhance damage prevention capabilities and benefit all stakeholders.
- **Benefits:** Improved safety, reduced costs, better project performance, and provide 3D data to support BIM initiatives.
- **Call to Action:** Invest in SUMDEx, a free data exchange system to improve the information needed to protect people, underground infrastructure, and the environment.



Blocking storm drains on oil spill site to prevent runoff into Burrard Inlet – July 2007 photo by Burnaby Now

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Questions & Answers

- The floor is open for audience questions.