

# Urban Design Standards

*Produced through the collaborative, technical, and professional efforts of...*



**MANLEY DESIGN**



▶ **UTILITY SERVICES**  
**Michelle Farnsworth**

# Mission: Review Standards to Identify Ways to Align Code Vision and Utilities

- ▶ Benchmark other communities' development standards;
- ▶ Evaluate alternative standards in urban areas; and
- ▶ Present evaluations and recommendations to General Policy Committee

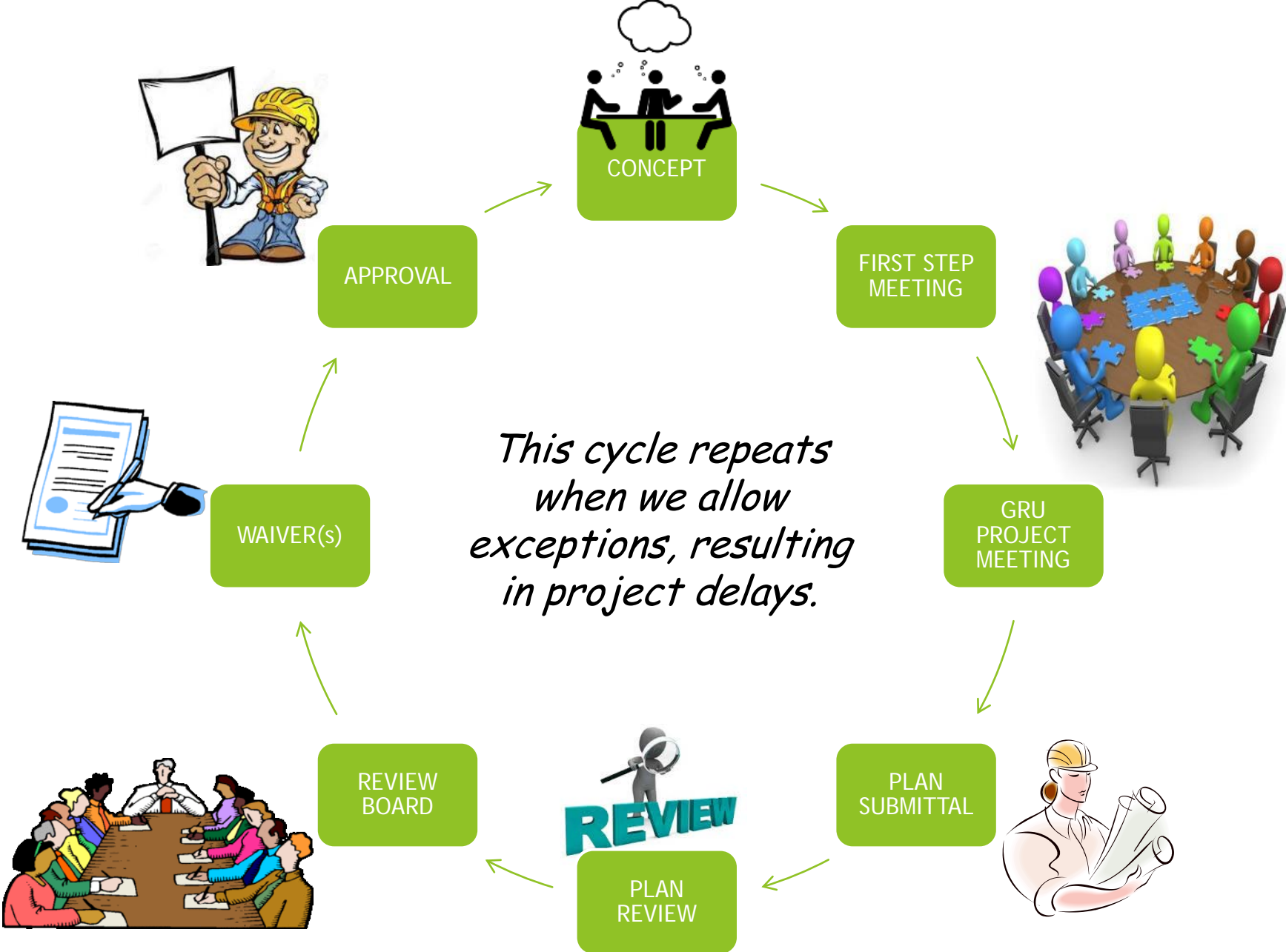


# Team

- ▶ Michelle Farnsworth, *Utility Services Supervisor, GRU*
- ▶ Debbie Daugherty, *Engineering Director, W/WW, GRU*
- ▶ Jim Mathews, *Engineering Manager, ED GRU*
- ▶ Ann Mullins, *Land Rights Coordinator, Real Estate, GRU*
- ▶ Andrew Persons, *Planner, GG*
- ▶ Chris Dawson, *County*
- ▶ Rick Melzer, *Utility Engineer, Public Works*
- ▶ Gerry Dedenbach, *CHW*
- ▶ Stephanie Sutton, *EDA*
- ▶ Sergio Reyes, *EDA*
- ▶ Bryan Harrington, *Trimark Properties*
- ▶ Andrew Meeker, *CRA*
- ▶ Elisabeth Manley, *Manley Design, LLC*
- ▶ Joe Wolf, *Utility Forester, GRU*
- ▶ Vanessa Riley, *Staff Specialist, GRU*



# Development Review Process: Best Case Scenario



# Pain Points

- ▶ Solicit input from multiple community sources
- ▶ Testimony from local industry professionals
- ▶ Identify challenges to address



# Challenges

- ▶ Conflict between the Land Development Code (LDC) and GRU standards
- ▶ Separation and setback requirements
- ▶ Aesthetics
- ▶ Cost and Liability
- ▶ Exceptions





▶ DEPARTMENT OF DOING

*Andrew Persons*



# What We See

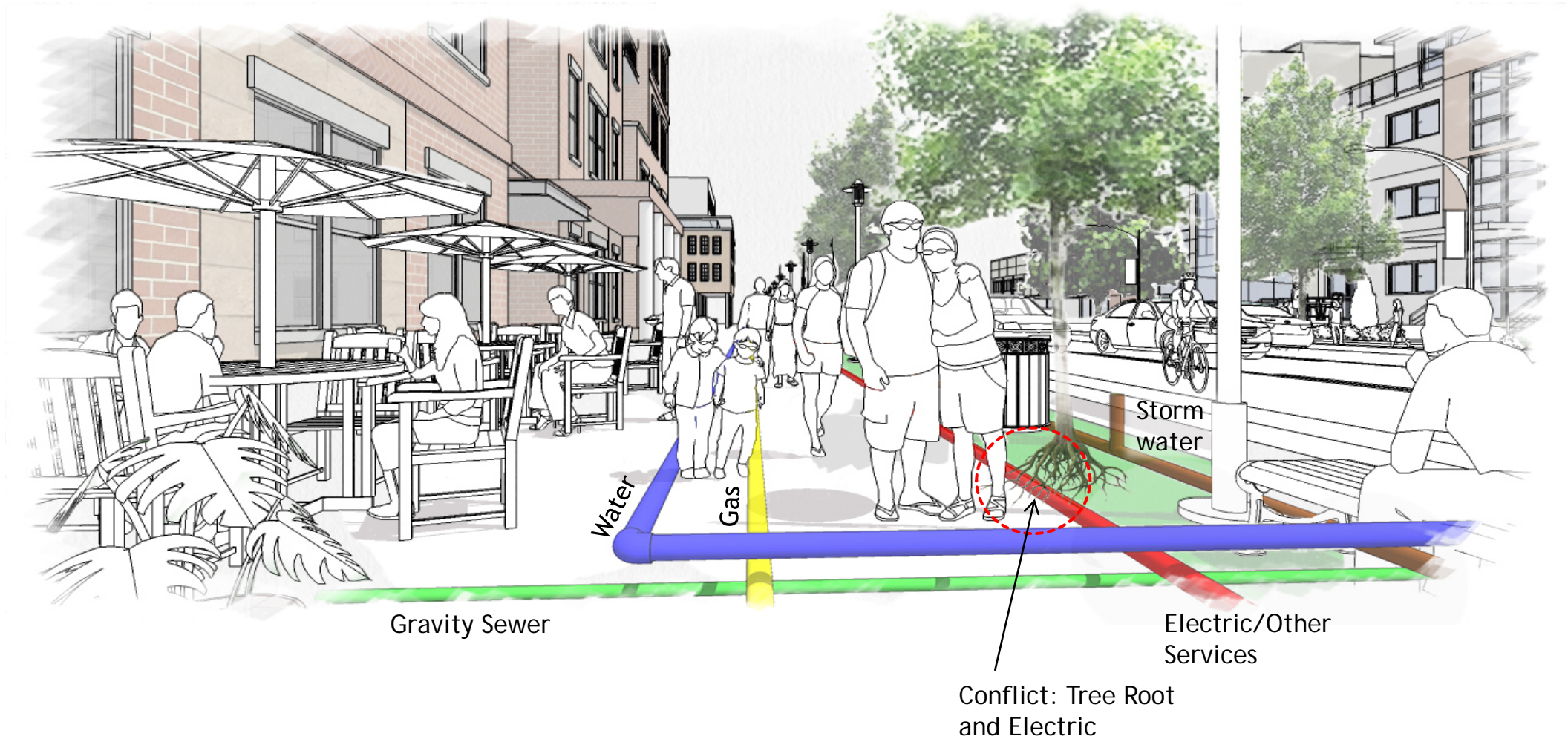


Building Zone

Sidewalk Zone

Landscape Zone

# What We Do Not See



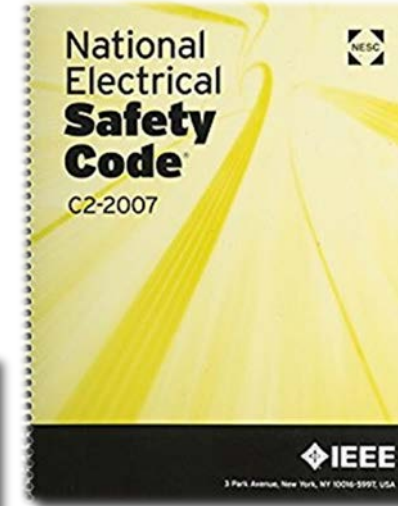


# Result of Conflicting Standards



# National and State Design Standards

- ▶ National Electric Safety Code (NESC)
- ▶ Florida Department of Environmental Protection (FDEP)
- ▶ Pipeline and Hazardous Materials Safety Act (PHMSA) Code of Federal Regulations (CFR title 49, part 191 and 192)
- ▶ Florida Department of Transportation (FDOT) Greenbook



# PDBITx Street Maintenance & Reprofitting Standards



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# Benchmarking and Research Reviewed Standards and Case Studies: What Can Work Here?

- ▶ Orlando, FL
- ▶ Jacksonville, FL
- ▶ Lakeland, FL
- ▶ West Palm, FL
- ▶ Greenville, SC
- ▶ Ann Arbor, MI
- ▶ Urban Forest Ecological  
Analysis/Tree Ordinance



# Local Design Standards



## CITY OF GAINESVILLE ENGINEERING DESIGN & CONSTRUCTION MANUAL

2015



ABOUT GRU WORK WITH GRU CONTACT US PAY MY BILL

**GRU**  
More than Energy

FOR MY HOME FOR MY BUSINESS ENVIRONMENT & COMMUNITY

## Standards Manuals

Pay My Bill » Report An Outage » Start, Stop, Move »

Work With GRU » Construction & Development » Standards Manuals

Menu
Partnering Contractor Programs
Purchasing
Construction

### Design, construction, and material standards

GRU is responsible for approval of materials, design and construction standards used in its utility infrastructure.

#### Electric

- Electric Material Standards Index
- Search for Individual Electric Material Standards

#### GRUCom (Internet & Telecom)

- GRUCom Material Standards Index
- Search for Individual GRUCom Material Standards

#### Natural Gas

- Gas Material Standards Index
- Search for Individual Gas Material Standards

#### Safety Equipment and Tools

- Tool Material Standards Index
- Search for Individual Tool Material Standards

#### Water, Wastewater & Reclaimed Water

- Complete Material Standards Manual
- W/WW/RCW Material Standards Index
- Search for Individual W/WW/RCW Material Standards
- Design Standards and Construction Details
- Policy & Procedures Manual



# Case Studies





# HUB ON CAMPUS

Stephanie Sutton,  
EDA

# Hub on Campus, 100 Block W University Avenue



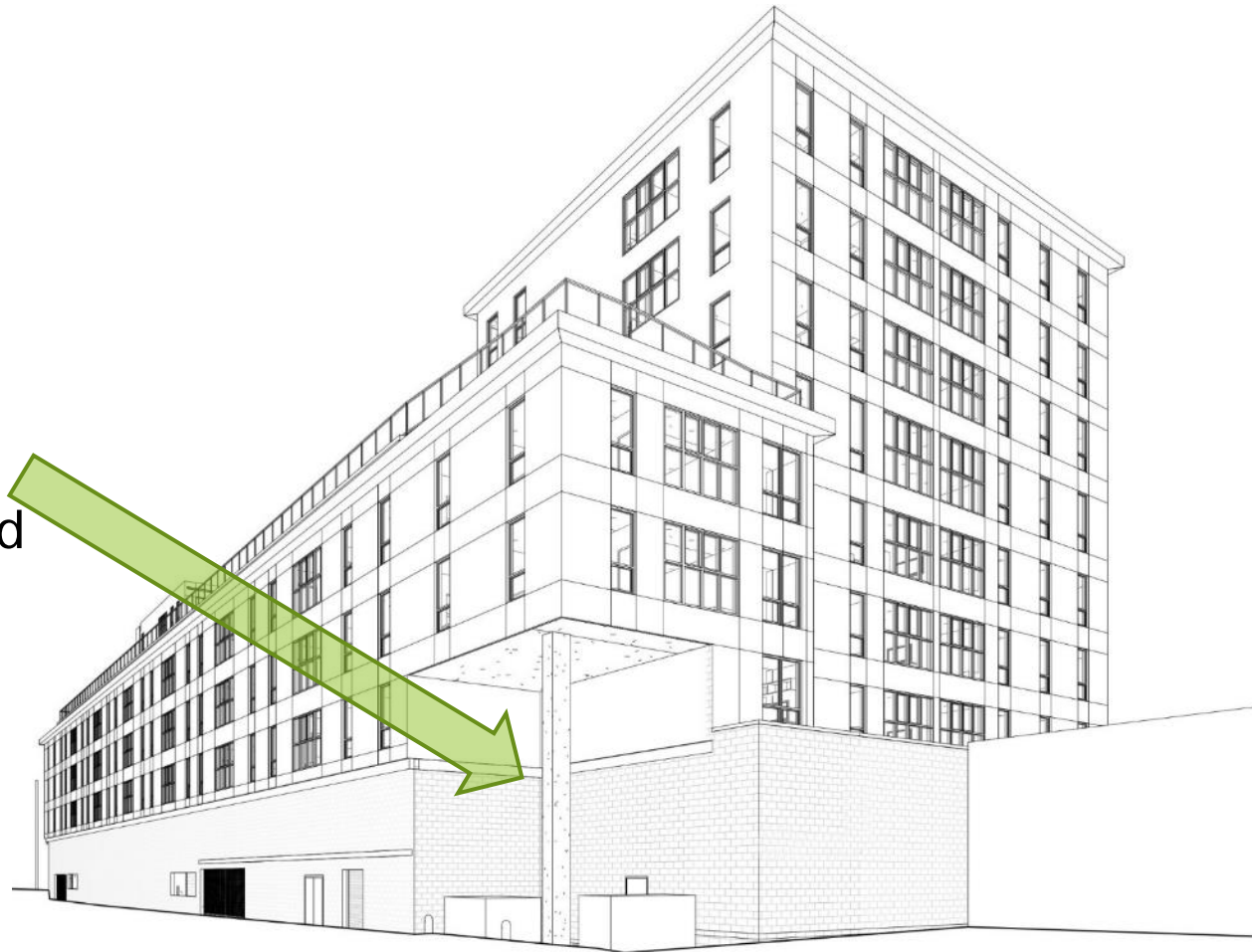
# Hub on Campus - View from SW 12<sup>th</sup> St

- ▶ Notch in building for required easements
- ▶ Landscape waiver required due to utility conflicts (crepe myrtles in large pots proposed)
- ▶ Water/wastewater, and gas service/meters will all be located on this side
- ▶ Service doors lead to meter room and fire pump room



# Hub on Campus - View from Alligator Alley

- ▶ Building has rear alcove for electric transformer and generator
- ▶ Existing overhead electric lines behind the building will be buried





▶ **CASCADES**

**Bryan Harrington, Trimark**



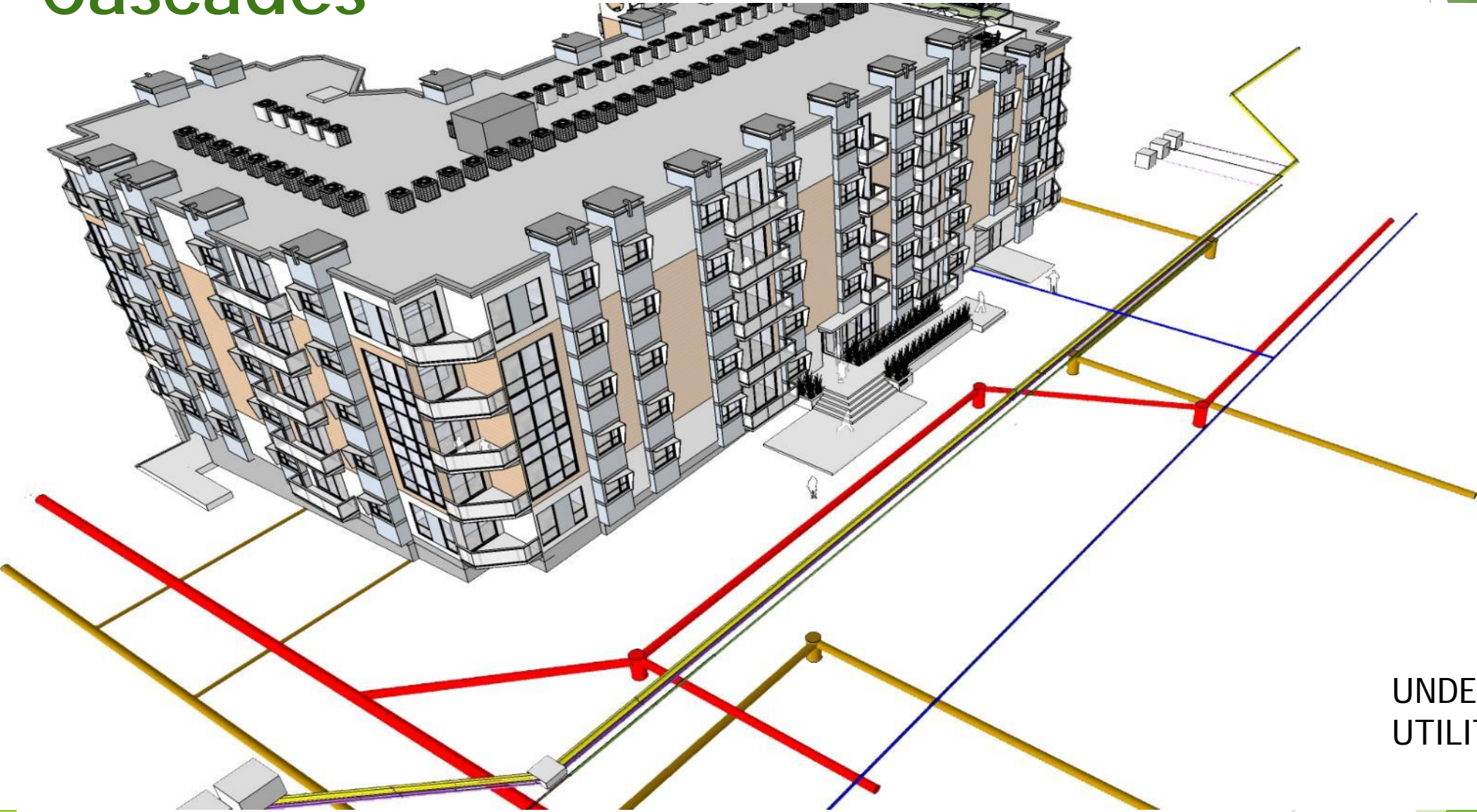
# Cascades



CITY'S VISION



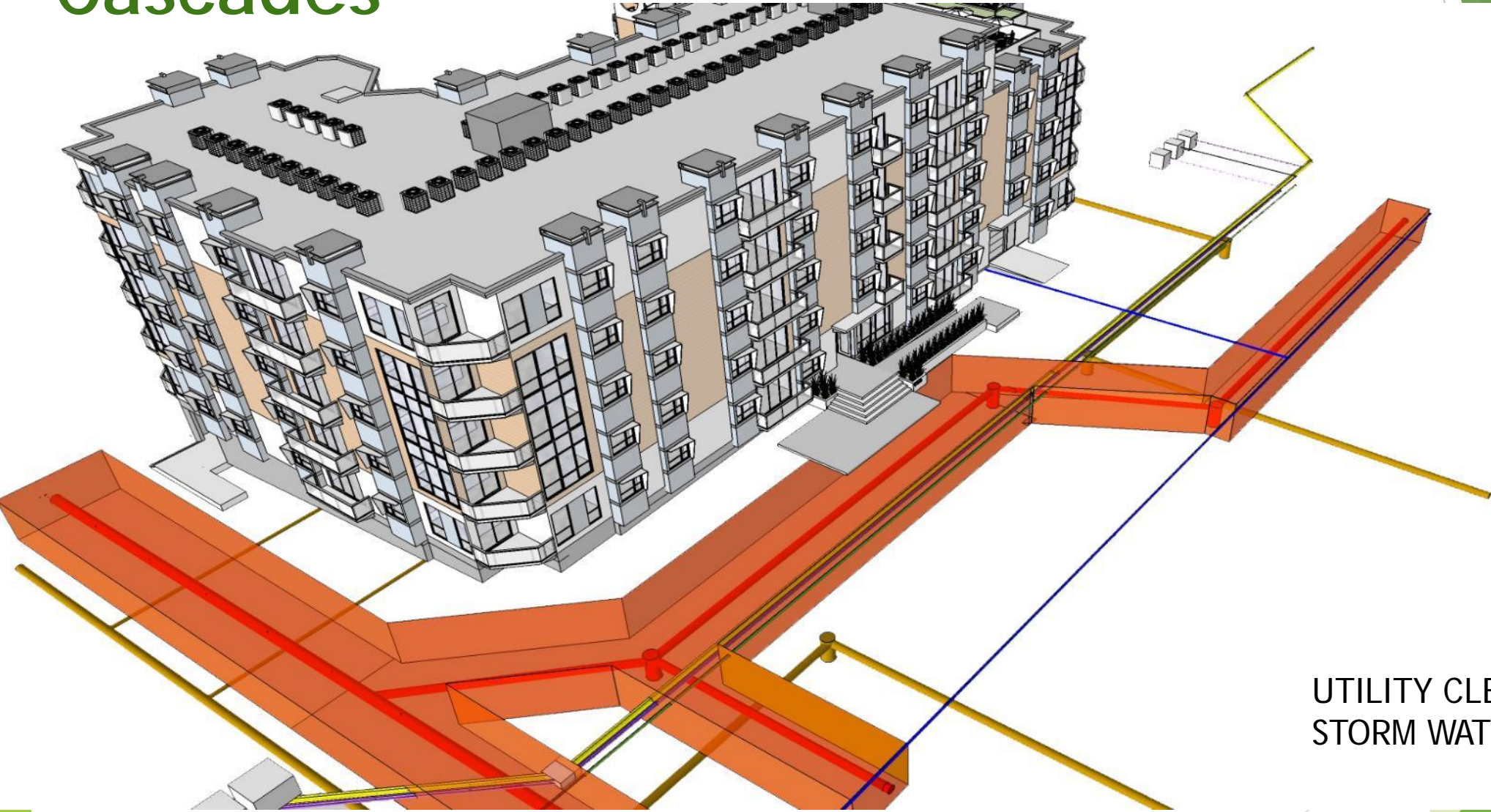
# Cascades



UNDERGROUND  
UTILITY LINES



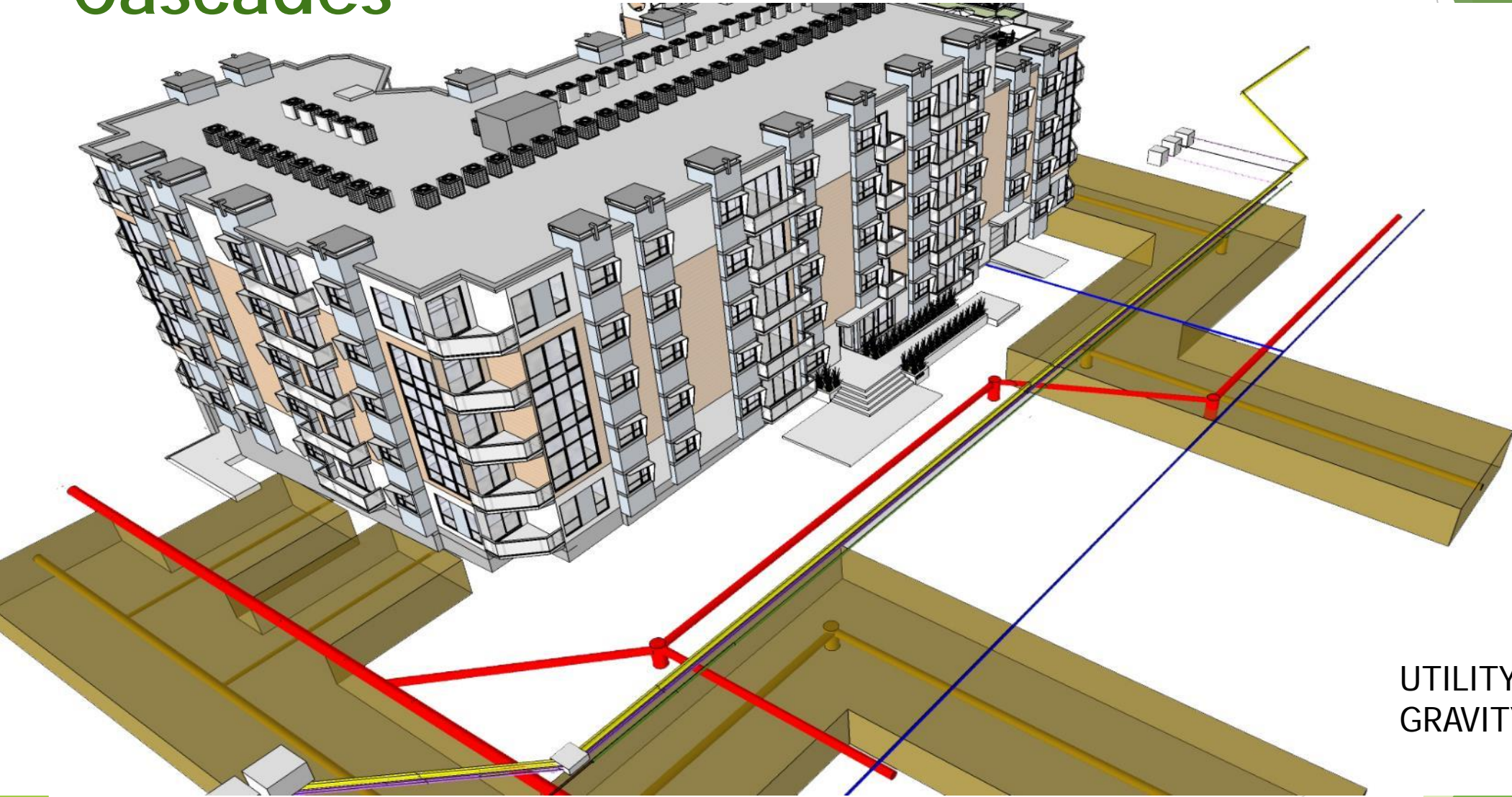
# Cascades



UTILITY CLEARANCE FOR  
STORM WATER LINE



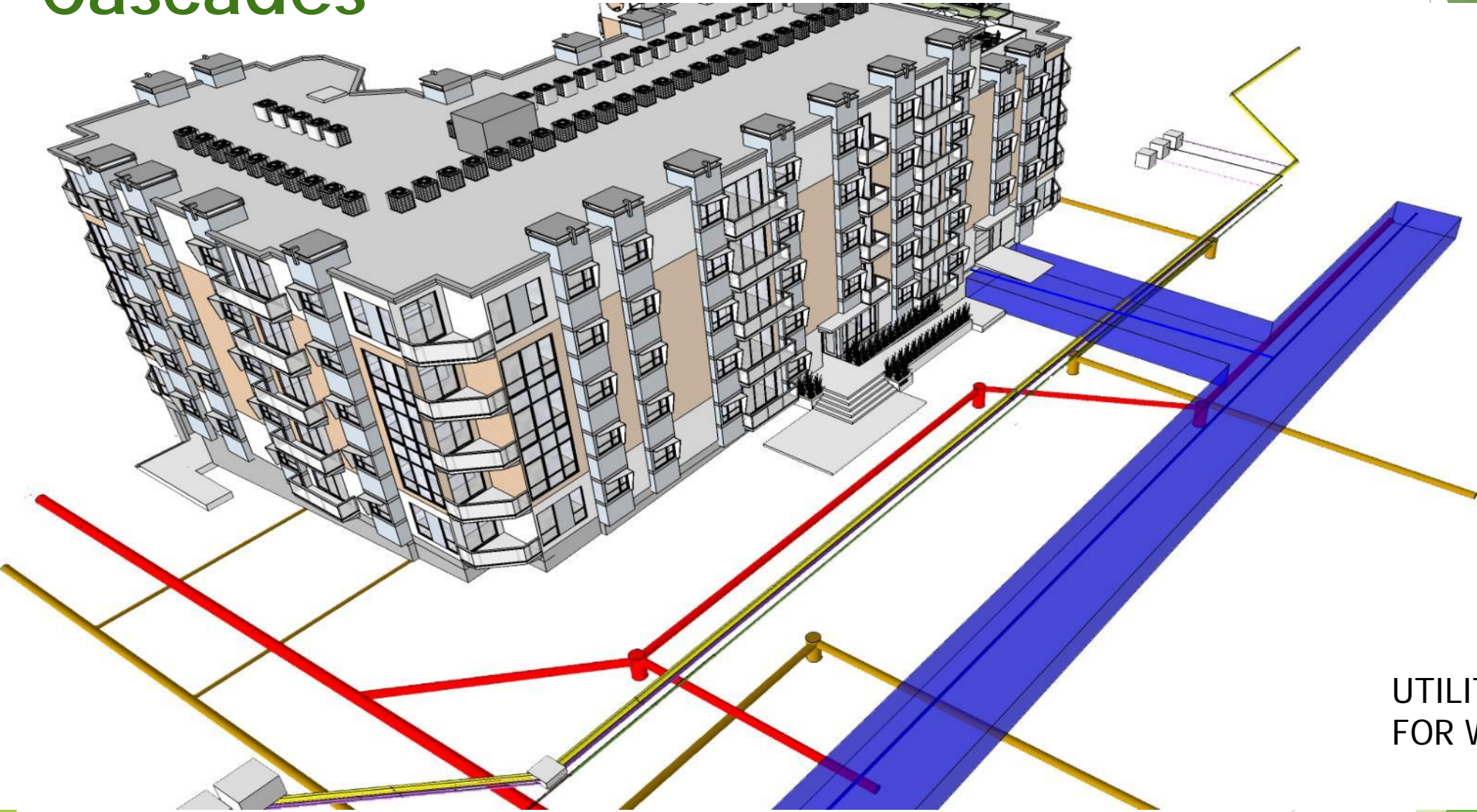
# Cascades



UTILITY CLEARANCE FOR GRAVITY SEWER LINE



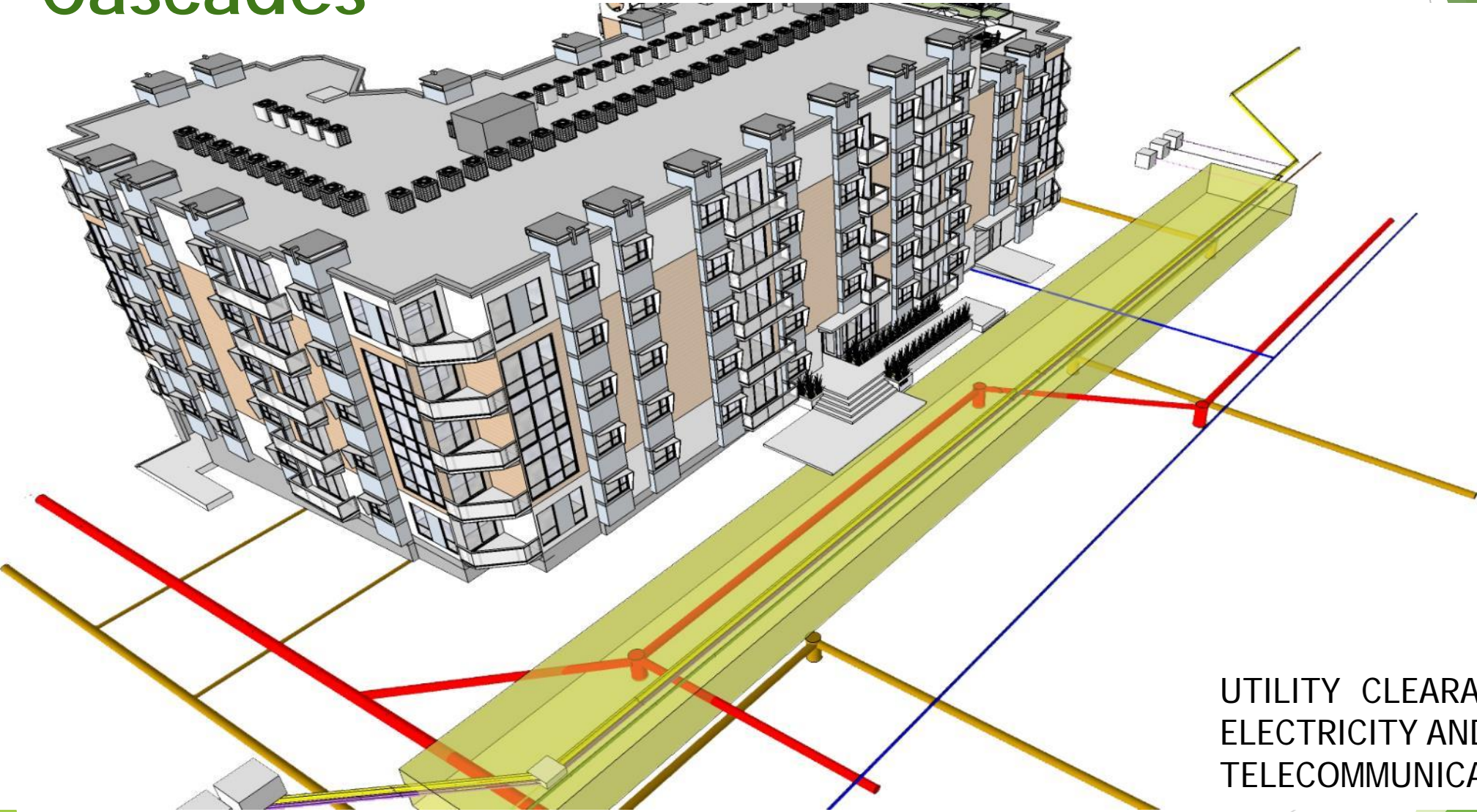
# Cascades



UTILITY CLEARANCE  
FOR WATER LINE



# Cascades



UTILITY CLEARANCE FOR  
ELECTRICITY AND  
TELECOMMUNICATION LINES



# Cascades



ALL UTILITY  
CLEARANCES



# Cascades



UTILITY CLEARANCES &  
STREETScape CONFLICTS



# Cascades



COMPROMISE IN  
STREETSCAPING



# Cascades



CITY'S VISION



# How Do We Achieve the Vision?





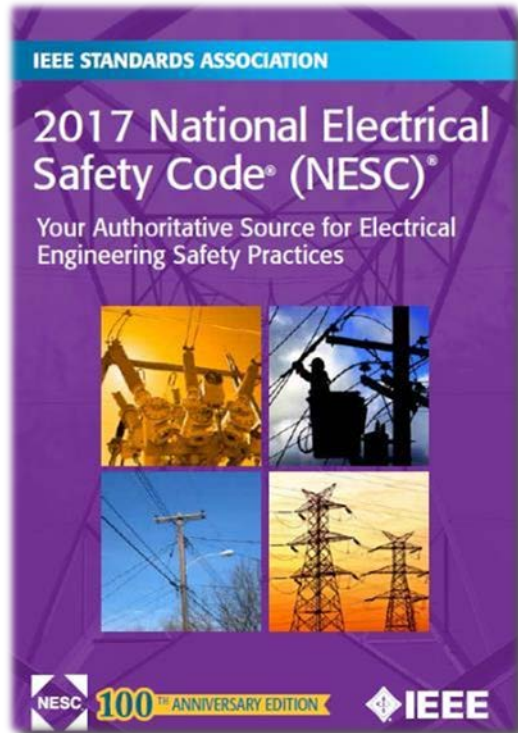


▶ ENERGY DELIVERY

Jim Mathews

# Electric: Existing Standards and Proposed Solutions

All GRU electrical standards have to meet or exceed National Electric Safety Code (NESC)

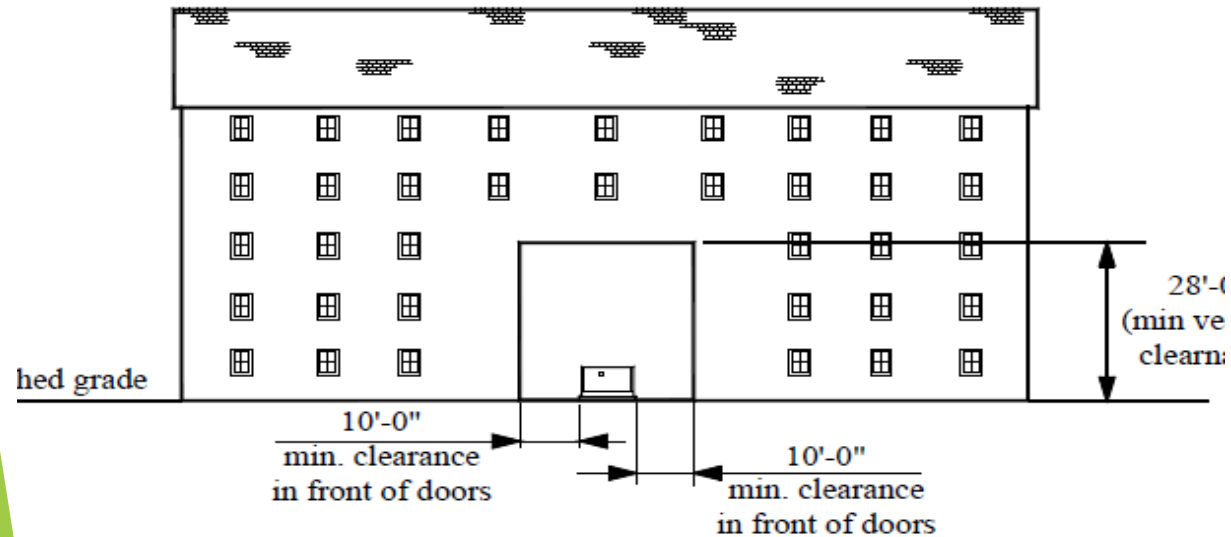


GRU electric easements are needed for equipment placement, safety and facility maintenance



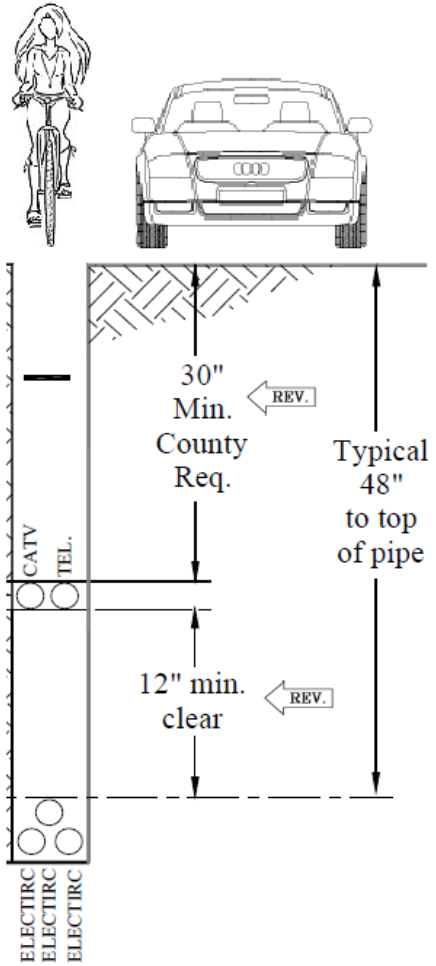


# Electric: Existing Standards and Proposed Solutions



- ▶ Easements to the "sky" may not be required
- ▶ Notch out building to a minimum height

# Electric: Existing Standards and Proposed Solutions



Allowing primary conduit/cable to be under the roadway



# Electric: Existing Standards and Proposed Solutions

Transformer vault has been in the GRU Standards for 5+ years and used at the I-Hub



Behind motorized metal door



Oil drains in floor if transformer fails

# Electric: Existing Standards and Proposed Solutions

*Ideas from Other Towns*

Painted above-ground equipment with town's History?



ED developed guidelines for above-ground electric equipment painting supporting the "Art in Public Places" project



# Electric: Cost and Liabilities

## ▶ Costs

- ▶ The developer is responsible for the purchase and installation of the electrical infrastructure (conduits & concrete pads)
- ▶ Developer would have to purchase planters
- ▶ GRU will be held harmless for moving planters

## ▶ Liabilities

- ▶ Electric does not have the equipment to routinely break through concrete duct banks
- ▶ Unscheduled outages may take longer to correct if in a duct bank or under pavement
- ▶ Extensions or modifications to concrete duct banks require more labor

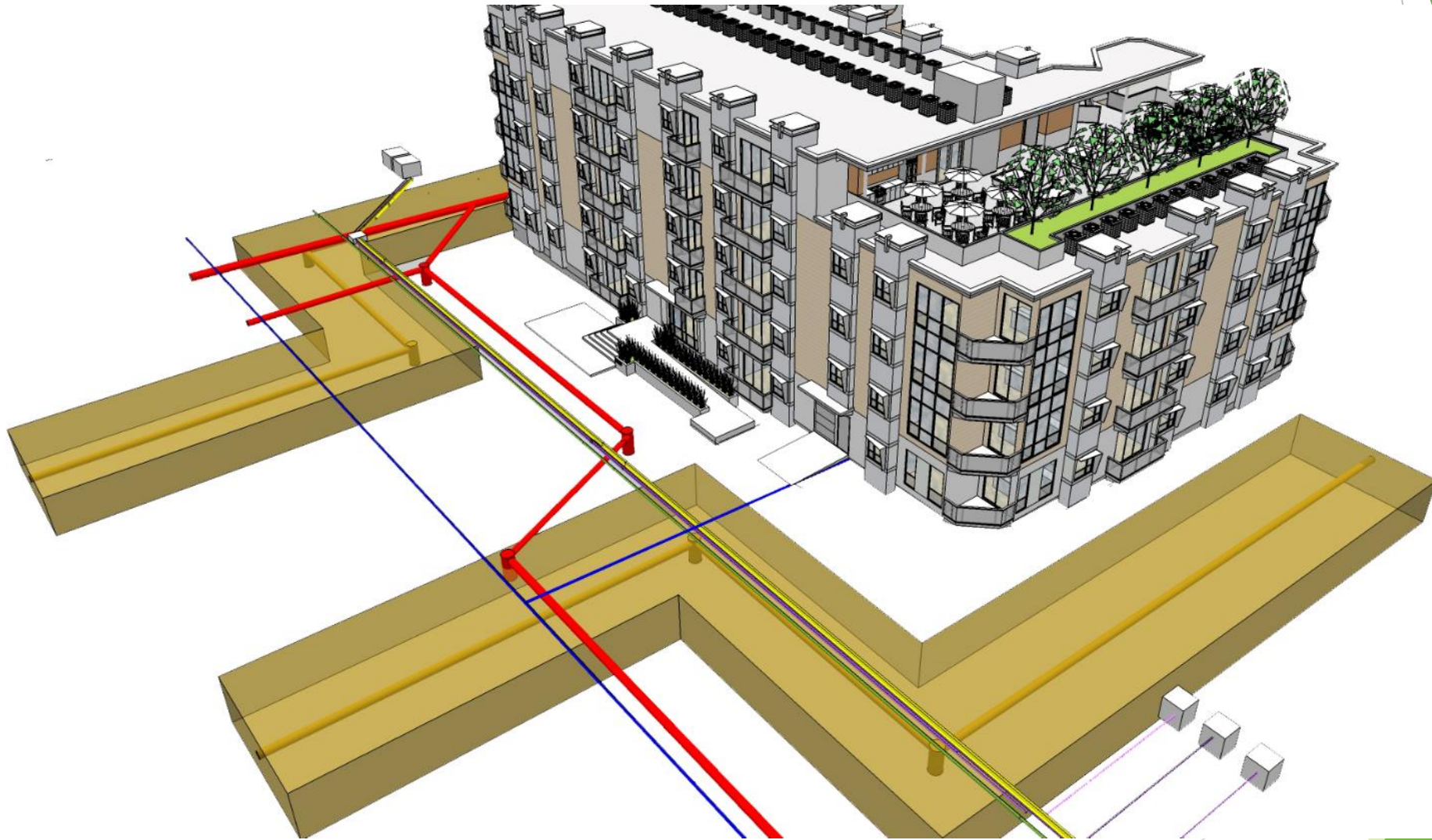




▶ WATER/WASTEWATER

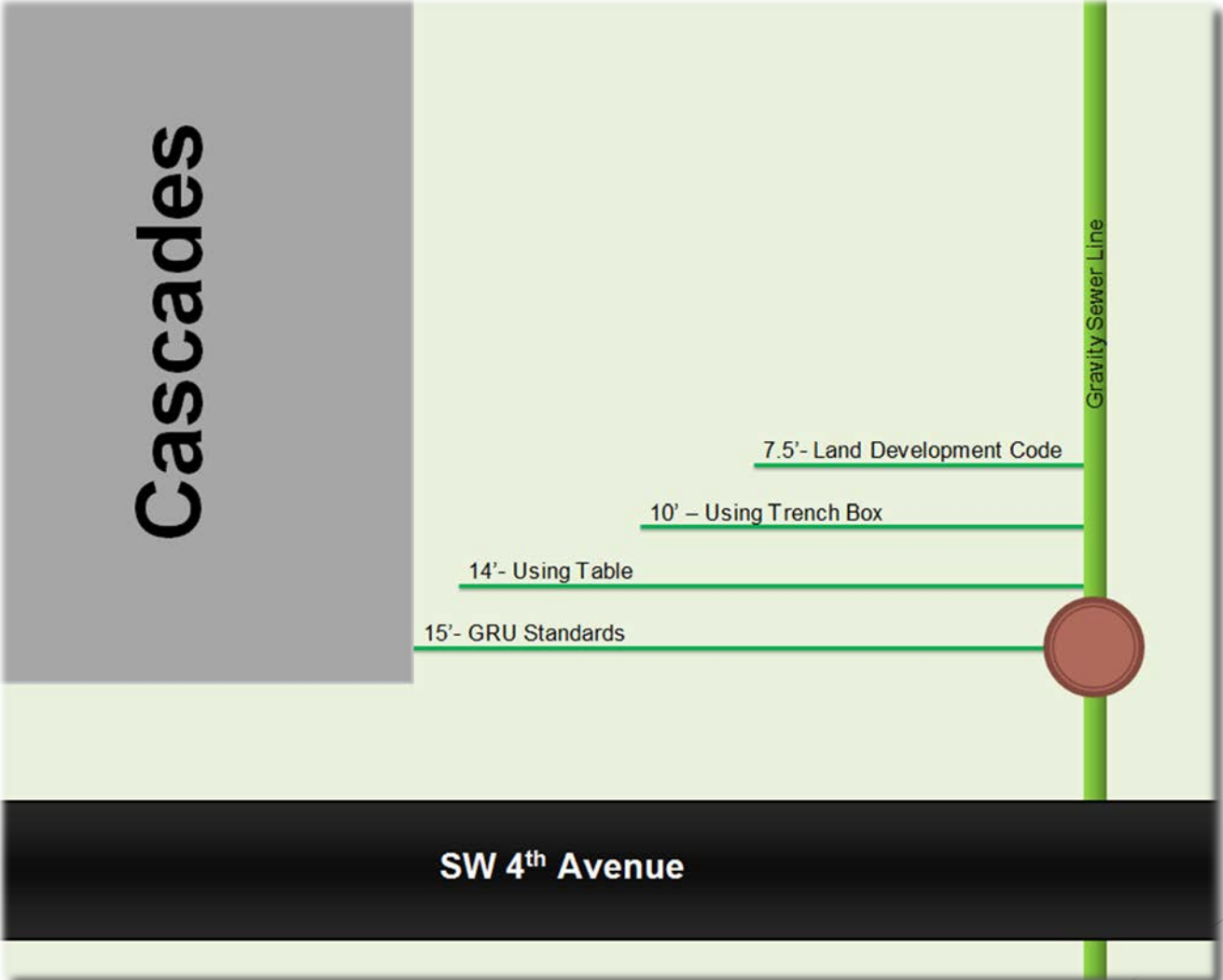
Debbie Daugherty

# Water/Wastewater Project: Cascades



# Water/Wastewater Project: Cascades

## Existing Standards / Proposed Solutions





# Water/Wastewater - Cost & Liabilities

- ▶ Lost buildable area for redevelopment / civic space
- ▶ Constructability and maintenance conflicts
- ▶ Accessibility for equipment and personnel safety



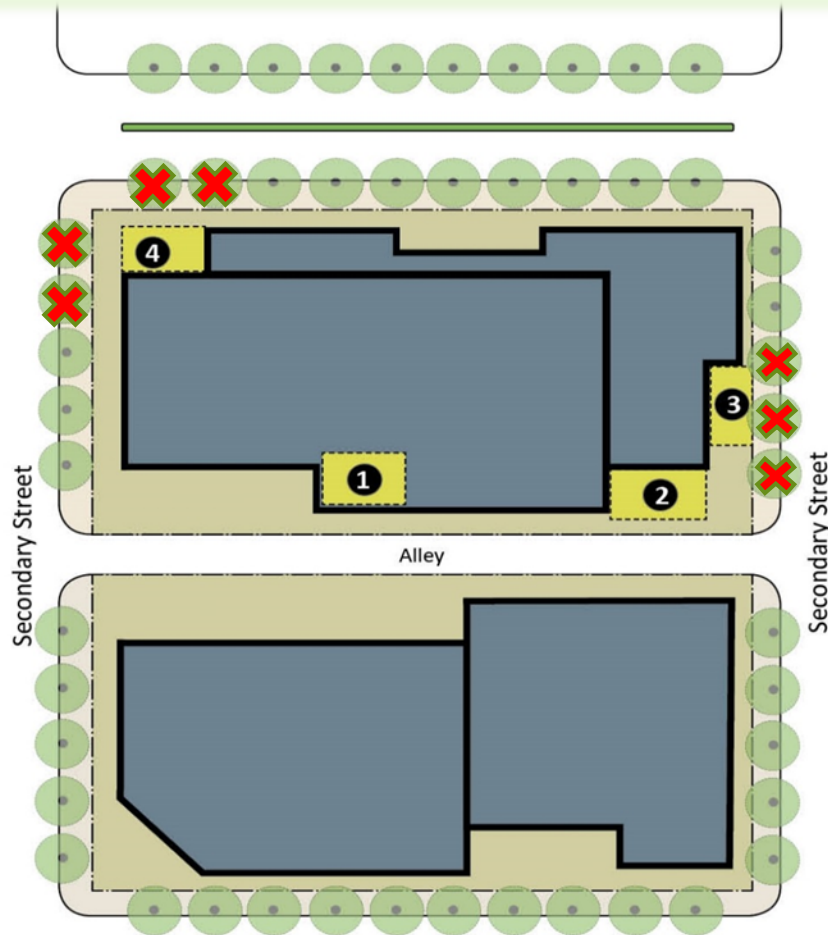
# Water/Wastewater Project: Hub On Campus

## Existing Standards and Proposed Solutions

- ▶ Existing Standard
  - ▶ Meter at right-of-way line
  - ▶ Meter outside of sidewalk
- ▶ Current Solutions In Existing Standard
  - ▶ Building notch out
  - ▶ Meter room
- ▶ New Solution
  - ▶ Meter in sidewalk



# Streetscape vs. Utilities: Options Create Consequences



- 1** Buildings shall be designed to accommodate utilities within the building envelope to the greatest extent practicable.
- 2** Locate utilities to the rear of the site along a rear access alley.
- 3** Locate utilities along secondary street and screened from direct public view, where option 1 and 2 are not possible.
- 4** Where all previous alternatives are not possible, utilities may be placed along primary street provided they do not conflict with the streetscape requirements.

*Utility Easements Required*





# URBAN FORESTRY

Joe Wolf

# Utility Infrastructure and the Urban Forest

- ▶ What did we find?
  - ▶ We are not alone
  - ▶ Other utilities and tree advisory boards agreed with offsets and separations
  - ▶ Plan review process was applauded

# Utility Infrastructure and the Urban Forest

- ▶ What do we want?
  - ▶ A safe and reliable utility infrastructure
  - ▶ A healthy and diverse urban forest
  - ▶ Resolve conflicts with solutions based on sound scientific research



# Immediate Considerations

- ▶ Reviewing easement requirements around equipment and facilities
- ▶ Reviewing the Urban Forest Ecological Analysis
- ▶ Plant the right tree in the right place
- ▶ Investigate new technologies in root barriers
  - ▶ Pro - separations reduced
  - ▶ Cons - product lifespan and effectiveness, cost
- ▶ Explore possibilities with planters and other above-ground solutions
  - ▶ Pro - conflict resolved
  - ▶ Cons - no canopy trees

# Future Considerations

- ▶ Ensure LDC and GRU requirements are consistent
- ▶ Embrace the overlaps between Standards and Tree Ordinance Committee
  - ▶ The cycle of reforestation in Gainesville's Urban tree canopy
  - ▶ Reduced payments to the Tree Mitigation Fund to offset costs in solving conflicts
- ▶ Reduce the economic impacts to developers and staff - time and \$\$

# Recap

- ▶ Development review process
- ▶ Exceptions create other challenges
- ▶ Changes will not remove all challenges and exceptions will always exist
- ▶ Solutions exist but are not in writing
- ▶ New solutions to be put in writing and implemented



# Recommendations

- ▶ *Team to continue working on appropriate modifications to align Utility Standards and LDC to result in high quality public spaces*
- ▶ *Continue to work on related efforts that help implement the City's vision (Public Works design manual, Dig Once policy, FDOT standards)*
- ▶ *Team will define practical timeline and implement solutions by December 2017*

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# ▶ QUESTIONS AND ANSWERS

*THANK YOU!*