Centralized vs. Decentralized Infrastructure

2019 Symposium for Sustainable Infrastructure 3
The City We Have, The City We Want

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Worth Discovering
Aurora Quick Stats

- Third largest city in Colorado (and safest)
- Largest employers:
  - Anschutz Medical Campus – 21,000
  - Buckley Air Force Base – 12,000
- New Areas of Interest
  - Gaylord Hotel, Innovation Campus, Distribution Centers, Mixed Use Living
- Award Winning School Districts
  - Aurora and Cherry Creek
- Accessibility:
  - DIA (closest metro city) – 10.5 miles
  - Denver Tech Center – 10 miles
  - Downtown Denver – 15 miles
  - I-70, I-225, Lightrail R Line
- Fittest, Happiest, and “Parkiest” City
Centralized vs. Decentralized

- Water (one water – water, wastewater, stormwater)
- Energy
- Transportation
- Parks and Recreation
- Land Use

Life Sustaining Services
Centralized Infr. Considerations

- Source and supply
  - Wet vs. dry and water law
- Large/expensive problems to solve
  - RO
- Security and regulation
- Cost efficiency
  - Public funded, operated, and maintained infrastructure
- Equitable levels of service
- Land Use
  - Origination of “Downtown”
  - Supermarkets
  - Delivery Services
Centralized Infr. Considerations

- Cramped utility corridors and land loss
- Energy Production
- Infrastructure sizing – Peaks
  - Batteries, tanks, arterial roadways, fireflow
- Public Services
  - Traffic Control
  - Public Safety
  - Planning/Zoning
Decentralized Infr. Considerations

• Household Utilities
  • DPR (Remote sensors, pumping energy, decreased water loss)
  • Rooftop Solar (Batteries)

• Stormwater runoff
  • LID vs. detention

• Transportation
  • Arterials/interstates (speeds and traffic control)

• Landuse
  • Placetypes

• More or less infrastructure overall?
  • Equitable?
Other Considerations

• Multi-use facilities
  • Stormwater ponds/parks, solar panel roadways, floating solar, homeless shelter offices)

• Technology and Tech Savvy Customers
  • Remote sensing

• How change happens
  • Necessity (regulations)
  • Development community
  • Passion/preferences of the people
    – Centralized, less maintenance, ease of access, experiences

• Infrastructure Funding
  • Public education
  • Metro Districts
Centralized vs. Decentralized?

- Combination and factor dependent
- Don’t do things how they have always been done
- Re-evaluate (every five years) with the “landscape” of that time
- Continue to provide efficient/cost effective services at an appropriate LOS

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