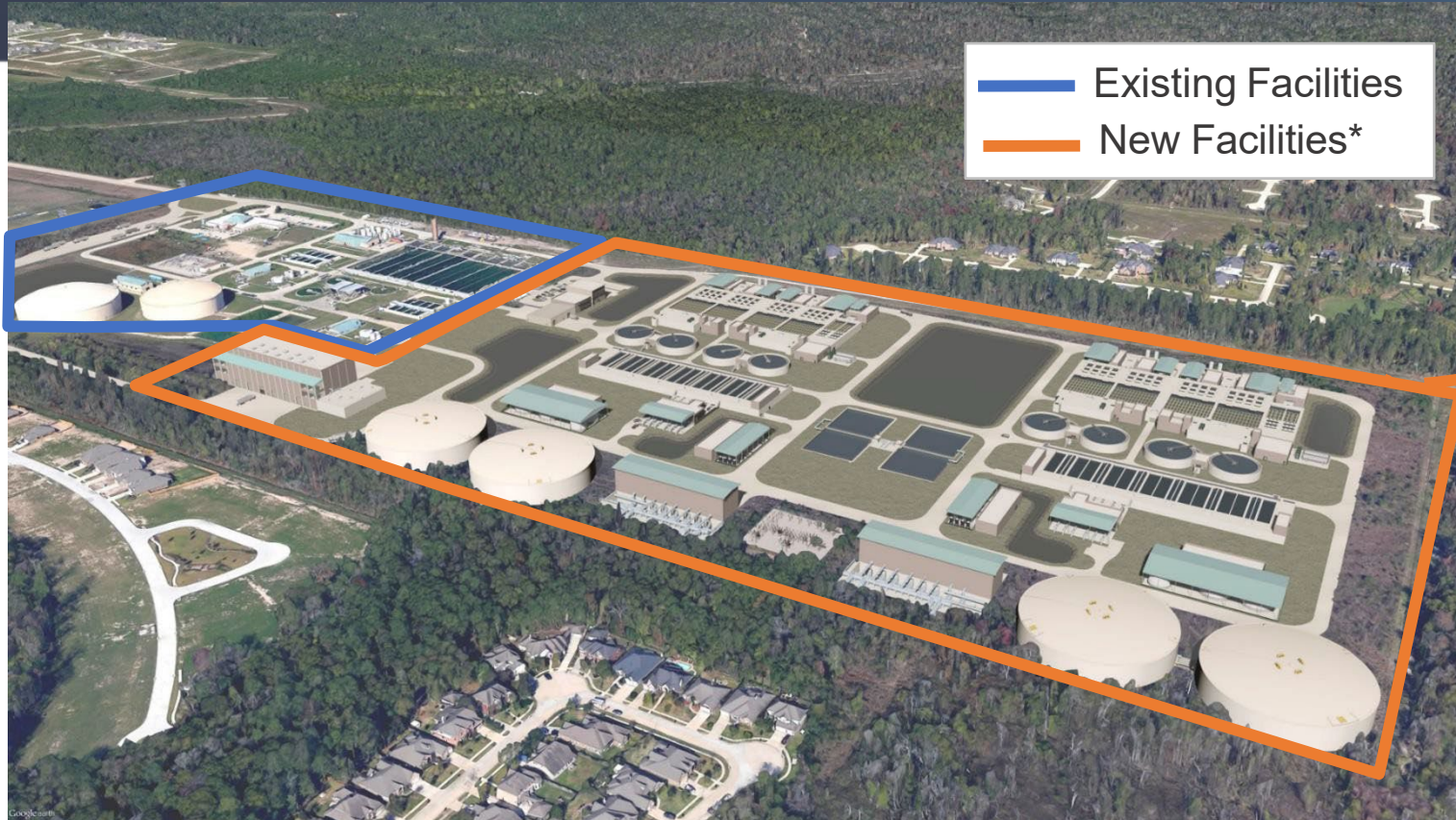




**ENCHANTED ROCK**  
**The Power is On.**

## **City of Houston Implements Largest U.S. Microgrid Project for Water Purification Plant**

# Houston, TX Northeast Water Purification Plant



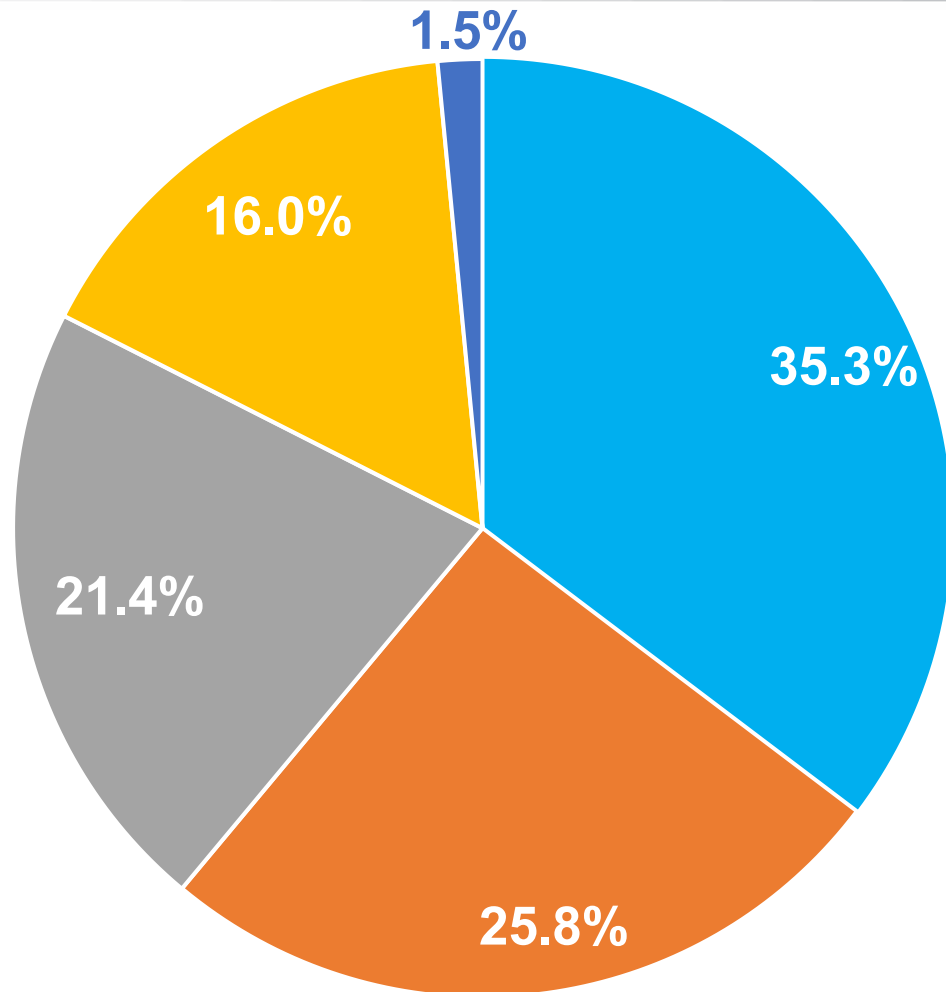
**Intake Pump Station**

**Raw Water Pipelines\***

## Treatment Facilities

\* new facilities shown are renderings of the completed project

# Project Partners



- North Harris County Regional Water Authority
- West Harris County Regional Water Authority
- North Fort Bend Water Authority
- City of Houston
- Central Harris County Regional Water Authority



# Standby/Emergency Generation System Services



# Background

- Hurricane Ike (September 2008) led to the 81<sup>st</sup> Texas Legislature passing Senate Bill (SB) 361 on June 19, 2009
- SB 361 required Texas Commission on Environmental Quality (TCEQ) to adopt standards for emergency operations by affected utilities, including the provision of standby/emergency power
- Water treatment facilities in Texas are regulated by TCEQ through the Texas Administrative Code, Chapter 290 – Public Drinking Water
- Per Subchapter D, §290.39: “Each affected utility that supplies, provides, or conveys surface water...shall include in its emergency preparedness plan...provisions for the actual installation and maintenance of automatically starting auxiliary generators...”



# Options For Compliance

- Direct purchase and maintenance of generators by City
- Contract with third party generator equipment/service vendor
- Benefits to third party option:
  - Zero/reduced capital cost
  - Minimal operation and maintenance responsibility and cost
  - Minimal risk during storm/grid outage events
  - Improved reliability
- City and Authorities jointly-agreed to pursue the third party option

# City System Design Criteria

- Natural gas or diesel fuel source
- Provide standby/emergency power to treat 50% (minimum) of the NEWPP Expansion total capacity
  - 21 mega volt amp (MVA) of generator capacity – 160 million gallons per day (MGD) treated water capacity (of total 320 MGD)
  - 24 MVA of generator capacity – 200 MGD treated water capacity (of total 320 MGD)
- Capable of operating during all grid outage periods regardless of duration
- Located within limits of dedicated 22,100 SF area on NEWPP Expansion site

# Benefits To City of Houston

- Vendor responsible for design, permitting, supply, installation, operation, maintenance, control, and compliance of generators
- Vendor contractually obligated to provide standby/emergency power during periods of grid outage (premise for “reliability as a service” contract)
- Allows City to:
  - Comply with TECQ regulatory requirements
  - Zero/reduce capital cost expenditures
  - Minimize future operation and maintenance costs
  - Increase reliability of treatment and production during emergency events
- Similar approach successfully implemented at Existing NEWPP facility





# Benefits To Vendor (Enchanted Rock, LLC)

- Participation in revenue-generation programs administered through the Electric Reliability Council of Texas (ERCOT; operator of Texas electric power supply grid)
- Power a portion of the NEWPP Expansion during non-emergency/grid outage periods, effectively offsetting the power draw from the grid
- Capitalize on freed-up capacity by selling it back to the grid (ERCOT) for use by other customers
- This available capacity is highly-coveted during periods of peak demand



# Basic Contract Terms & Cost



- 20-year duration
- Master Services Agreement and Ground Lease Agreement
- Vendor has the ability to enter into revenue generation programs
- City has the option to purchase generator equipment at the end of the contract term
- Up-front capital cost to the City is \$0
- Operations costs limited to reimbursement for fuel usage during emergency/grid outage periods
- 5% of Vendor annual net revenue share to City



# Enchanted Rock exceeds at delivering resiliency in face of emergencies



## ***Texas Winter Storm: What to Know***

Power outages and no running water have left Texas and other parts of the South still feeling the effects of a deep freeze that swept the region earlier this week.

**The New York Times**

### WINTER STORM 2021

## **Winter storm could cost Texas more money than any disaster in state history**

Lawmakers and analysts say it is too soon for an exact estimate, but the financial damage from the storm has left state lawmakers scrambling to account for the storm in the middle of the 2021 legislative session.



### WINTER STORM

## **At Least 57 Killed in Texas' February Winter Storm: DSHS**

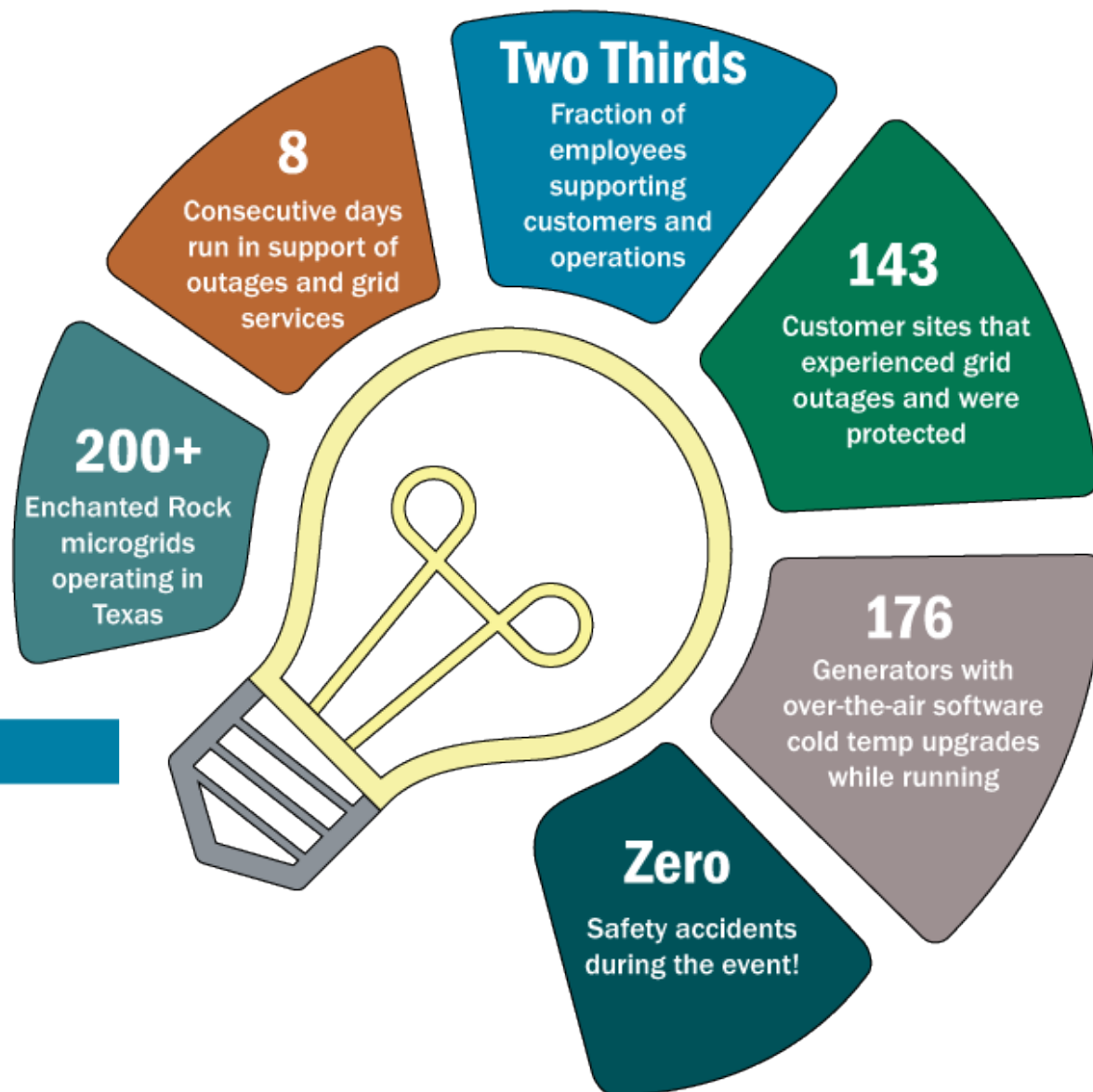
State health department says most deaths caused by hypothermia, warns more deaths may be tied to last month's storm







# Enchanted Rock Feb 2021 Texas Winter Storm Microgrid Performance



# ENCHANTED ROCK BY THE NUMBERS



**276** Operational  
Microgrid Sites



**11,245** Hours of Utility  
Outages Covered



**569** MW  
Commissioned



**705,853** Unit  
Run Hours



**259** MW Under  
Construction



**99.9998%** Combined  
Reliability

THANK YOU