# Edisto Basin Water-Demand Projections Update

Alex Pellett
Hydrologist
S.C. Department of Natural Resources
Land, Water and Conservation Division

Edisto River Basin Council – Meeting (Virtual)
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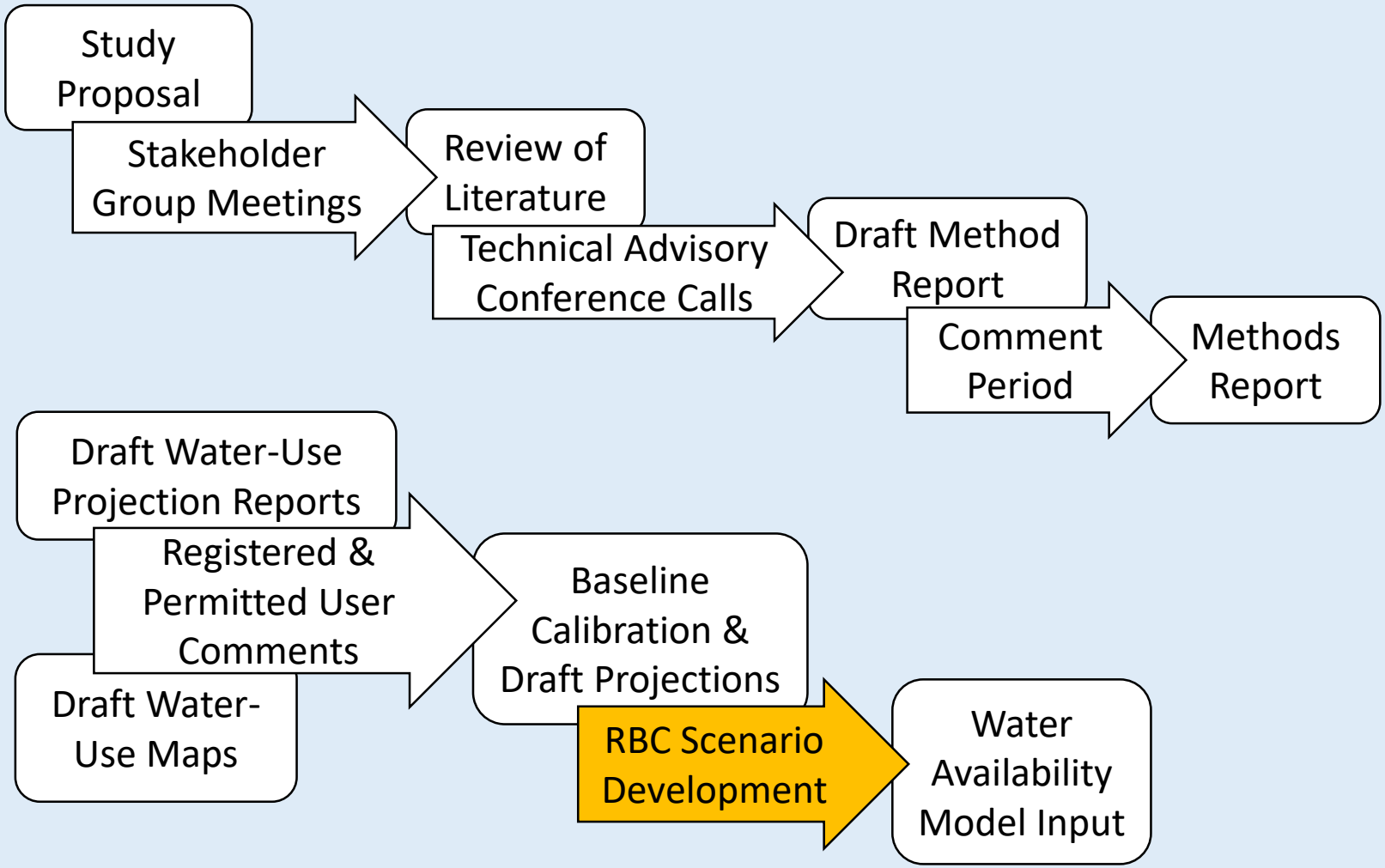
# Stakeholder Input Process



# Future Work

**Routine updates:**

- ✓ Update water use data to 2019.
- ✓ Update electricity projections from 2020 IRP.
- ✓ Update industry projections from 2020 EIA AEO.
- ✓ Use annual projections instead of step function interpolation for groundwater model input.
- Publish projections summary and detailed reports.

**Recommended adjustments:**

- Agriculture irrigated area in the high-demand scenario could grow faster.
- ✓ Consider using additive high-impact factor instead of multiplicative.
  - High-impact for public supply is low.
  - High-impact factor for agriculture is high in some cases.

**Other Potential Enhancements**

- Adjust projections by survey questions (privacy issue?).
- Re-send custom reports to permittees.
- Model return flows, discharges, and consumptive use.
- Aquifer Storage and Recovery, Wastewater Reuse, De-watering.
- Efficiency Improvements.
- Public Supply
  - Service area population projections.
  - Distinguish different kinds of water use.
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- Agriculture
  - Field-scale irrigation modelling.
  - Econometric modelling of different crops.
  - Constraints on irrigated area.

# Scenarios

## Business-as-usual Scenario

Water Demand = Driver * Rate * Seasonality

## High-Demand Scenario

~~Water Demand = Driver * Rate * Seasonality * High Impact Factor~~

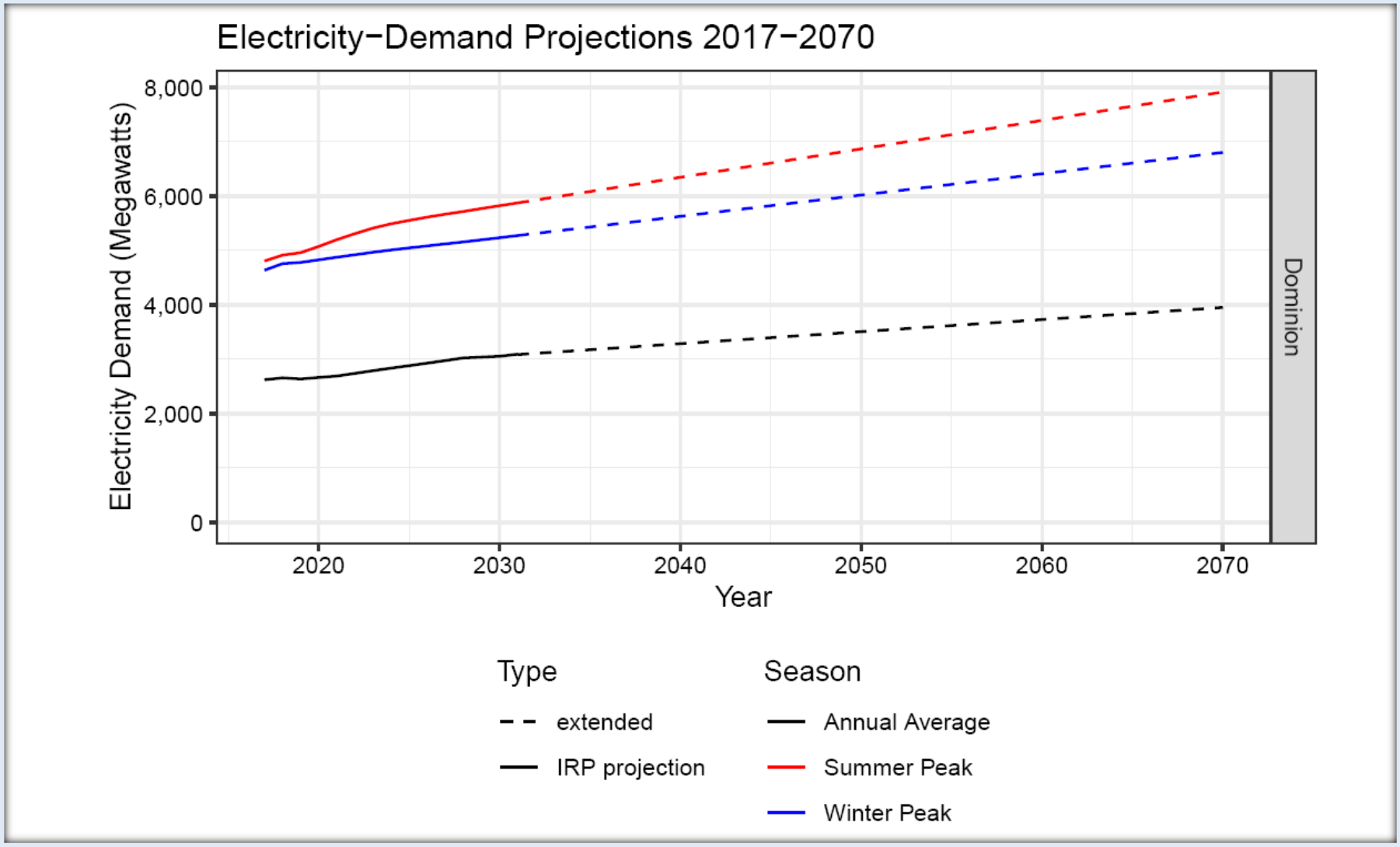
Water Demand = (Driver * Rate * Seasonality) + High Impact Factor

*High Impact Factor is not used for groundwater model input.*

High Impact Factor is calculated as:

- ~~Monthly 90th percentile impact of weather~~
  - ~~As described in the methodology report.~~
  - ~~Used for agriculture, and any water-use systems for which weather was found to have a significant impact on water demand.~~
- Seasonal 90th deviation from baseline median rate
  - Weather was not found to have a significant impact on all water-use systems.
  - Calculated this way, the High Impact Factor is “agnostic” to the cause of high demand.
  - Described in upcoming addendum to the methodology report.

# Thermo-electric Electricity Demand



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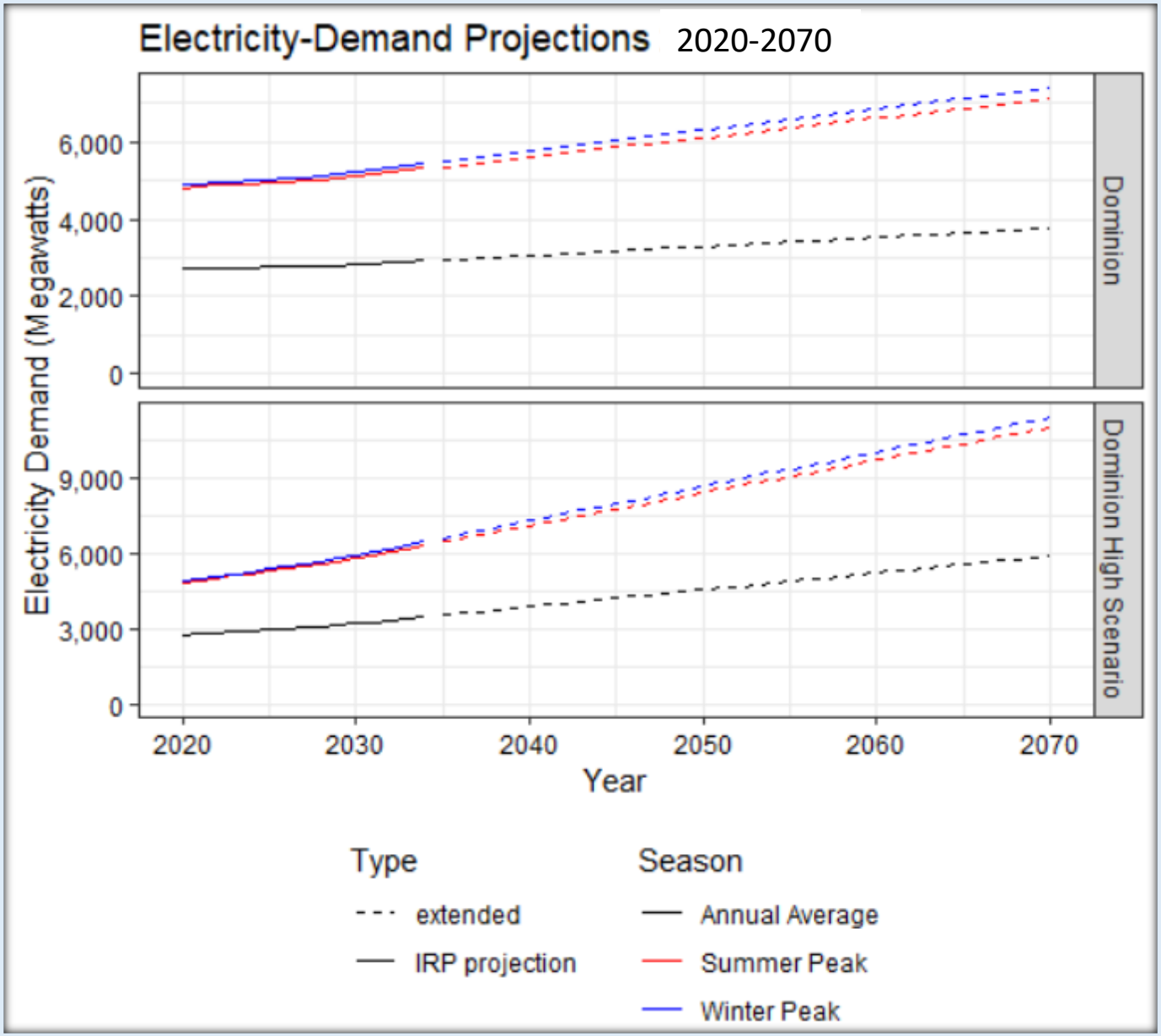
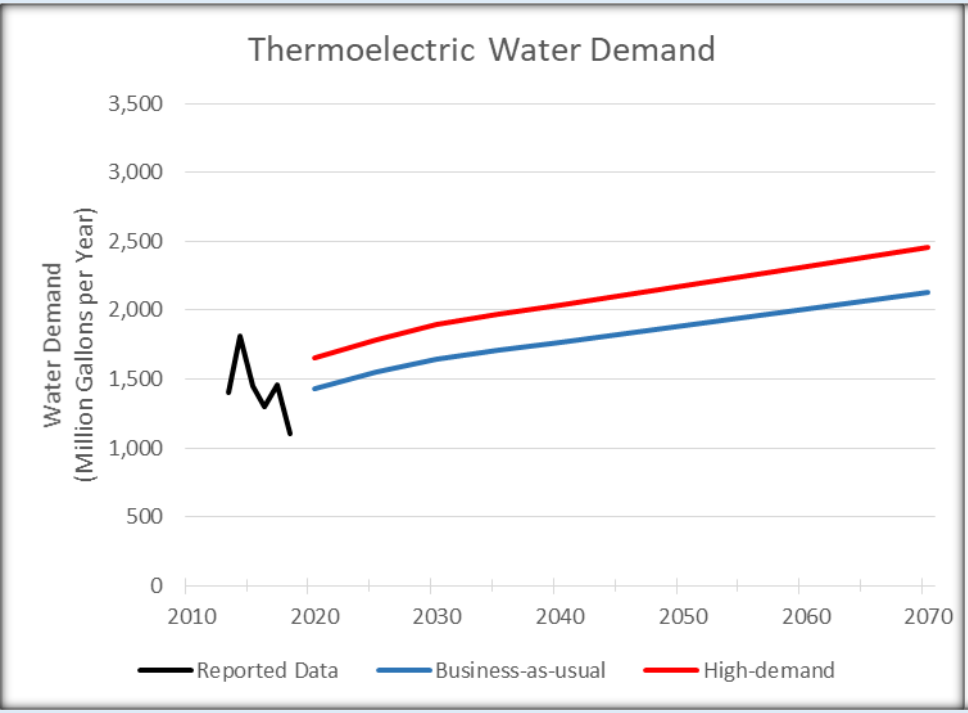


# Edisto Thermo-electric Results

August Draft

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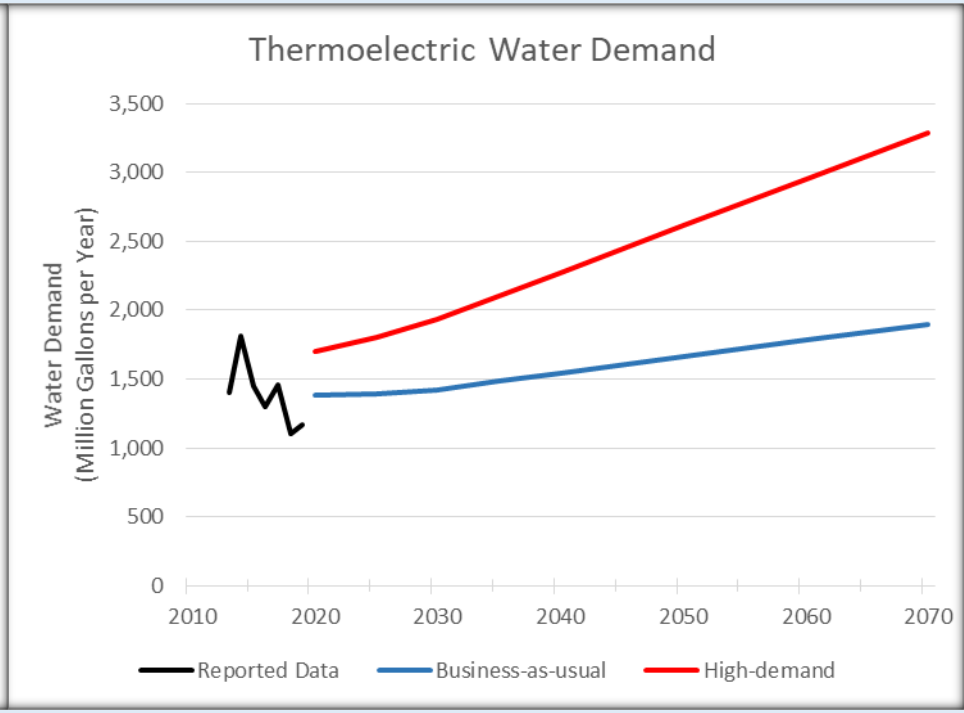
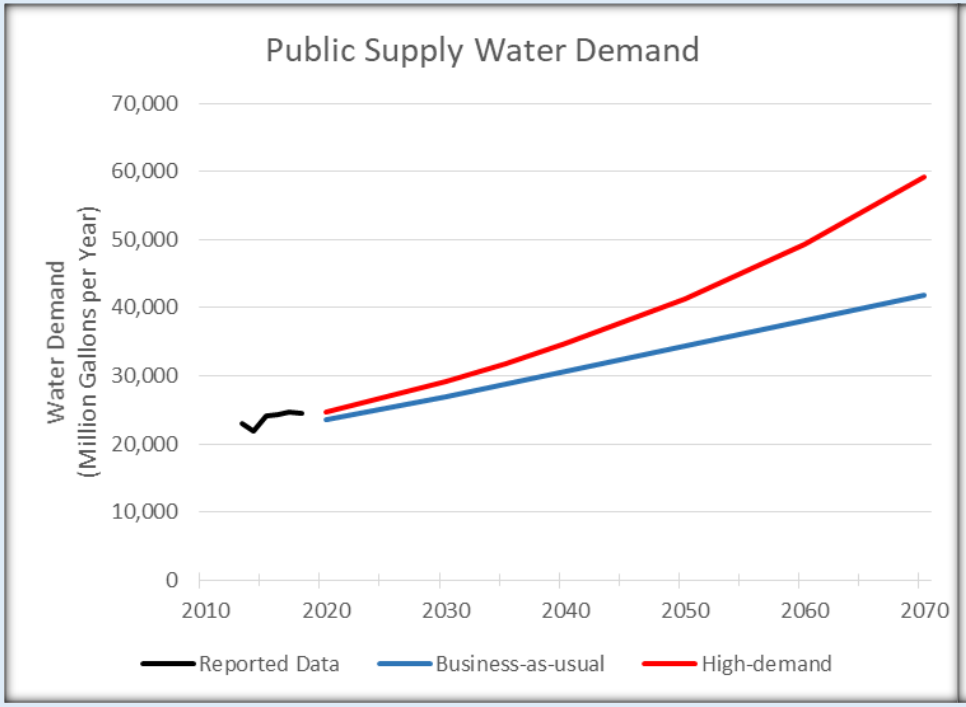



- 2019 water use was lower than average over the baseline.
- The updated business-as-usual electricity demand projections are lower.
- The electricity projections now include a high-demand scenario.

# Edisto Public Supply Results

August Draft

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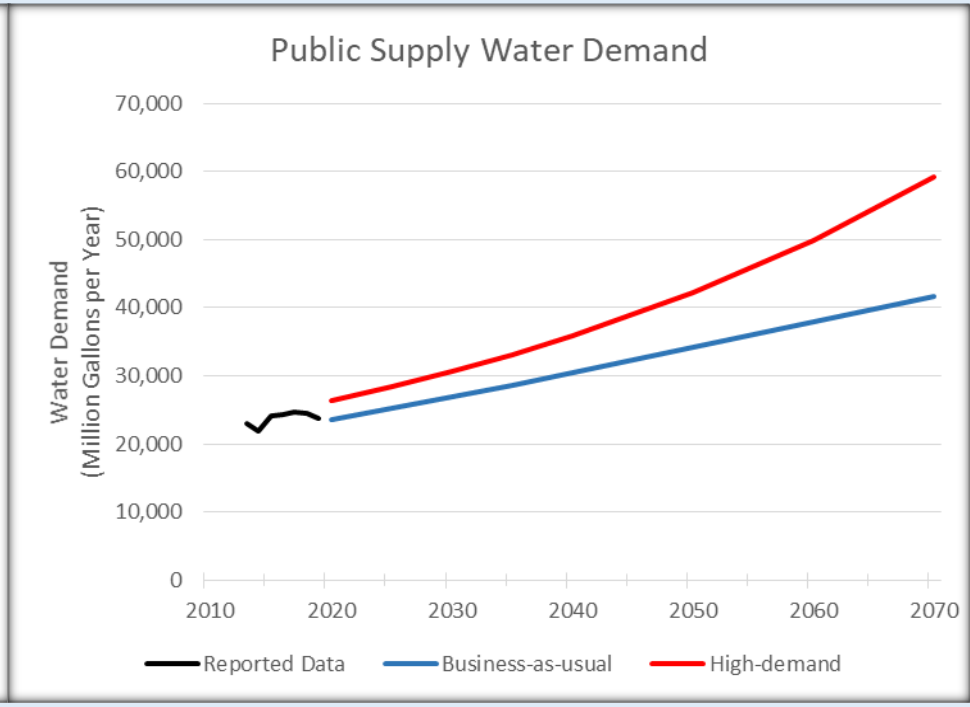
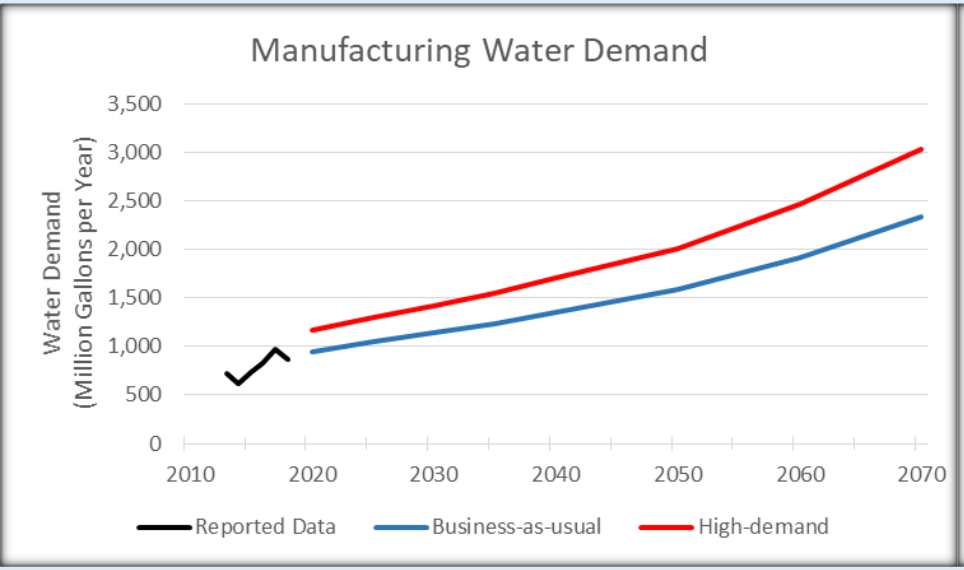



- 2019 water use was slightly lower than some previous years, but the effect is negligible.
- Population projections were not modified.
- The additive high-impact factor provides a greater difference between the two scenarios in the short term.

# Edisto Manufacturing Results

August Draft

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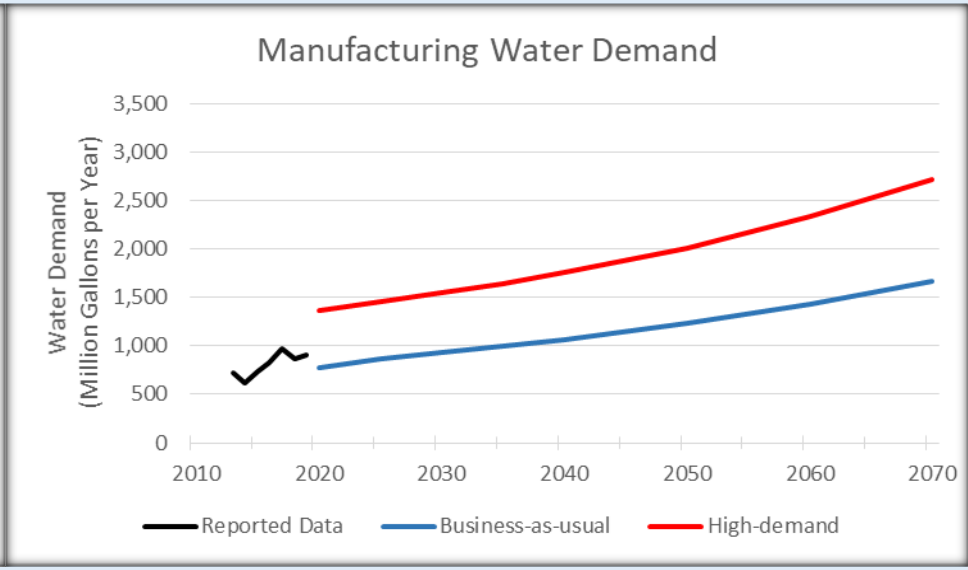
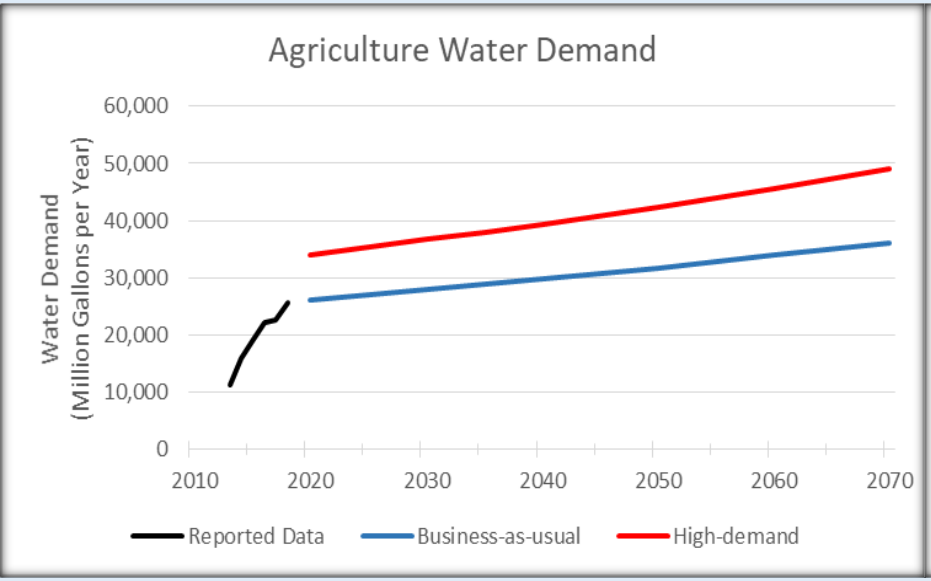



- The updated projections of economic production (from the 2020 US Annual Energy Outlook) are generally lower than the previous edition.
- The additive high-impact factor provides a greater difference between the two scenarios.
- Edisto manufacturing water use is almost entirely groundwater, so the high-demand scenario will be a bit less when input in to the groundwater model.

# Edisto Agriculture Results

August Draft

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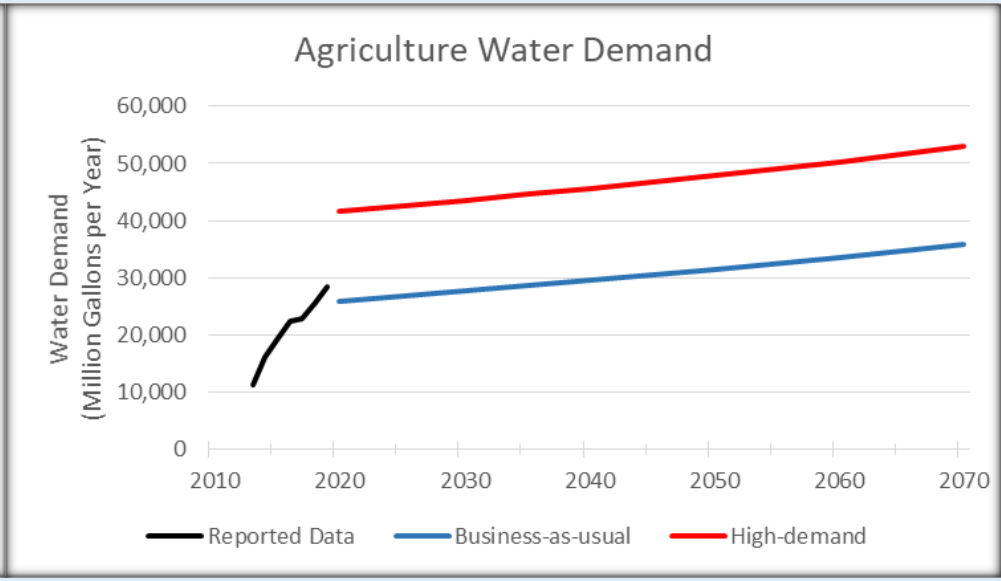


Reported agricultural water use in the Edisto basin continued to increase in 2019.

The additive high-impact factor increased the spread between the two scenarios.

*Over 75% is groundwater demand. These plots represent results of the high-demand scenario including the monthly high-impact factor. It is not realistic to apply the monthly high-impact factor continuously over time, so the high-demand scenario input for the groundwater model will not be this high.*

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