

RESILIENT BY DESIGN



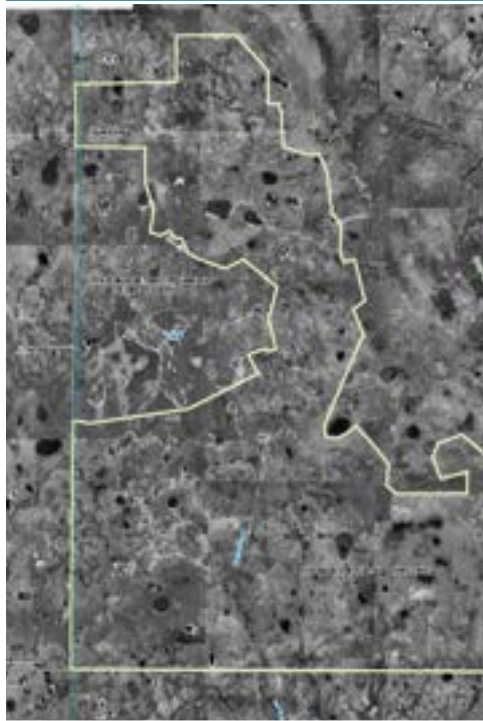
KITSON
— & PARTNERS —

Jennifer Languell, PhD
Green Building, Sustainable Development &
Resilience Advisor to Babcock Ranch



Largest Land Purchase in Florida's History – Historic Four Party Agreement - Area 6 Most Disturbed Land





LOCATION & LAND DICTATED TOWN PLAN

- 1940'S Historic Aerial Photos
- Topography
- Trail Maps

PLANNING CHARRETTES

Social:
 Ex) Facebook or Linked In for Balbock
 → capturing part of community
 → match you up with neighbor with similar interests

Land
 - farmers market
 - organic gardening → community, local, personal
 - edible landscaping → neighborhood
 → create and build community, organic, self-sufficient (or at least local)

Safety
 - community walk plan for businesses

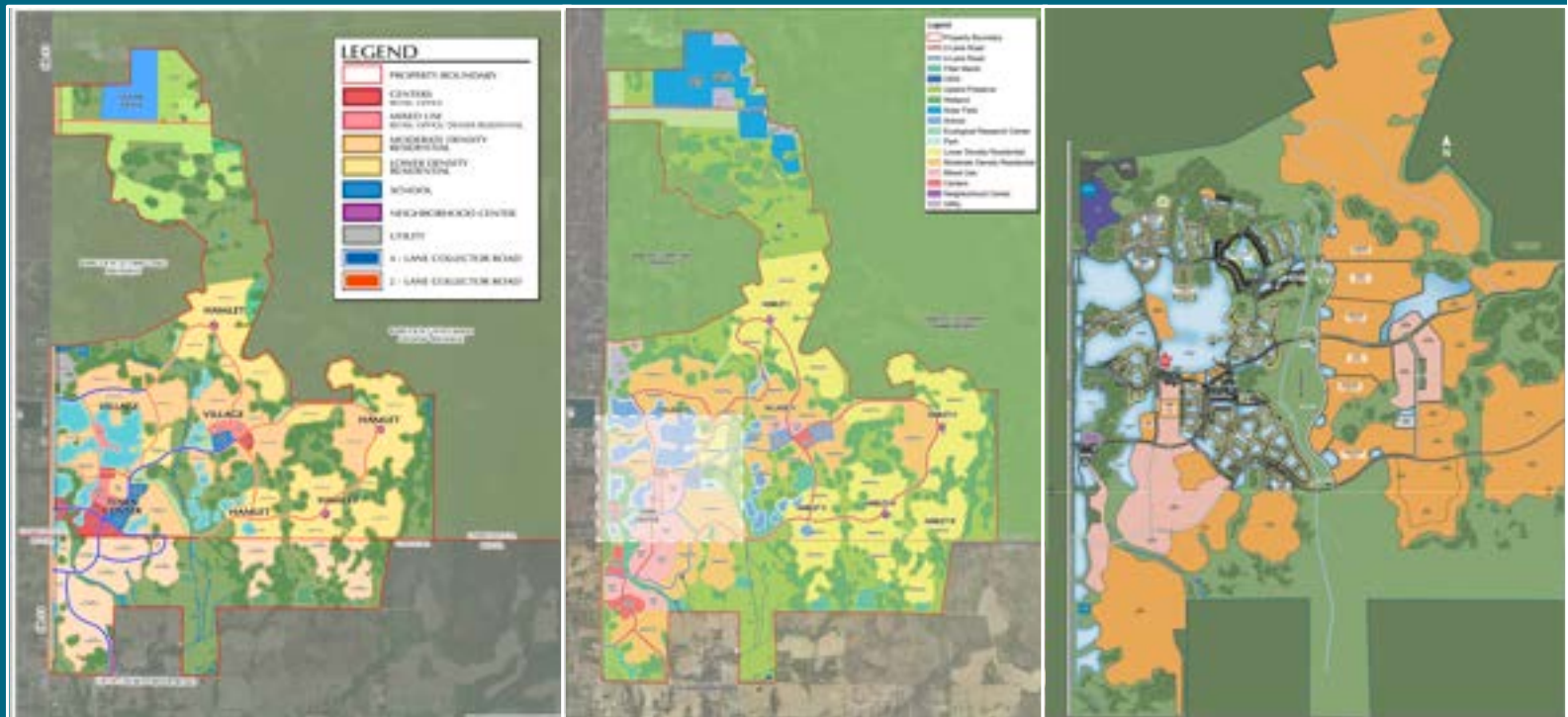
BALBOCK LIFE THEMES
 *RELATIONSHIP:
 - COMMUNITY → SAFE
 - NOSTALGIA
 - CONNECTION - PERSONAL
 + AFFINITY GROUP - POWER BRAND
 - ATTRACTED DEMOGRAPHIC
 - DAILY RITUALS - SPONTANEOUS
 - EVOLVING - SPECIAL

Land ↔ Value (Access)
 Land: preservation, restoration, conservation
 Value (Access): circulation, resource efficiency, education
 Convenience: positive benefits, access-
 Body: Fresh/Local

Urban-suburban-rural - "plural" living
 MIND: safety - as a measure of health
 Pets: disconnect - connection
 Friendly - convenience
 Immersion
 Social: connected, support, safety
 Family: create community traditions - free childcare

PLAN EVOLUTION

- FGBC
- Firewise
- Bike Friendly Communities
- ULI LID
- LEED ND
- NGBS

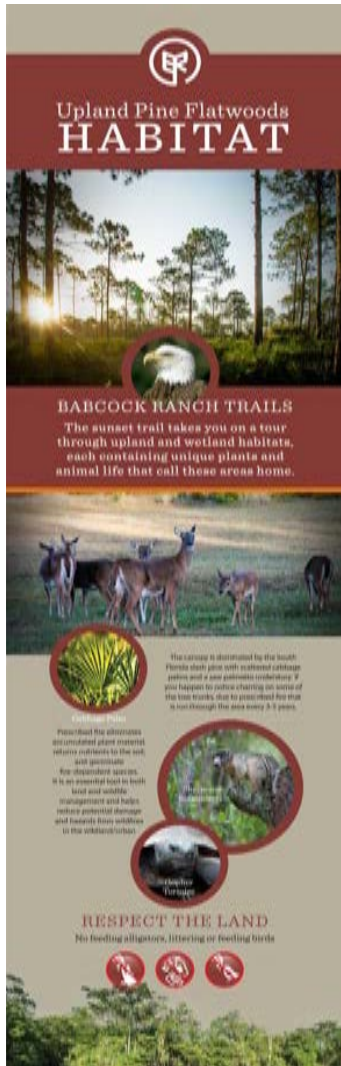


HERCULES'S WEIR BEFORE & AFTER



RESTORED
FLOWWAYS AND
HABITAT





ENVIRONMENT & SUSTAINABILITY



- Preservation, Conservation & Restoration
 - Preserved natural space
 - LID – Raingardens
 - Wildlife corridors
 - 75% Native, 100% Drought Tolerant
- Connections
 - Roads
 - Sidewalks and Trails
 - Road Design
 - Street Trees
 - Shared Parking
 - Access
- Utilities
 - Green Power
 - Non-Potable Irrigation
 - Utilities
- Amenities
 - Parks – Neighborhood and Regional, Passive and Active
 - Trails
 - Community Amenities – Neighborhood Gardens & Common Area Pools
- CDR's
 - All Vertical Construction must be FGBC Certified
 - Management Plans
 - Education
 - Monitoring





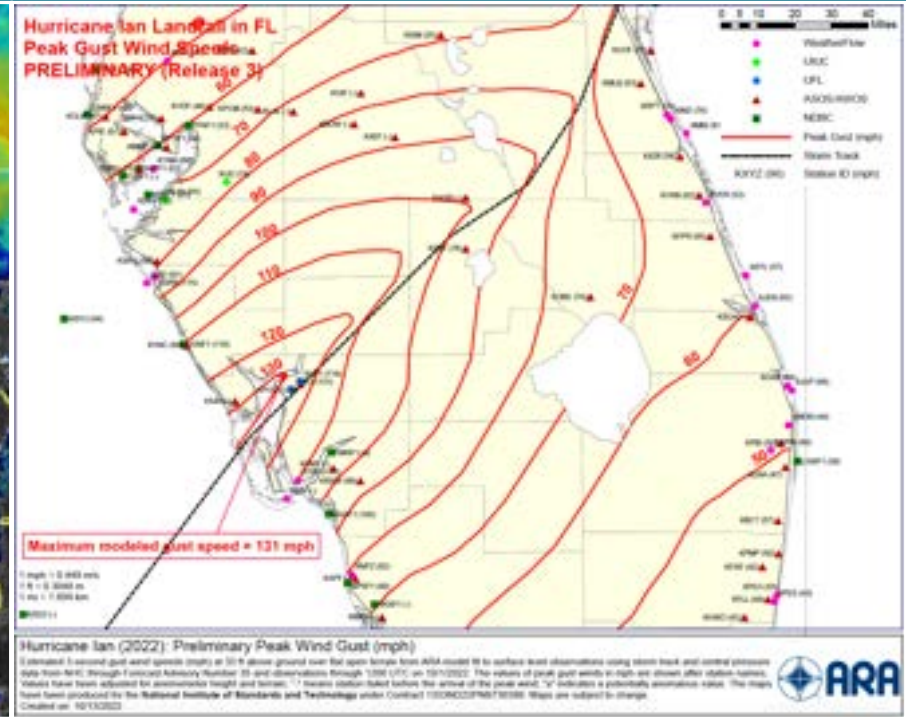
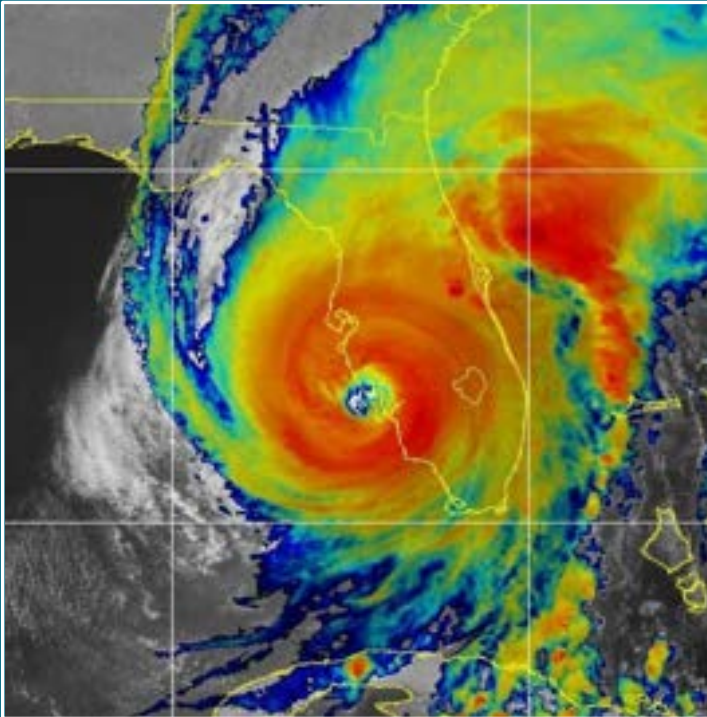
MULTI-GENERATIONAL SOLAR POWERED SUSTAINABLE RESILIENT NEW TOWN

SHELTER IN PLACE

- Utilities
 - Power
 - Water
 - Communication
- Stormwater
- Native Vegetation
- Structures

HURRICANE IAN

GROUND LEVEL WIND MAP

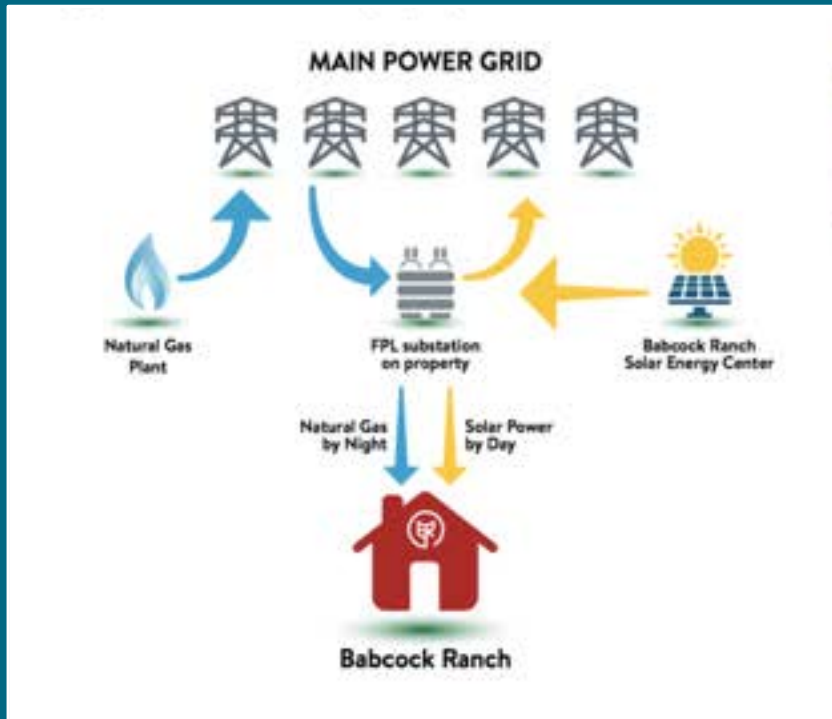


150 MW – 880 ACRES – 660,000 PANELS – FPL HARDENED INFRASTRUCTURE



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UTILITY RESILIENCY THROUGH REDUNDANCY



UTILITIES

FPL Substation

Underground
Utilities and
Communication
Infrastructure



UTILITIES

Water Utility
Supply, Treatment & Reuse





STORMWATER RESILIENCE

Restored Wetlands

INNER CONNECTED LAKES – REAL TIME MONITORING OF LAKE LEVELS



STORMWATER RESILIENCE

Raingardens
Extreme Event Fields
Dry Detention





NATIVE VEGETATION

ICC 500 FIELD HOUSE (180 MPH) – HOMES & BUILDINGS FBC (160 MPH)
ALL FLORIDA GREEN BUILDING COALITION CERTIFIED





FIELD HOUSE

ICC 500

Steel Beams & Screening

Back up Well

Generator

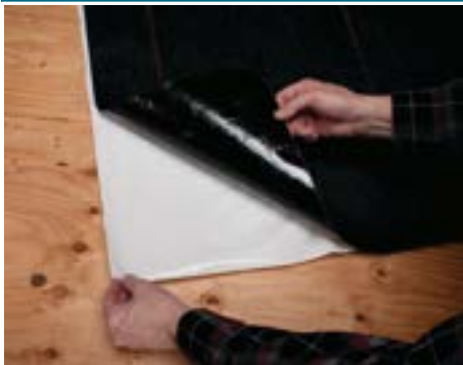
Water Storage

FLORIDA BUILDING CODE

Requires a continuous load path. This means the house is tied together from the roof to the foundation.

1. Rebar imbedded in the slab goes into the CMU cells
2. CMU cells are filled with concrete
3. Hurricane straps imbedded in the concrete
4. Straps wrapped around the trusses.





CODE PLUS

- Peel and Stick Underlayment
- Roof Sheathing Adhesive
- Sealed Attics
- Higher Class Shingles
- Miami NOA Garage Doors



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IAN DAMAGE



BABCOCK RANCH



WHATS NEXT - STRUCTURES

Post Ian:

- Fortified Engineers Reviewed Residential Structural Drawings
- MINIMAL adjustment with inspection and documentation can achieve FORTIFIED Certification
 - ✓ Roof Sheathing Complies
 - ✓ Design Exposure Complies (at Babcock Ranch location)
 - ✓ Flashing Complies
 - ✓ Must use ring shank nails (which are already specified)
 - ❑ Confirm Gable End Bracing
 - ❑ Adjust 12" support spacing for soffit versus 16" or 24"

GENERAL NOTES:
 1. REFER TO APPLICABLE FORTIFIED HOME STANDARDS FOR ADDITIONAL INFORMATION.
 2. SOFFIT PANELS IN GABLE END OVERHANGS CANNOT BE VENTED.
 3. FORTIFIED HOME STANDARDS ARE TO BE APPLIED IN CONJUNCTION WITH FEDERAL, STATE, AND LOCAL CODES, ORDINANCES AND REGULATIONS IN ADDITION TO THE STRUCTURAL DESIGN WHICH IS BY OTHERS. IN CASE OF A CONFLICT BETWEEN PROVISIONS, USE WHICHEVER IS MORE STRINGENT.

TABLE F-G-E-1: RAKE OVERHANG OUTLOOKER MAXIMUM LENGTH AND CONNECTION REQUIREMENTS.

| Ultimate Wind Speed, V_u (mph) | Exposure III | | Exposure II | |
|----------------------------------|---------------------------|--|---------------------------|--|
| | Max. Overhang Length (ft) | Joint Connection at Gable End ¹ | Max. Overhang Length (ft) | Joint Connection at Gable End ¹ |
| 120 | 24 | Simpson K120 USP RT26A | 22 | Simpson K120 USP RT30A |
| 140 | 22 | Simpson K120 USP RT26A | 18 | Simpson K120 USP RT30A |
| 150 | 20 | Simpson K120 USP RT26A | 16 | Simpson K120 USP RT30A |
| 160 | 18 | Simpson K120 USP RT26A | 14 | Simpson K120 USP RT30A |
| 170 | 14 | Simpson K120 USP RT26A | 14 | Simpson K120 USP RT30A |
| 180 | 14 | Simpson K120 USP RT26A | 14 | Simpson K120 USP RT30A |

Notes:
 1. Both outlooker framing spacing and connector spacing are @ 24" O.C. max.
 2. Loads are per the 2018 Wood Frame Construction Manual and ASCE 7-16.
 3. Simpson K120 connector requires (1) 1/4" x 3-1/2" nails to outlooker and (2) 1/4" x 3-1/2" nails to gable end top chord.
 4. USP RT30A connector requires (1) 1/4" x 3-1/2" nails to outlooker and (2) 1/4" x 3-1/2" nails to gable end top chord.
 5. Simpson K120 connector requires (1) 1/4" x 3-1/2" nails to outlooker and (2) 1/4" x 3-1/2" nails to gable end top chord.

Diagram Labels:
 GABLE END OVERHANG WIDTH OF (OUTLOOKER)
 NAILS INTO GABLE END TOP CHORD OR INTO BOTH SIDES OF TOP PLATE IF FRAMED GABLE END WALL.
 ROOF SHEATHING MIN. 1/2" THICK NAILED PER FORTIFIED REQUIREMENTS.
 DOOF FLASHING MEMBERS @ MAX 24" O.C. TYP.
 NO LESS THAN OVERHANG.
 24" OVERHANG MAX.
 REFER TO FORTIFIED HOME HURRICANE STANDARD FOR SOFFIT REQUIREMENTS.
 GABLE END TRUSS (FRAMED GABLE END WALL SIMILAR).
 SIMPSON L242 OR USP T24 JOIST FACE BRACES W/ (1) 1/4" x 3-1/2" NAILS TO TRUSS AND (2) 1/4" x 3-1/2" NAILS TO OUTLOOKER.
 SADDLE-TYPE HURRICANE CLIP AT GABLE END REFER TO TABLE F-G-E-1 FOR MINIMUM JOIST CONNECTION REQUIREMENTS.
 TOP OF GABLE MUST BE DROPPED WIDTH OF OUTLOOKER.
 2" x 4" CONTINUOUS OUTLOOKER MIN. @ MAX 24" O.C. TYP. OUTLOOKER MUST BE POSITIONED IN EDGEWISE ORIENTATION; PLATWISE IS NOT ACCEPTABLE.
 TYPICAL JOIST BRACES RESPECTIVE VIEW.
 TYPICAL SADDLE-TYPE CLIP RESPECTIVE VIEW.

APPLICABLE STANDARDS: FORTIFIED HOME™ - HURRICANE (2018)

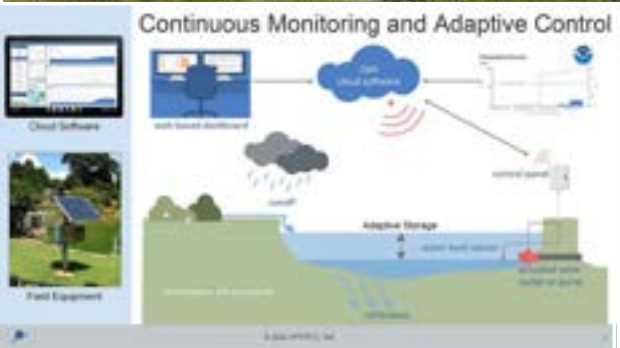
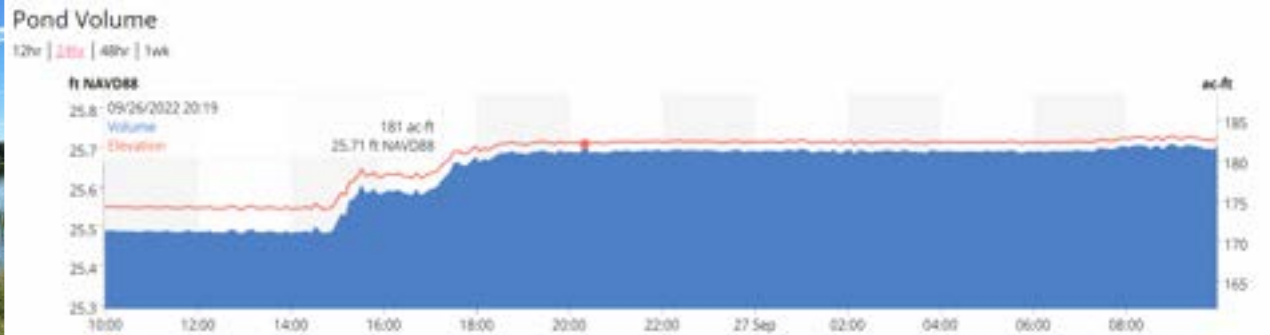
DESCRIPTION: PRESCRIPTIVE GABLE END OUTLOOKER FRAMING AND ANCHORAGE

DRAWING #: F-G-E-1

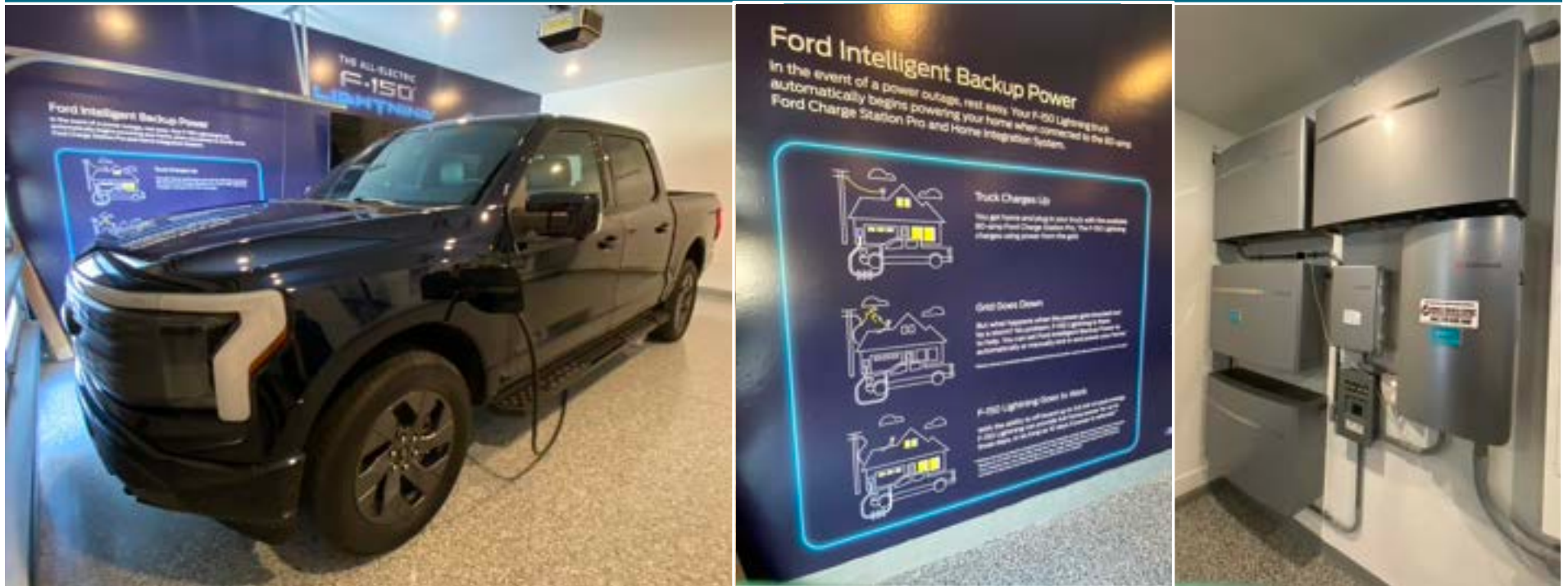
DATE: 11/01/20




INNER CONNECTED LAKES – REAL TIME MONITORING OF LAKE LEVELS



INNOVATION WAY 1.0





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