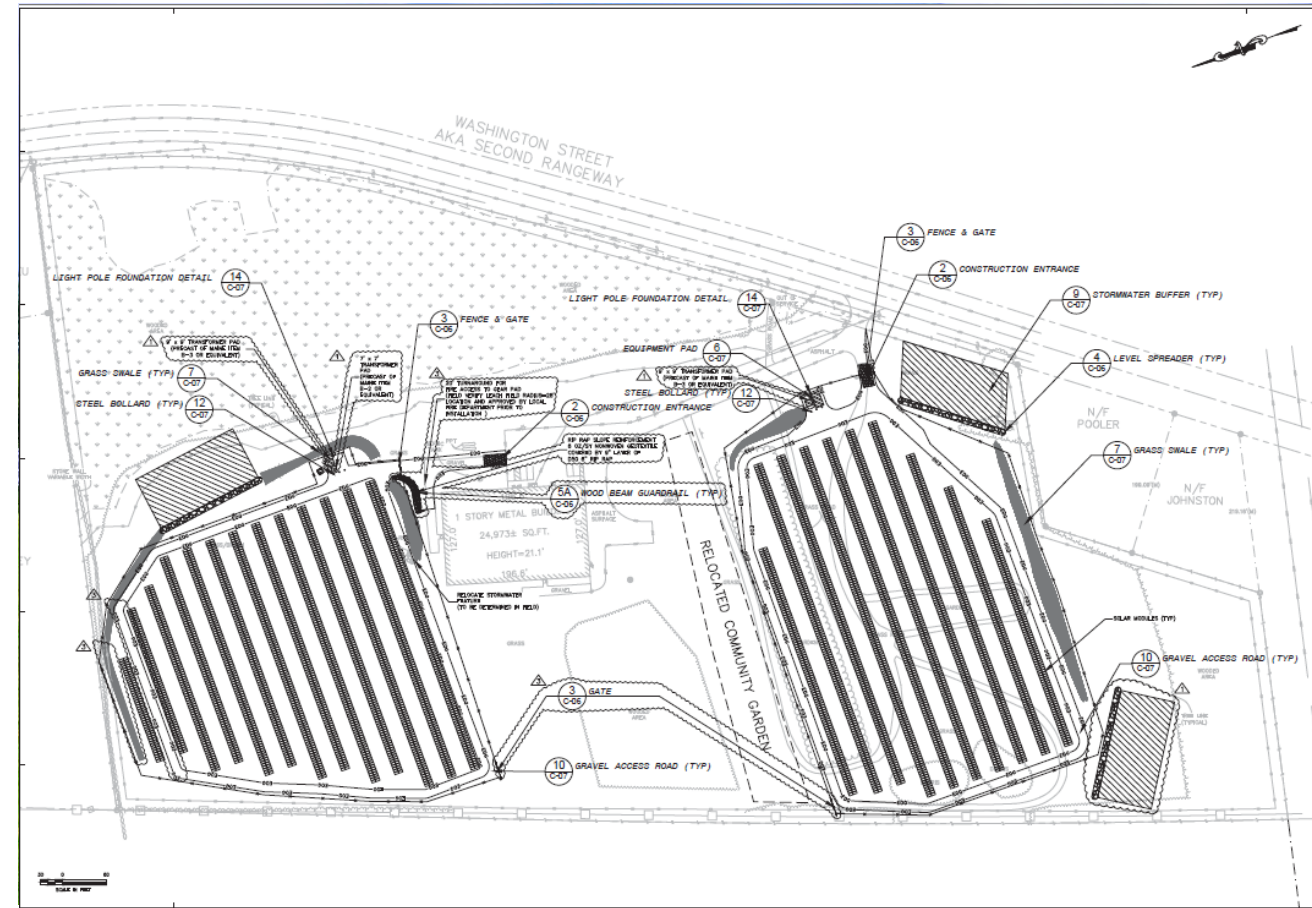




Solar in the LUPC Service Area

Highlights from the Research

- ▶ The Basics
 - ▶ Scale
 - ▶ Setting
 - ▶ Design
- ▶ Impacts
- ▶ Considerations



AECOM

Microgrid

COURT COLLEGE
123 WASHINGTON ST
OAKLAND, CALIF 94612

SITE LAYOUT PLAN

Scale = Purpose + Capacity + Acres

Small

Town definition: Less than ½ acre

Maine Audubon: Less than 1/3 acre

Nameplate Capacity: up to 125kW; or up to 20kW



Medium

Town Definition: Over ½ acre, up to 4 ½ acres

Maine Audubon: Over 1/3 acre, and less than 2 acres

Nameplate Capacity: Over 250 kW and less than 1 mgW;



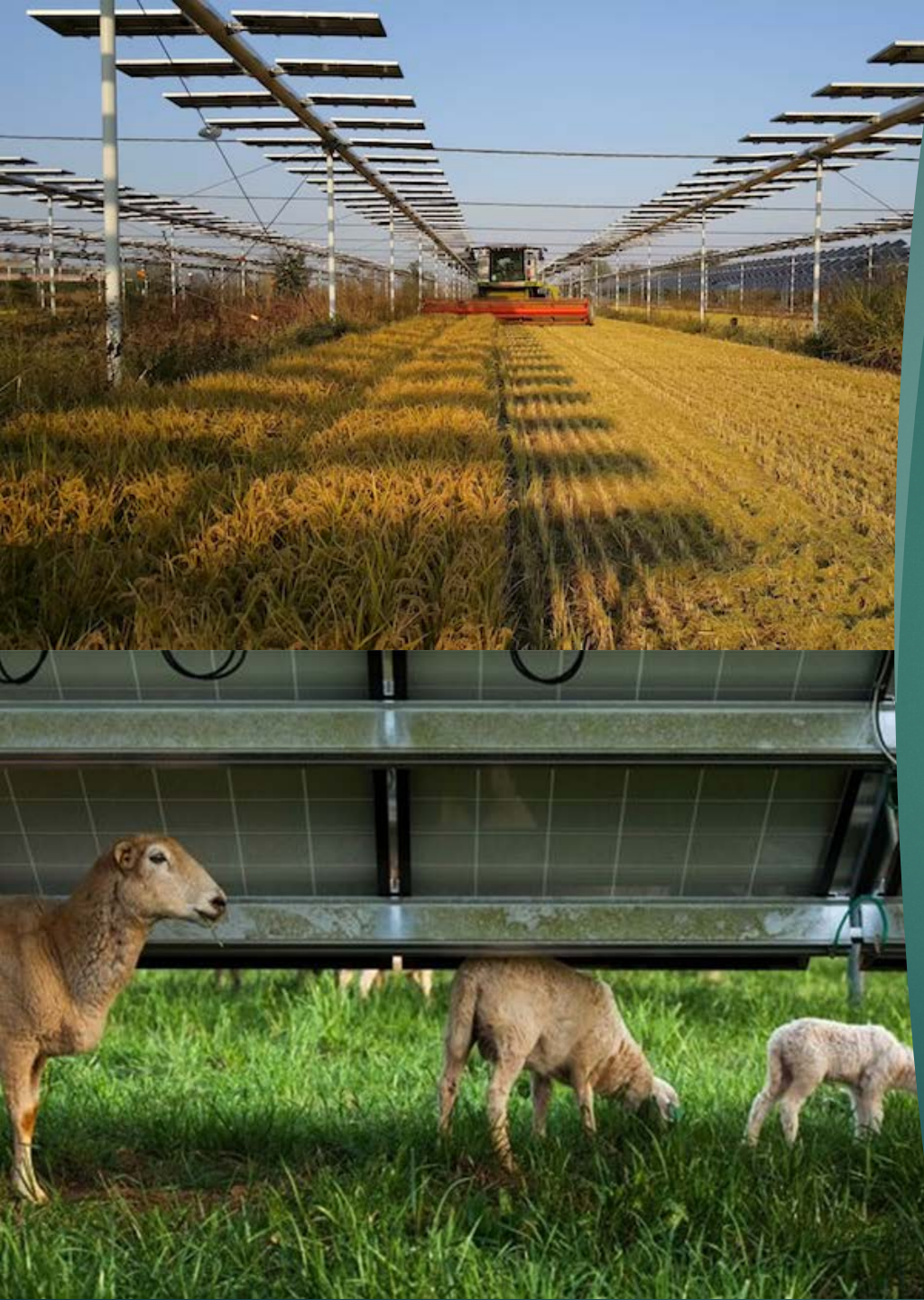
Large

Town Definition: Over 4 ½ acres

Maine Audubon: Over 2 Acres

Nameplate Capacity: Over 1 mgW





Dual Use on Farmland

- ▶ Proactive use of prime farmland
- ▶ Livestock grazing
- ▶ Farming/Harvesting
- ▶ Maintenance of the solar site

Health and Safety

- ❖ Compliance with:
 - ❖ NFPA standards and guidelines
 - ❖ National Electrical Code
- ❖ Notification of local PD and FD of proposed developments, and training for emergency response
- ❖ Roads must support use by emergency vehicles
- ❖ Battery Storage



NATIONAL FIRE PROTECTION ASSOCIATION

The leading information and knowledge resource on fire, electrical and related hazards



Environmental Impacts

- ▶ Inland Fisheries and Wildlife concerns for wildlife movement and important species
- ▶ Maine Audubon recommendations for Fence designs



Landscaping and Mitigation

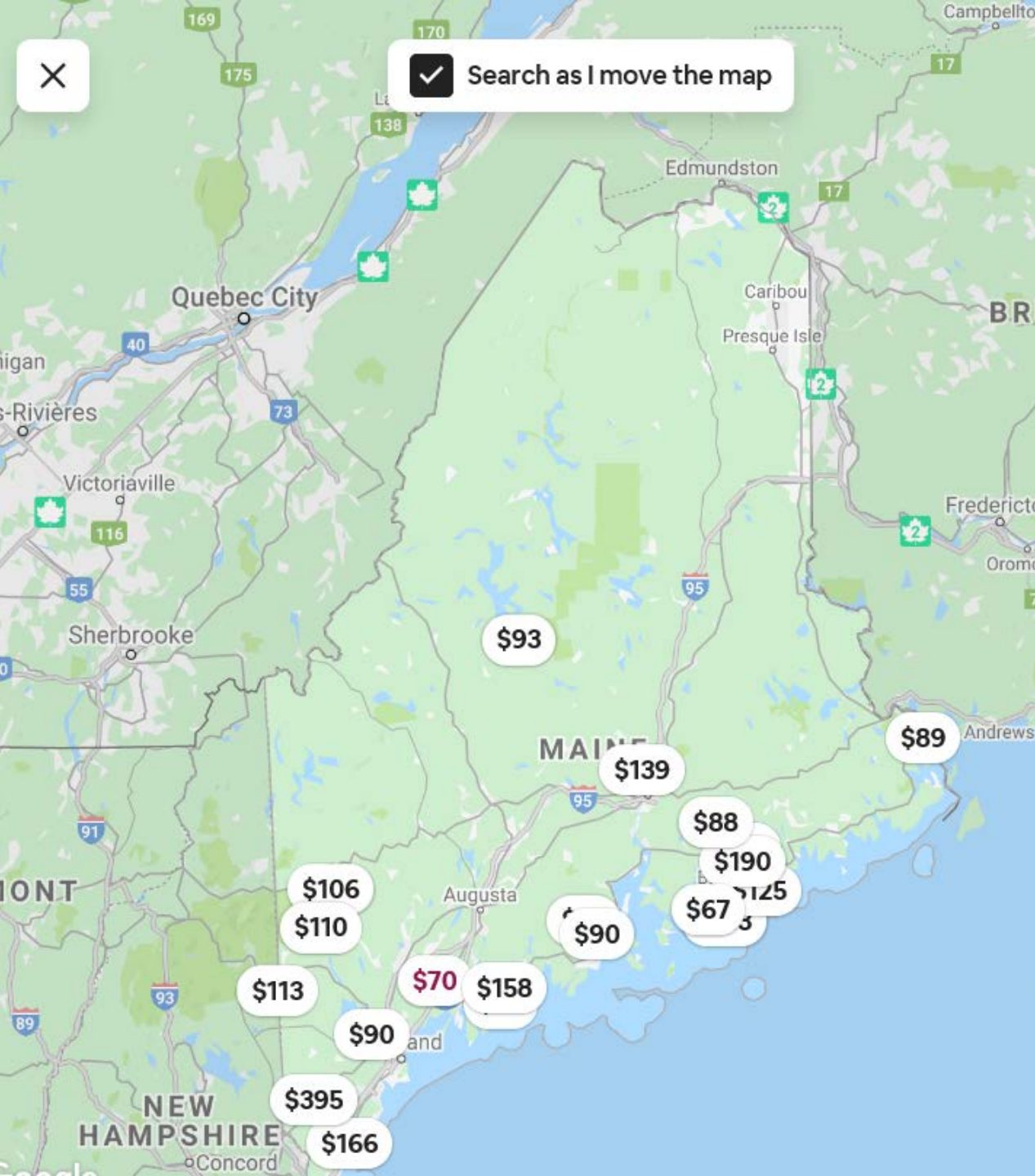
- ▶ Maine Audubon best practices
 - ▶ Natural drainage
 - ▶ Minimize erosion
 - ▶ Prevent Invasive Species
 - ▶ Plant indigenous flora



Considerations

- ▶ Zoning for solar development
- ▶ Permitting requirements and standards for solar development





Short Term Rental Research

Purpose & Methods

- ▶ Short Term Rentals (or "STRs")
- ▶ New Options for Online Rentals
- ▶ Background Research
- ▶ Questionnaire for LUPC Staff

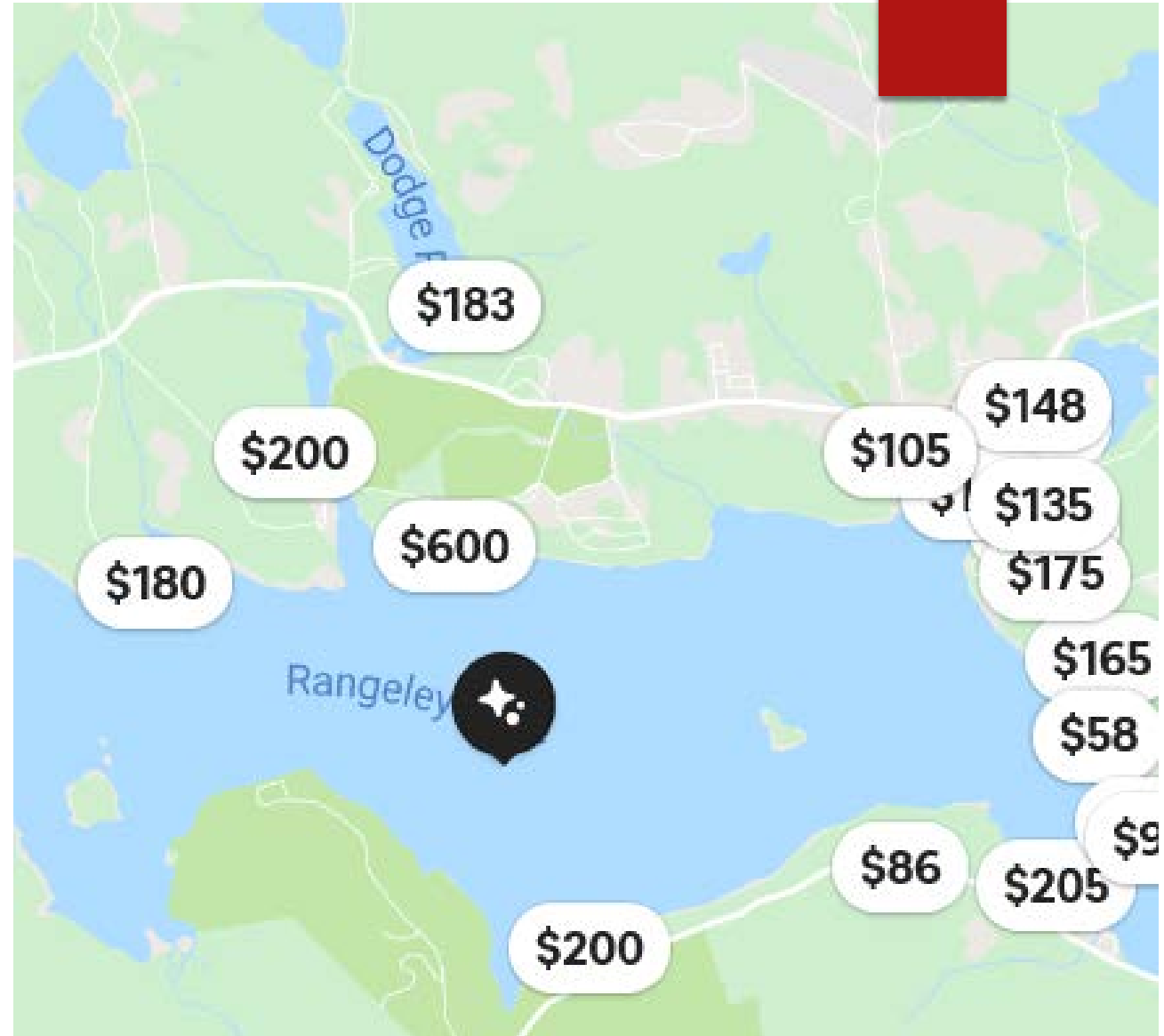
Benefits/Impacts

- ✓ Increased tourism
- ✓ Use of empty or seasonal camps and homes
- ✓ Additional income for home owner
- Housing market availability (rentals and owned)
- Visual impacts (trash, vehicles, parking etc.)
- Noise complaints
- Turnover of neighborhoods from individual owners to rental companies
- Increase in recreational use (motorized and non-motorized use on water bodies and trails)
- Competing lodging services



Observations From LUPC Staff

- ▶ STRs concentrated near waterbodies and other recreation
- ▶ Questions from the public about building rental units
- ▶ Not many complaints yet
- ▶ Monitoring and compliance would be challenging
- ▶ Concern about residential wastewater systems having enough capacity
- ▶ Should the Commission allow "Mother-In-Law" apartments?



Questions?

Sources

Images for Slides

- ▶ https://www.salon.com/2019/02/09/agrivoltaics-solar-panels-on-farms-could-be-a-win-win_partner/
- ▶ <http://rainer-brohm.de/new-study-solar-dual-use-approaches-for-solar-energy-and-agriculture-in-vietnam/>
- ▶ <https://pv-magazine-usa.com/2018/11/12/solar-panel-increase-sheep-and-cow-grasses-by-90/>
- ▶ <https://www.nfpa.org/>
- ▶ <https://www.evoenergy.co.uk/technology/solar-battery-storage/>
- ▶ <https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/51900636>
- ▶ <https://doggonefencing.com.au/portfolio-items/solar-farm-fencing/>

Reviewed Ordinances and Guidance Documents

- ▶ Town of Farmington zoning ordinances
- ▶ Town of Washington solar ordinances
- ▶ Maine Department of Inland Fisheries and Wildlife, Solar energy project general resource guidance and recommendations
- ▶ Town of Belfast solar ordinances
- ▶ Town of Waterville zoning ordinances
- ▶ Town of Sanford ordinance
- ▶ Maine Audubon
 - ▶ Best practices
 - ▶ Model site plan
- ▶ American Planning Association for solar energy
- ▶ National Fire Protection Association
- ▶ Department of Agriculture Conservation and Forestry Draft solar energy guidance form
- ▶ American Farmland Trust smart solar siting principles guidance document