

LOCAL RENEWABLES: LAND USE CHALLENGES

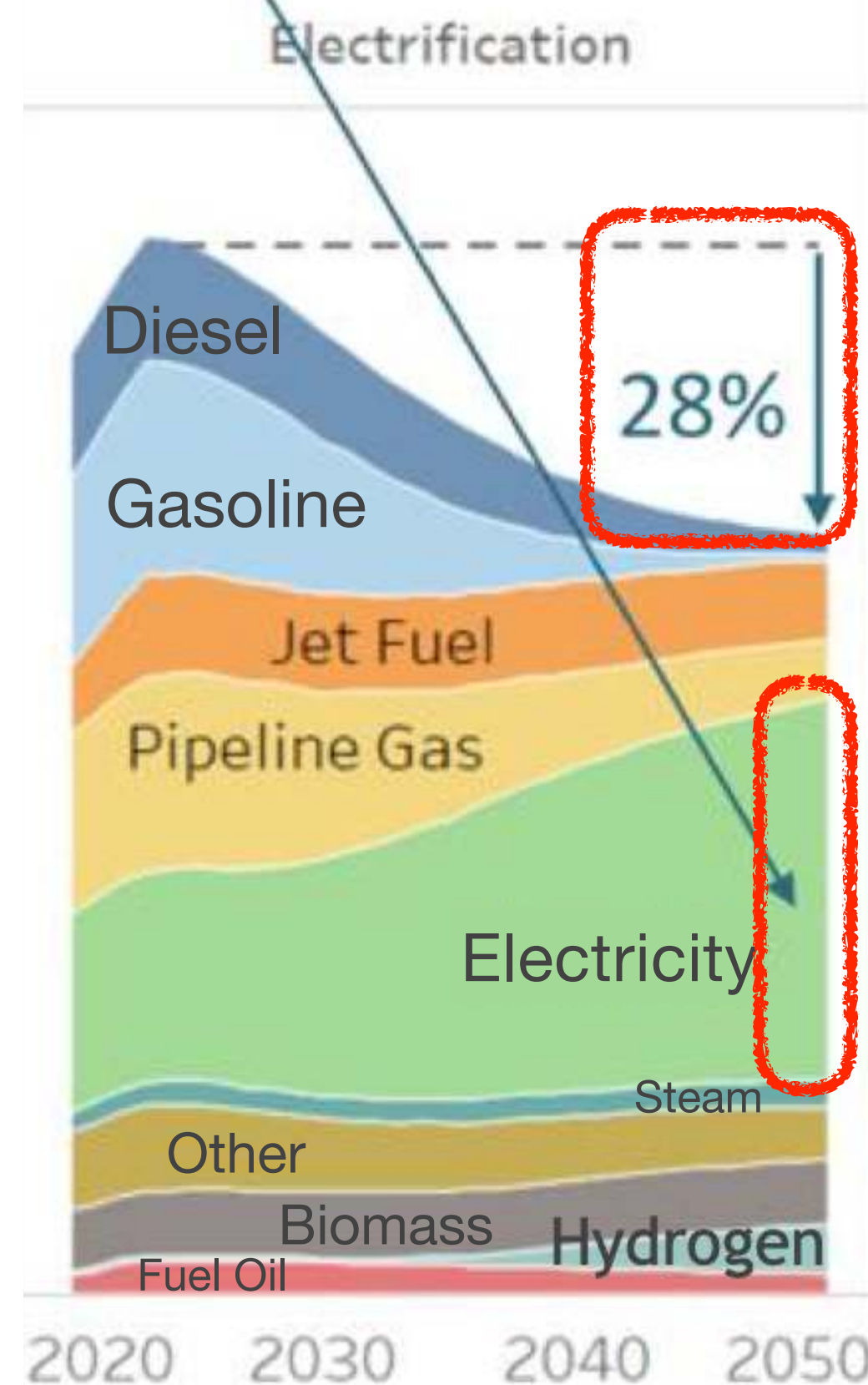
OPALCO

Board Meeting

June 2021

NW Regional Energy Perspective: Objectives

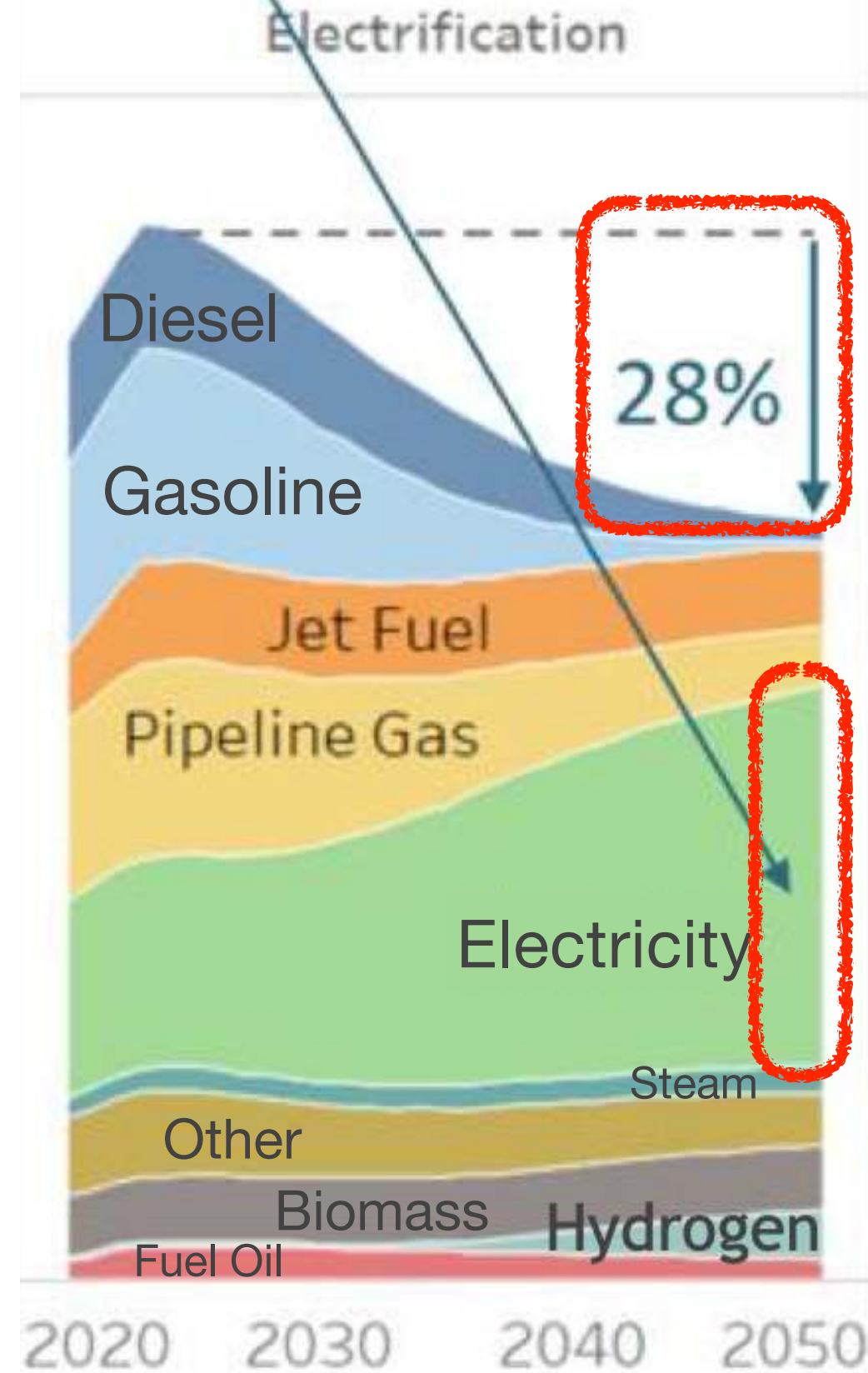
Electrification: **90% growth in electricity sector** over 2020 levels, displacing fuels



- ❖ Decarbonization is rapidly driving replacing fossil fuels with electricity for heating and transportation.
- ❖ Capacity is decreasing dramatically- e.g. Coal plant shut down, hydro spill, retirements, carbon reduction legislation, etc..
- ❖ By 2050, electricity demand will nearly double to reduce TOTAL energy demand by 28% (see chart at left).
- ❖ New demand will largely be met by new solar and wind generation.
- ❖ It will require millions of acres of land to host solar and wind generators and new transmission corridors.

NW Regional Energy Perspective: Challenges

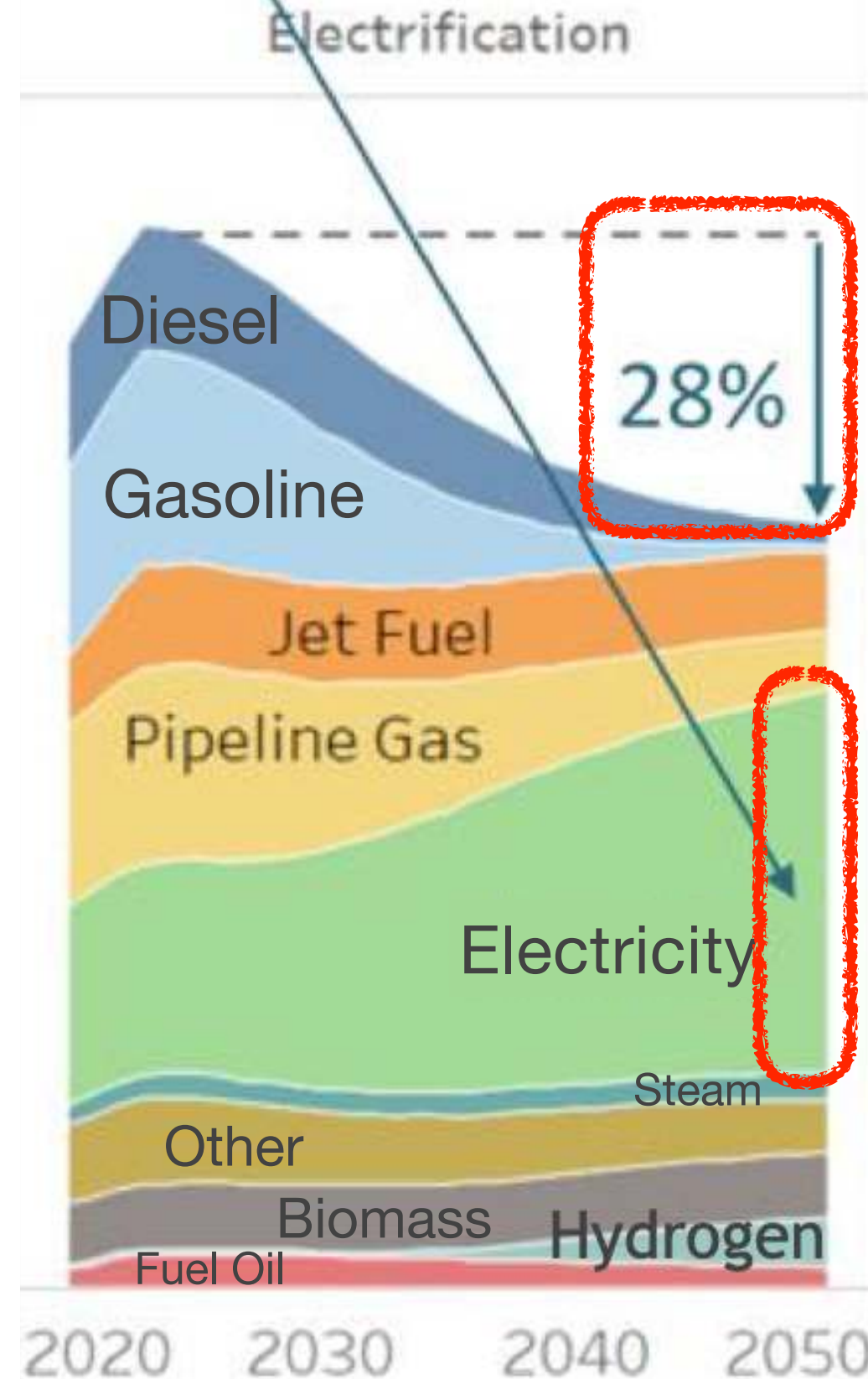
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- ❖ Industry Reports use “average” load / capacity data and neglect firm power requirements when the sun doesn’t shine or wind doesn’t blow.
- ❖ Aggressive energy efficiency and demand response targets.
- ❖ BPA not building any new generation resources or transmission infrastructure.
- ❖ Hydro conditions and timing of flow is predicted to change dramatically, leaving deficient power during critical load months.
- ❖ Exports could be significant - BPA looking to maximize value of exports via EIM and EDAM (California load also expected to double and will pay handsomely for PNW Hydro-power to firm their intermittent solar and wind).
- ❖ Firming technology extremely capital and time intensive to handle Texas/ California style energy shocks (wind doesn’t blow, sun doesn’t shine).
- ❖ Increasing levels of carbon reduction legislation should be expected and planned for, which may further limit firming capability.

NW Regional Energy Perspective: Land Use Implications

Electrification: **90% growth in electricity sector** over 2020 levels, displacing fuels



- ❖ Building new resources will take years to bring to market, given massive requirement for land and transmission
- ❖ Permitting / siting / acquiring new land resources will take years and capital
- ❖ Will need Federal and State financial assistance to meet capital requirements
- ❖ New transmission - could take decades to permit and connect new renewable projects to the grid in different regions.
- ❖ Will eastern NW (Idaho, Montana, Wyoming) be willing to convert millions of acres of wild land to power western metropolitan centers?

San Juan County Energy Perspective: Increasing Local Energy Resilience

- ❖ Comp Plan 2036 Vision: “Our community strives for energy independence”
- ❖ Solar and tidal energy are the two most abundant potential sources
- ❖ Utility-scale solar requires about 6 acres per MW.
- ❖ Energy independence would require over 1,200 acres for solar + batteries, costing \$ billions
- ❖ Some of that can come from member rooftop solar, which is much less space efficient.
- ❖ In meantime, OPALCO is building community solar + storage micro-grids, as land becomes available and member interest supports subscriptions.
- ❖ The micro-grids are designed to power critical services and population centers during outages.

San Juan County Energy Perspective: Evolving Land Use Vision

- ❖ If we want local renewables, **are we willing to embrace and see energy systems?**
 - NIMBYism, donating land and easements
 - active support for solar, wind, tidal, biomass, dispatchable load, energy efficiency, EV charging in town centers
- ❖ **Establish permitting certainty**, to...
 - obtain grant funding or we will never reach San Juan County energy goal of energy independence
 - meet CETA mandates
 - maintain emergency power / reliability when mainland power goes out, etc
- ❖ **Mixed messages and opposing constraints** at WA and County level
 - maintain reliable power but rapidly increase intermittent resources
 - permitting uncertainty
 - extreme cost (solar, batteries, land)
 - power wars beginning with California
- ❖ OPALCO members, Land Bank, San Juan Preservation Trust, Friends of the San Juans, Ag groups, Recycling and biomass organizations, Charter Review Group, etc., need to **come together to influence:**
 - County Council, Planning Commission, EPRC, Town of Friday Harbor, etc.

Permitting Clarity and Local Energy Resilience and Independence

Clear permitting approaches to Joint Use Wireless facilities enabled rapid rollout of broadband.

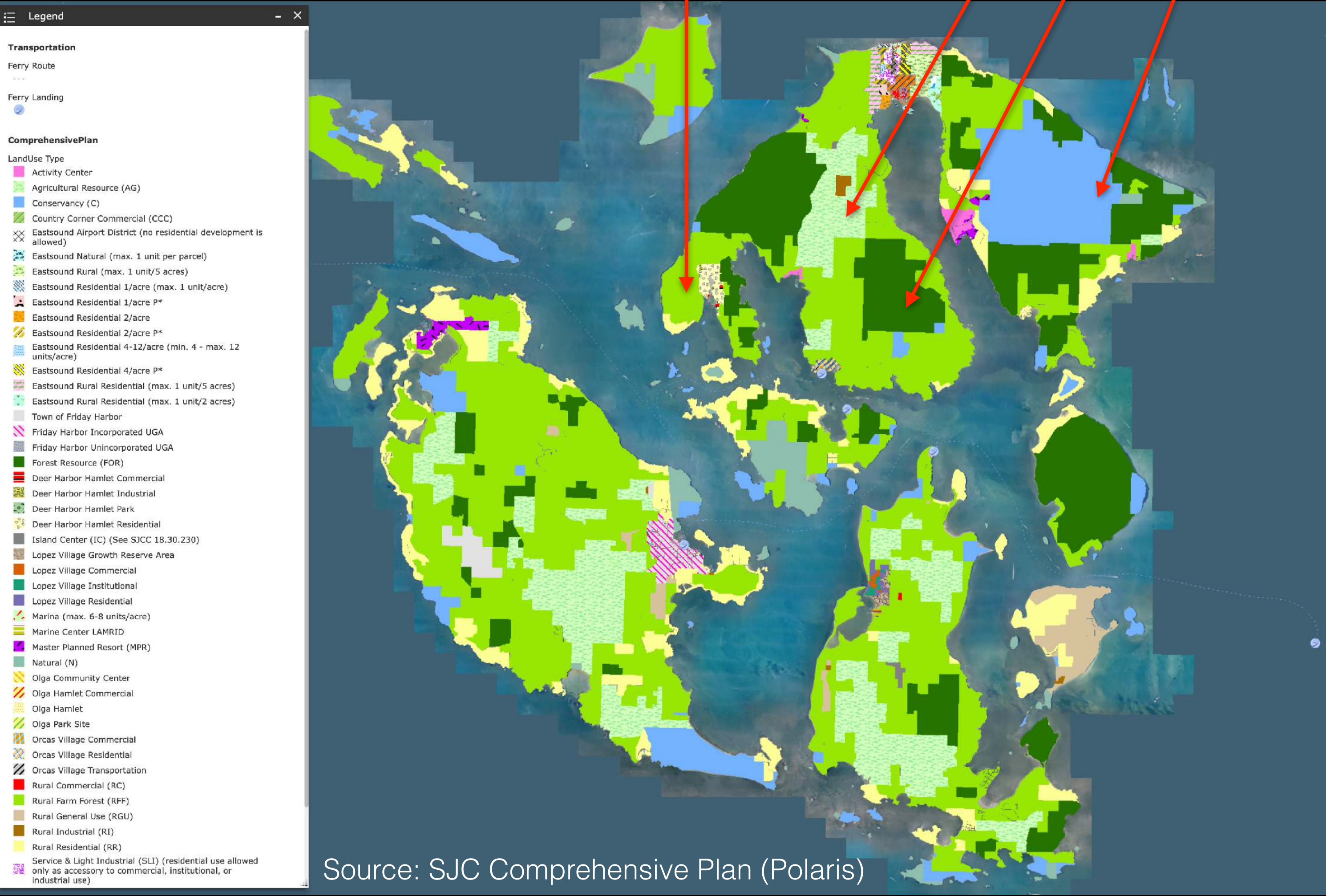
That was invaluable to the local economy, health, education, and emergency services.

Increasing local energy independence depends on similar approaches to permitting for local renewable energy.

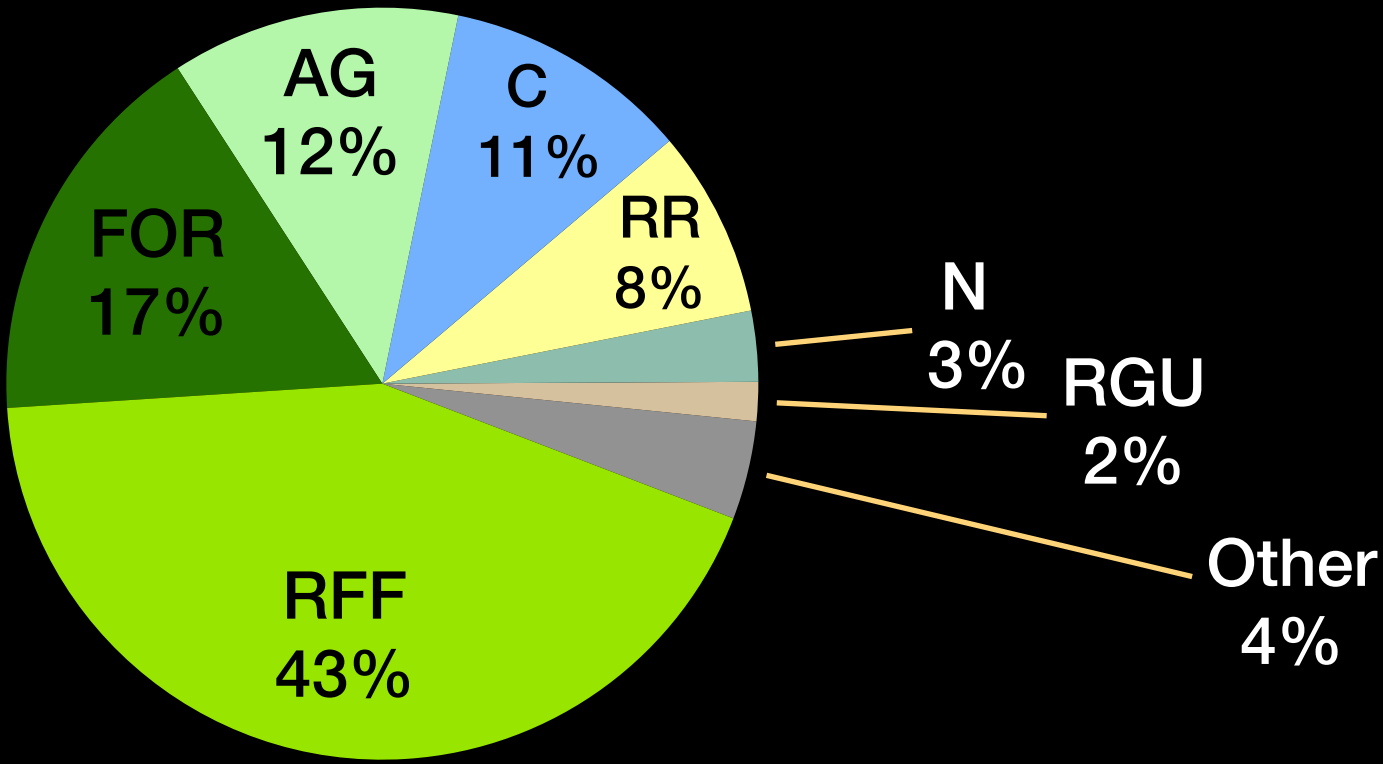
Just as broadband helped with the pandemic, increased local energy resilience will help with unexpected outages and natural disasters.

San Juan County Land Use Designations

Land Use Designations	RURAL					RESOURCE		SPECIAL	
	RGU	RR	RFF	RI	RC	AG	FOR	C	N
	Rural General Use	Rural Residential	Rural Farm-Forest	Rural Industrial	Rural Commercial	Agricultural	Forest	Conservancy	Natural
Commercial power-generation facilities	C	N	N	P/C	P/C	C	C	N	N
Category "A" joint use wireless facility	Y	Y	Y	Y	Y	Y	Y	Y	Y



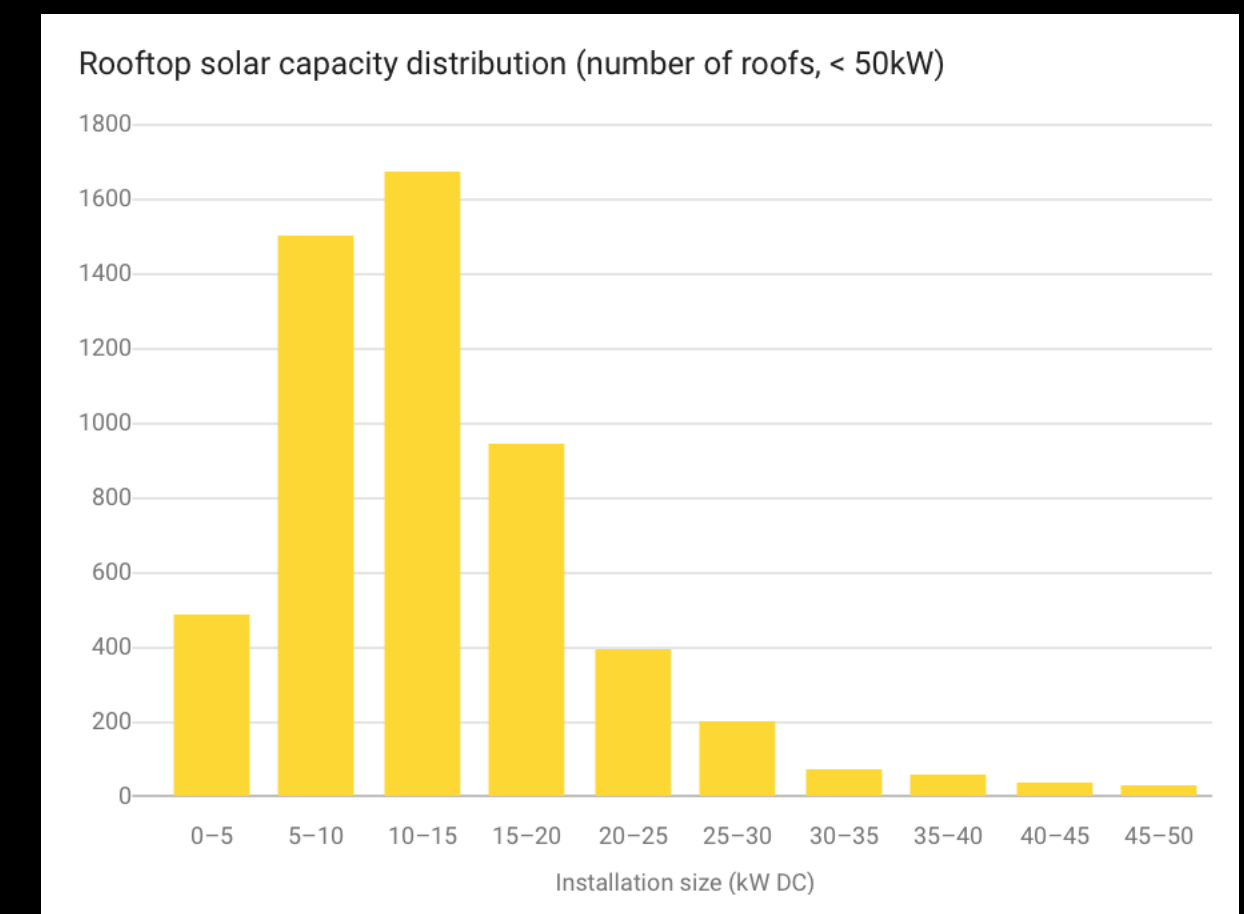
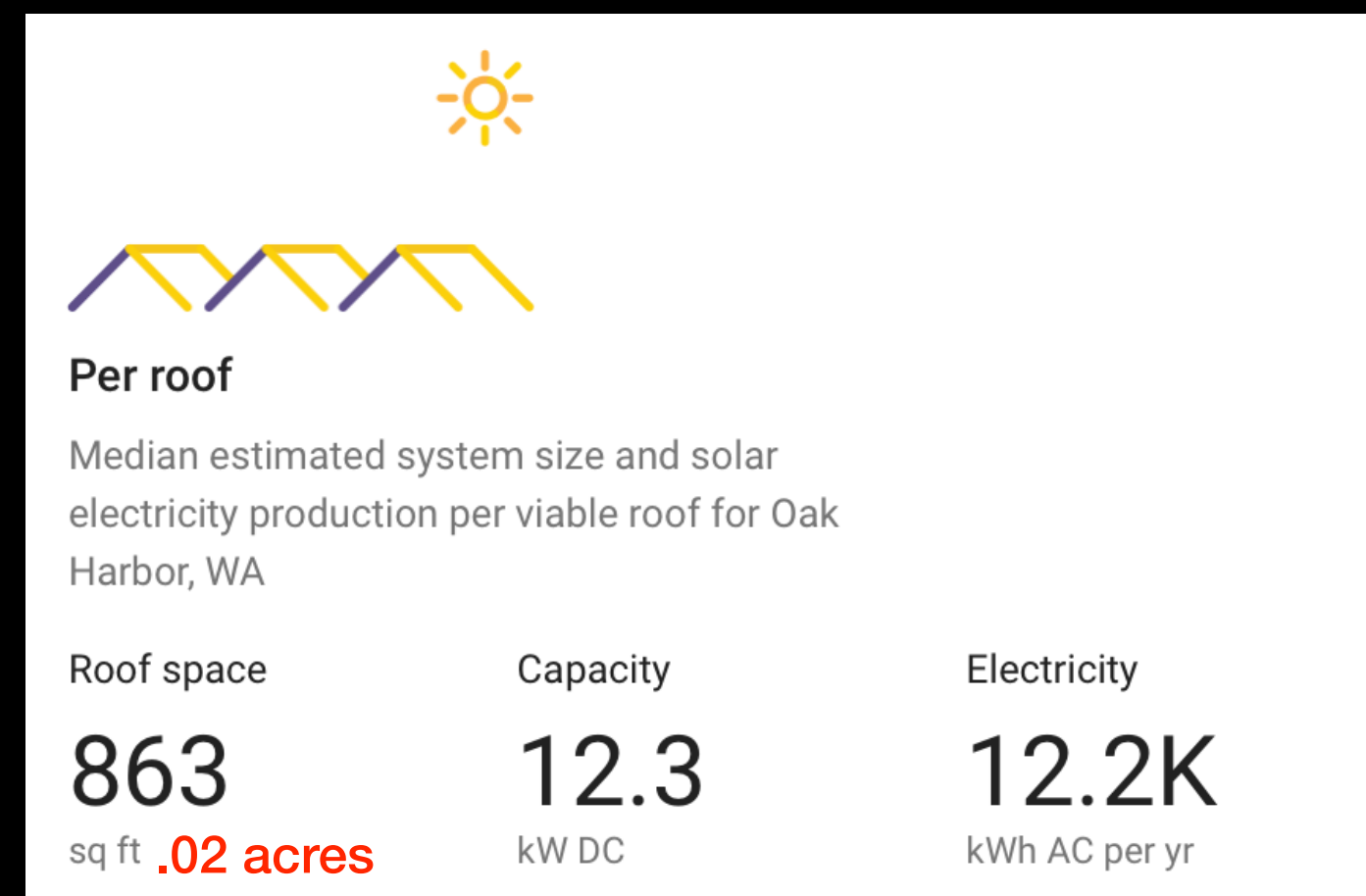
Land Distribution
(109,000 acres)



Y	Use allowed outright, without project permit
P	Provisional use, subject to administrative consistency review for compliance
C	Conditional use, subject to public notice and permit hearing procedure
P/C	Administrator will determine if provisional or conditional use permit is required
N	Prohibited use

Example Rooftop Solar Potential

- ❖ MapDwell uses LIDAR to assess rooftop solar potential
- ❖ Capacity can be degraded due to tree shade and poor roof orientation to the sun
- ❖ Sunny rooftops become a small percentage of total acreage
- ❖ Average member installed capacity is about 10 kW per member
- ❖ If 30% of members had rooftop solar:
 $30\% \times 11,000 \text{ member} \times 10 \text{ kW} = 33 \text{ MW}$
 $= 200 \text{ acres of utility-scale solar equivalent (17\% of independence target)}$



sunny

shaded

Next Steps

Members, Community Organizations

- ❖ Influence County Council and planning groups
- ❖ Donate land and easements
- ❖ Work together to embrace common carbon reduction goals

County Council, Planning

- ❖ Adjust land use tables to be more decarbonization friendly
- ❖ Streamline permitting
- ❖ Support mixed use ag / farm land that incorporates local renewable energy
- ❖ Establish grant team to win infrastructure and energy transition grants



Discussion

Thank You!