



SUBSTATION PROGRAM

Planning to power

Springwater Substation

Neighborhood Update

December 10, 2024

What we'll cover today:

Introduce the Team

Chelan PUD Strategic Visioning

Substation 101

Substation Program Overview

Springwater Substation Update

Next Steps



Okanogan Substation (Wenatchee)



- ✓ **Imagine 2075** is a 50-year strategic visioning effort
- ✓ **Long-range planning** to address foundational questions
- ✓ Setting a **course for the future** using data, trends, analysis and feedback

Goals:

PROPOSED MISSION: PROVIDE ESSENTIAL SERVICES TO EMPOWER THE COMMUNITY

PROPOSED VISION: CREATE BOLD, ENDURING VALUE FOR FUTURE GENERATIONS

GOAL

ENERGY & WATER FOREVER

Chelan PUD is committed to sustainable growth that builds a legacy of dependable resources for tomorrow.

FUTURE FACING: Boldly act on opportunities that can benefit residents in the long run.

BEND DON'T BREAK: Invest in equipment, people and technology to make services more resilient.

COMMUNITY POWER: Keep the public informed and involved by sharing details and collaborating with them.

Trends Driving the Vision:

INCREASING DEMAND FOR ELECTRIC ENERGY



INCREASING ELECTRICITY LOAD



INCREASING ENERGY STORAGE DEMAND & OPTIONS



GROWING USE OF ARTIFICIAL INTELLIGENCE



INCREASING WILDFIRE FREQUENCY & SEVERITY



INCREASING EXTREME WEATHER EVENTS & IMPACTS



LEARN MORE
about **Imagine 2075**

Chelanpud.org/Imagine2075



SUBSTATION PROGRAM

Planning to power

Chelan PUD 50-year vision — our plan for resilient and reliable power generation

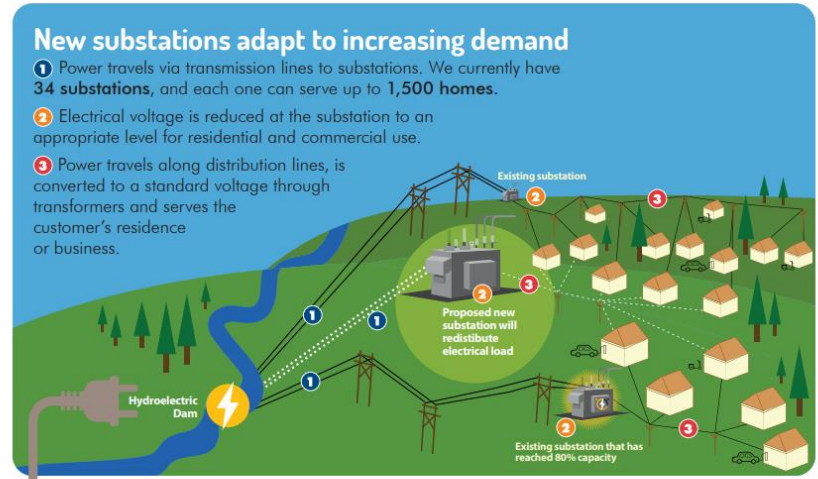
Planning to Power — all the way to 2075

Substations are an integral part of Chelan PUD's electrical power system, bringing together generation, transmission, and distribution, so that electricity can reach our **50,000 customers**. In partnership with the community, we created the

Substation Program to systematically manage how the PUD plans, acquires and builds new substations.

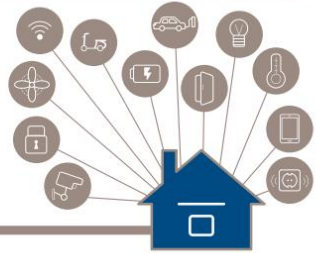
Just as Chelan County must adapt to increasing demand and growth in our communities, the PUD will continue

to light the best path forward to serve our customer-owners. To meet modern electricity usage and maintain reliable service to our growing/dynamic community, the PUD plans to build **15 new substations over the next 10 years**.

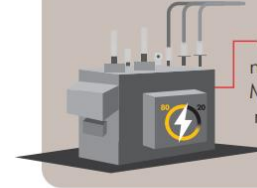


Modern increased energy needs:

- ↑ Residential occupancy — home office, remote work, rentals
- ↑ Household Appliances
- ↑ Growth and development
- ↑ Technology & AI
- ↑ EV and Electric Charging (Electric and Hybrid vehicles, bikes, scooters, etc.)
- ↑ Entertainment
- ↑ Home Office
- ↑ Heating & Cooling
- ↑ Devices



WHEN is a new substation needed?



When an existing substation is consistently reaching **80% capacity**, it triggers the PUD to begin looking into the need for a new substation. The PUD refers to this as an 80/20 Model and it initiates the process of identifying a location for a new substation and the associated transmission and distribution lines, in order to continue resilient and reliable service.

To meet increasing energy demands, Chelan PUD is planning to build **15 new Substations over the next ten years**. Here's our plan for expanding resiliency to safekeep our investments. This is how you help us get there.

	Phase I — PLAN	Phase II — ACQUIRE	Phase III — BUILD
Typical timeline*	Years 0-2	Years 2-4	Years 4-5
What the PUD does in each phase	<ul style="list-style-type: none"> Identify the need for new substations through forecasting electrical load growth. Using the 80/20 Model and community engagement to locate potential sites. 	<ul style="list-style-type: none"> Identify and narrow potential sites using site evaluation criteria where additional electrical capacity is needed. Acquire property, easements and permitting and perform feasibility and due diligence. 	<ul style="list-style-type: none"> Design the substation components. Procure equipment and perform construction. Energize and connect customers to the new substation.
How the PUD partners with the community	<p>Inform:</p> <ul style="list-style-type: none"> We will inform the public through community meetings, mailers, emails, media and website. 	<p>Involve:</p> <ul style="list-style-type: none"> We will involve impacted stakeholders in the site selection process through a series of meetings and communications. 	<p>Consult:</p> <ul style="list-style-type: none"> We will consult impacted stakeholders during the design process through a series of meetings and communications.
In partnership, our promise to you	<ul style="list-style-type: none"> We will provide you with balanced and frequent information. 	<ul style="list-style-type: none"> We will ensure stakeholder feedback is considered and reflected in decision making. 	<ul style="list-style-type: none"> We will listen to and acknowledge concerns.**

**A Substation Program project's priority may shift once it begins the Planning or Acquire phase. The timing shown represents the average period of time within each phase, however, there may be idle periods in between phases which can extend the overall length of time to advance fully from Planning to the Build phase.

**Chelan County PUD uses principals developed by the International Association of Public Participation (IAP2).



SUBSTATION PROGRAM

Planning to power



SUBSTATION PROGRAM

Planning to power

Chelan PUD's 50-year vision will chart the path for **resilient and reliable power** all the way to 2075.

In partnership with the community, we developed the **Substation Program** to systematically manage how the PUD plans, acquires and builds new substations.

To meet modern electricity usage and maintain reliable service the PUD plans to build **15 new substations over the next 10 years.**



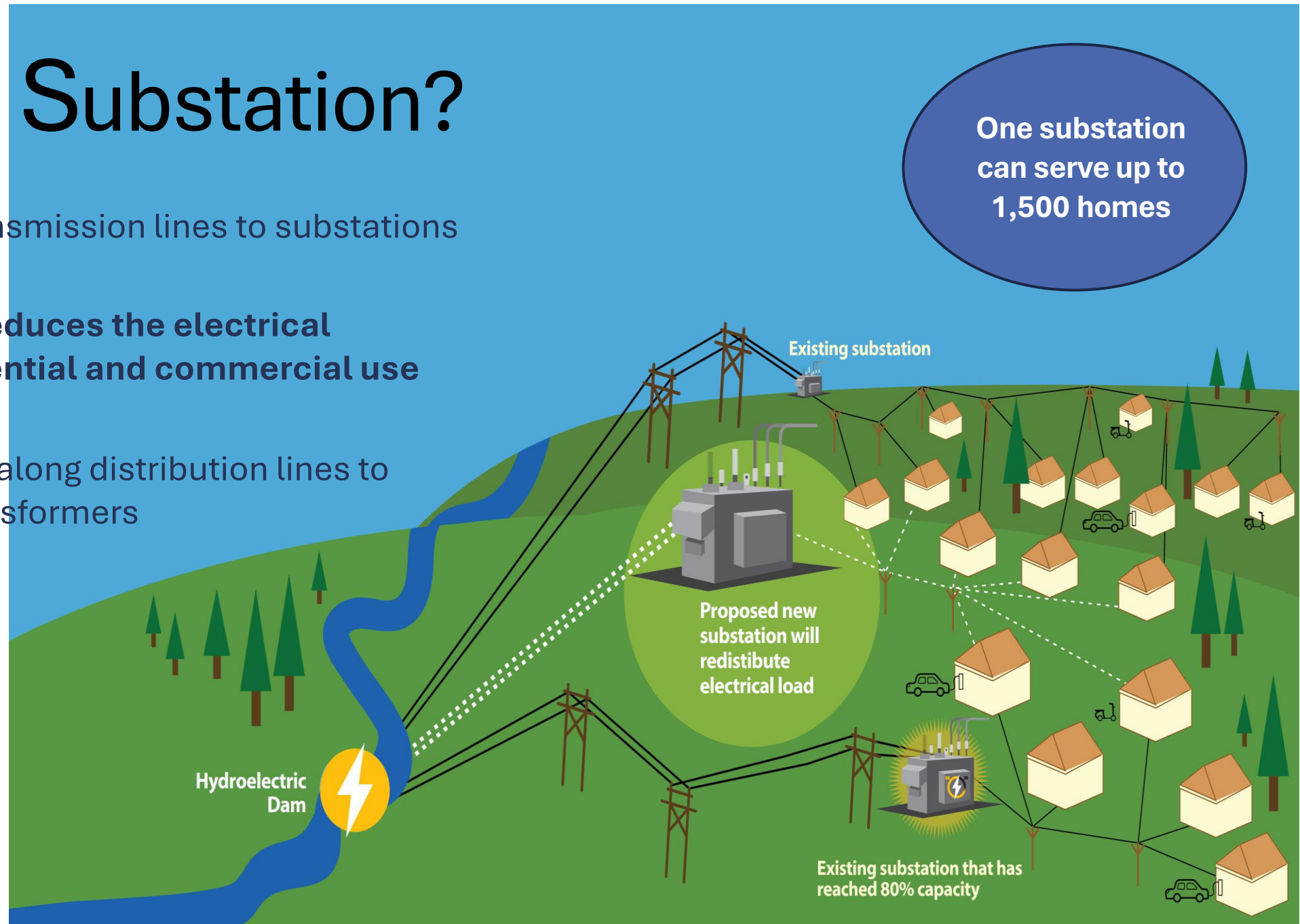
WHAT is a Substation?

Power travels via transmission lines to substations

The substation reduces the electrical voltage for residential and commercial use

Power travels along distribution lines to customer transformers

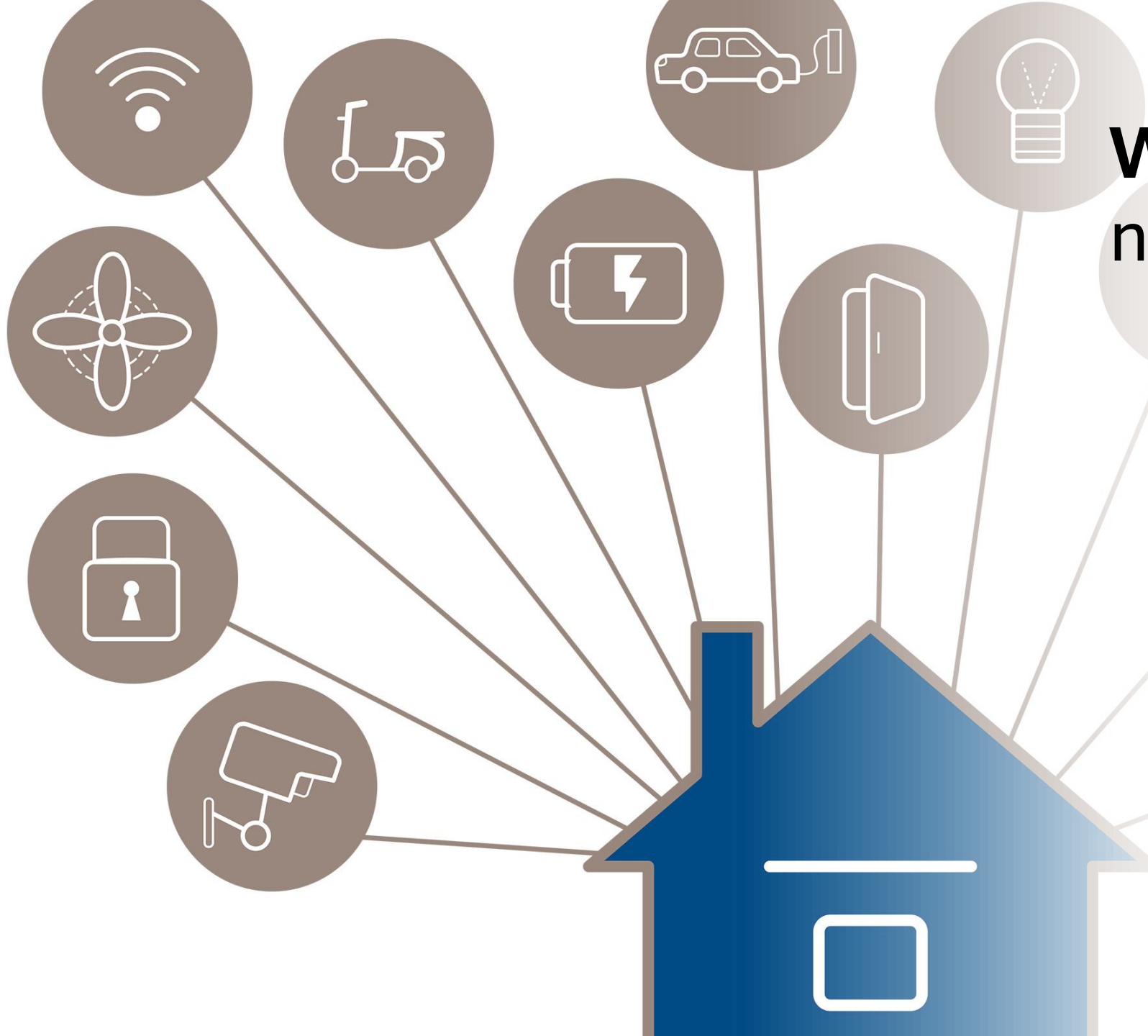
One substation can serve up to 1,500 homes



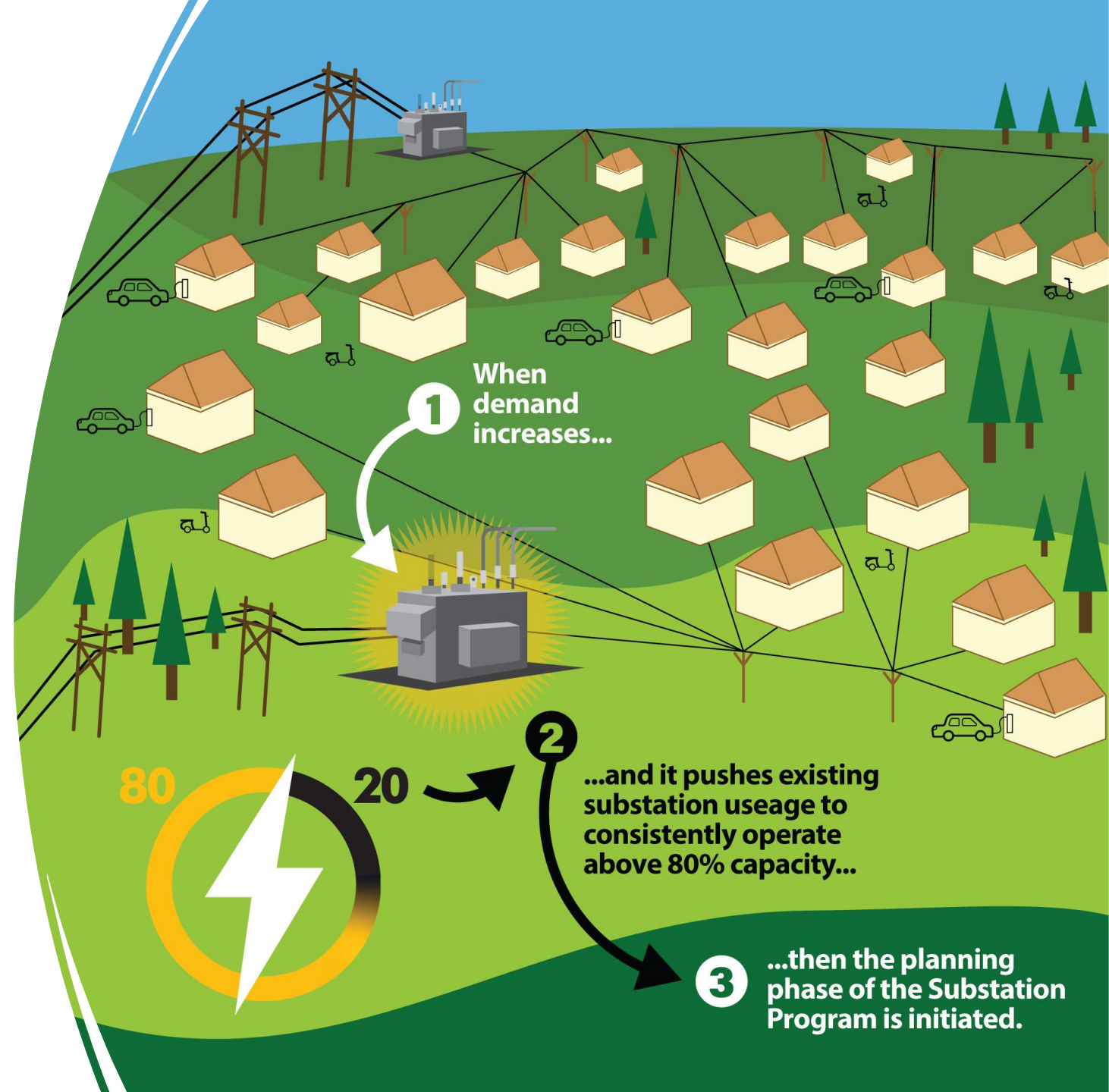
WHY do we need new substations?

Modern increased energy needs:

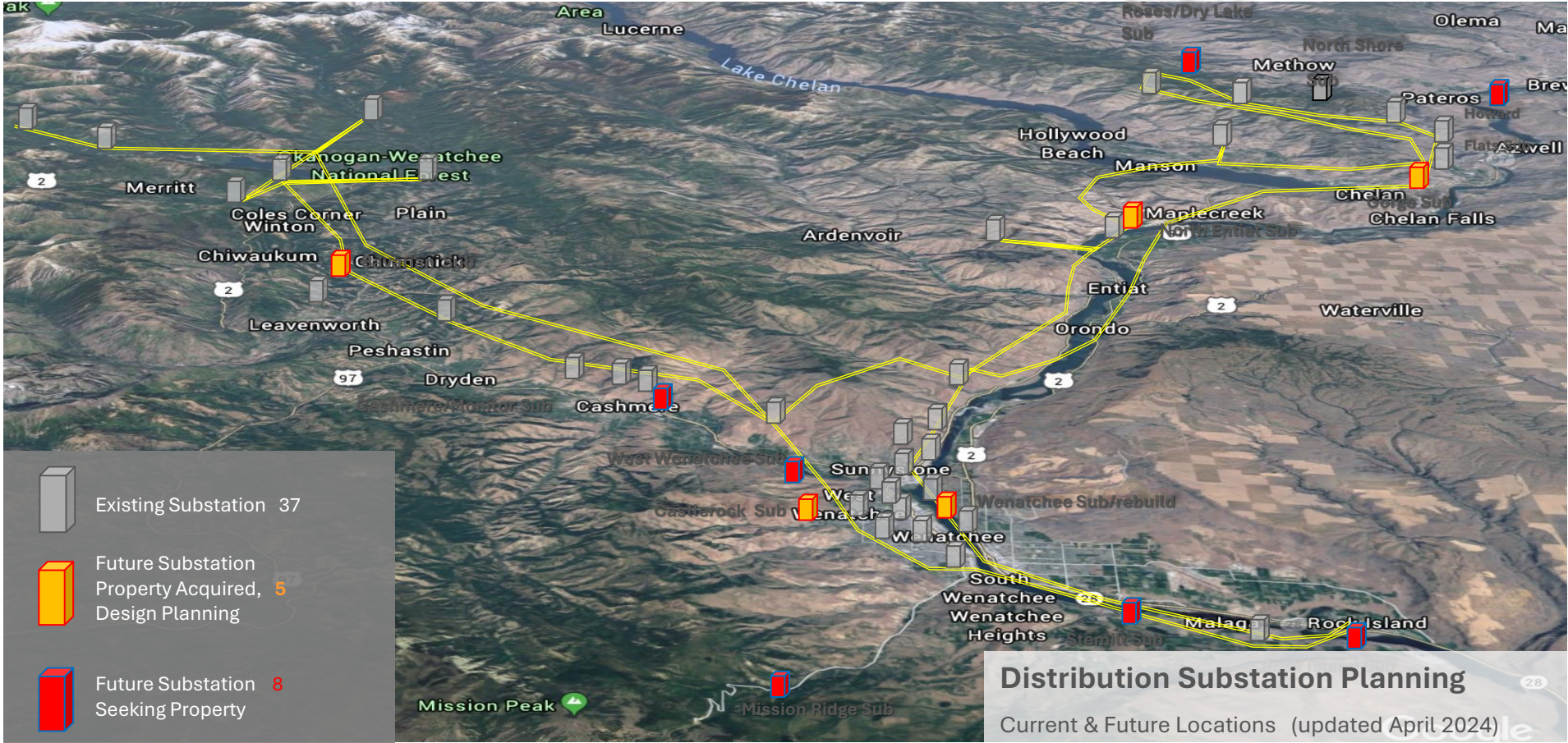
- Residential occupancy
- Growth and development
- EV and Electric Charging
- Household Appliances
- Technology & AI
- Entertainment
- Home Office
- Heating & Cooling
- Devices



WHEN is a new substation needed?



WHERE are new substations needed?



Current Substation Program Status

Station	Substation Program Phase	Anticipated Year for Completion
North Shore (Chelan)	BUILD	2024
Bavarian (Leavenworth)	BUILD	2026
Wenatchee (South)	ACQUIRE	2026
Springwater (West Wenatchee)	ACQUIRE	2028
Roses (Manson)	PLAN	2028
Castlerock (West Wenatchee)	PLAN	2028
Entiat North	PLAN	2028
Fish Hatchery (Leavenworth)	PLAN	2029
Coles Corner (Lake Wenatchee)	PLAN	2029

Station	Substation Program Phase	Anticipated Year for Completion
Malaga	PLAN	2030
Chelan Gorge (Chelan)	PLAN	2031
Howard Flats (Chelan)	PLAN	2032
Hay Canyon (Cashmere)	PLAN	2032
Colockum (Malaga/Rock Island)	PLAN	2034
Mission Ridge (South Wenatchee)	PLAN	2034
College (Wenatchee)	UPGRADE	2025
Leavenworth	UPGRADE	2028

- ❖ *Substation planning is reviewed annually*
- ❖ *Priorities may change based on various factors*
- ❖ *Timeframes are shifted to accommodate*



SUBSTATION PROGRAM

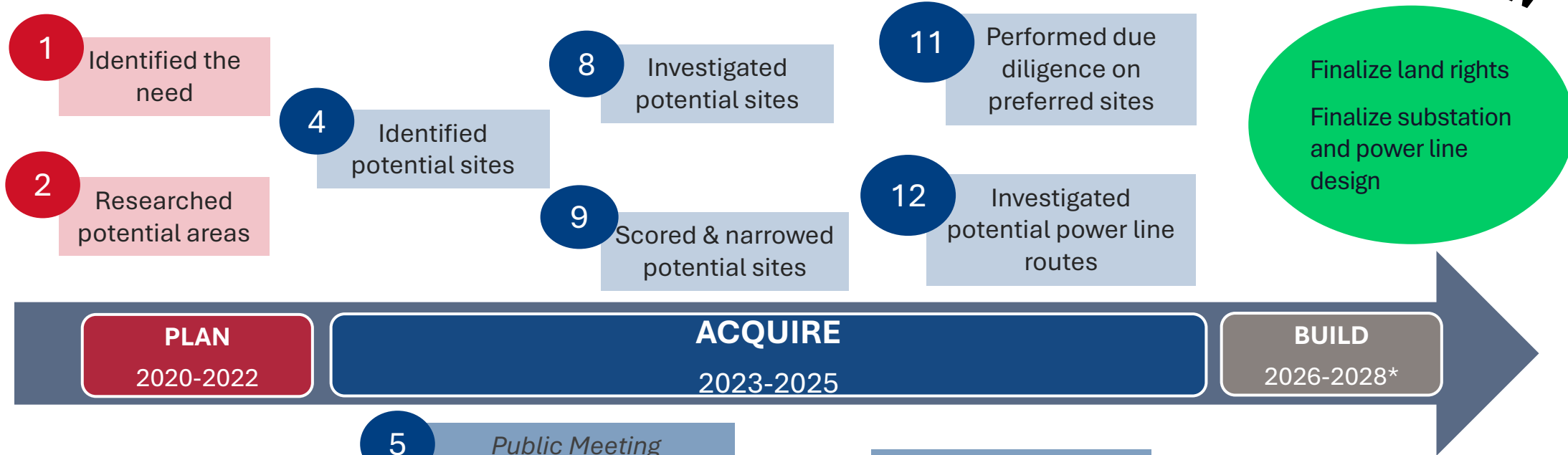
Planning to power

	<u>PLAN</u> Phase I	<u>ACQUIRE</u> Phase II	<u>BUILD</u> Phase III
Typical Timeline	Years 0-2	Years 2-4	Years 4-5
What is the PUD doing?	<ul style="list-style-type: none"> • Load forecasting • Identify the need • Plan for Phases II and III 	<ul style="list-style-type: none"> • Identify and score potential sites • Acquire property and land rights 	<ul style="list-style-type: none"> • Design the substation • Construct the substation • Connect and energize the substation
How is the PUD engaging the public?	<ul style="list-style-type: none"> • Inform stakeholders • Public meetings, mailers, media <p style="text-align: center;"><u>INFORM</u></p>	<ul style="list-style-type: none"> • Gather input on potential sites • Stakeholder focus group <p style="text-align: center;"><u>INVOLVE</u></p>	<ul style="list-style-type: none"> • Obtain feedback on design • Neighborhood focus group • Post-construction follow-up <p style="text-align: center;"><u>CONSULT</u></p>
Our promise to the public*	We will provide the public with balanced and frequent information.	We will ensure stakeholder feedback is considered and reflected in decision making.	We will listen to and acknowledge concerns.

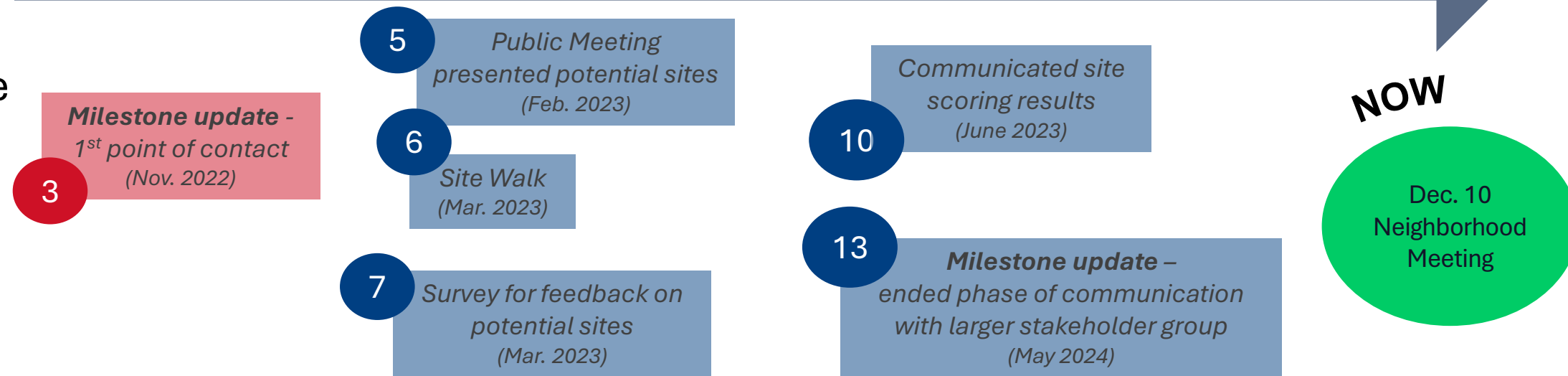
**Based on the International Association for Public Participation (IAP2) Spectrum*

Springwater Substation Timeline

What's the **PUD** doing?



How are we engaging **YOU?**



NOW
Finalize land rights
Finalize substation and power line design

NOW
Dec. 10 Neighborhood Meeting

*Build Phase timeline is based on annual Substation Program prioritization.

2023

4 Identified potential sites

8 Investigated potential sites

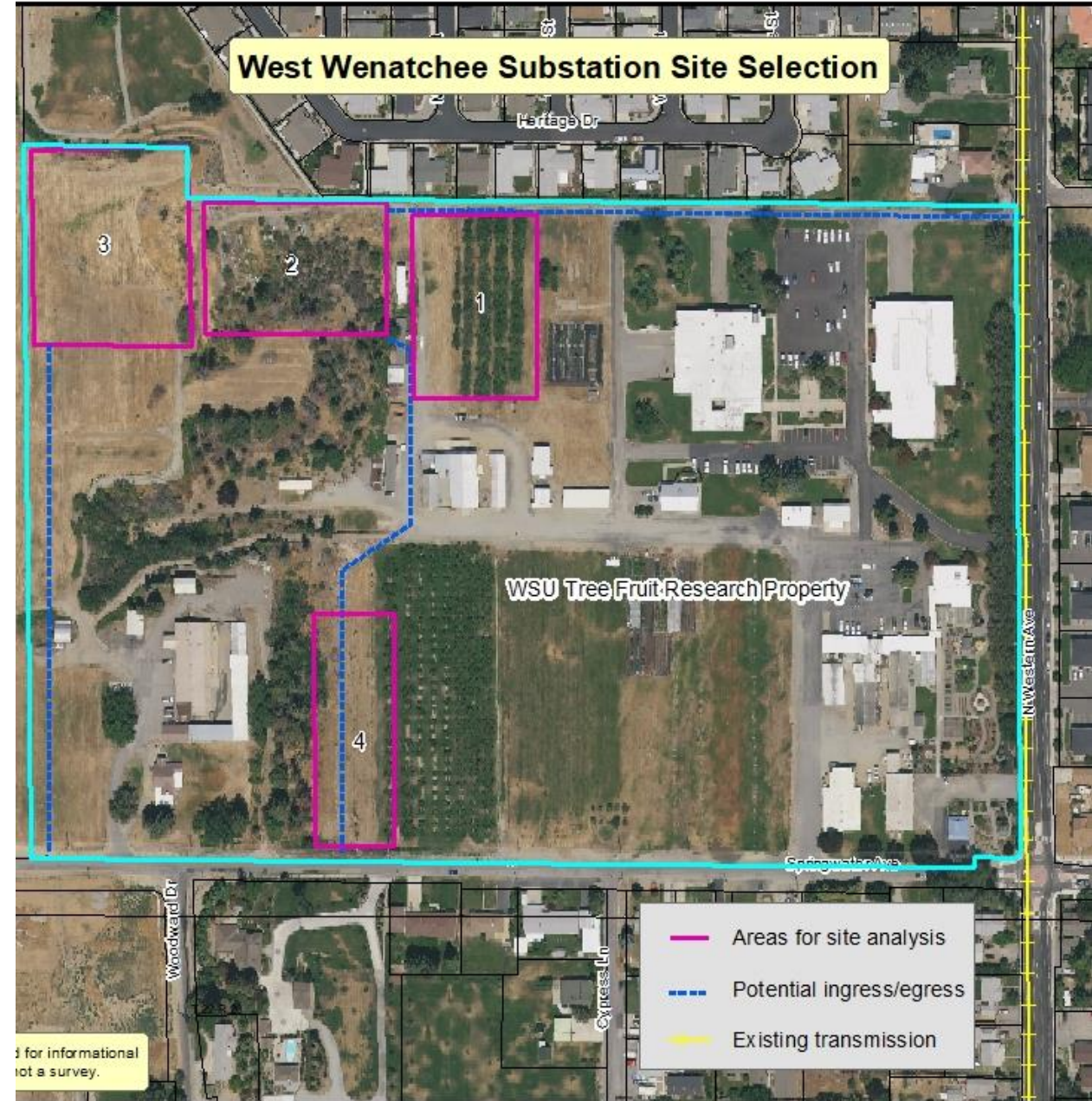
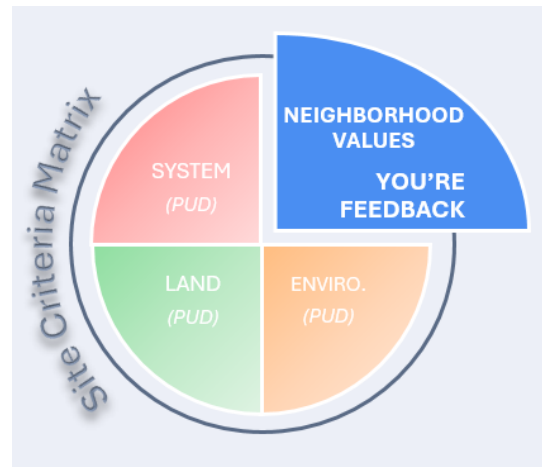
5 Public Meeting presented potential sites (Feb. 2023)

9 Scored & narrowed potential sites

6 Site Walk (Mar. 2023)

10 Communicated site scoring results (June 2023)

7 Survey for feedback on potential sites (Mar. 2023)



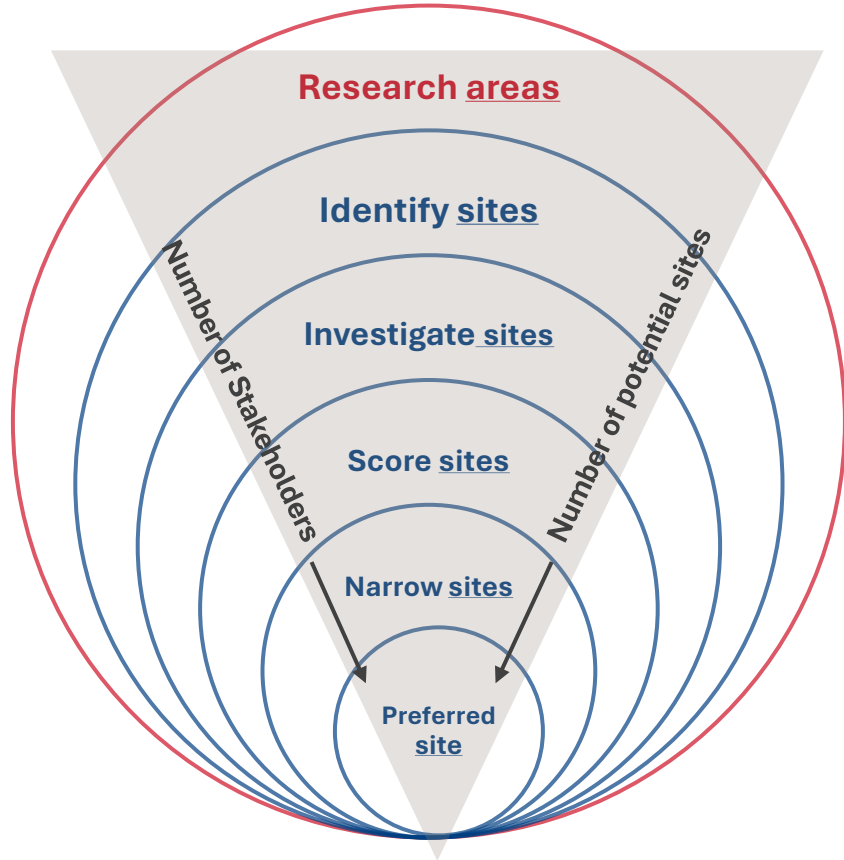
2024

11

Performed due diligence on preferred sites

12

Investigated potential power line routes



13

Milestone update – ended phase of communication with larger stakeholder group (May 20224)

HAPPENING NOW

Dec. 10
Neighborhood Meeting

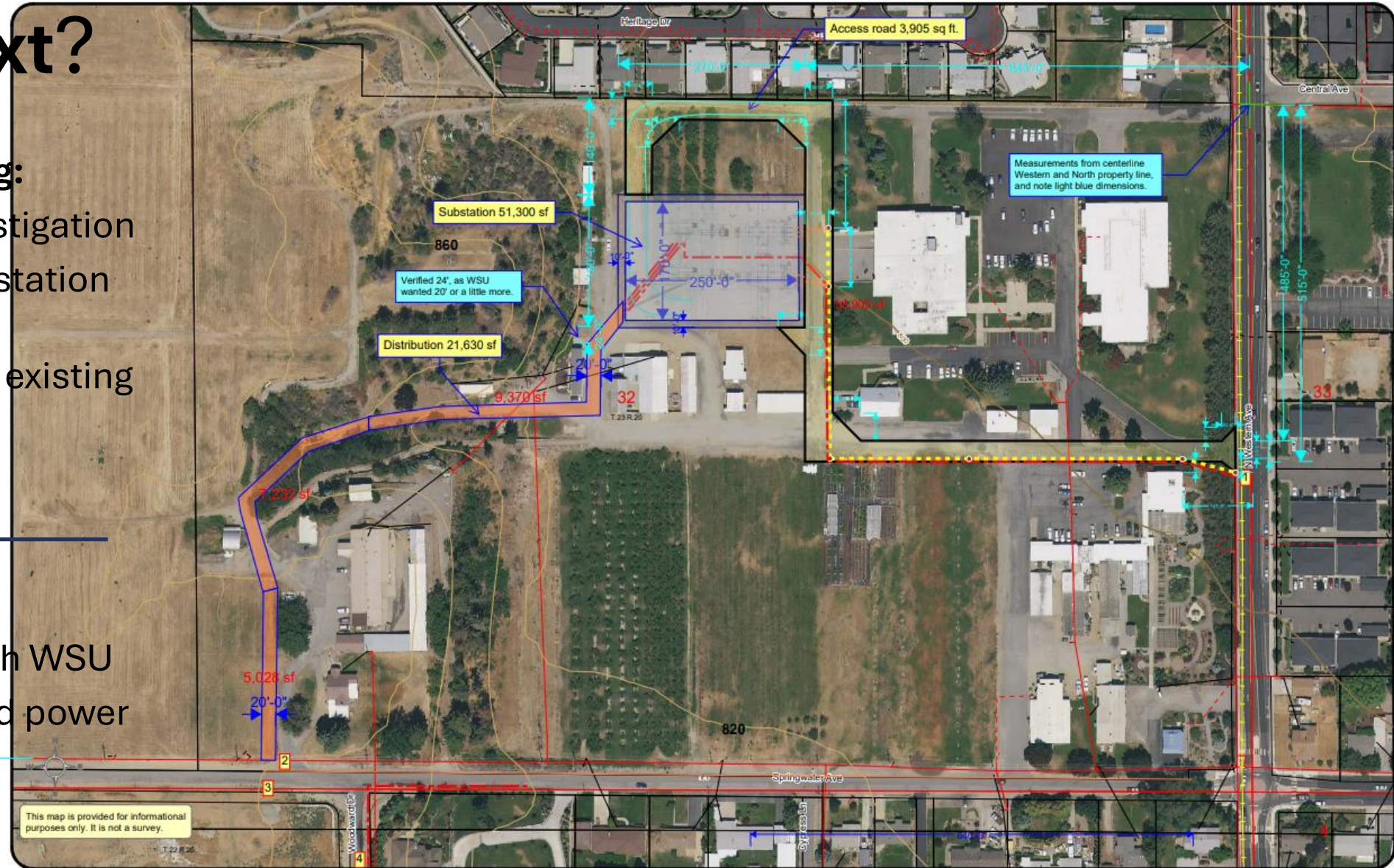
WHAT'S Next?

Today we are presenting:

- Results of further investigation
- Power line routes, substation footprint
- Considerations for the existing environment
- **Preliminary design**

PUD's next steps:

- Finalize land rights with WSU
- Finalize substation and power line design
- Permitting



Substation Components



Walla Walla Substation (Wenatchee)

Substation Components



Transmission Pole Examples



Other Examples – *North Shore (Chelan)*



North Shore Substation (Chelan)



North Shore Substation (Chelan)

Other Examples – *Okanogan (Wenatchee)*

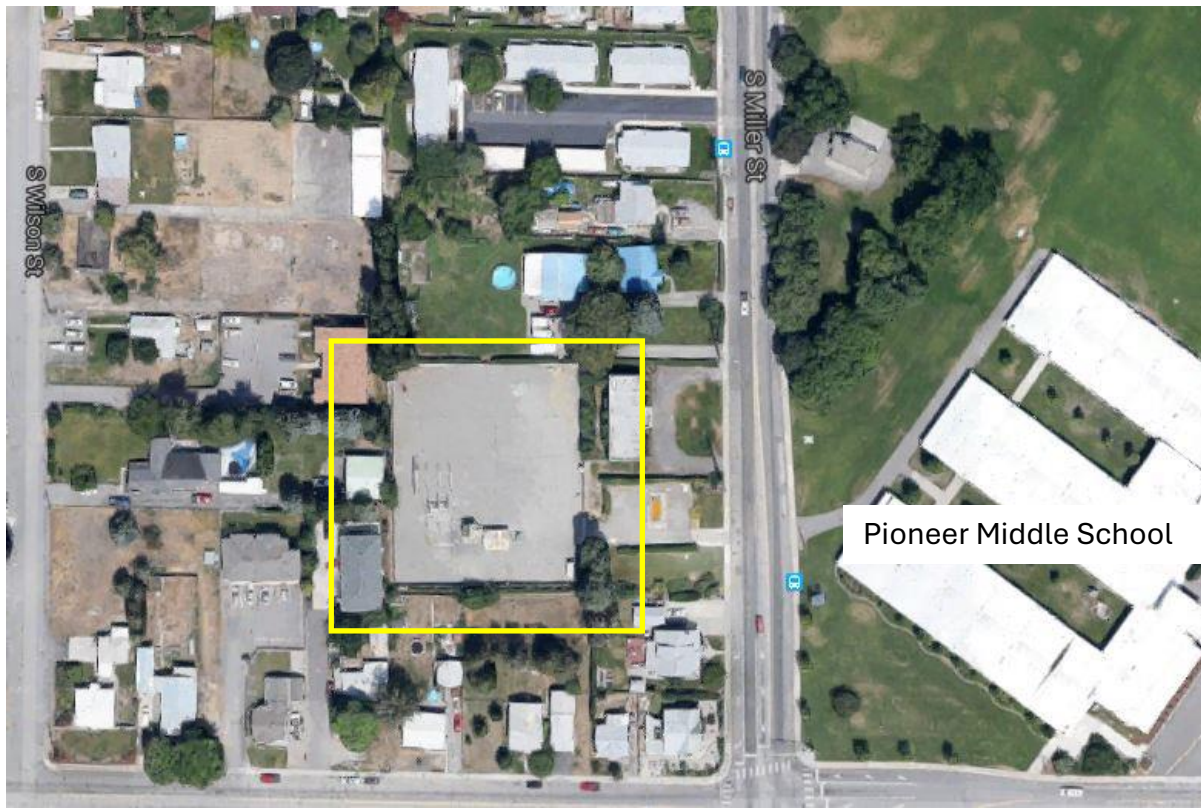


Other Examples – *Miller (Wenatchee)*



Miller Substation (Wenatchee)

Other Examples – *Saddlerock (Wenatchee)*



Other Examples – *Squilchuck (Wenatchee)*



Squilchuck Substation (Wenatchee)



Summary

- Chelan PUD's strategic visioning process will drive future decisions
- Substations play an integral role in the PUD's electrical system
- The Substation Program was developed to manage planning and building new substations
- A preferred site has been chosen
- We are actively developing the preliminary design
- We anticipate finalizing the Acquisition Phase of the Springwater Substation project in 2025
- The start of the Build Phase will depend on annual prioritization and load forecasting

QUESTIONS?

[Chelanpud.org/SpringwaterSubstation](https://www.chelanpud.org/SpringwaterSubstation)

Customeroutreach@chelanpud.org

509-661-8563

