

CASBO WEBINAR

Solar Development 101

Learn what happens after a solar and energy storage contract is signed.

Meet Your Speakers



Nate Roberts
Sr. Director, Development

14+ years experience working in general construction and renewable energy development and construction. Oversees development and construction for all Distributed Generation assets in North America



Casey Miller
Director, Development

14+ years experience working in renewable energy. Oversees development and construction for behind-the-meter projects in California.



David Granlund
Sr. Project Manager, Development

4+ years experience developing solar for CA school districts, resulting in close to 50 MW of capacity across dozens of districts.



Madeline Milani
Marketing Manager

Focus on expanding renewable energy beyond energy savings by impacting the classroom and indirect stakeholders

Our goals for the webinar:

- Know the steps that a solar developer takes after contract signing.
- Understand information a solar developer might need to complete tasks.
- Learn how solar and storage integrate into your campus environment.

Webinar Outline

Introductions

Case Study: Sample Project Schedule

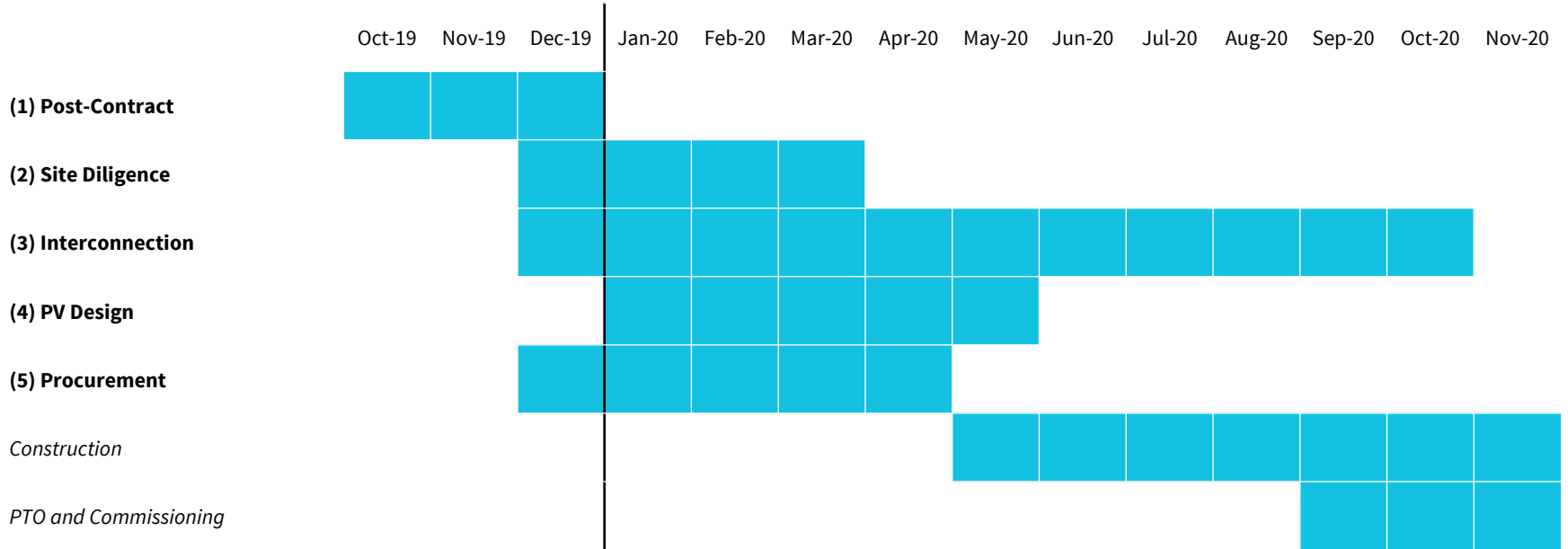
1. Post Contract: Finalizing Project Details and Engineering
2. Site Preparation: Title Reports, Real Estate Diligence, and CEQA Compliance
3. Utility: Interconnection Application and Approvals
4. Local Approvals: Permitting

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Project Schedule

Let's look at a sample project schedule to orient ourselves to the development process.

Schedule: 2.8 MW Solar Parking Canopy



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1. Post-Contract

“What? I thought all the details were done before the contract was signed!”

Congratulations! Now let's begin the work.

- Kick-Off Meeting
- Introduce Project Team
- Gather Stakeholder Needs
- Review Project Schedule

SITE DILIGENCE

UTILITY INTERCONNECTION

PV + STORAGE DESIGN

EQUIPMENT PROCUREMENT

CONSTRUCTION

OPERATION

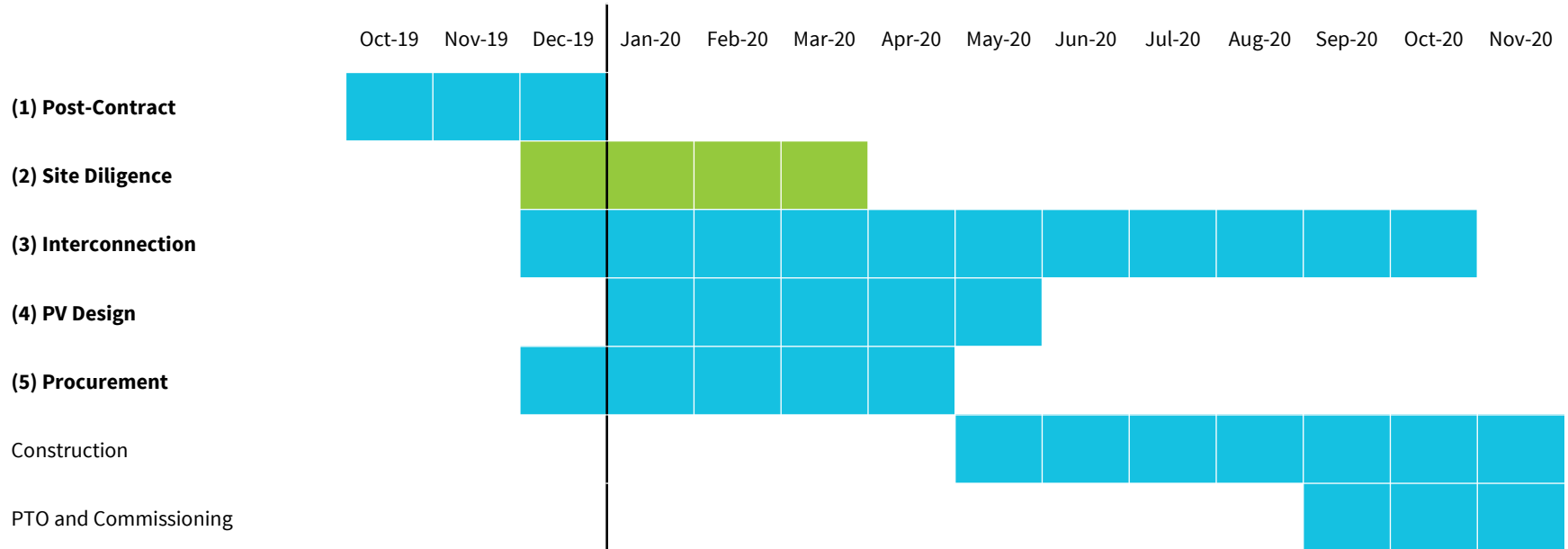


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2. Site Diligence

“I didn’t realize that a solar project would need an environmental review.”

Schedule: 2.8 MW Solar Parking Canopy



Real Estate, Survey, Subsurface Conditions, and More

- Title Reports and Real Estate Diligence // Fatal Flaw analysis // easements, encroachments, title report exceptions
- Beware of SNDAs, Quit Claims, Encroachment Permits, Easements that impact system layout and necessitate the need to rearrange system siting, and assessments/liens.
- Verify property owner and vesting of title.
- Boundary Survey, easement plotting/title exception plotting, underground utility location and plotting
- Survey/Mapping
- ESA Phase I, (Environmental Site Assessment)
- Geotechnical Analysis
- Detailed POCC analysis on site, (remove dead fronts of switchgear)
- ADA site analysis
- FAA case submission
- School District creates DIR number

CEQA Compliance

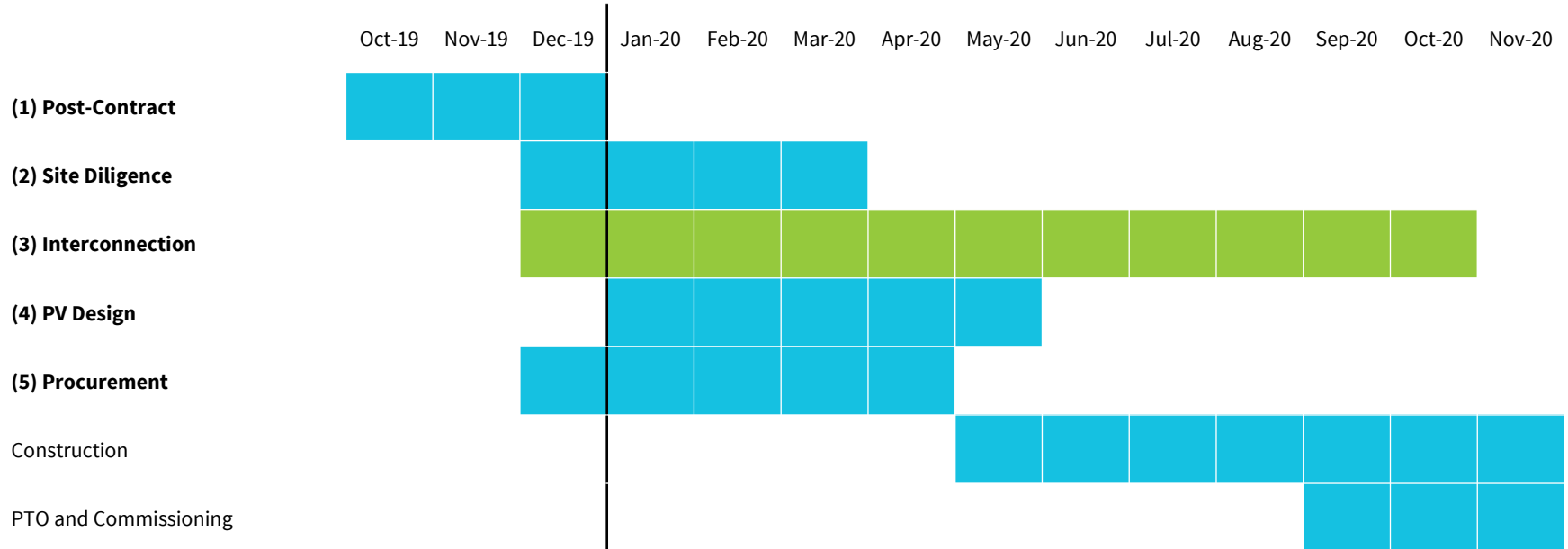
- Identify the Lead Agency; identify the scope
- Other Conditional Permitting

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3. Interconnection

“Wow, does it really take that long?”

Schedule: 2.8 MW Solar Parking Canopy



Interconnection Approval

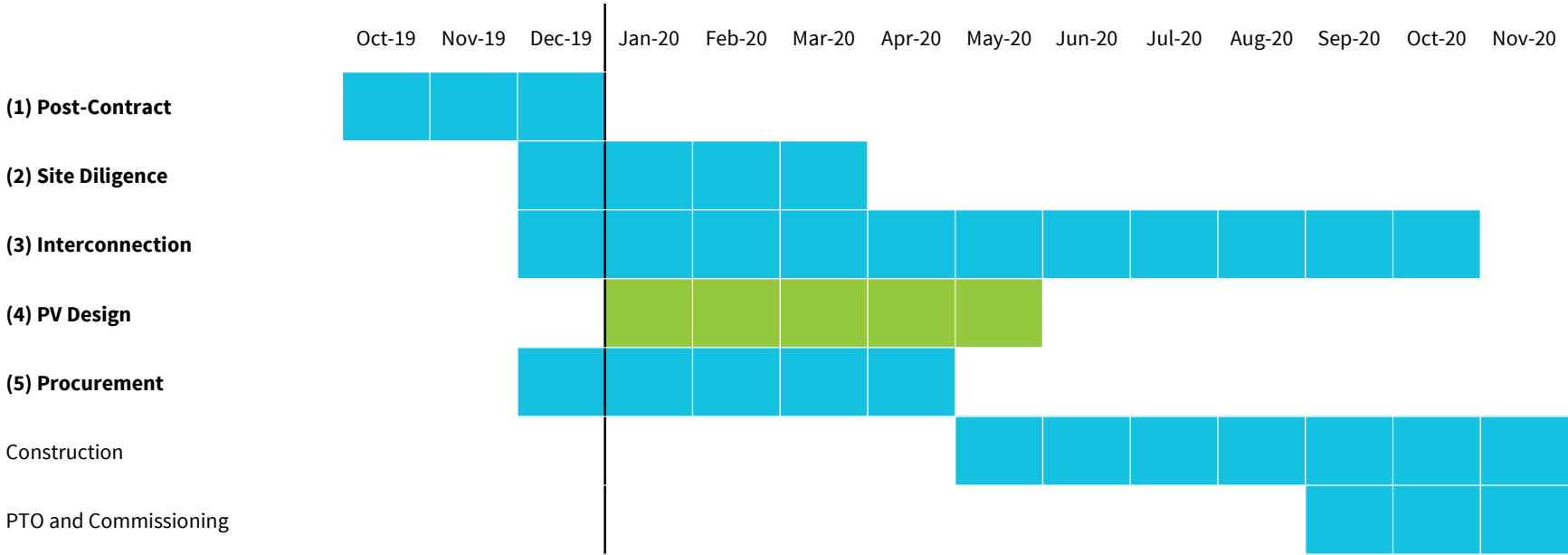
Interconnection Step	Duration in <u>business days</u> (Over 1 MW) - Assumes telemetry or other upgrades	Duration in <u>business days</u> (Under 1 MW) - Assumes no Upgrades
Application Submitted	1 Day	1 Day
Application Review Period	20 Days	15-20 Days
Supplemental Review	20 Days	-
Detailed Study	60 Days	-
Upgrades Scope and Cost Determined (if applicable)	-	-
Utility Engineering of Required Upgrades	4-6 Months	-
Utility Procurement	3-6 Months	-
Utility Installation of Upgrades	1-2 Weeks	-
Total	12 to 18 Months	15-20 days

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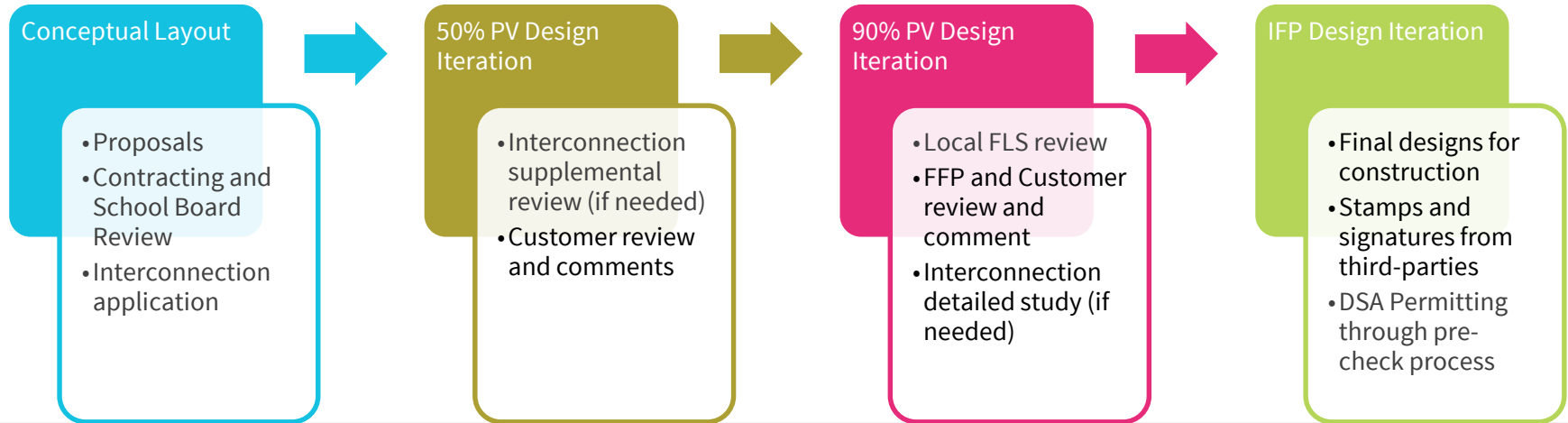
4. PV Design

It's time to finalize the design for construction now that site details and interconnection requirements are completed.

Schedule: 2.8 MW Solar Parking Canopy



An Iterative Approach to PV Design



Each iterative step of the PV design process is used for various milestones of the solar development process.



Duration of 60-80 business days for canopy



Third-party engineering review

Permitting

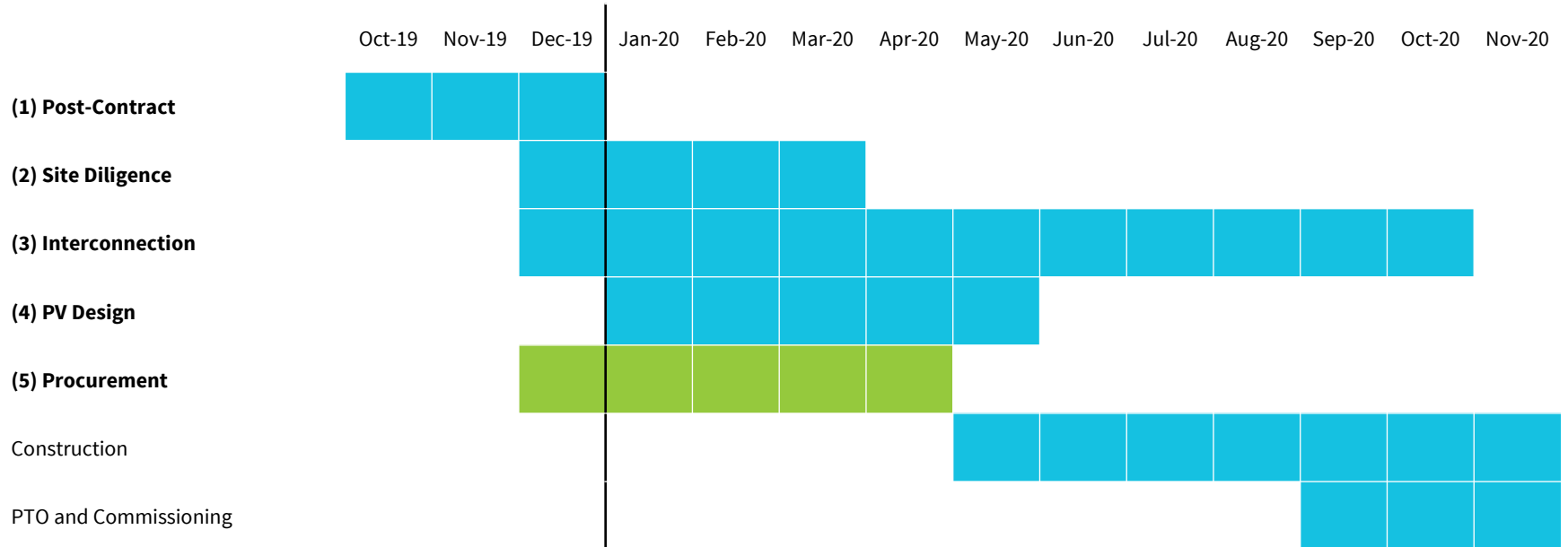
- School District employs the IOR/SOR
- School District provides facility record drawings, including site plan with all existing DSA A#'s.
- 50% Designs and allow for customer review and comment, (though design burden remains solely with system owner)
- 90% Designs and allow for customer comment.
- School District creates Office of Public School Construction (OPSC) Project Tracking Number (PTN).
- California Geological Survey (CGS) submission (if applicable).
- Local AHJ FLS review
- Permit submittal, (often times DSA Over The Counter Permits)
- DSA Forms
- DSA Box Site
- DSA A#
- Ground Mounts and DSA permit exemptions, (IR16-8/IR17-5/IR A-22)

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5. Procurement

Timing equipment purchases to ensure
Federal ITC compliance.

Schedule: 2.8 MW Solar Parking Canopy



What equipment is needed?

Steel

- Canopy steel procurement
- Fabrication of any custom equipment

Modules & Inverters

- “Safe harbor” modules to ensure Federal 30% investment tax credit compliance.
- Inverters
- “Balance of System” (BOS) equipment

Electrical Components

- Transformers
- Switchgear
- Energy Storage

*ForeFront Power procures equipment and ships to our local warehouse.
Our installation teams then bring to the site as needed.*

Let's revisit our goals for the webinar.

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Questions?



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Thank you