WASHINGTON STATE UNIVERSITY
Energy Program

Pumped Storage Hydropower Siting Information Study

PSH Siting Topics: What to Know about PSH State & Federal Permitting and Licensing

WSU Energy Program

December 4, 2024

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Welcome and a few reminders…

- This meeting is being recorded and will be available on the study website—along with the slides and a meeting summary
- Please remain muted unless you are speaking
- As needed, please rename yourself with your affiliation or workplace in Zoom
- Attendees will be able to chat everyone in the meeting
  - If you are experiencing technical issues, please chat directly to "hosts and panelists" (or email to hsherrow@rossstrategic.com).
- To ask questions or join discussion, please use the "raise your hand" button to indicate you would like to speak; chat can also be used for Q&A
- Please be respectful of this process. Allow everyone the chance to speak and listen actively to understand others' views

WSU Energy Program

- Self-supporting department within Washington State University based in Olympia
- Other programs: green transportation education and outreach, community solar, Washington state energy codes (residential) support, community energy efficiency, emerging technologies, and more

WSU Energy Program website: https://www.energy.wsu.edu

WSU PSH Siting Study Team

- Karen Janowitz

WASHINGTON STATE UNIVERSITY
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- Terri Parr

WASHINGTON STATE UNIVERSITY

- Tom Beierle
- Susan Hayman
- Hogan Sherrow

ROSS STRATEGIC

- Jeff Boyce

Meridian Environmental, Inc.

Today's Meeting Objectives

- Regarding PSH, understand key aspects of:
  - Federal licensing and permitting
  - State environmental review process
  - Section 106 requirements of the National Historic Preservation Act (NHPA), which relates to Tribal consultation on lands affected by proposed projects
- Hear from attendees and promote discussion about the above topics
- Provide project update and overview of topics for upcoming PSH study meetings

Agenda Overview

9:30 – 9:40 AM	Welcome
9:40 – 9:50 AM	Study Overview and Update
9:50 – 10:25 AM	Federal Licensing and Permitting for PSH
10:25 – 10:50 AM	State Environmental Policy Act (SEPA) Process
10:50 – 11:00 AM	*Break*
11:00 – 11:25 AM	Section 106 of the National Historic Preservation Act
11:25 – 11:50 AM	*Breakout Sessions*
11:50 – 11:55 AM	Breakout Session Highlights
11:55 – noon	Next Steps, Wrap up, and Adjourn

Study Overview and Update

Karen Janowitz, WSU Energy Program

PSH Siting Study Goal

Identify and understand issues and interests of federally recognized Tribes, agencies, and various stakeholders related to **areas where pumped storage hydro might be sited**.

No specific PSH projects are being promoted or sited in this study.

Section 306 of House Bill 1216 (2023) on Clean Energy Project Siting:

https://lawfilesext.leg.wa.gov/biennium/2023-24/Pdf/Bills/Session%20Laws/House/1216-S2.SL.pdf?q=20240327114612

Why a PSH Siting Study?

- Support goal of Clean Energy Transformation Act (CETA) (SB 5116, 2019)
- Explore PSH, which is an existing proven technology, long-duration, and provides grid reliability
- Understand issues concerning PSH siting to work towards avoiding impacts and disputes

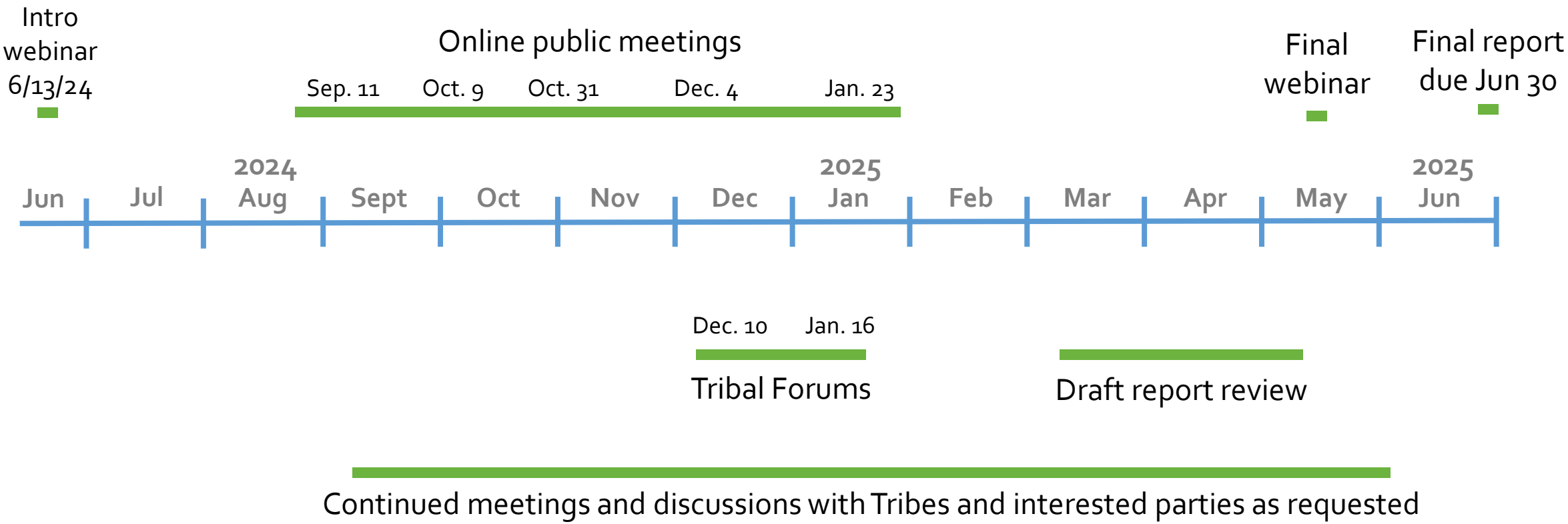
Pumped Storage Hydro Siting Study Process

- PSH research
- Outreach, Engagement, Meetings, Webinars
  - Provide information on PSH
  - **Provide opportunities to hear from you**
- Mapping *(requested in legislative bill)*
  - Develop map based on participant input (no sensitive information)
- Final report – due June 30, 2025

Engagement

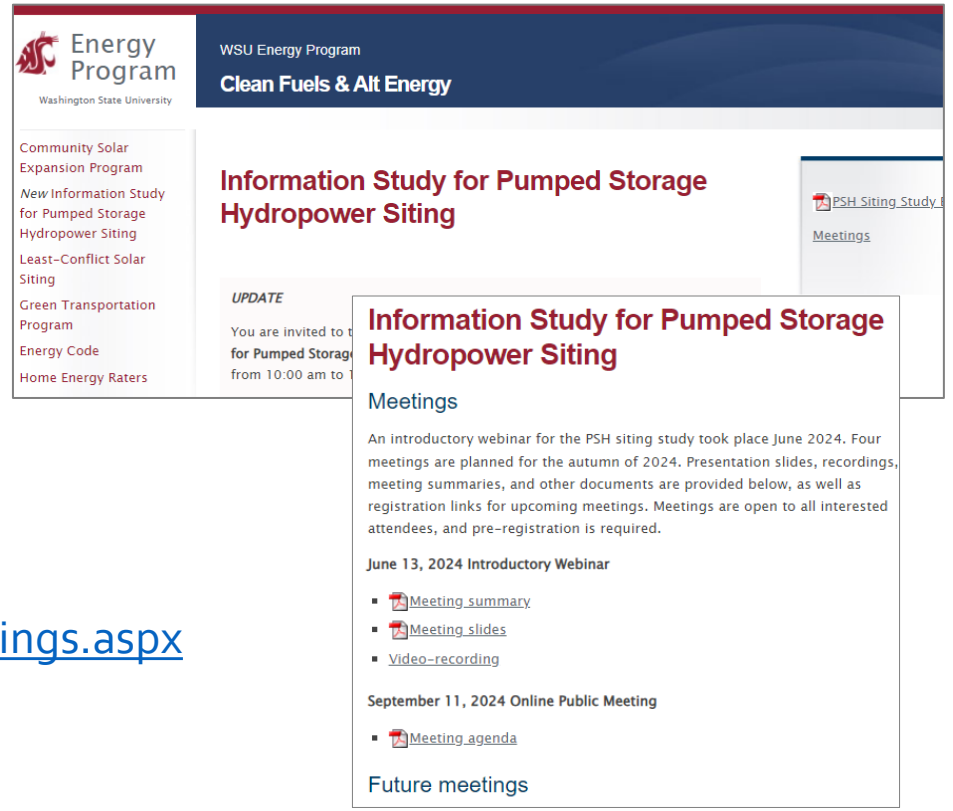
- Next statewide online public meeting – January 23, 2025
  - Other mechanical energy storage options, including:
    - Advanced Rail Energy Storage
    - Pumped storage using abandoned mines
- Tribal engagement
  - Two Forums for Tribal leaders and staffs
  - Attendance and discussion at Tribal conventions & conferences
  - Further outreach and meetings
- Further engagement
  - We welcome the opportunity to hear from you individually or in groups

Timeline *(subject to change)*



WSU PSH Website and Email List

WSU Energy Program PSH Siting Study Webpages:
https://www.energy.wsu.edu/CleanFuelsAltEnergy/PSHSiting.aspx



PSH Siting Study Meeting Webpage:

- Meeting summary
- Meeting video-recording
- Meeting slides

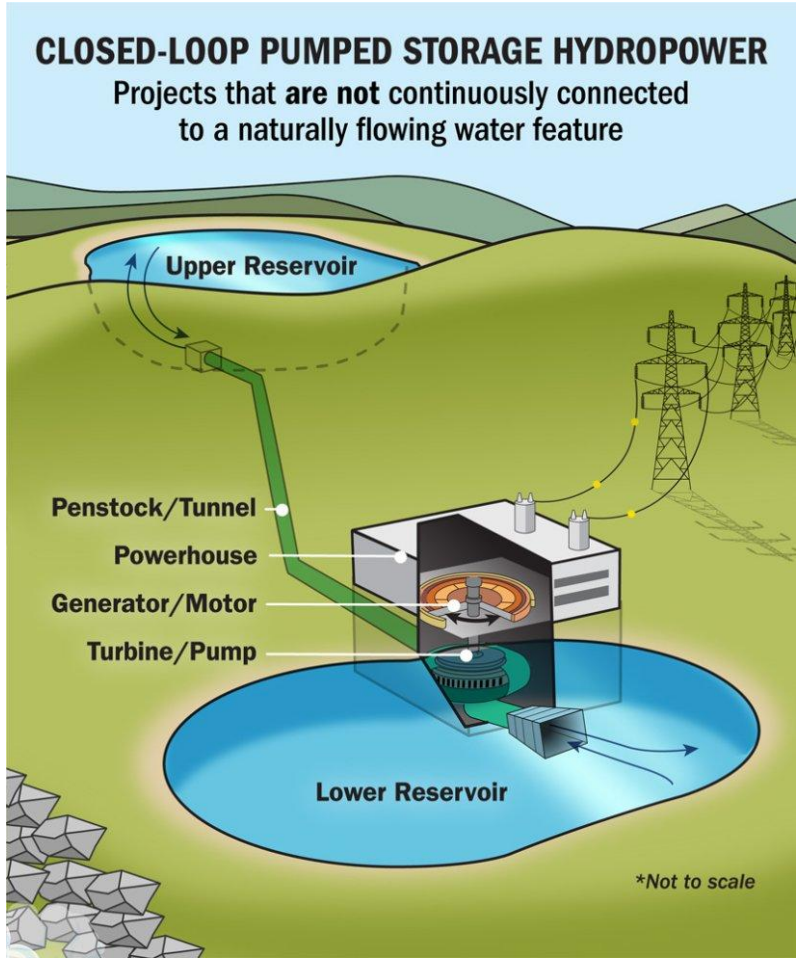
https://www.energy.wsu.edu/CleanFuelsAltEnergy/PSHSiting/Meetings.aspx

Sign up for the email distribution list:
https://www.energy.wsu.edu/CleanFuelsAltEnergy/PSHSiting/PHSSitingEmailRegistration.aspx

What is Pumped Storage Hydropower?

- Long-duration energy storage technology
- "Water battery":
  - Stores energy in an upper reservoir
  - Generates electricity when water is released through turbines to a lower reservoir (high demand)
  - Replenishes storage when water is pumped back to upper reservoir (low demand)
- Provides over 90% of U.S. energy storage capacity

This study focuses on closed-loop, where reservoirs are not connected to any existing water bodies



U.S. Dept of Energy, 2019

For more information: https://www.energy.wsu.edu/CleanFuelsAltEnergy/PSHSiting/Meetings and https://www.energy.gov/eere/water/pumped-storage-hydropower

Questions?

Overview of Federal Energy Regulatory Commission (FERC) Hydropower Licensing Process

Aaron Levine, Esq.
Senior Legal & Regulatory Analyst
National Renewable Energy Laboratory

What Does FERC Regulate?

- FERC regulates most “non-federal” hydropower development
  - i.e., hydropower projects not directly developed by federal agencies such as the Bureau of Reclamation, U.S. Army Corps of Engineers, or the Tennessee Valley Authority
  - Exception for Bureau of Reclamation Lease of Power Privilege projects on authorized Reclamation dams and conduits.

- FERC issues permits, licenses, and exemptions from licensing to study feasibility and construction, operate, and maintain the associated dams, water conduits, reservoirs, powerhouses, transmission lines (to the first point of interconnect), and other project works necessary and convenient for the development of non-federal hydropower projects.

❖ This applies to all projects regardless of who owns or manages the surrounding land

Types of Permits, Exemptions, and Licenses

FERC issues various types of approvals, including:

- Preliminary permits:
  - Allow the permit holder to have priority for a hydroelectric site over any other applicants to conduct feasibility, environmental studies, and pre-filing stakeholder consultations.
  - Issued for up to 4 years, one extension for up to an additional 4 years
- Exemptions from Licensing
  - **Small hydropower** - 10 megawatts or less built at an existing non-federal dam
  - **Small conduit hydropower** – 40 megawatts or less, the facility does not occupy federal lands, and the facility was constructed primarily for a purpose other than hydropower
  - Exemptions from Licensing last in perpetuity once they are issued (i.e., no relicensing process), but are subject to mandatory terms and conditions set by federal and state fish and wildlife agencies (and FERC).

Types of Permits, Exemptions, and Licenses

Licenses – first time (known as “original”) and relicenses (known as “new”)

- FERC hydropower licenses may be issued for a term of 30-50 years
  - FERC policy statement sets 40 years as the default term length
  - Licenses set for 50 years at federal dams
- Licenses are issued for projects at various types of facilities, including:
  - Run of river
  - New dam reservoirs
  - Existing dam reservoirs (NPDs)*
  - Pumped storage*
  - Some marine energy devices

* At the direction of Congress FERC has developed a 2-year post-filing licensing process for qualifying NPDs and closed-loop pumped storage projects that shortens the process by typically one year.

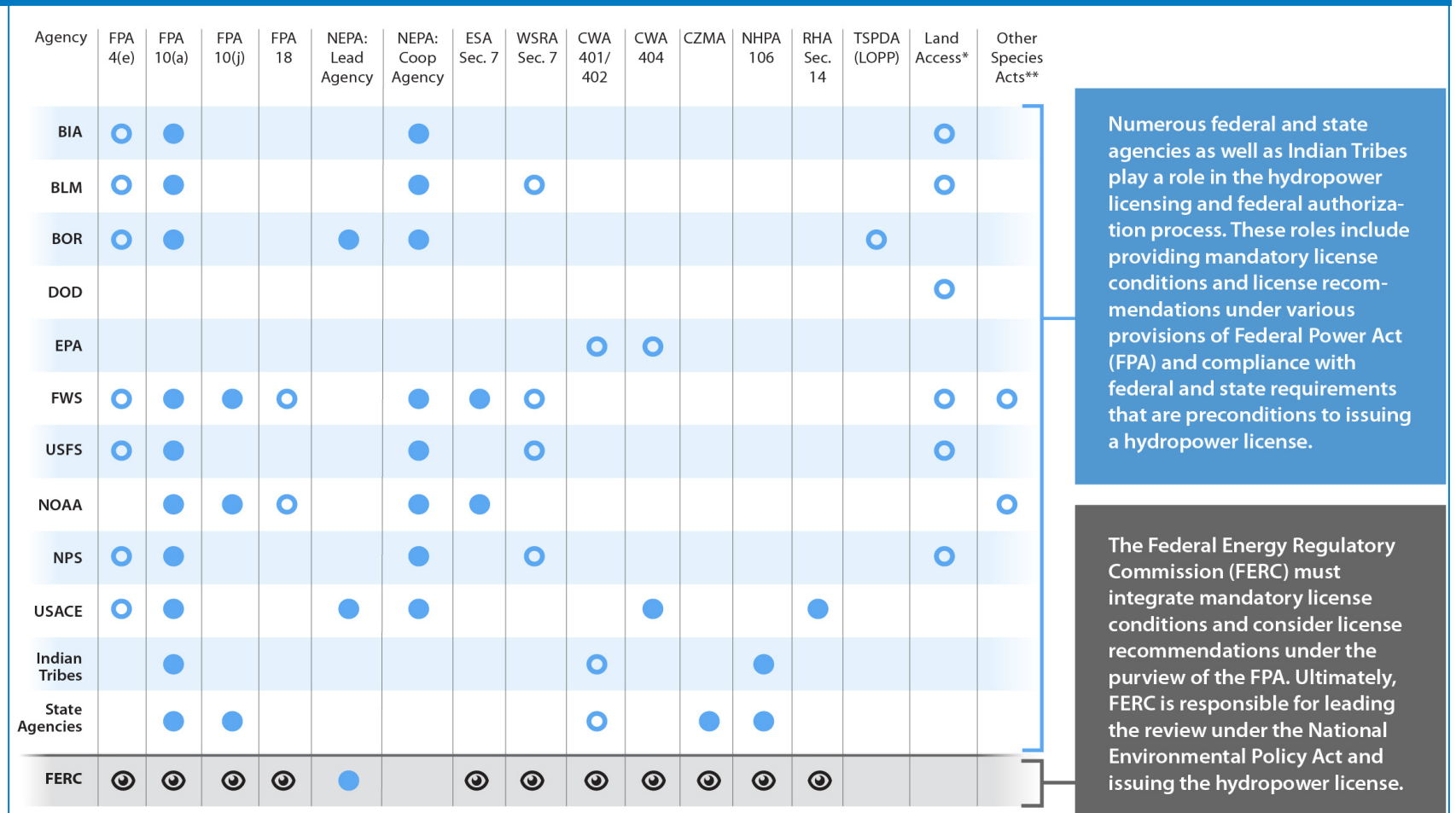
When is Pumped Storage Outside of FERC Jurisdiction?

- FERC has authority over most non-federal pumped storage hydropower projects, with the following exceptions:
  - Exclusively under the control of the Bureau of Reclamation (i.e., both reservoirs are withdrawn from FERC jurisdiction)
  - Closed-loop pumped storage hydropower if the project:
    - Does not occupy federal public land or a federal reservation
    - Does not use surplus water or water power from a government dam
    - Is not located on a non-navigable Commerce Clause stream, affects the interests of interstate or foreign commerce, and has undergone construction or modification since August 26, 1935.*

* Use of groundwater has been determined to not constitute a Commerce Clause waterway (*See Swanton Village, Vermont*, 70 FERC ¶ 61,325, at 61,992 (1995)).

FERC & Other Agency Authorizations

A multitude of federal and state agencies have a role in the hydropower licensing and federal authorization process related to fish and wildlife, water quality, cultural, and general environmental considerations.



The FERC (re)Licensing Process: Three Types

The FERC licensing process is largely the same for both new hydropower development (original licenses) and existing hydropower development (relicensing/new licenses).

Three types of FERC licensing processes:

- Integrated Licensing Process (default)
  - Most structured
  - Most suitable for projects with complex issues
  - FERC involved from outset of process
- Traditional Licensing Process (most commonly used)
  - Most flexible
  - Most suitable for projects that do not have complex issues
  - FERC involved after the final license application
- Alternative Licensing Process (least commonly used)
  - Most cooperative
  - Stakeholders/developer agreement upfront

The FERC (re)Licensing Process: Two Phase

The **licensing process** can be thought of in two main phases:
1) Pre-filing and 2) Post-filing.

Key aspects of the **Pre-filing phase**:

- Notice of Intent (NOI) and Pre-Application Document (PAD) kick-off the process
  - For relicensing this must occur between 5.5 and 5 years prior to license expiration
- Pre-filing steps and timeline vary between the three licensing processes
- Study requests, study plan, and study disputes occur in this phase

Key aspects of the **Post-filing phase**:

- Begins after submission of the Final License Application
- Post-filing steps and timeline are mostly similar between the three licensing processes except for the scoping process for the National Environmental Policy Act (NEPA) occurring during post-filing in the TLP.

The FERC (re)Licensing Process: Study Request

ILP example: Study requests are filed within 60 days after the Pre-Application Document and Scoping Document 1 and:

(1) Describe the goals and objectives of each study proposal and the information to be obtained;

(2) If applicable, explain the relevant resource management goals of the agencies or Indian tribes with jurisdiction over the resource to be studied;

(3) If the requester is not a resource agency, explain any relevant public interest considerations in regard to the proposed study;

(4) Describe existing information concerning the subject of the study proposal, and the need for additional information;

The FERC (re)Licensing Process: Study Request

(5) Explain any nexus between **project operations** and effects (direct, indirect, and/or cumulative) on the resource to be studied, and how the study results would inform the development of license requirements;

(6) Explain how any proposed study methodology (including any preferred data collection and analysis techniques, or objectively quantified information, and a schedule including appropriate field season(s) and the duration) is consistent with generally accepted practice in the scientific community or, as appropriate, considers relevant tribal values and knowledge; and

(7) Describe considerations of level of effort and cost, as applicable, and why any proposed alternative studies would not be sufficient to meet the stated information needs.

The FERC (re)Licensing Process: Study Plan

Applicant Submits Study Plan that:

(1) A detailed description of the study and the methodology to be used;

(2) A schedule for conducting the study;

(3) Provisions for periodic progress reports, including the manner and extent to which information will be shared; and sufficient time for technical review of the analysis and results; and

(4) If the potential applicant does not adopt a requested study, an explanation of why the request was not adopted, with reference to the criteria set forth in 18 CFR § 5.9(b)

- Plus consideration of the issue/criteria included in the study request on previous slide.
- FERC then accepts comments on the applicant's study plan for **90 days**

The FERC (re)Licensing Process: Study Plan

Remainder of Study Plan/Dispute Process:

- Applicant submits revised study plan within **30 days** of comments
- Participants have an additional **15 days** to file comments in revised study plan
- FERC makes a determination on study plan within **30 days** of revised study plan
- Participants have **20 days** to file disputes on FERC study plan determination

❖ If formal disputes are filed, ILP allows for a dispute resolution process under 18 CFR § 5.14

The FERC (re)Licensing Process: Post-Filing

More Key aspects of the **Post-filing phase**:

- NEPA review by FERC
- Application for Clean Water Act Section 401 Water Quality Certification and state agency decision
- Endangered Species Act review by Fish and Wildlife Service or NOAA Fisheries
- State and federal agency submission of mandatory conditions and license recommendations under Federal Power Act Sections 4(e), 10(a), 10(j), and 18.
- Issuance of final FERC license order with inclusion of mandatory terms and conditions that the project must comply with.

The FERC (re)Licensing Process: Recommendations and Conditions

FPA Section 4(e)

- Federal land management agencies may issue mandatory conditions for inclusion in a FERC license to ensure that the project will not interfere or be inconsistent with the purpose of any federal reservation.

FPA Section 10(a)

- Recommendations from Tribes ,federal agencies, and state resource agencies exercising administration over flood control, navigation, irrigation, recreation, cultural and other relevant resources of the state in which the project is located.

- Recommendations to ensure the project will be best adapted to a comprehensive plan for improving or developing a waterway for the use or benefit of interstate or foreign commerce, the improvement and use of water power development and the adequate protection, mitigation damages to, and enhance fish and wildlife and for other public uses.

The FERC (re)Licensing Process: Recommendations and Conditions

FPA Section 10(j)

- Recommendations from USFWS, NOAA Fisheries, and state fish and wildlife agencies to adequately and equitably protect, mitigate damages to, and enhance fish and wildlife (including related spawning grounds and habitat) affected by the development, operation, or management of the project.

FPA Section 18

- Mandatory Fishway Prescriptions by USFWS and NOAA Fisheries
- Limited to physical structures, facilities, or devices necessary to maintain all life stages of such fish, and project operations and measures related to structures, facilities, or devices which are necessary to ensure the effectiveness of such structures, facilities, or devices for such fish.
- Licensee or any other party to the FERC licensing proceeding may file alternative Section 18 fishway prescriptions with FWS or NOAA Fisheries for consideration.

The FERC (re)Licensing Process: Detailed Steps

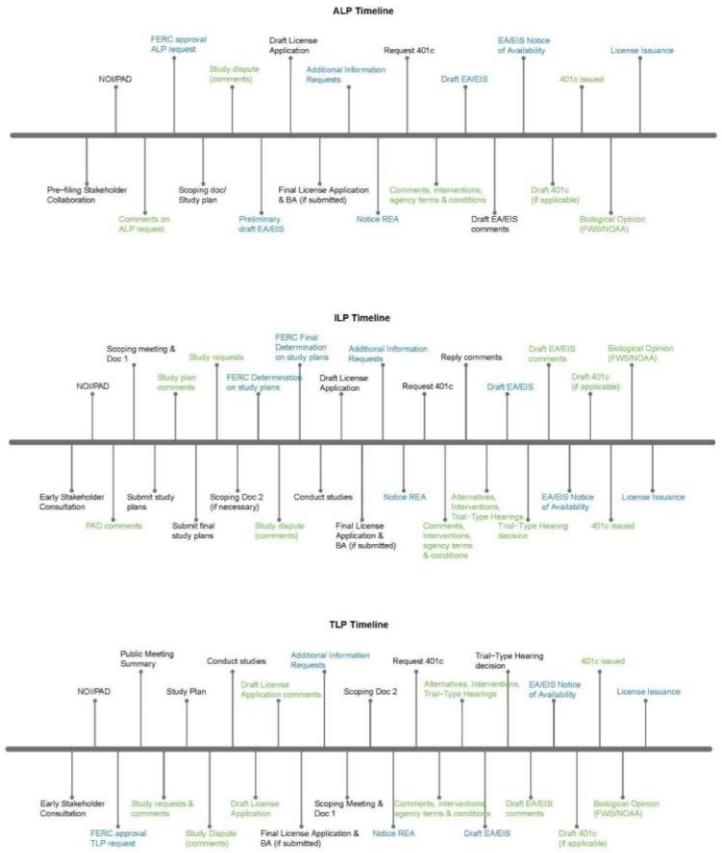
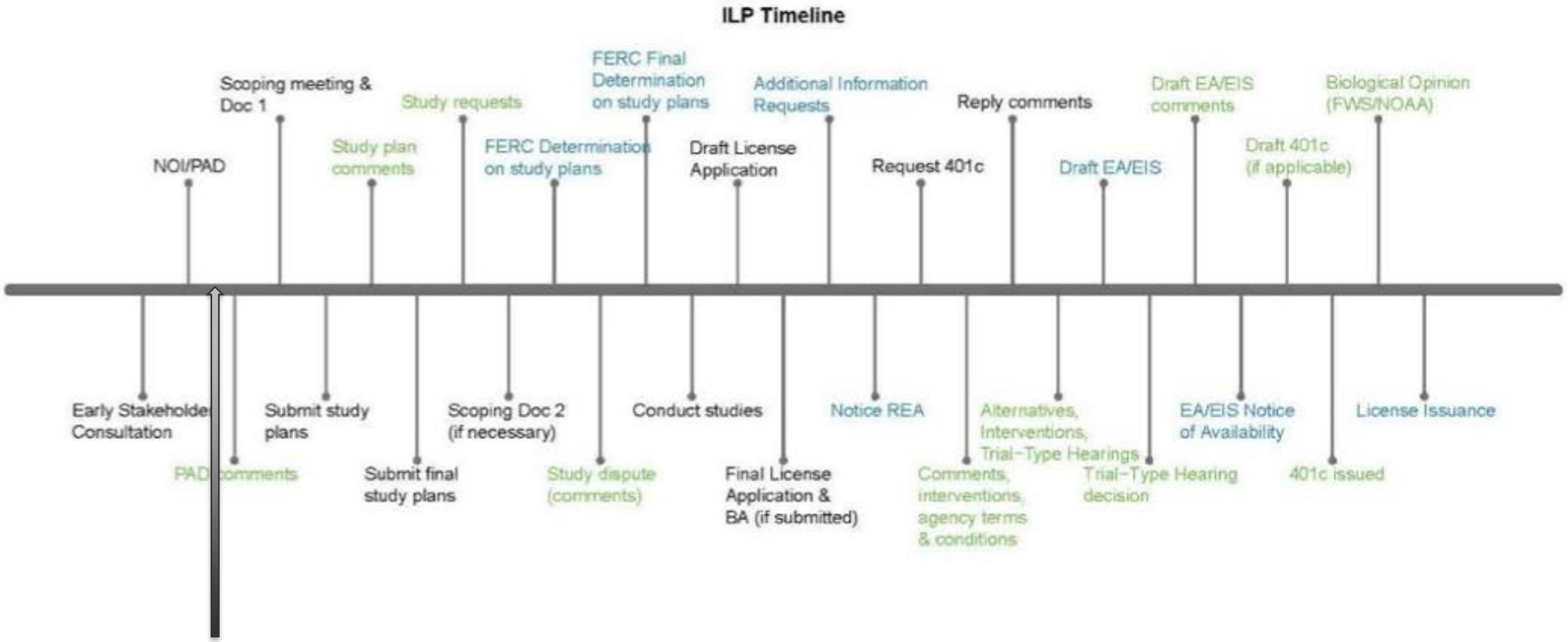


Figure 1. Example alternative, integrated, and traditional licensing process timelines. License applicants are responsible for milestones in black text, other stakeholders are responsible for milestones in green text, and FERC is responsible for milestones in blue text.

The FERC (re)Licensing Process: Detailed Steps ILP



***Ex Parte* Communications** – interactions between one party and the decision-making authority *without* the presence of all other parties.

Thank you!

Aaron Levine, Esq.
Aaron.Levine@nrel.gov

Participant Engagement

- Please share in chat:
  - *What observations or concerns do you have about federal licensing and permitting for PSH?*

DEPARTMENT OF ECOLOGY
State of Washington

State Environmental Policy Act (SEPA)

Pumped Storage Hydropower

December 2024

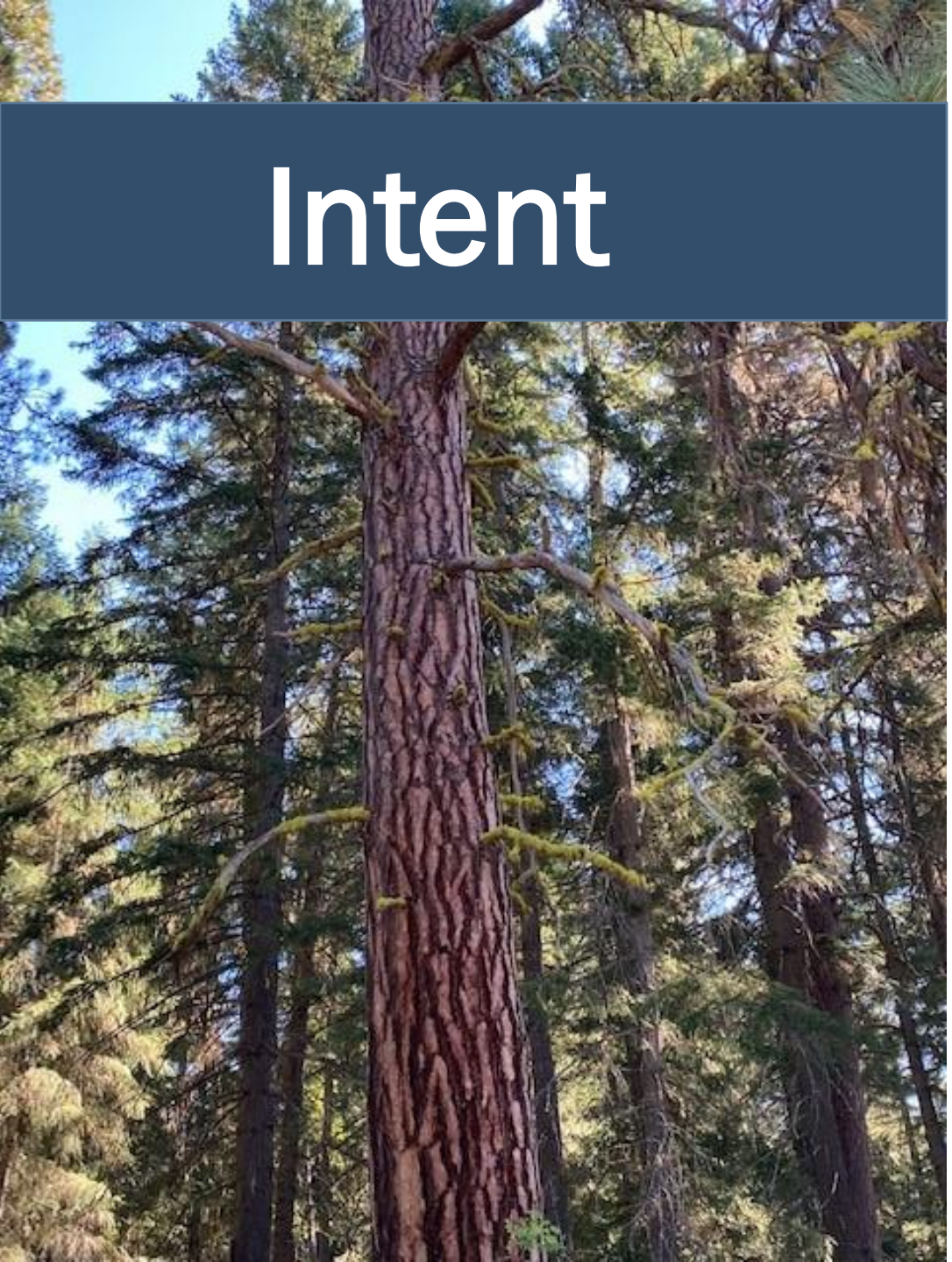
Agenda

1. What is SEPA?
2. Who Leads SEPA for Pumped Storage Hydropower projects
3. Evaluating the proposal
4. Tribal Engagement best practices
5. Using NEPA and other documents
6. Q&A

SEPA IS...

DEPARTMENT OF ECOLOGY
State of Washington

State policy directing state and local agencies to **protect and enhance** the natural and built environment by **making informed decisions.**



Intent

- Before decisions are made
- Evaluate impacts
- Involve the public
- Provide clarity
- Integrate into existing planning
- Complete SEPA early

Key Features

Identify and evaluate probable impacts for all elements of the environment

Condition or deny government actions

Supplement existing authority of all branches of state government

Lead Agency

- ✓ Completes review
- ✓ Can be proponent
- ✓ Makes the determination
- ✓ Ensures laws are followed
- ✓ No project actions can be taken until after SEPA completed

SEPA Lead Agency options for Pumped Storage

Ecology as SEPA lead agency for any water impoundments over 40 acres.

- Applicant can also request to use Ecology's Coordinated Permit Process

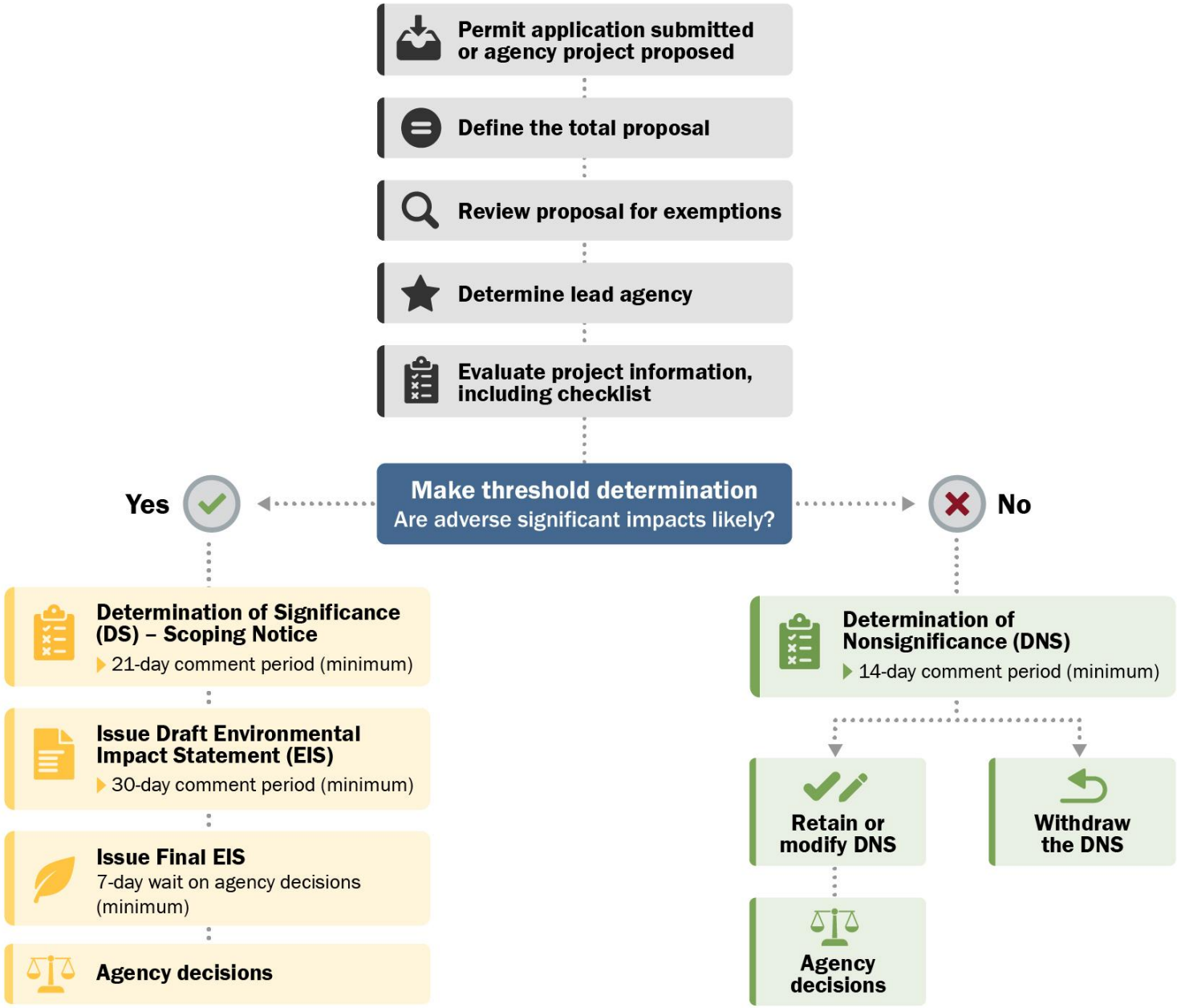
Energy Facility Site Evaluation Council (EFSEC) as SEPA lead

- Applicant must submit application and request EFSEC Site Certification process

Local government as SEPA lead agency

- An option when the water impoundment is less than 40 aces

State Environmental Policy Act (SEPA) Process



Evaluating the Whole Proposal

Use

- Permit application
- Checklist
- Other materials

Request

- More information from applicant
- Consult with other agencies

Consider

- Construction
- Operation
- Support facilities

Natural Environment

- Earth
- Air
- Water
- Plants and animals
- Energy and natural resources

Built Environment

- Land and shoreline use
- Transportation
- Public utilities and services
- Environmental health

DEPARTMENT OF ECOLOGY
State of Washington

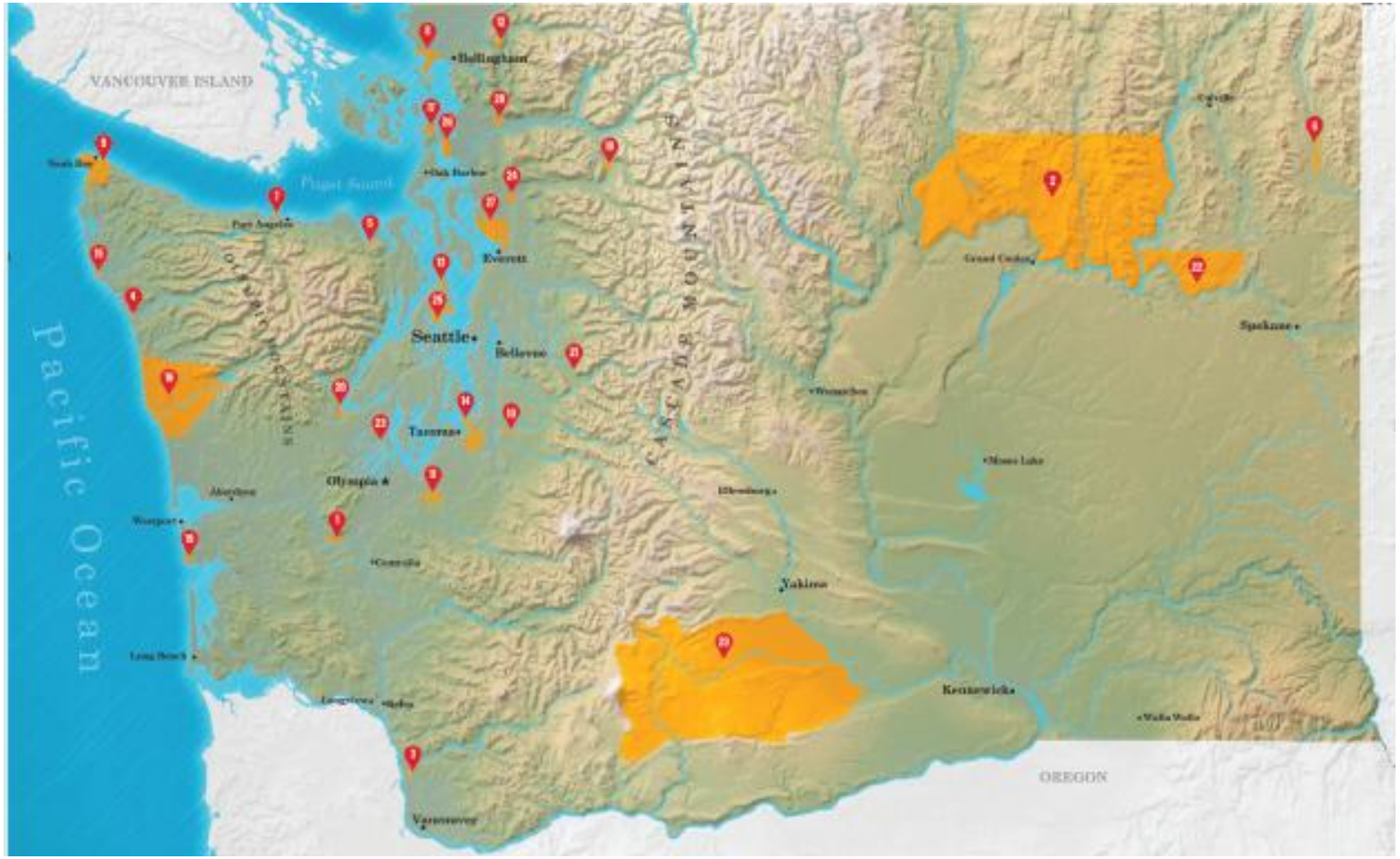
Considerations

Existing Conditions

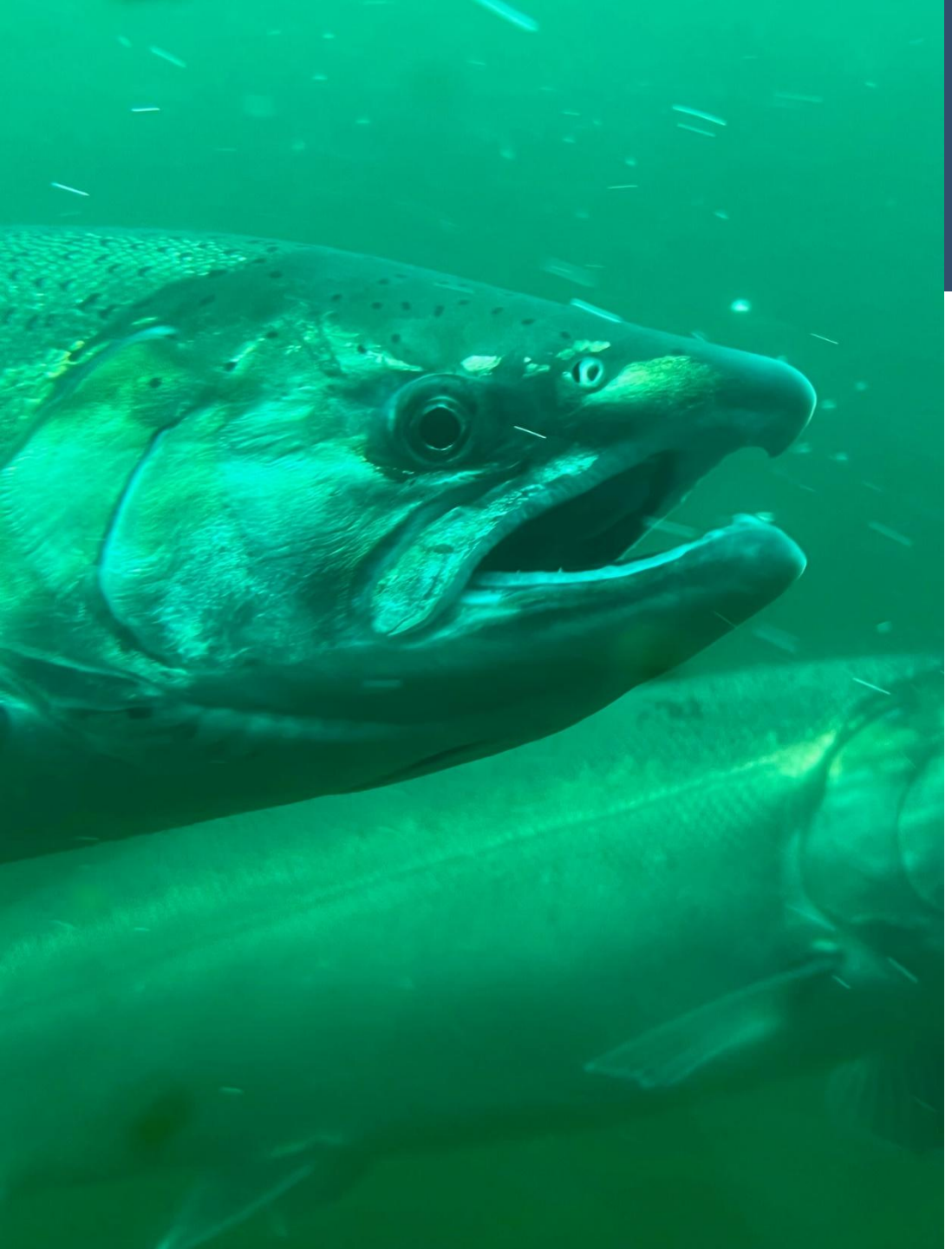
Direct & Indirect Impacts

Short- & Long-Term Impacts

Sensitive Areas & Species



Impacts to Tribes



Tribal Impacts:
Best Practices

- Determine if Tribes are impacted
- Engage early and often
- Understand project concerns
- Include mitigation options to reduce impacts
- Formal government to government consultation (state and federal agencies only)

NEPA & SEPA

- NEPA applies to federal agencies
- Both NEPA and SEPA reviews may be required on the same proposal
- NEPA documents **MAY** be adopted under SEPA
- SEPA documents **CANNOT** be adopted under NEPA

Integrated Review Process

- State and federal agencies act as co-leads
- Combined NEPA-SEPA documents are issued
- SEPA review “shadows” the NEPA document production
- SEPA is done separately from the NEPA review process

NEPA vs. SEPA

NEPA	SEPA
Categorical exclusion	Categorical exemptions Statutory exemptions
Environmental assessment	Environmental checklist
Findings of No Significant Impact	Determination of Nonsignificance
Notice of Intent	Determination of Significance and Scoping notice
Draft Environmental Impact Statement	Draft Environmental Impact Statement
Final EIS	Final EIS
Supplemental EIS	Supplemental EIS
Record of Decision	SEPA agencies must wait 7 days before taking action

2 options for using existing documents

Adopting existing NEPA or SEPA documents

Incorporation by reference, i.e. EIS's from other states or relevant studies

Adopting Existing Documents

NEPA documents

Adopt NEPA documents on same proposal instead of SEPA Checklist or EIS

SEPA documents

- Adopt SEPA documents prepared for similar but different proposals.
- Can use nonproject review documents

Incorporate by Reference

Different than adopting documents:
Does not have to be a SEPA or NEPA document

Similar to adopting documents:
All or part of the document becomes part of environmental documentation

Documents identified and described in checklist, DNS or in EIS

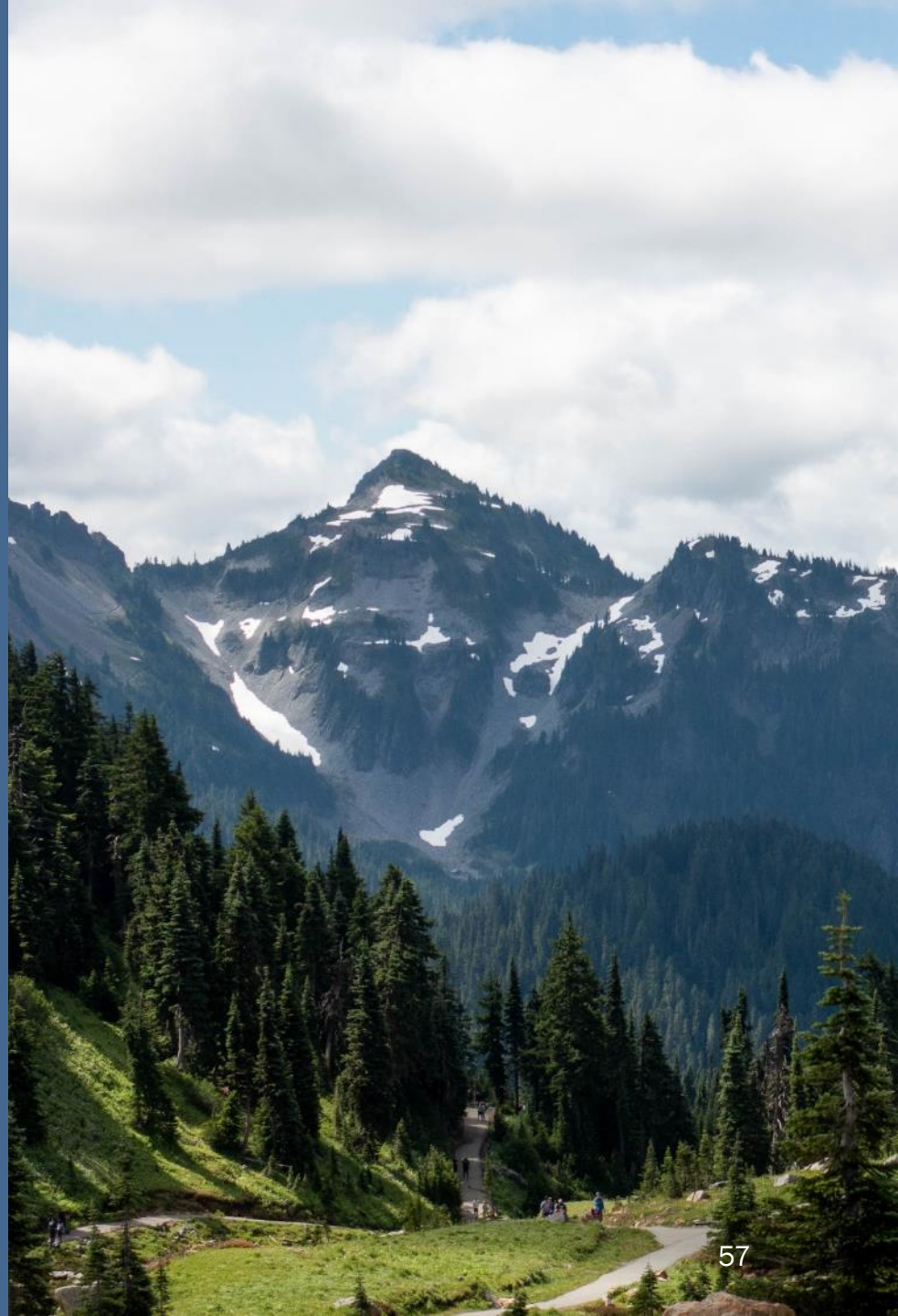
Key Points

- Determine who is going to lead the SEPA process
- Consider **ALL** impacts when making a determination
- Engage with Tribes early and often
- Use NEPA and other documents when possible.

Questions?

Contact info

fran.sant@ecy.wa.gov



Break

Returning at 11:00 AM

Section 106
of the
National Historic Preservation Act

dahp
protect the past, shape the future
DEPT OF ARCHAEOLOGY + HISTORIC PRESERVATION

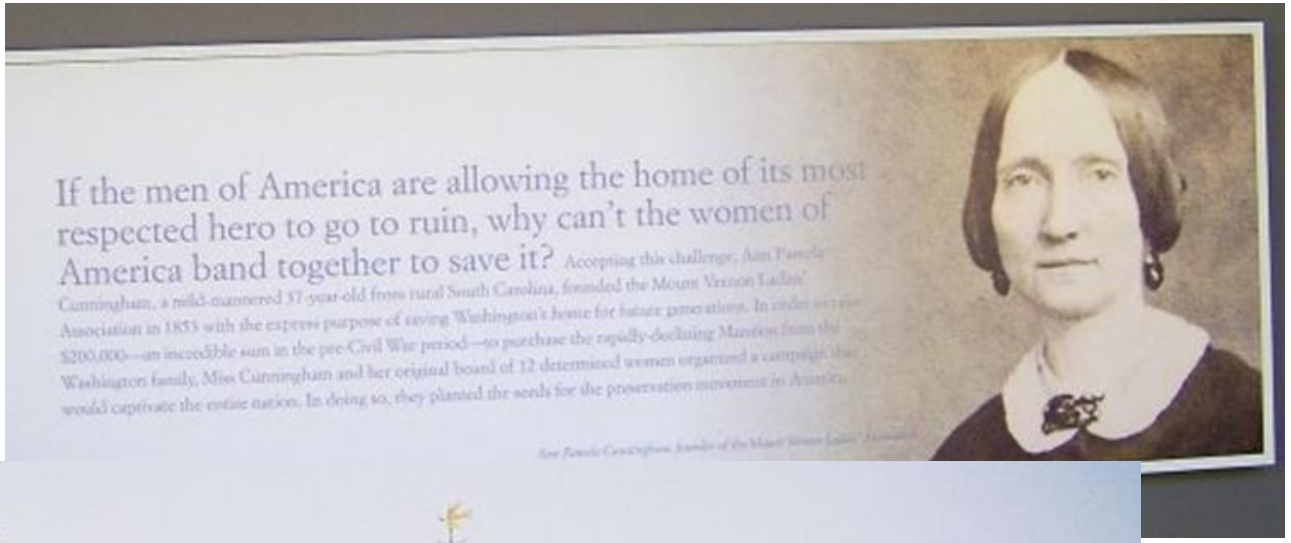
Rob Whitlam, Ph.D.
(360) 890-2615
rob.whitlam@dahp.wa.gov

Preface

- This presentation is the perspective of an educated professional.
- Short/highlights of Section 106
- Multiple day classes on Section 106
- Regulations (36CFR800) and Guidelines are at: www.achp.gov

Protection of the Past is Not New

We the People



Government's Role

Post WW 2 Urban Renewal & Construction

It’s the Law & Its Not New

Section 106 is **NOT** New

- NHPA has been law since 1966
- Number of amendments and iterations in its regulations.
- It is a process
- Responsibility of the Federal Agency
- Consultative

Section 106
An Overview

- Requires substantive technical information and informed decision making.
- Involves a number of parties.
- Over the years the general evolution of the process has been towards a more consultative process with more parties that address more types of resources.

Undertaking

Means a project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a federal agency, including those carried out with federal financial assistance; those requiring a federal permit, license, or approval, those subject to State or local regulation administered pursuant to a delegation or approval by a federal agency.

Examples of Undertakings

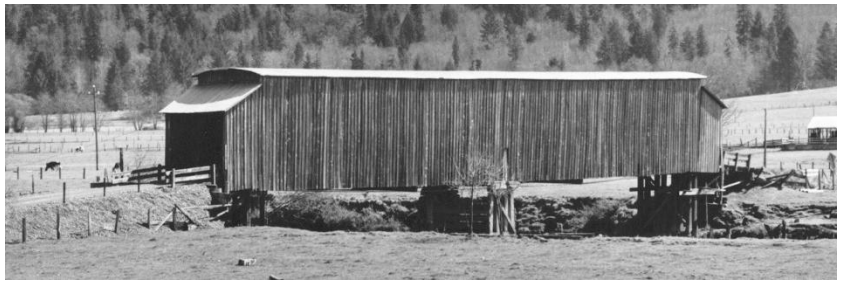
Projects which utilize Federal money

- FERC Licenses, BLM grazing permits,
- FS Timber Sales, recreation developments
- COE permits, dredging projects
- FHWA highway funding projects of State DOT and local government roads
- FDIC ATMs, and FCC Cell Towers
- FEMA Emergency Response, Habitat Restoration

Undertakings

Not all undertaking have the potential to affect historic places.

- Social Security payments.
- Student Loans
- Purchase of Pens, etc.



Undertakings that have traditionally been the focus of Section 106.

- Land Altering Activities.

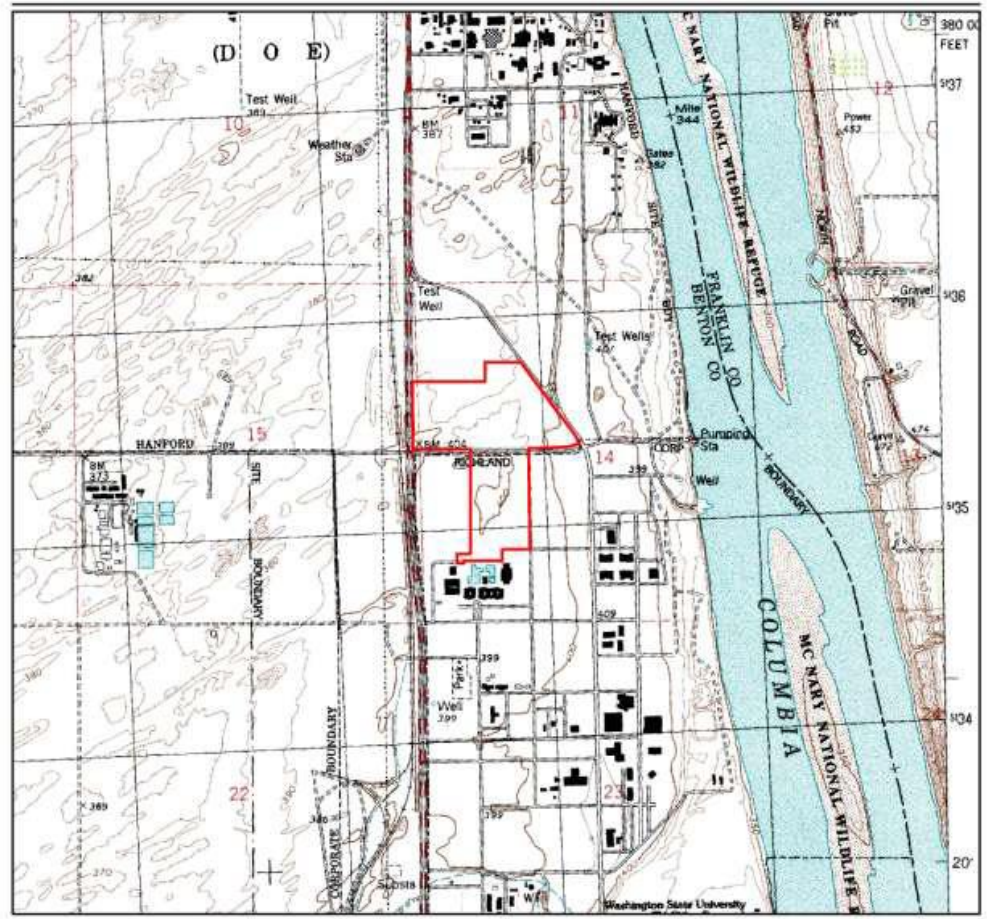
- Capital Financing that alters buildings, the landscape.

Key Participants

- The Federal Agency or Agencies
- THPO: Tribal Historic Preservation Officer
- SHPO: State Historic Preservation Officer
- Applicant for Funding, License, Permit, etc.
- ACHP: Advisory Council on Historic Preservation (Washington DC).
- Public or Local Government (CLG)
- Consultant

Step 1: Identify the APE/Parties

- Determine the Undertaking
- Identify Concerned Parties
- Define Area of Potential Effect (APE)



Legend

Area of Potential Effect (APE)

Richland, WA 7.5' USGS Quad
Township 10 N Range 28 E
Sections 14 & 15

N

0 0.25 0.5 0.75 1 Miles

FIGURE 1
Area of Potential Effect (APE)
HCRC#2012-PNSO-014 | PSF EMSL Blanket Utilities
Benton County, WA

Path: W:\PNNL\PSF_EMSL_BlanketReview\2012-PNSO-014_PSF_EMSL_Fig1.mxd

Step 2: Identify the Sites

- Acquire background and historic information
- Conduct on the ground survey
- Author Report, Inventory forms,
- Consult with parties on findings

Products

- *Open File:*
- *Letters, APE map*
- *Response letters*

🚫 ***EXEMPT Documents***

- *Site forms, Reports,*
- *Maps with site locations*
- *DOE forms, reports*

Sites: Archaeological, Historic, Traditional Cultural Places

Evaluation of the Significance

- Evaluating the Significance of the sites in the APE.
- Follow Secretary of Interior Standards, and guidelines from the National Register of Historic Places (www.nps.gov)
- Requires the Federal Agency to consult and seek the concurrence of THPO or SHPO
- If disagree, forward to the Keeper of the NR

Step 3: Assess the Effects

- What are the impacts of the proposed project upon the National Register sites?
- Consult with the parties to determine:
  - *No Historic Properties effected*
  - *No Adverse Effect*
  - *Adverse Effect*

Assessing Effects

- No Historic Properties Affected: No historic or cultural resources affected.
- No Adverse Effect:

Will be a change,

but not damaging

to the qualities

that make a resource significance.

- Adverse Effect:

Where you have an impact that will alter, damage, destroy or change the characteristics that make the property significant and eligible to the National Register.

Adverse Effect: **MOA/PA**

- Memorandum of Agreement (MOA) is a legal document that formalizes the specific actions the Federal Agency will take to minimize, avoid, or mitigate the adverse effect.
- Agency must notify ACHP
- and invite participation
- Consult with the

  THPO

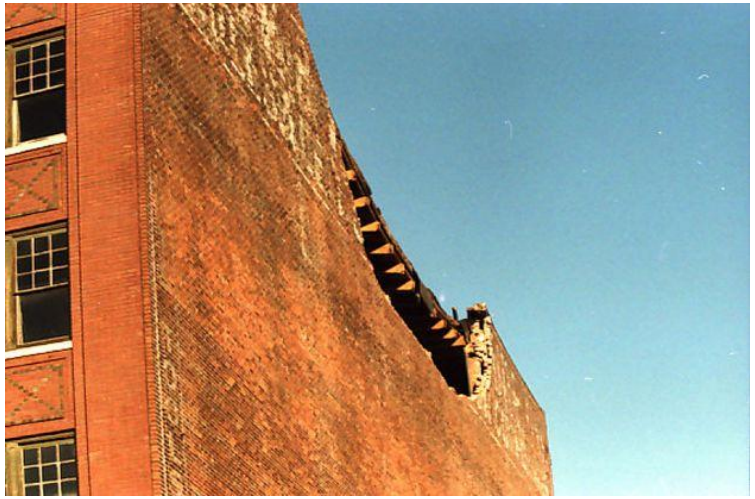
  and/or SHPO

Final Step

- Implement the MOA
- Report back to assure the consulting parties that the terms and conditions of the MOA were met.

- If no agreement notify ACHP for formal ACHP comment to Agency Head.
- If conditions change notify parties of need for amendment.

Emergency Response



Discussion of Federal, State, and Section 106 Tribal Processes (*Breakout Sessions)*

Breakout Sessions

- 25-minute facilitated discussions, each covering:
  - Federal licensing and permitting for PSH
  - SEPA process
  - Section 106

- Participants will be randomly assigned to breakout groups

- Discussion questions:
  - *Where have you seen these processes go well and where have you seen them not go well? Why?*
  - *What activities prior to formal environmental review, licensing, and permitting help these processes work best?*

Breakout Sessions

Returning around 11:50 AM

Quick Highlights from Breakout Sessions

Next Steps and Wrap up

Karen Janowitz, WSU Energy Program

Next Statewide Online Public Meeting

Meetings are 9:30 AM to 12:00 PM Pacific Time, subject to change

- Next statewide online public meeting – January 23, 2025
  - Other mechanical energy storage options, including:
    - Advanced Rail Energy Storage
    - Pumped storage using abandoned mines

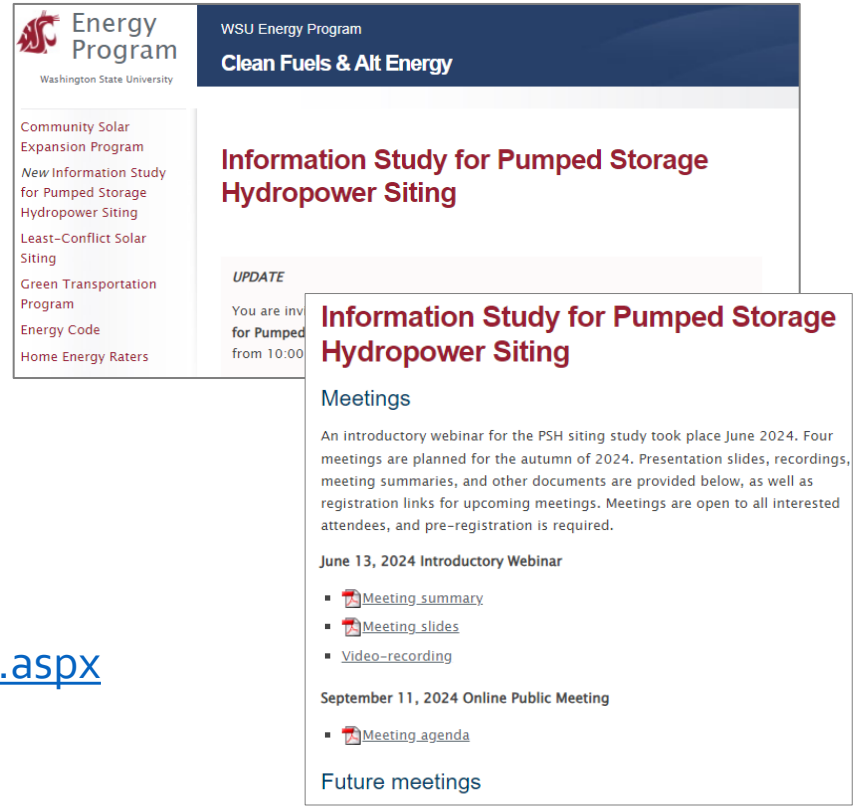
WSU PSH Website and Email List

WSU Energy Program PSH Siting Study Webpages:
https://www.energy.wsu.edu/CleanFuelsAltEnergy/PSHSiting.aspx

PSH Siting Study Meeting Webpage:

- Meeting summary
- Meeting video-recording
- Meeting slides

https://www.energy.wsu.edu/CleanFuelsAltEnergy/PSHSiting/Meetings.aspx



Sign up for the email distribution list:
https://www.energy.wsu.edu/CleanFuelsAltEnergy/PSHSiting/PHSSitingEmailRegistration.aspx

Karen Janowitz
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Thank You!

Karen Janowitz and the PSH study team