

Lesson number	2.4 Assessing human impacts on hydrology
Title of activity	Role play debate on dam construction
Time	One class of prep (plus prep at home) and one class for the debate
Student group size	1-3 students per role
Resources required	<ul style="list-style-type: none"> ● One hard copy of the role description for each student (found below) ● Organizational name tags for each group
Venue	In-class

Instructions:

1. Class prior to the debate:

- a. Assign students to roles.
 - i. Depending on class size, you can have up to three students assigned to each role.
 - ii. Make sure you choose two confident and focused students to play the role of FERC administrators because they will be running the debate.
 - iii. Print and cut out sufficient copies of the role description for each student (role descriptions are below in this document).
 - iv. Distribute the role descriptions to the students and give them a class period to prepare their opening statements and questions. They can do further prep at home.

2. On the day of debate:

- a. Arrange desks in a circle so everyone can see each other.
- b. Put a nametag with the organization name on the desk so students can remember who is playing which roles.
- c. Students can have notes and/or computers out during the debate.
- d. Instruct the FERC role players that they will be running the debate. They should:



- i. Call on each group to read their opening statement. Have Puget Sound Energy go first and have the residents go last.
 - ii. Once the opening statements are complete, FERC should call on different groups to ask their prepared questions for other groups. They should allow responses and follow up questions as necessary.
 - iii. FERC role players should make sure all groups and all students in each group are heard from.
 - iv. With 5 or 10 minutes left, FERC should call on all groups to do a closing statement.
 - v. FERC role players go out of the room and decide if they grant or deny the license based on what they have heard during the debate. Then they come back into the class and announce their decision.
- e. Teacher can take notes in the back during the debate for individual student feedback.
3. Have the students fill out the reflection questions for homework. Questions [here](#).



The situation: Puget Sound Energy, a power company that operates hydroelectric plants in the state of Washington, wants to build a new dam to provide more power to the greater Seattle area. The Federal Energy Regulatory Committee (FERC) is the federal agency that licenses hydropower projects and has called a public meeting for comment on whether to grant a permit to Puget Sound Energy permission to build a 100 MW hydropower project on private land on the Pilchuck River. An old dam was recently removed from the Pilchuck, and PSE plans to build the new dam with effective fish passage measures.

Director, Division of Hydropower Licensing, FERC: The Director of the Northwest Branch of the Federal Energy Regulatory Commission (FERC) is charged with issuing and monitoring the licenses for hydropower projects in Washington State. You are responsible for weighing the costs and benefits of license applications. You have to equally value the economic, social and environmental effects of the application. You are hosting the public meeting in order to gather input to make your decision.

Other roles:

- Puget Sound Energy-- hydropower company applying for the application
 - National Hydropower Association-- hydropower trade association supporting the application
 - Seattle City Light-- electricity utility for Seattle supporting the application because of increasing electricity demand in Seattle
 - Trout Unlimited (TU)-- national NGO against the application because it will harm the stream ecosystem
 - Tulalip Tribes-- a Native American tribe against the application who recently removed an old dam on the Pilchuck River
 - American Rivers-- national NGO against the application because it will harm the stream ecosystem
 - residents of Granite Falls, Washington-- ???
1. Prepare an opening statement introducing yourself and your perspective on the issue.
 2. Prepare a question for the Puget Sound Energy representative.
 3. Prepare a question for the Trout Unlimited representative.
 4. Prepare a third question for another participant.
 5. Be prepared to answer questions and defend your perspective.



Puget Sound Energy CEO and staff: You are a regional power company that generates and distributes electricity and natural gas to over 1,000,000 residents. You operate two hydropower dams in western Washington already, Baker River and Snoqualmie Falls. You are submitting the application for a license to build a new 100 MW hydropower project on private land on the Pilchuck River. You have found a local landowner who is willing to sell their land to you for the project if approved.

Other roles:

- Director, Division of Hydropower Licensing, FERC-- convening the hearing to decide whether to approve or deny the license.
 - National Hydropower Association-- hydropower trade association supporting the application
 - Seattle City Light-- electricity utility for Seattle supporting the application because of increasing electricity demand in Seattle
 - Trout Unlimited (TU)-- national NGO against the application because it will harm the stream ecosystem
 - Tulalip Tribes-- a Native American tribe against the application who recently removed an old dam on the Pilchuck River
 - American Rivers-- national NGO against the application because it will harm the stream ecosystem
 - residents of Granite Falls, Washington-- ???
1. Prepare an opening statement introducing yourself and your perspective on the issue.
 2. Prepare a question for Seattle City Light.
 3. Prepare a question for TU.
 4. Prepare a third question for another participant.
 5. Be prepared to answer questions and defend your perspective.



National Hydropower Association: You are the trade association for hydropower operators. You are supporting this application because you want as much of future U.S. energy to come from hydropower as possible.

Other roles:

- Director, Division of Hydropower Licensing, FERC-- convening the hearing to decide whether to approve or deny the license.
 - Puget Sound Energy-- hydropower company applying for the application
 - Seattle City Light-- electricity utility for Seattle supporting the application because of increasing electricity demand in Seattle
 - Trout Unlimited (TU)-- national NGO against the application because it will harm the stream ecosystem
 - Tulalip Tribes-- a Native American tribe against the application who recently removed an old dam on the Pilchuck River
 - American Rivers-- national NGO against the application because it will harm the stream ecosystem
 - residents of Granite Falls, Washington-- ???
1. Prepare an opening statement introducing yourself and your perspective on the issue.
 2. Prepare a question for Puget Sound Energy.
 3. Prepare a question for American Rivers..
 4. Prepare a third question for another participant.
 5. Be prepared to answer questions and defend your perspective.



CEO, Seattle City Light: You are the public utility that generates and distributes electricity and natural gas to almost 1,000,000 residents in the City of Seattle, Washington. You operate four hydropower dams in western Washington yourself. You support the application because Seattle will need more power in the future and you want to buy carbon-neutral power from this new hydropower project by Puget Sound Energy.

Other roles:

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 - Puget Sound Energy-- hydropower company applying for the application
 - National Hydropower Association-- hydropower trade association supporting the application
 - Trout Unlimited (TU)-- national NGO against the application because it will harm the stream ecosystem
 - Tulalip Tribes-- a Native American tribe against the application who recently removed an old dam on the Pilchuck River
 - American Rivers-- national NGO against the application because it will harm the stream ecosystem
 - residents of Granite Falls, Washington-- ???
1. Prepare an opening statement introducing yourself and your perspective on the issue.
 2. Prepare a question for National Hydropower Association.
 3. Prepare a question for Tulalip Tribes.
 4. Prepare a third question for another participant.
 5. Be prepared to answer questions and defend your perspective.



President, Three Rivers Chapter of Trout Unlimited (TU): TU is a national non-profit organization dedicated to protecting trout and salmon habitat for fish and for people. You are the President of the local Three Rivers Chapter of TU that covers Seattle and the surrounding area. Your chapter is against this application because it would impede fish passage and damage river habitat.

Other roles:

- Director, Division of Hydropower Licensing, FERC-- convening the hearing to decide whether to approve or deny the license.
 - Puget Sound Energy-- hydropower company applying for the application
 - National Hydropower Association-- hydropower trade association supporting the application
 - Seattle City Light-- electricity utility for Seattle supporting the application because of increasing electricity demand in Seattle
 - Tulalip Tribes-- a Native American tribe against the application who recently removed an old dam on the Pilchuck River
 - American Rivers-- national NGO against the application because it will harm the stream ecosystem
 - residents of Granite Falls, Washington-- ???
1. Prepare an opening statement introducing yourself and your perspective on the issue.
 2. Prepare a question for Seattle City Light.
 3. Prepare a question for the Tulalip Tribes.
 4. Prepare a third question for another participant.
 5. Be prepared to answer questions and defend your perspective.



Executive Director of the Tulalip Tribes Natural Resources Department: You are in charge of the programs protecting natural resources on the Tulalip Tribes, a group of 5,100 native Americans who have a 22,000 acre reservation in the area that includes part of the Pilchuck River. Salmon are important to your culture and you were involved in removing an old dam on the Pilchuck River. You are against this application because it would hurt salmon populations that are beginning to recover.

Other roles:

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 - National Hydropower Association-- hydropower trade association supporting the application
 - Seattle City Light-- electricity utility for Seattle supporting the application because of increasing electricity demand in Seattle
 - Trout Unlimited (TU)-- national NGO against the application because it will harm the stream ecosystem
 - American Rivers-- national NGO against the application because it will harm the stream ecosystem
 - residents of Granite Falls, Washington-- ???
1. Prepare an opening statement introducing yourself and your perspective on the issue.
 2. Prepare a question for Puget Sound Energy.
 3. Prepare a question for the American Rivers.
 4. Prepare a third question for another participant.
 5. Be prepared to answer questions and defend your perspective.



President, American Rivers: You are a national non-profit organization dedicated to protecting rivers for the people and the natural systems that depend on them. One of your core missions is to maintain free-flowing rivers and are against dam construction in general so you are against this application.

Other roles:

- Director, Division of Hydropower Licensing, FERC-- convening the hearing to decide whether to approve or deny the license.
 - Puget Sound Energy-- hydropower company applying for the application
 - National Hydropower Association-- hydropower trade association supporting the application
 - Seattle City Light-- electricity utility for Seattle supporting the application because of increasing electricity demand in Seattle
 - Trout Unlimited (TU)-- national NGO against the application because it will harm the stream ecosystem
 - Tulalip Tribes-- a Native American tribe against the application who recently removed an old dam on the Pilchuck River
 - residents of Granite Falls, Washington-- ???
1. Prepare an opening statement introducing yourself and your perspective on the issue.
 2. Prepare a question for the National Hydropower Association.
 3. Prepare a question for the Tulalip Tribes.
 4. Prepare a third question for another participant.
 5. Be prepared to answer questions and defend your perspective.



Resident of Granite Falls, Washington: You can make up your own background and either support the plan or oppose the application.

Other roles:

- Director, Division of Hydropower Licensing, FERC-- convening the hearing to decide whether to approve or deny the license.
 - Puget Sound Energy-- hydropower company applying for the application
 - National Hydropower Association-- hydropower trade association supporting the application
 - Seattle City Light-- electricity utility for Seattle supporting the application because of increasing electricity demand in Seattle
 - Trout Unlimited (TU)-- national NGO against the application because it will harm the stream ecosystem
 - Tulalip Tribes-- a Native American tribe against the application who recently removed an old dam on the Pilchuck River
 - American Rivers-- national NGO against the application because it will harm the stream ecosystem
1. Prepare an opening statement introducing yourself and your perspective on the issue.
 2. Prepare a question for the Director of FERC.
 3. Prepare a second question for another participant based on your chosen perspective.
 4. Prepare a third question for another participant based on your chosen perspective.
 5. Be prepared to answer questions and defend your perspective.