

INSTRUCTION GUIDE FOR MINOR HYDROELECTRIC APPLICATIONS

This document is a guide on how to apply for a new minor hydroelectric water right. A minor hydroelectric project has a capacity of less than 100 theoretical horsepower (thp).

Theoretical horsepower is calculated by multiplying the maximum quantity of water to be diverted (in cubic feet per second) by the maximum difference in elevation between the intake and discharge (in feet) and dividing by 8.8. **(Quantity cfs * Head ft / 8.8)=THP.**

Following is information about: (1) the application process, (2) resource protection standards, (3) sample map, (4) fees, (5) land use form, and (6) water and power conversion factors.

There are five steps to complete before submitting an application to the Oregon Water Resources Department (OWRD).

1. Read through all of the resource protection standards that must be satisfied in order to approve the project. Consult with Oregon Department of Fish and Wildlife or the Department of Environmental Quality if there are potential impacts to fish, wildlife or water quality anywhere within the project area.
2. Complete the application form.
3. Prepare a project map and obtain a tax assessor's map for the powerhouse area.
4. Print the land use form; obtain approval from your county land use agency.
5. Submit a completed application packet and the first installment of the application fee (\$500.00) to Oregon Water Resources Department.

The Hydroelectric Application Review Team (HART), a group of state agencies responsible for reviewing applications for hydroelectric projects, will provide input on a number of key natural resource questions concerning your proposed project. A number of federal agencies will also be consulted regarding the application.

To approve an application and issue a time-limited hydroelectric water right, OWRD must find that the proposed project will satisfy the resource protection standards described in this document and fully set forth in OAR 690-51-190 to OAR 690-51-260. There may be other statutes and rules that could be relevant to your application.

If you have questions about the resource protection standards, application form, map, land use form, or the process for obtaining a new minor hydroelectric water right, please contact Craig Kohanek at 503-986-0823.

I. APPLICATION PROCESS FOR A MINOR HYDROELECTRIC WATER RIGHT

Hydroelectric projects are addressed in Oregon Revised Statutes (ORS) Chapter 543, and Oregon Administrative Rule (OAR) Chapter 690 Division 51 <http://www.leg.state.or.us/ors/543.html> and http://arcweb.sos.state.or.us/rules/OARS_600/OAR_690/690_051.html . Be sure to review these documents for full details.

This document provides a general description of the process to apply for new minor hydroelectric projects and the review of those applications. We suggest that you call our hydroelectric staff to discuss your project before filing an application.

APPLICATION FILED

- Application and application fees received by OWRD.
- If the application is found incomplete – OWRD returns to applicant for more info.
- If the application is found complete - a new application number is assigned to the file.

PUBLIC NOTICE OF APPLICATION AND AGENCY QUESTIONNAIRE

- OWRD prepares a public notice and sends it out for a 30 day comment period to affected local, state, and federal agencies. The notice is sent to the local county planning department with a request that it be posted in a conspicuous location in the county courthouse. Property owners within 300 feet of the powerhouse, and affected Indian tribes receive the notice. It is also published in OWRD's weekly notice. OWRD also sends a questionnaire to various agencies for them to complete and return to OWRD. By completing the questionnaire, the agencies provide OWRD with the information necessary to determine whether the proposed project would comply with applicable resource standards. Agencies must respond to the questionnaire within the 30-day period of the public notice.

SITE VISIT

- A site visit may be conducted with the applicant and various HART members.

TECHNICAL REPORT AND DRAFT WATER RIGHT

- OWRD reviews all comments received regarding the application.
- OWRD prepares a technical report stating the action OWRD proposes to take on the application. If OWRD recommends approval, a draft water right will accompany the technical report.
- Standards considered include the basin plan, land use approval, water availability and scenic waterway flow requirements, potential conflicts with other water rights, and resource protection standards in OAR 690-051-160 through 690-051-0260.

PUBLIC NOTICE OF TECHNICAL REPORT AND DRAFT WATER RIGHT

- OWRD sends the technical report and draft water right to the applicant, any members of the public who provided comments on the application, and all reviewing agencies for a 60 day comment period.

OBJECTIONS AND PROTESTS TO THE TECHNICAL REPORT AND DRAFT WATER RIGHT

- If objections are received, OWRD sends the objections to the applicant, all objectors and commenters, and all reviewing agencies.
- Within 30 days of receiving an objection, the OWRD Director (Director) determines if the objection is valid. If invalid, the Director informs the objector who then has 30 days to submit a protest. The Director refers the protest to the Water Resources Commission.
- If the objection to the technical report or draft water right is valid, OWRD revises them and sends them out to the applicant, objectors, commenters, and reviewing agencies for another comment period.

CONTESTED CASE HEARING

- If OWRD proposes to deny the application, OWRD notifies the applicant of the opportunity to request a contested case hearing.
- OWRD distributes notice of filing of a request for a contested case hearing to interested parties, commenters, objectors, and reviewing agencies.

TIME-LIMITED WATER RIGHT

- OWRD reviews comments received on the technical report and draft water right and makes any necessary revisions.
- OWRD requests remaining \$500 fee from applicant.
- OWRD receives remaining fees and issues a time-limited water right.

Any time-limited hydroelectric water right, if issued, is for the beneficial use of water and will be expressly made inferior in right and subsequent in time to any future appropriation of water upstream for beneficial consumptive use. On termination of any such water right, the right to use water shall revert to the public.

II. RESOURCE PROTECTION STANDARDS

In order to approve your application, OWRD must find that your project would meet each of these standards.

A. RESTRICTION ON FILING (See OAR 690-051-0030)

1. Is the project located in any of the following areas?
 - A. National parks
 - B. National monuments
 - C. Wilderness areas established by federal law
 - D. Bureau of Land Management areas of critical environmental concern established under federal law
 - E. Wild and scenic rivers established by federal law
 - F. Estuarine sanctuaries established under Public Law 92-583
 - G. Federal research natural areas established under federal regulation
 - H. State parks and waysides
 - I. Scenic waterways designated under ORS Chapter 390
 - J. State wildlife refuges
 - K. State dedicated natural heritage areas established under ORS Chapter 273.

B. WATER RESOURCES (See OAR 690-051-0190)

2. Is there water available to provide for reasonable operation of the proposed project?
3. Does the proposed use preclude or interfere with any existing rights or permits for the use of water?
4. Is the proposed use consistent with the applicable State Water Resources Policies in OAR Chapter 690, Divisions 400, 410 and the Basin Program in OAR Chapter 690, Divisions 500 through 520 or, in the absence of a policy, is the proposed use consistent with the policies set forth in ORS 536.300 through 536.350?
5. Is the project consistent with achieving maximum economic development of the waters involved?
6. Is the project consistent with making the fullest practical use of the stream's hydroelectric potential in the project vicinity?
7. Will the project constitute wasteful, uneconomic, impracticable or unreasonable use of the waters involved?
8. Is the project, including mitigation and enhancement measures, consistent with conserving the highest use of the waters of the state for all beneficial purposes?
9. Is the project consistent with controlling the waters of the state for all beneficial

purposes, including, drainage, sanitation and flood control?

10. Construction and operation of the proposed project shall comply with water quality standards established in OAR Chapter 340, Division 41. Exceptions to this standard may be allowed if permitted by Division 41 rules, granted by the DEQ and approved by the Director, or in cases where an exception has been filed to the Director's proposed order, the Commission.

C. FISH RESOURCES (See OAR 690-051-0200)

11. Will project facilities and operations have significant adverse impacts on fish populations?
12. Will project facilities and operations unreasonably interfere with upstream and downstream passage of fish through the project vicinity? (The OWRD Director, or in cases where the final order is approved by the Commission, the Commission may make exceptions to this standard in special cases where fish populations have been significantly damaged by past activities and the proposed single- or multiple-purpose project development will improve existing fish populations).
13. Have project facilities and operation been designed to mitigate, to the greatest extent practicable, adverse impacts upon spawning, rearing or other habitat areas necessary to maintain the levels and existing diversity of fish species?
14. Will unavoidable adverse impacts on fish or to fish management programs be mitigated?
15. Are project construction, timing, and procedures designed to minimize fishery impacts from instream construction work and premature or unnecessary land clearing and disturbances?
16. Are all fishery protective measures scheduled to be fully functional when the project commences operations?
17. Is the proposed project consistent with ODFW management programs in force on the effective date of these rules?
18. Is any part of the project located on a river or stream reach used by wild game fish, or that would adversely affect wild game fish?
19. If the answer to question 18 is YES, the project shall include mitigation measures which:
 - A. Are located in the project vicinity.
 - B. Are in effect at the time of adverse impact or start of project operation, whichever comes first.

- C. Will prevent a net loss to individual species of wild game fish.
 - D. Will prevent conversion of a wild game fish population and fishery to a hatchery dependent resource.
 - E. Are consistent with ODFW management plans and programs in force on the effective date of these rules.
 - F. Employ workable and generally accepted methods and techniques of mitigation best suited to the affected fish resource(s).
20. If proposed at an undeveloped site, is it reasonably foreseeable that the location, design, construction or operation of the project may result in mortality or injury to an individual anadromous salmon or steelhead or loss of any salmon or steelhead habitat?
21. Modification of an existing facility or project on a stream reach used by anadromous salmon or steelhead or providing anadromous salmon or steelhead habitat shall include measures that:
- A. Are reasonably certain to restore, enhance or improve existing salmon and steelhead populations in the affected river.
 - B. Comply with wild game fish standards in paragraphs (2)(a)(C) and (D) of OAR 690-051-0200 if the affected salmon or steelhead populations contain wild fish.
 - C. Are consistent with ODFW Fishery management plans and programs in force on the effective date of these rules.
 - D. Employ workable and generally accepted methods and techniques best suited to the fish resources affected by the proposed project.
 - E. Are in effect at the time of adverse impact or start of project operation, whichever comes first.
22. (NOTE: See Question 28)

D. WILDLIFE (See OAR 690-051-0210)

23. Will the location, design, construction or operation of the proposed project jeopardize the continued existence of animal species that have been:
- A. Designated, or officially proposed by the USF&WS or the NMFS as threatened or endangered pursuant to the Endangered Species Act of 1973;
 - B. Identified by the Oregon Natural Heritage Data Base as endangered, threatened or limited in Oregon; or

- C. Identified by the Oregon Fish and Wildlife Commission as threatened or endangered in Oregon.
- 24. Will the location, design, construction and operation of project facilities minimize adverse impacts on wildlife habitat, nesting and wintering grounds, and wildlife migratory routes?
- 25. Will project construction methods and scheduling minimize disruption of wildlife and avoid premature or unnecessary land clearing in the project vicinity?
- 26. Will unavoidable adverse impacts on wildlife or wildlife habitat be mitigated in the project vicinity by methods such as replacement of vegetation, regulation of reservoir levels, creation of aquatic habitat, improvements in wildlife carrying capacity in the project vicinity or acquisition of land or management rights?
- 27. Will the project be consistent with applicable ODFW management programs in force on the effective date of these rules?
- 28. If within the Columbia River Basin, will the project be consistent with the provisions of the NWPPC's Columbia River Basin Fish and Wildlife Program and the Northwest Conservation and Electric Power Plan? Certification of compliance by the NWPPC shall satisfy this standard.

E. PLANT LIFE (See OAR 690-051-0220)

- 29. Will the location, design, construction or operation of the proposed project jeopardize the continued existence of plant species that are:
 - A. Designated or officially proposed by the USF&WS as threatened or endangered pursuant to the Endangered Species Act of 1973;
 - B. Identified by the Oregon Natural Heritage Database as endangered, threatened or limited in Oregon.

F. RECREATION (See OAR 690-051-0230)

- 30. Will project facilities be designed, located and operated to substantially avoid visible or audible intrusion on the natural setting integral to existing recreational facilities, activities or opportunities?
- 31. Will the proposed project reduce the abundance or variety of recreational facilities or opportunities available in the project vicinity?

32. Will unavoidable adverse impacts on nonwater-dependent recreation facilities, activities or opportunities be mitigated in the project vicinity by providing replacement facilities or opportunities of the same or similar nature and abundance?
33. Will the project have significant adverse impacts on any unique, unusual or distinct natural feature that provides the focus or attraction for non water-dependent recreational facilities or activities?
34. Will unavoidable adverse impacts on any water-dependent recreational opportunity be mitigated with replacement by or enhancement or another water-dependent recreational opportunity available in the project vicinity?
35. Will the proposed project cause the loss of or significant adverse impact to any water-dependent recreational opportunities of statewide significance?
36. Will adverse impacts on any specific elements, such as flow regime, length of reach, access, season of use, degree of difficulty, of a water-dependent recreational opportunity of statewide significance, be offset by enhancement to other element(s) of the same water-dependent recreational opportunity in the project vicinity?

G. HISTORIC, CULTURAL, AND ARCHAEOLOGICAL RESOURCES (See OAR 690-051-0240)

37. Will the project result in significant adverse impact(s) on any historic district, site, building, structure, or object included in or eligible for inclusion in the National Register of Historic Places?
38. Will the project comply with state laws to protect Indian graves (ORS 97.740 - 97.760), historical materials (ORS 273 .705 - 273.711) and archaeological objects and sites (ORS 358.905 - 358.955)?
39. Will unavoidable adverse impacts on historic, cultural and archaeological resources be mitigated in accordance with generally accepted professional standards?
40. Will archaeological data of significance associated with a site not eligible for inclusion in the National Register of Historic Places be recovered in accordance with generally accepted professional standards?
41. Have you consulted with the State Historic Preservation Office, the State Legislative Commission on Indian Services and appropriate tribes about Indian historic and cultural resources in the project vicinity?

H. LAND RESOURCES (See OAR 690-051-0250)

42. Will adverse impacts on high value or important farmlands or agricultural land as identified in OAR Chapter 660, Division 33, be avoided, minimized or offset by acceptable mitigation?
43. Will adverse impacts on prime forestlands as defined by the city or county and by the Oregon Forestry Department be avoided, minimized, or offset by acceptable mitigation?
44. Will adverse impacts on wetlands as defined by OAR 141-085-0010(20) or identified by the Oregon Natural Heritage Database be avoided, minimized, or offset by acceptable mitigation?
45. Will project facilities be designed and located to avoid or minimize adverse impacts on:
 - A. Outstanding scenic and aesthetic views and sights inventoried in city and county comprehensive plans as required by Statewide Planning Goal 5.
 - B. Scenic and aesthetic resources identified by state or federal agencies as outstanding, significant or deserving special protection.
46. Will project facilities be designed and located to blend with adjacent features?
47. Will mechanical noise caused by the project comply with applicable noise standards in OAR Chapter 340, Division 35?
48. Will the location, design, construction or operation of the project:
 - A. Disturb fragile or unstable soils.
 - B. Cause soil erosion which would impair other water uses.
49. Will the design, location, construction and operation of the proposed project avoid or minimize adverse impacts on natural communities or geological features identified by the Oregon Natural Heritage Data Base as threatened or endangered in Oregon?
50. Will project facilities located in geologically unstable areas be designed with appropriate safeguards?
51. Will project facilities located in areas subject to naturally occurring conditions or hazards, such as flooding or ice formation be designed to withstand damage to project facilities and allow reasonable access for project maintenance or operation under such conditions?

I. LAND USE (See OAR 690-051-0260)

52. The Director or Commission shall meet requirements established in OAR 690-005-0045 (Standards for Goal Compliance and compatibility with Acknowledged Comprehensive Plans) in evaluating, or taking action on, a Permit or License for hydroelectric use. In the event of a land use dispute, as defined in OAR 690-005-0015 (Definitions), the Department shall follow resolution procedures provided in OAR 690-005-0040 (Resolution of Land Use Disputes).

III. MAP REQUIREMENTS

In order to properly examine your application, OWRD must have an accurate map showing the location of the water source and the area(s) of use. The maps submitted must meet the following criteria:

- Be of permanent quality and drawn clearly in ink on good quality paper.
- Maps larger than 11x17 inches must be drawn on tracing vellum or mylar, or four copies must be submitted.
- Be drawn to a standard, even scale of not less than 4 inches = 1 mile. Small area maps may be more easily and clearly drawn to a larger scale, such as 1 inch = 400 feet. The scale must be indicated on the map.

Each copy of the map must clearly show the elements of the project.

- The location of the dam or water diversion. The location should be described by distance from a corner.
- The location of main canals, ditches, pipelines or flumes and powerhouse.
- The section number, township, range, tax lot lines and numbers, nearest quarter-quarter section, and a north directional symbol.

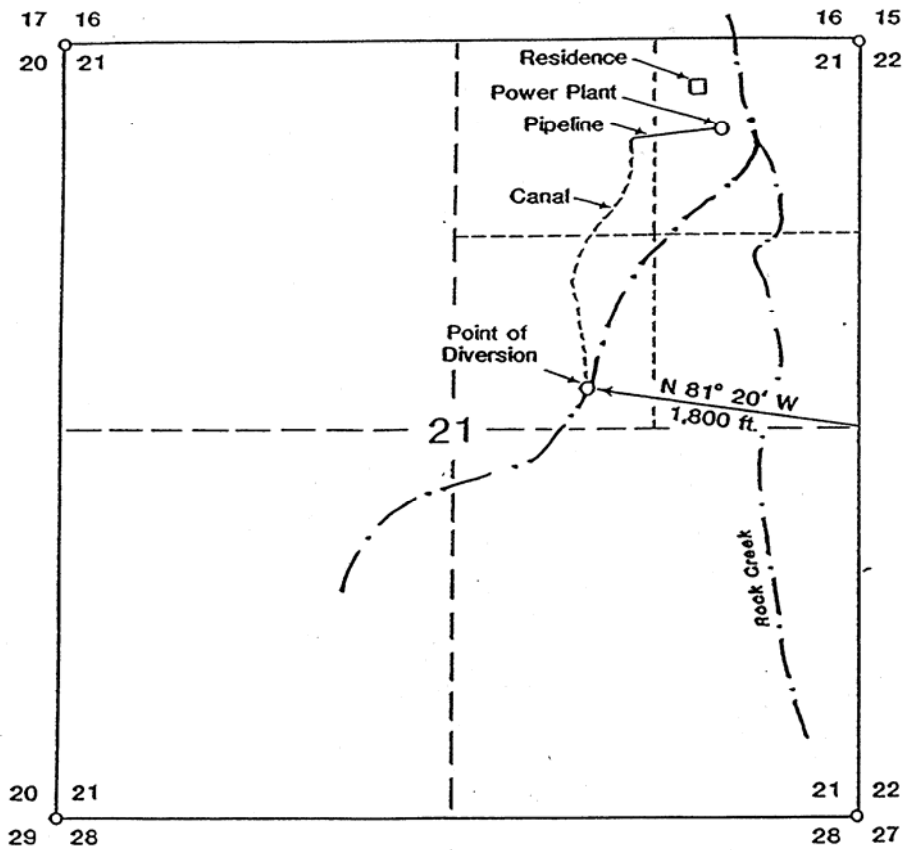
A platted and recorded subdivision map, deed description survey map or county assessor tax lot map may be submitted as the application map if all the required information listed above is clearly shown on each print.

NOTE: Due to re-sizing, this sample map is not to scale.

EXHIBIT A

MAP TO ACCOMPANY APPLICATION FOR HYDROELECTRIC LICENSE

A.C. Smith
January, 1988



SECTION 21
TOWNSHIP 2 SOUTH, RANGE 2 WEST, W.M.

Scale: 1" = 1,000'



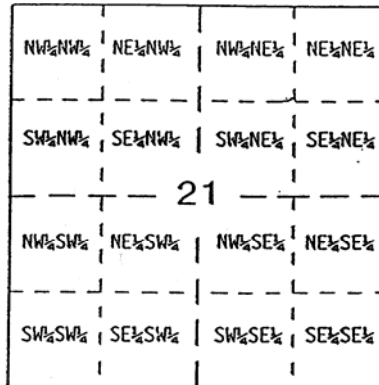
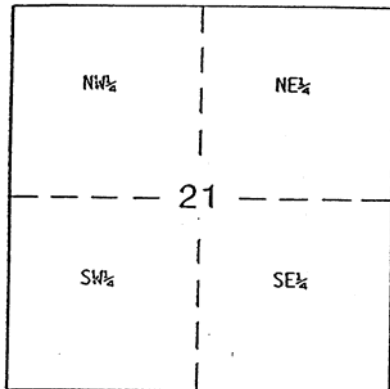
SAMPLE

Land descriptions used to locate various project features are based on Section, Township, and Range. A Township is divided into 36 Sections, as shown below:

	6	5	4	3	2	1
	7	8	9	10	11	12
Township 2 South	18	17	16	15	14	13
	19	20	21	22	23	24
	30	29	28	27	26	25
	31	32	33	34	35	36

Range 2 West

When describing a particular location, Sections are further divided into quarter sections (160 acre portions), and sixteenth sections (40 acre portions), as shown below:



For example, the 40 acre portion shown in black on the diagram above right would be described as follows:

"The SW $\frac{1}{4}$ of the NE $\frac{1}{4}$ of Section 21, Township 2 South, Range 2 West, W.M."

A SAMPLE PROJECT MAP IS SHOWN ON THE REVERSE SIDE OF THIS PAGE

IV. FEES

The application fee for a minor project is \$1,000.00. One half of the fee (\$500.00) is due at the time the application is made. The second half of the fee (\$500.00) is due prior to the issuance of the license. A surcharge of 30 percent may be required if anadromous fish (salmon or steelhead) or threatened or endangered species are present (ORS 543.280).

If a water right is issued, annual fees will be assessed under ORS 543.300(5) and OAR 690-51-400(6) in the amount of \$1.00 for each of the first 25 theoretical horsepower (thp) or fraction thereof, and 20 cents per thp over 25 thp. Annual fees plus the reauthorization fee under ORS 543A.415 must not exceed 28 cents per thp, but shall be at least \$15.00.

V. LAND USE FORM

In order for an application to be processed by the OWRD, a Land Use Information Form must be completed by a local government planning official in the jurisdictions where your water right will be used and developed. The planning official may chose to complete the form while you wait, or return the receipt stub to you. Applications received by OWRD without the Land Use Form or the receipt stub will be returned.

Print Land Use form.

<http://www1.wrd.state.or.us/pdfs/landuseform.pdf>

NOTE TO LOCAL GOVERNMENTS REGARDING LAND USE FORM

The person presenting the attached Land Use Information Form is applying for a water right. The Oregon Water Resources Department (OWRD) requires its applicants to obtain land use information to be sure the water rights do not result in land uses that are incompatible with your comprehensive plan.

Please complete the form or detach the receipt stub and return it to the applicant for inclusion in their water right application. You will receive notice once the applicant formally submits his or her request to OWRD. The notice will give more information about OWRD's water rights process and provide additional comment opportunities. You will have 30 days from the date of the notice to complete the land use form and return it to OWRD. If no land use information is received from you within that 30 day period, OWRD may presume the land use associated with the proposed water right is compatible with your comprehensive plan.

Your attention to this request for information is greatly appreciated by the Water Resources Department. If you have any questions concerning this form, please contact Craig Kohanek 503-986-0823.

VI. WATER EQUIVALENTS

1 CUBIC FOOT = 7.48 GALLONS = 62.4 LBS. OF WATER

1 ACRE-FOOT = 43,560 CUBIC FEET = 325,850 GALLONS

1 ACRE-FOOT OF WATER COVERS 1 ACRE 1 FOOT DEEP

1 CUBIC FOOT PER SECOND (CFS) = 448.8 GALLONS PER MINUTE

1 CFS: FOR ONE DAY = 648,215 GALLONS, OR 1.98 ACRE-FEET

FOR 30 DAYS = 59.5 ACRE-FEET

FOR ONE YEAR = 724 ACRE-FEET

1 MILLION GALLONS = 3.07 ACRE-FEET

1 MILLION GALLONS PER DAY (MGD) = 1,120 ACRE-FEET PER YEAR

1,000 GALLONS PER MINUTE (GPM) = 2.23 CFS

1,000 GPM = 4.42 ACRE-FEET PER DAY

UNITS OF POWER

1 THP = 746 WATTS

1 THP = .75 KILOWATTS

1 KILOWATT = 1,000 WATTS

1 MEGAWATT = 1,000,000 WATTS OR 1,000 KILOWATTS

THEORETICAL HORSEPOWER (THP) = (HEAD X CFS) DIVIDED BY 8.8

Head is calculated in feet

See OAR 690-51-010(35)

HORSEPOWER = 745.7 WATTS = .7457 KILOWATTS

PLANT GENERATING CAPACITY, KW = (Q x H x E)/11.8

Where Q = Discharge through turbine, cfs

H = Net head available for generation, feet

E = Plant efficiency (turbine plus generator)