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BEFORE THE BOARD OF COUNTY COMMISSIONERS OF DESCHUTES COUNTY, OREGON

An Ordinance Amending Deschutes County \*  
Code Chapter 18.48 to Permit Hydroelectric \*  
Facilities in the Open Space and Conservation \*  
Zone and Declaring an Emergency. \*

ORDINANCE NO. 2008-018

WHEREAS, on February 13, 2008, Central Oregon Irrigation District and Swalley Irrigation District submitted an application to amend the Deschutes County Code ("DCC") Chapter 18.48, to allow for hydroelectric facilities on existing irrigation systems to be permitted outright in the Open Space and Conservation Zone; and

WHEREAS, the Planning Commission held a public hearing on May 8, 2008, and forwarded to the Board of County Commissioners ("Board") a recommendation of approval as proposed; and

WHEREAS, the Board considered this matter after a public hearing on July 21, 2008, July 28, 2008 and July 30, 2008 where it was concluded that the public will benefit from changes to the Open Space and Conservation Zone; now, therefore,

THE BOARD OF COUNTY COMMISSIONERS OF DESCHUTES COUNTY, OREGON, ORDAINS as follows:

Section 1. AMENDMENT. DCC 18.48.020, Open Space and Conservation Zone, Uses Permitted Outright is amended to read as described in Exhibit "A" attached hereto and by this reference incorporated herein, with new language underlined and language to be deleted in ~~strikethrough~~.

Section 2. AMENDMENT. DCC 18.48.070, Open Space and Conservation Zone, Limitations on Small Hydroelectric Facilities, is amended to read as described in Exhibit "A" attached hereto and by this reference incorporated herein, with new language underlined and language to be deleted in ~~strikethrough~~.

Section 3. FINDINGS. The Board adopts as its findings Exhibit "B", attached and incorporated by reference herein.

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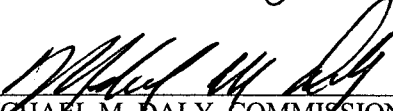
Section 4. EMERGENCY. This Ordinance being necessary for the immediate preservation of the public peace, health and safety, an emergency is declared to exist, and this Ordinance takes effect immediately.

Dated this 30<sup>th</sup> of July, 2008


BOARD OF COUNTY COMMISSIONERS  
OF DESCHUTES COUNTY, OREGON

  
DENNIS R. LUKE, CHAIR

  
TAMMY (BANEY) MELTON, VICE CHAIR

  
MICHAEL M. DALY, COMMISSIONER

ATTEST:

  
Recording Secretary

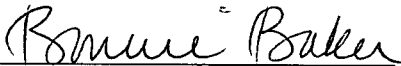
Date of 1<sup>st</sup> Reading: 30 day of July, 2008.

Date of 2<sup>nd</sup> Reading: 30 day of July, 2008.

Record of Adoption Vote  
Commissioner    Yes   No   Abstained   Excused  
Michael M. Daly               
Dennis R. Luke               
Tammy (Baney) Melton         

Effective date: 30 day of July, 2008.

ATTEST:

  
Recording Secretary

**Chapter 18.48. OPEN SPACE AND CONSERVATION ZONE - OS&C**

**18.48.010. Purpose.**

**18.48.020. Uses Permitted Outright.**

**18.48.030. Conditional Uses Permitted.**

**18.48.040. Dimensional Standards.**

**18.48.050. Setbacks.**

**18.48.060. Limitations on Conditional Uses.**

**18.48.010. Purpose.**

The purpose of the Open Space and Conservation Zone is to protect designated areas of scenic and natural resources; to restrict development in areas with fragile, unusual or unique qualities; to protect and improve the quality of the air, water and land resources and to plan development that will conserve open space.

(Ord. 93-043 §6, 1993)

**18.48.020. Uses Permitted Outright.**

The following uses and their accessory uses are permitted outright:

- A. Farm use as defined in ORS 215.203(2).
- B. Public and nonprofit agencies, museums and exhibits on lands where an exception has been granted in accordance with Oregon Administrative Rules chapter 660, Division 4.
- C. Public wildlife reserve or management area, not including structures.
- D. Class I and II road or street project subject to approval as part of a land partition, subdivision or subject to the standards and criteria established by DCC 18.116.230.
- E. Class III road or street project.
- F. Operation, maintenance, and piping of existing irrigation systems operated by an Irrigation District except as provided in DCC 18.120.050.
- G. Construction, operation, and maintenance of small hydroelectric facilities, including transmission lines serving such facilities, subject to DCC 18.48.070.

(Ord. 2008-018 §1, 2008; Ord. 2001-039 §3, 2001; Ord. 2001-016 §2, 2001; Ord. 97-023 §1, 1997; Ord. 94-041 §1, 1994; Ord. 91-020 §1, 1991)

**18.48.030. Conditional Uses Permitted.**

The following uses may be allowed subject to DCC 18.128:

- A. Private parks, picnic areas or hunting and fishing preserves.
- B. Public parks and recreational areas owned and operated by a governmental agency or nonprofit community organization.
- C. Utility facility except landfills.
- D. Water supply and treatment facility.
- E. Excavation, grading and fill and removal within the bed and banks of a stream or river or in a wetland subject to DCC 18.120.050 and DCC 18.128.270.
- F. Campground.
- G. Wireless telecommunications facilities, except those facilities meeting the requirements of DCC 18.116.250(A) or (B).
- H. Surface mining of mineral and aggregate resources in conjunction with the operation and maintenance of irrigation systems operated by an Irrigation District, including the excavation and mining for facilities, ponds, reservoirs, and the off-site use, storage, and sale of excavated material.

(Ord. 2001-039 §3, 2001; Ord. 2001-016 §2, 2001; Ord. 97-063 §3, 1997; Ord. 94-041 §1, 1994; Ord. 92-004 §9, 1992; Ord. 91-038 §1, 1991)

**18.48.040. Dimensional Standards.**

In an OS&C Zone, the following dimensional standards shall apply:

- A. The minimum lot size is 80 acres.
- B. Building Height. No building or structure shall be erected or enlarged to exceed 30 feet in height, except as allowed under DCC 18.120.040.

(Ord. 94-041 §1, 1994; Ord. 92-055 §B, 1992)

**18.48.050. Setbacks.**

- A. Minimum setbacks shall be 60 feet from an arterial or collector street or road right of way and 20 feet from a street within a platted and recorded subdivision.
- B. The setback from a perennial stream or lake ordinary high water mark shall be a minimum of 200 feet, and from an intermittent stream channel, 100 feet.
- C. Each side setback shall be a minimum of 15 feet, except on a corner lot it shall be 30 feet from the street side.
- D. The setback from the north lot line shall meet the solar setback requirements in DCC 18.116.180.
- E. Rimrock Setback. Setbacks from rimrock shall be as provided in DCC 18.116.160.
- F. In addition to the setbacks set forth herein, any greater setbacks required by applicable building or structural codes adopted by the State of Oregon and/or the County under DCC 15.04 shall be met.

(Ord. 95-075 §1, 1995; Ord. 94-008 §28, 1994; Ord. 91-020 §1, 1991; Ord. 86-053 §10, 1986; Ord. 83-037 §13, 1983)

**18.48.060. Limitations on Conditional Uses.**

The following limitations shall apply to a conditional use in an OS&C Zone:

- A. An application for a conditional use in an OS&C Zone may be denied if, in the opinion of the Planning Director or Hearings Body, the proposed use is not related to or sufficiently dependent upon the recreational resources of the area.
- B. The proposed use shall not significantly increase fire hazard or significantly increase risks to fire suppression personnel. The Planning Director or Hearings Body may require establishment and maintenance of fire breaks, the use of fire resistant materials in construction and landscaping, or attach other similar conditions or limitations that will reduce fire hazards or prevent the spread of fire to surrounding areas.
- C. The Planning Director or Hearings Body may limit changes in the natural grade of land, or the alteration, removal or destruction of natural vegetation to prevent or minimize erosion, pollution or degradation of the natural attractiveness of the area.
- D. An application for a conditional use in an OS&C Zone shall be denied if, in the opinion of the Planning Director or Hearings Body, the proposed use would exceed the carrying capacity of the area or would be detrimental to the natural features or resources of the area.
- E. An application for a conditional use in an OS&C Zone shall be denied if not in compliance with the Comprehensive Plan.
- F. An application for a conditional use shall be denied if the proposed use would force a significant change in, or significantly increase the cost of accepted farming or forest practices on agriculture or forest lands.
- G. Where the proposed use is adjacent to forest zoned land, a written statement recorded with the deed or written contract with the County or its equivalent shall be obtained from the land owner which recognizes the right of adjacent and nearby land owners to conduct forest operations consistent with the

Forest Practices Act and Rules for uses authorized in Oregon Administrative Rules 660-06-025(4)(e), (1), (r), (s) and (v).  
(Ord. 94-041 §1, 1994; Ord. 91-020 §1, 1991)

**18.48.070. Limitations on Small Hydroelectric Facilities.**

- A. “Small hydroelectric facility” means a hydroelectric facility that qualifies for a Federal Energy Regulatory Commission (“FERC”) Conduit Exemption use.
- B. DCC Chapter 18.84 and Sections 18.116.130 and 18.128.260 are not applicable to small hydroelectric facilities.
- C. Prior to issuance of a building permit, the applicant shall provide the County with documentation of the FERC and state licenses for the small hydroelectric facility.
- D. The applicant shall demonstrate protection of public health and safety by specifying necessary fencing, signage, and shielded lighting to protect the public from the electrical generation and transmittal process.
- E. The County may require establishment and maintenance of fire breaks, the use of fire resistant materials in construction and landscaping, or attach other similar conditions or limitations that will reduce fire hazards or prevent the spread of fire to surrounding areas.
- F. The applicant shall submit conceptual construction plans and profiles of project features, including building elevations, colors and textures to be used, and landscape plans.
  - 1. Structures shall be finished in muted earth tones that blend with and reduce contrast with the surrounding vegetation and landscape of the building site.
  - 2. No large areas, including roofs, shall be finished with white, bright or reflective materials.
  - 3. Roofing, including metal roofing, shall be non-reflective and of a color which blends with the surrounding vegetation and landscape.
  - 4. Landscaping:
    - a. Except as necessary for construction of access roads, building pads, public utility easements, parking areas, etc., the existing tree and shrub cover shall be retained to screen the development.
    - b. This provision does not prohibit maintenance of existing lawns, removal of dead, diseased or hazardous vegetation; the commercial harvest of forest products in accordance with the Oregon Forest Practices Act, or agricultural use of the land.
    - c. The Planning Director or Hearings Body may require the establishment of introduced landscape material to screen the development, assure compatibility with existing vegetation, reduce glare, direct automobile and pedestrian circulation or enhance the overall appearance of the development while not interfering with the views of oncoming traffic at access points or views of mountains, forests and other open and scenic areas as seen from a designated landscape management road, river or stream.
    - d. Use of native species shall be encouraged.
  - 5. Landscape plans shall be subject to DCC 18.48.070(F).
- G. The applicant shall obtain an access permit, if necessary, to the project site.

(Ord. 2008-018 §2, 2008)

(Zoning maps amended by Ord. 95-059 §1, 1995)

## TA-08-4 FINDINGS

The Deschutes Board of County Commissioners (Board) held a public hearing on July 21, 2008, continued to July 28, 2008, and again to July 30, 2008, at the Deschutes Services Center. The Board considered a text amendment to the Deschutes County Code (DCC), Chapter 18.48, Open Space and Conservation (OS&C) Zone, Section 18.48.020, *Uses permitted outright* initiated by Central Oregon Irrigation District and Swalley Irrigation District, municipal corporations and special districts in the Deschutes Basin.

### BACKGROUND

Central Oregon Irrigation District (COID) and Swalley Irrigation District (SID) (together, the Districts) utilize miles of irrigation canals throughout Central Oregon to distribute irrigation water from the Cascade Mountain range. They have proposed an amendment to the Deschutes County Code that would permit construction and operation of small hydroelectric facilities on existing irrigation systems in piped canals to generate and supply sustainable electrical power, primarily in Deschutes County. The Planning Commission held a public hearing on May 8, 2008 and considered the text amendment initiated by the Districts. The Planning Commission recommended approval of the proposed text amendment without changes.

The Deschutes County Code presently does not permit hydroelectric facilities in the OS&C Zone. Utility facilities are permitted conditionally in this zone; however, the definition of utility facilities excludes hydroelectric facilities. As a result, utility facilities are allowed in the OS&C Zone, but hydroelectric facilities are not. No specific code provision addresses small hydroelectric facilities. Deschutes County staff and the Board find these to be distinguishable from traditional run-of-the-stream hydroelectric generation facilities because they do not impact natural watercourses, do not harm fish or their habitats, and are small in scale.

Small hydroelectric facilities are regulated administratively by the state and federal government. The federal government defines such facilities as those facilities generating 15 megawatts or less. Until recently, such facilities were not generally profitable, so demand was constrained. Technology and pricing structures now make such operations feasible in screened flows, such as the screened canals of irrigation systems.

Within Deschutes County, the Districts have identified two suitable locations for small hydroelectric facilities. Eligible locations must evidence significant flow elevation drop together with moderate to high water velocity in screened, piped, irrigation canals. The two eligible locations are within the OS&C Zone, necessitating the proposed amendment to the DCC OS&C Zone's code.

Small hydro facilities capture energy from gravitationally powered hydro flows in pipes. The turbines harnessing the energy would be enclosed in buildings entirely within the Districts' right of way. The turbines used for these applications are engineered specifically to accommodate levels to maintain an even flow, preventing pooling at the turbine intake. Customized engineering results in minimal negative impacts.

Location of turbine facilities will determine the length of power lines needed to transmit the energy into the electrical grid. In the example projects considered for this text amendment, power lines transmitting the electrical current to the network will still be required, though minimal at the intended locations, because the distance from the proposed facilities to the existing lines

will be short. This link will be in place for approximately three to four years until PacifiCorp installs permanent lines, likely underground.

Oregon Water Resources Department (OWRD) regulates state surface and ground water as a public resource. Small hydroelectric facilities require permits to use the water for this purpose. Thus, other agencies will have review and oversight authority over such uses. State statutes also address hydropower generation generally and specifically to the Deschutes Basin and are further detailed by administrative rules.

The Oregon Legislature has repeatedly supported this method of generating electricity. Oregon Statewide Planning Goal 13, Energy Conservation, Oregon's Energy Policy (ORS 469.010), and the 2007 Senate Bill 838 (Oregon Renewable Energy Act) were all intended to promote the efficient use of energy resources and develop sustainable energy resources. State law allows local jurisdictions to implement such energy facilities for the needs of the rural area served. It is found in the Oregon Renewable Energy Act (SB 838) that it is necessary for Oregon to decrease the reliance on fossil fuels for electricity and increase the use of renewable energy sources.

ORS 543.650 Power Generation by Districts, Policy, states, "The Legislative Assembly finds that a significant potential exists for the development of the hydroelectric generation capabilities of water systems serving . . . irrigation districts. . . . It is the intent of the Legislative Assembly to provide . . . irrigation districts . . . with the authority and right to exercise municipal preference in the development of hydroelectric generation capabilities in connection with their water systems."

Deschutes County Board of Commissioners considers this amendment to the text of the County Code in support of that intent.

### **STATEWIDE PLANNING GOALS**

The proposed amendment would revise Deschutes County Code, Title 18, to permit hydroelectric facilities on existing piped irrigation systems as a use permitted outright in the OS&C Zone. For purposes of this discussion, the proposed amendments would satisfy Statewide Planning Goals.

Goal 1 is satisfied through the County text amendment process that includes a Planning Commission work session followed by a public hearing and then completed with a work session and public hearing with the County Board of Commissioners.

The text amendment complies with Goal 2 because Deschutes County has established a compliant process and policy framework to assure that decisions rendered by the County on land use applications have an adequate factual basis and meet with state standards. This amendment complies with legislative policies as noted above, and conforms to regional policies. It also requires management of implementation measures as illustrated by the conditional criteria included in the revised code provision.

Goal 3, Agricultural Lands, requires preservation and maintenance of agricultural lands. Because this text amendment does not apply to the Exclusive Farm Use (EFU) zoning district, this nonfarm use on nonfarm land will not directly adversely affect farm uses. Neither will it have significant indirect adverse impacts. To the contrary, irrigation districts are essential to successful agricultural uses in the County, and this amendment strengthens the districts by giving them new ways to generate income. This income will offset rising costs of water

distribution and effectively reduce the potential cost of water delivery to farmers and ranchers, thus enhancing agricultural operations over time.

Forest Lands are protected under Statewide Planning Goal 4. Although this text amendment does not affect uses on forestlands, this goal also requires sound management of soil, air, water, and fish and wildlife resources. This proposal will facilitate electrical power generation without significant impacts on any of these resources because it will occur in existing water diversions without impacting the river, using diversion facilities already screened to prevent fish from entering the canal systems.

The text amendment is consistent with Goal 5, Open Spaces, Scenic and Historic Areas and Natural Resources. We conclude this after analyzing the difference between the existing impacts of the irrigation canal system and the insertion of turbines into the system to generate power on a small basis, under the FERC conduit exemption (existing diversion, piped, less than 15 MWs). The proposed facilities will be located entirely within existing irrigation district rights of way, except for the low wattage transmission connections to existing lines. Design conditions placed upon the use are included in the ordinance to minimize visual impacts. State and federal (FERC) regulation further controls impacts, including restriction of new water diversions to power the proposed facilities. The "small" nature of this use is designed specifically to satisfy the requirements of this goal. The County has added approval criteria to the subject code in the form of DCC 18.48.070. These criteria require an applicant to minimize impacts on open space, recreation, wildlife, and related values. Statewide Planning Goal 5, A. Planning, Paragraph 3, specifically states, "Natural resources and required sites for the generation of energy (i.e. natural gas, oil, coal, hydro, geothermal, uranium, solar and others) should be conserved and protected. . . ." This implies a need to protect this use within the context of goal 5, and this amendment does so.

Goal 6, Air, Water and Land Resource Quality, requires the County to take only those actions that will maintain and improve the quality of the air, water, and land resources of the state. This amendment facilitates generation of electricity without burning of fossil fuels, to the comparative benefit of air quality. Natural water flows are not impacted, because this proposal would harness power from water already diverted for irrigation uses, deriving two uses from one resource. Land resources are enhanced, comparatively, because of the positive effect on agricultural uses, noted above under Goal 3 analysis. Natural, unimproved lands are not impacted by this proposal.

The text amendment complies with Goal 7, Areas Subject to Natural Hazards, because it will not affect areas subject to natural hazards in Deschutes County.

Goal 9, Economic Development, requires "adequate opportunities throughout the state for a variety of economic activities vital to the health, welfare, and prosperity of Oregon's citizens." The text amendment will provide energy in greater supply, thus reducing comparative costs to the public. It will increase the value of the irrigation districts, and their viability. It will reduce the net cost of irrigation district administration, and thus reduce the cost to the patrons of the districts who pay for such administration as part of their annual fees. It will make these positive changes without adverse impacts to the environment or the other protected values illustrated by the Statewide Planning Goals.

Goal 10, Housing, is not applicable because no housing is proposed with this text amendment.

Goal 11, Public Facilities and Services, requires local governments to consider the need to provide public facility infrastructure. In this instance, the proposal will allow the irrigation districts to generate electric power for 3900 homes, presuming that specific applications for this amendment are approved. Existing and proposed land uses must be considered for supply needs, and this proposal promotes that consideration.

Goal 13, Energy Conservation, states simply that the purpose of this goal is “to conserve energy.” The existing energy in irrigation district canal flows, dropping down in elevation, is currently unharnessed. The text amendment would allow that energy to be captured and used, implementing sound economic principles and with consideration to impacts. This renewable energy source will serve the electrical needs within the County, and beyond, as they are not needed locally.

Goal 8, Recreation Needs, and Goal 14 regarding orderly and efficient transition from rural to urban land use, are not applicable to this proposal. Goal 12, Transportation, is satisfied, as it will have no effect on the transportation system. Statewide Planning Goals 15 – 19 are related to resources not located in Central Oregon and, therefore do not apply to Deschutes County.

### **DESCHUTES COUNTY COMPREHENSIVE PLAN**

The text amendment is consistent with the applicable provisions of the County’s comprehensive plan. The relevant sections include those addressing energy resources, water resources, open space, and public facilities and services. These shall be addressed individually below.

**Chapter 23.76** of the County Comprehensive Plan sets out energy goals and policy, and guides codification. It notes several current concerns. These include:

- Current energy deficit (imports exceed exports of power)
- Projected increased cost of energy (BPA changes in pricing and supply)
- Projected increased demand with population growth

The Board finds the text amendment will be consistent with the County’s energy goals (DCC 23.76.020) on protecting natural energy resources and increasing generation of local energy. Allowing for hydroelectric facilities on existing irrigation systems where there is no net loss of the natural resource (water) will protect local natural energy sources. The placement of the facilities will be within existing piped irrigation canals and associated rights of way, thus managing land uses, eliminating significant impacts, and harnessing an existing supply of energy.

This is done with intergovernmental coordination, implementing new federal and state mandates to use small hydro where feasible. It also benefits local irrigation districts by broadening their economic base, and thus benefitting the farmers, ranchers, and governmental entities they serve.

**Chapter 23.68** governs Public Facility and Service Policies. The Board finds the text amendment consistent with the County’s public facility and service policies outlined in DCC 23.68 for reasons noted here. The text amendment will allow for generation of hydroelectric power within existing piped irrigation district water flows. This will encourage sustainable energy generation without material impact to the open space of the OS&C zone or the irrigation water already flowing through it, by placing generator turbines in existing flows piped to capture energy from the gravitational drop and velocity of water flow. This is accomplished without materially impacting the flows themselves, thus preserving their integrity as irrigation water, the

primary use. Therefore, the carrying capacity of the land, air, and water are not detrimentally impacted by this change to the County Code.

In addition, the proposed change will allow irrigation districts to generate hydroelectric power on a small scale. This cooperation between the County and the irrigation districts fosters mutual planning in the future, subject to state and federal approvals. By refining the County Code in this way, supply of electrical power available to all users increases, including those in urban areas.

The 2007 Oregon Legislature passed incentive legislation to encourage this type of project by allowing the Business Energy Tax Credit ("BETC"). Use of this tax incentive program is forecast to reduce the financial cost of energy generation, thus reducing potential increases to County citizens and businesses. Further, the text amendment refers only to the OS&C zone, thus the small hydroelectric facilities will be located in non-farm areas.

Lines required to transmit the small amounts of electricity generated will be transferable over standard, existing single pole systems that will match those already in place adjacent to eligible irrigation district sites within this zone.

The County Code does not define "power generation sites," although the concept is referenced in DCC 23.68. Without a definition, the Board looks to context for intended meaning to confirm there is consistency with past legislative decisions. As previously regulated, "power generation sites" are generation facilities that are located *on natural watercourses*. These run-of-the-river sites may provide natural fish habitat and/or recreational uses and require special consideration and protection. This appears to be the intent of the earlier regulations passed by this body and acknowledged by the state.

The Board interprets this provision of the Comprehensive Plan to be inapplicable to the subject text amendment approved by this action, because small hydroelectric power sites qualifying for the FERC conduit exemption do not impact natural watercourses or the natural fish habitat such streams and rivers provide. To the extent that small hydroelectric facilities are found to be subject to this comprehensive plan provision, the text amendment complies with this provision because the irrigation canals do not have fish swimming in them due to screening and the small hydroelectric facilities will not alter the amount of water flow to the rivers by any measurable amount. For this reason, the use is to be approved as a use permitted outright, subject to specific conditions, including landscaping and site plan submittal.

As submitted, the proposal is consistent with the County's open spaces, areas of special concern and environmental quality goals to maintain and improve the quality of air, water, and land resources. This portion of the County's comp plan is conceptually close to the statewide planning goal, so the analysis provided in Goal 6, above, applies here as well.

The text amendment proposed here includes existing irrigation canals located on OS&C zoned properties along Highway 97 and far from federal and state scenic waterways as well as other local rivers and streams. The proposal is consistent with maintaining water quantity and quality as addresses in the County's water resources goals. The text amendment satisfies public facilities and services goal to determine if the proposal will best serve existing and proposed (urban and rural) development with "timely, orderly and efficient arrangement of public facilities."

**Chapter 23.112** governs Deschutes County's water resources. This proposal has no impact on these resources. It uses already diverted water in already improved rights-of-way to deliver

water to agricultural and municipal users throughout the basin. Thus, there is no impact on supply. The turbines designed for this use are placed to prevent pooling, and process the water without heating it, resulting in no net effect to the water quality as it continues to travel through the irrigation system to the patrons who will continue to irrigate lands with the water as they have for the past 100 years or so.

This proposal does not impact wetlands, riparian areas, or perennial streams.