

# Riparian Ordinance Toolkit

A Guideline for City Planners Across the State of Utah



Source: Adobe Stock Images

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Source: Jacob Barlow 2022



# What is a Riparian Zone?

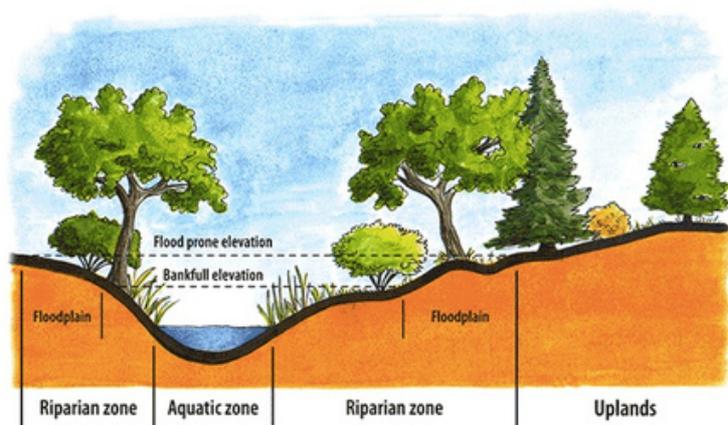
Of, pertaining to, or situated along the banks of a river or other body of water



## Diversity of Riparian Zones in Utah

- A) Bear River next to agricultural fields from: Utah Rivers Council "Why Rivers Matter"
- B) Southern Utah riparian example from: blm.gov "BLM Utah Wetlands and Riparian"
- C) Mountain riparian example from: Utah State University "Water Quality: Riparian Zones"

The riparian zone is a region of land that links the aquatic ecosystem to the drier uplands that are not submerged during floods. These areas are home to a diverse range of flora and fauna due to the frequent presence of water and periodic inundation. As a result, they are highly productive and valuable landscapes, particularly in dry climates.



Source: SLCo Watershed

# Importance of Riparian Zones

## Land Use

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Riparian zones play an integral role in metropolitan areas. These zones, which are areas near rivers, streams, or other above-ground bodies of water, serve as critical ecosystems that provide numerous benefits for both the environment and human communities. However, riparian zones throughout Utah are threatened by frequent periods of drought and rapid population growth. For these reasons, it is vital that land managers and city planners have the knowledge and resources to best protect their riparian environments. In managing a riparian area, it is also important for city planners to consider overlapping standards and requirements from other regulatory agencies, such as those at the County, State, and Federal level.



Source: Adobe Stock Images

“For those familiar with riparian corridors in the application area, it is evident that every riparian buffer and adjacent site condition will have unique aspects. Consequently, it is difficult to develop universally applicable planning and design guidelines.”<sup>1</sup> With this said, some agency regulations apply to all riparian areas. Our toolkit summarizes these regulations, while providing example ordinances with a range of provisions that can be utilized to accommodate local conditions or concerns.

How we continue land use planning and development in the near future will play a critical role in the health of both riparian environments and our local communities. By protecting and restoring these areas, communities can ensure the long-term availability of these resources, which are used by communities for a variety of purposes (e.g., flood control, recreation and tourism, water purification). By preserving and restoring these important ecosystems, we can ensure that future generations have access to the resources and benefits they provide.

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<sup>1</sup> Johnson, C. W., & Buffler, S. (2008). Riparian buffer design guidelines for water quality and wildlife habitat function on agricultural landscapes in the intermountain west. US Department of Agriculture, Forest Service, Rocky Mountain Research Station.

# Importance of Riparian Zones

## Economic Security

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Riparian zones are important for economic security as they provide valuable resources such as timber, food, and water. Additionally, waterfront properties typically have increased property values, and maintaining healthy riparian zones around these private properties can prevent flooding and erosion, further supporting economic security.

Riparian zones can also serve as key tourism destinations, providing economic benefits to local communities through recreation and hospitality industries. However, we must consider the fact that riparian zones can't always be seen as a free-for-all. "Disputes over how water is allocated among individuals, organizations, sectors, and political jurisdictions are constant, and at least in the United States, make litigation over water rights and allocations a permanent feature of the social and hydrological landscape."<sup>1</sup>

The manner in which we shape our water and land laws in conjunction with our city and land management plans is key for the protection of riparian zones. In an era of rapidly changing environmental conditions and economic market forces, zoning and regulatory approaches offer stability that confer greater resistance to major perturbations (e.g., drought, large-scale development) that threaten attributes that draw residents to particular communities.<sup>1</sup>



Source: Visit Salt Lake



Source: Adobe Stock Images

## Social Connections

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Riparian zones often serve as important recreational areas for local communities, providing access to clean water and open spaces for activities. These areas also help to mitigate any negative effects of urbanization on riparian zones and provide valuable wildlife habitat, helping to ensure that the benefits of nature are shared among all members of a community.

Green spaces, like riparian zones, provide a number of benefits for the public. "For example, since green spaces can deliver ecosystem services such as climate regulation, psychological renewal, and outdoor recreation which promotes physical activity, inequitable access may relate to health disparities in heat-related illness, obesity, cardiovascular issues, and psychological concerns."<sup>2</sup> Green spaces can also help filter pollution, provide shade, and help areas retain moisture. As drought and poor air quality continue to be common in Utah's growing cities, these health disparities will continue to grow if we don't adequately nurture, protect, and provide our local riparian zones.

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<sup>1</sup> Sandoval-Solis, S., Paladino, S., Garza-Diaz, L., Nava, L., Friedman, J., Ortiz-Partida, J. P., ... & Neeson, T. (2022). Environmental flows in the rio grande-rio bravo basin. *Ecology and Society*, 27(1), art20

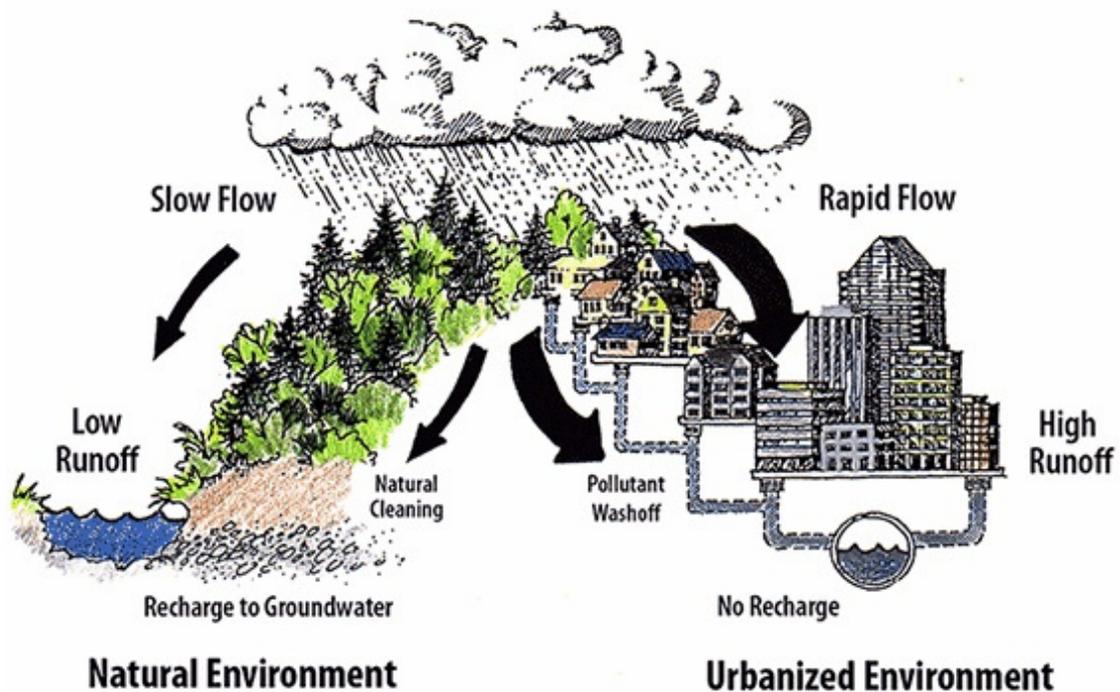
<sup>2</sup> Jennings, V., & Johnson Gaither, C. (2015). Approaching environmental health disparities and green spaces: an ecosystem services perspective. *International journal of environmental research and public health*, 12(2), 1952-1968.

# Importance of Riparian Zones

## Environment

Not only do riparian zones play an important role in our communities, they are also vital for environmental prosperity. They help to protect and restore water quality, reduce erosion, provide crucial habitat for aquatic and terrestrial species, and regulate the local water cycle. They also help to mitigate the impacts of natural disasters such as floods and droughts, providing valuable ecosystem services to communities and helping to preserve the health of these vital ecosystems for future generations, highlighting their environmental integrity.

"Research suggests that continuous, ecologically functioning riparian corridors have beneficial effects on water quality, wildlife and fish habitat, overall ecosystem function, and landscape aesthetic quality."<sup>1</sup>



Source: SLCo Watershed

In urban environments stream waters flow faster, leading to a higher probability of erosion, degraded water quality, flooding, and property damage - in comparison to natural environments which slow the rate of flow through absorption.

<sup>1</sup> Johnson, C. W., & Buffler, S. (2008). Riparian buffer design guidelines for water quality and wildlife habitat function on agricultural landscapes in the intermountain west. US Department of Agriculture, Forest Service, Rocky Mountain Research Station.

# Riparian Buffer Zones

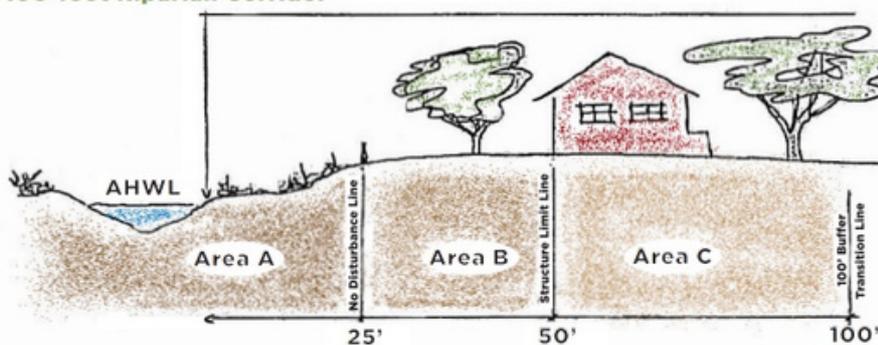
Salt Lake City  
Ordinance Example

## Riparian Corridor Overlay District\*

### Buffer Zone Area Regulations

Area A	Area B	Area C
<p>No Disturbance Area</p> <ul style="list-style-type: none"> <li>• 0-25 ft from AHWL</li> <li>• Activities allowed without a permit:               <ul style="list-style-type: none"> <li>◦ Removal of storm debris and trash</li> <li>◦ Maintenance of property &amp; existing fences and structures</li> <li>◦ planting of non-invasive vegetation</li> </ul> </li> <li>• With a permit               <ul style="list-style-type: none"> <li>◦ develop outdoor projects that do not require heavy equipment (stairs, paths, fencing, open patios)</li> </ul> </li> </ul>	<p>Structure Limit Area</p> <ul style="list-style-type: none"> <li>• 25-50 ft from AHWL</li> <li>• Activities allowed without a permit:               <ul style="list-style-type: none"> <li>◦ All of the activities allowed in Area A</li> <li>◦ Yard debris composting</li> <li>◦ New construction (fencing, open patios and decks)</li> </ul> </li> <li>• With a permit               <ul style="list-style-type: none"> <li>◦ replace existing structures with ones similar in size and type - complying with city zoning regulations</li> </ul> </li> </ul>	<p>Buffer Transition Area</p> <ul style="list-style-type: none"> <li>• 50-100 ft from AHWL</li> <li>• Activities allowed:               <ul style="list-style-type: none"> <li>◦ All activities allowed in Area A and B</li> <li>◦ All development projects permitted by city zoning regulations</li> </ul> </li> <li>• Exclusions:               <ul style="list-style-type: none"> <li>◦ leach fields</li> <li>◦ storm water retention ponds</li> <li>◦ detention basins or commercial parking lots</li> </ul> </li> </ul>

100-foot Riparian Corridor



AHWL = Annual High Water Line

Permits can be acquired for each area to increase allowed activities and usage

\* Full URL listed in Works Cited section of this document

# Agency Contacts



To cross-check regulations

Numerous local, state, and federal agencies regulate waterways. When creating a riparian ordinance, it is critical to cross-check the ordinance's provisions with those from these other agencies, to ensure the regulations work in harmony with one another. The following list includes contact information for some of the agencies you may need to coordinate with.

Bureau of Reclamation (BOR)	<a href="#">Upper Colorado Basin Regional Office</a> Phone: 801-524-3600	The Bureau of Reclamation is a provider of wholesale water and hydroelectric power in the United States. Its primary mission is to assist in the development of water resources and infrastructure.
Bureau of Land Management (BLM)	<a href="#">West Desert District Office</a> Phone: 801-320-8300	The BLM regulates water resources on public lands by issuing permits, leases, and authorizations for water-related activities, like water (diversion) rights, water development projects, water quality, land use planning and water conservation.
United States Forest Service	<a href="#">Uintah-Wasatch-Cache National Forest</a> Phone: 801-999-2103	The US Forest Service is a federal agency under the U.S. Department of Agriculture that manages public lands including national forests and grasslands in order to ensure quality water and timber for the nation.
United States Army Corps of Engineers	<a href="#">Western Regional Environmental and Energy Office</a> Phone: 303-844-0956	The US Army Corps of Engineers provides public engineering services with a guiding principle of environmental sustainability in order to strengthen the Nation's security, economy, and disaster readiness and response.
Federal Emergency Management Agency (FEMA)	<a href="#">Utah Integration Team</a> Region 8 Phone: 303-468-6600	FEMA is a federal emergency response agency responsible for helping people before, during, and after natural disasters including hurricanes, earthquakes, floods, and more.
Utah Director of Water Rights	<a href="#">Utah Division of Water Quality</a> Multi-Agency State Office Phone: 801-536-4300	This agency is responsible for managing and regulating water rights in Utah, including overseeing allocation and distribution of water resources and ensuring compliance with state and federal laws.
Salt Lake County Flood Control	<a href="#">Public Works-Flood Control</a> Phone: 385-468-6600	Responsible for managing and mitigating the risk of flooding within Salt Lake County, this agency implements various flood control measures and develops comprehensive flood management plans.

# Existing Ordinances/Regulations

The following list outlines the existing communities in Utah that have ordinances and/or regulations for riparian zones. Links to the regulations are provided for further reference.

Out of the 16 cities in Salt Lake County, only Salt Lake City has officially adopted a riparian ordinance (as of 2023). There are no other specific riparian ordinances in the state of Utah across all levels (city, county, or state). Several cities, towns, & counties do have water body protections that primarily address water quality or flood control. However, these do not include specific riparian safeguards that address development regulations and plant protections in areas adjacent to streams and rivers.

Jordan River Commission	Guide	<a href="#">Best Practices for Riverfront Communities</a>
Salt Lake County	Municipal Code	<a href="#">Title 17 - Flood Control and Water Quality</a> See Chapters 17.06, 17.10, & 17.22,
Salt Lake County	Health Regulations	<a href="#">#12 Subdivisions</a> <a href="#">#14 Watershed Regulation</a>
Salt Lake County	Ordinance Amendment	<a href="#">Emigration Canyon</a> <a href="#">Brighton Town</a>
Salt Lake City	Municipal Code & Fact Sheet	<a href="#">Riparian Corridor Overlay District</a> <a href="#">Fact Sheet</a>
Lehi City	Development Code	<a href="#">Jordan River Protection Overlay Zone</a>
Francis City	Municipal Code	<a href="#">Sensitive Lands Restrictions</a> See Chapter 18.120
Park City	Municipal Code	<a href="#">Sensitive Land Overlay (SLO)</a> See 15-2.21
Ivens City	Municipal Code	<a href="#">Sensitive Lands Overlay District (SL)</a> See 16.08.207 & 16.08.208
Logan City	Ordinance Amendment	<a href="#">Critical Lands Overlay Zone (CL)</a>
Cottonwood Heights	Municipal Code	<a href="#">Sensitive Lands Evaluation and Development Standards (SLEDS)</a>

# Outline of a Riparian Ordinance

An outline of a model riparian protection ordinance. It illustrates a basic structure that can be modified by any community to meet their needs.

Source: Jordan River Commission

## Purpose Statement

Describes the community's reasons and goals for protecting riparian habitats

## Applicability

States generally where the riparian protections will apply and/or what types of development are subject to the ordinance

## Map

Depicts where the regulations apply, such as with an overlay district

## Permits Required

Provides guidance for landowners to obtain a specific permit to build in protected riparian areas, then the type of permit (e.g., zoning certificate, conditional use permit, etc.) and the required review process should be provided.

## Habitat/Natural Resources Analysis

Requires applicants with proposed projects located in the riparian protection zone to submit a resource inventory and impact analysis for the property. May also include a required mitigation plan that proposes a strategy for avoiding, minimizing, and potentially, mitigating impacts to the protected features.

## General Standards

The bulk of the substantive requirements for riparian protection. The length and detail of this section will vary significantly depending on the goals of each jurisdiction.

## Modifications to Required standards

Provides flexibility and to allow alternative methods for compliance, many ordinances provide a process through which landowners may modify riparian requirements to respond to unforeseen circumstances on the ground or to allow innovative development techniques that meet or exceed the adopted standards.

## Enforcement

Identifies who is responsible for enforcing the riparian ordinance, what constitutes a violation of the ordinance, and the penalties and enforcement measures available in case of violations

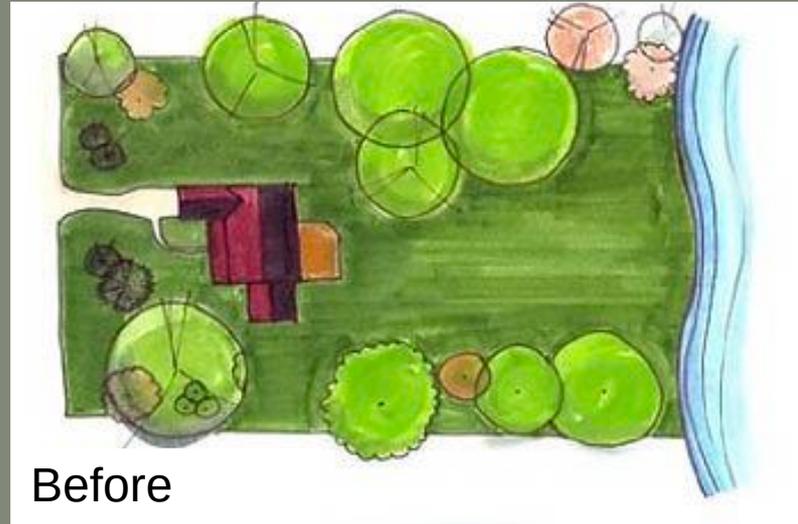
**Definitions** Describes the community's reasons and goals for protecting riparian habitats

# Community Guidelines

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## Community Perspective:

Considering community perspectives is vital for creating riparian ordinances. A riparian ordinance can affect various property laws, water use regulations, and development. Depending on what the community perspectives are, reactions can be mixed and varied. Providing education, accessibility, and resources to the public while in the process of creating a riparian ordinance may lead to better outcomes and less problems once the riparian ordinance is ready for implementation.



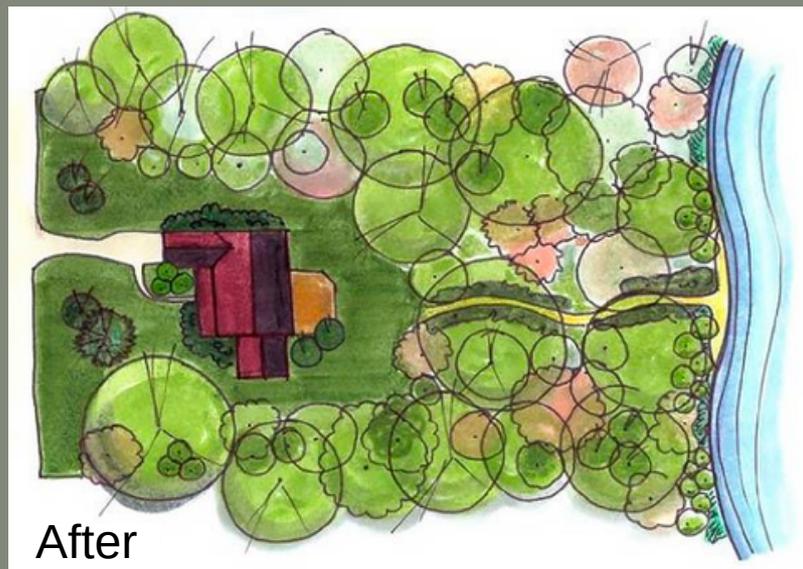
Before

Source: SLCo Watershed

## Advice to give to homeowners:

Salt Lake County has created a stream care guide for residents. They recommend the following:

- Create a riparian backyard
  - Plant native species
  - Meet minimum buffer requirements but remember; bigger is better.
- Rethink your lawn
  - Mow high
  - Water deeply
- Don't dump debris - dispose of it properly



After

Source: SLCo Watershed

For more information, direct individuals to the following: [Stream Care Guide by Salt Lake County](#)

# Sources & Credits

## Credits:

- Environmental & Sustainability Studies (ENVST) Air, Water & Health (Spring 2023) Capstone Students - Margot Langue, Corinna McMurtrey, Lauren Page, Talon Roberts, Haley Segura
- ENVST Capstone Professor - Dr. Jennifer Follstad Shah
- Project Partner - Samantha DeSeelhorst, Senior Planner at Cottonwood Heights City

## Sources:

- Johnson, C. W., & Buffler, S. (2008). Riparian buffer design guidelines for water quality and wildlife habitat function on agricultural landscapes in the intermountain west. US Department of Agriculture, Forest Service, Rocky Mountain Research Station.
- Sandoval-Solis, S., Paladino, S., Garza-Diaz, L., Nava, L., Friedman, J., Ortiz-Partida, J. P., ... &
- Neeson, T. (2022). Environmental flows in the rio grande-rio bravo basin. *Ecology and Society*, 27(1), art20
- Jennings, V., & Johnson Gaither, C. (2015). Approaching environmental health disparities and green spaces: an ecosystem services perspective. *International journal of environmental research and public health*, 12(2), 1952-1968.
- Broadmeadow, S., & Nisbet, T. R. (2004). The effects of riparian forest management on the freshwater environment: a literature review of best management practice. *Hydrology and Earth System Sciences*, 8(3), 286-305. <https://njstatehousetours.org/tour/index.php/lawmaking-student-guide/lawmaking-02-bkg/>
- Salt Lake County: Watershed Planning and Restoration <https://slco.org/watershed/>
- Riparian Corridor Overlay District Ordinance Fact Sheet <http://www.slcdocs.com/building/b-riparian-corridor.pdf>