

San Juan County Comprehensive Plan Update

ELEMENT 4. WATER RESOURCES

Introduction

San Juan County strives to achieve integrated water resources management throughout its jurisdiction. The County gained greater understanding of its water resources over the last 20 years through several plans and studies (Attachment A). These efforts focused on resource protection through [a common goal](#) of non-degradation [and conservation](#) for all water types-including surface and storm waters, groundwater, and marine receiving waters. [The following background narrative includes preventative and corrective actions the County is taking to mitigate discharges that pollute waters of the state.](#) Managing for resiliency, in both water resources and our community, [in the face of climate change](#) is critical to minimizing the impacts of change on the hydrology and aquatic habitats we and other species rely upon.

San Juan County relies on precipitation as the only source of freshwater. Precipitation that falls on each island is the only source of recharge for surface and groundwater supplies, [leaving the County especially vulnerable to drier conditions expected with climate change.](#) The percentage of precipitation that actually becomes groundwater recharge is extremely low, often less than 10 percent.

The islands' geography is characterized by the rain shadow created by the Olympic Mountains to the south and Vancouver Island to the west, by predominantly steep terrain and bedrock geology, by small watershed catchment areas, and by extensive shoreline. These conditions result in lower rainfall than other areas of Western Washington, limited groundwater storage, and extensive runoff and drainage to the Salish Sea. The freshwater available on each island is isolated by the surrounding marine waters, which make our groundwater supplies near the shorelines at risk of seawater intrusion.

[Wells vary widely in quality and quantity across the County.](#) Generally, water systems with wells located away from the shoreline have good water quality. However, some areas are experiencing seawater intrusion at this time. How we manage our water use for domestic and agricultural purposes, as well as treat and manage our storm and surface waters, is critical to ensuring all of our water resources are of the highest quality and quantity possible.

Planning

Since 2000, San Juan County has been active in water resource planning; [beginning with the adoption of adopting](#) the Watershed Management Action Plan. This plan contained specific recommendations [for addressing to address](#) watershed contamination from several development, land use, and disposal related practices. The plan also resulted in the integration of several local organizations like the Lead Entity for Salmon Recovery and the Marine Resources Committee. [In 2022, the Lead Entity initiated a comprehensive update to the San Juan County Chapter of the Puget Sound Chinook Recovery Plan.](#) These groups have completed several studies and projects [aimed at enhancing fish habitat and advancing understanding of local ecosystems.](#)~~to further understanding and improve fish habitat.~~

The Water Resource Management Plan was adopted in 2004, addressing surface and groundwater quality and quantity issues, water rights, and existing water systems capacity to serve projected growth. Groundwater availability from exempt wells, alternative water supply options, and water source approval were discussed in the plan. The Plan was a springboard for future studies and research by the Water Resource Management Committee, [and its successor, the Clean Water Advisory Committee.](#) [The San Juan Conservation Land Bank also recently updated their strategic plan, which includes measure for protecting watersheds and aquifers.](#) The entire list of plans can be viewed in Attachment A. The County supports the protection and enhancement of critical areas and agricultural viability. There are programs

using watershed-based, incentive-based processes to protect critical areas, promote viable agriculture, and encourage cooperation among diverse stakeholders.

Critical Aquifer Recharge Areas

The entire County has been designated a critical aquifer recharge area because the County's aquifers are highly susceptible to contamination. The County has development requirements and voluntary programs, including the Voluntary Stewardship Program, to ~~assure~~ promote a safe and adequate water supply by protecting the quantity and quality of water available for recharge. Over the past decades, the County has adopted stricter regulations to ensure that new sources of potable water are safe and adequate. However, legacy issues that include groundwater contamination, inadequate well production, well interference, and insufficient potable water storage persist throughout the County and are dealt with on a case-by-case basis.

Coordinated Water System Planning

With the goal of improving service and protecting a shared resource, the County worked with water purveyors to develop coordinated water system plans in three areas.

- The *San Juan Island Critical Water Supply Service Area Coordinated Water System Plan* was drafted in September 1990. The plan evaluated the existing water systems constructed at that time, including: source capacity, storage, transmission, and shared facility potential. In addition service areas for existing water systems were established allowing for the water systems to become the exclusive water service providers within those areas.
- In 2003, the *Lopez Village Abbreviated Coordinated Water System Plan* was adopted, establishing design guidelines for new and expanding water systems and outlining a process to direct new growth to existing public water systems in the area rather than creating new water systems. This supports the ability of existing water systems to continue to provide safe and reliable drinking water to their service areas. The Coordinated Water System Plan was adopted in response to the establishment of the Lopez Village Critical Water Supply Service Area in 2001. The Critical Water Supply service area was designated due to questions about whether water quantity and quality were adequate for the growth that was occurring in the area during that time.
- The *Eastsound Water Supply and Abbreviated Coordinated Water System Plan* was adopted in 2008. This established Eastsound Water Users Association (EWUA) as the sole water purveyor within their service area and set standards for timely and reasonable service. This plan ensured that all new development within the EWUA service area is served by that water system and not by individual or smaller water systems in the area.

Climate Change Considerations

Based on the University of Washington report published in 2015, *State of Knowledge, Climate Change in Puget Sound*; the regional trend indicates that summer precipitation is likely to slightly decrease over time, with warmer, drier summers expected. However, periods of heavy rain may intensify during the spring months from March through May. The precipitation during these spring months from 1895-2014 has increased twenty-seven percent for the region.

With ground and surface water resources dependent solely on precipitation to recharge, increasing periods of extended drought will require planning to ensure that adequate water supplies are available.

Some large water systems in the County are implementing water use efficiency and conservation measures and have served more users with less water. Implementation of such measures Countywide has the potential to ease demand on County water resources.

Water Sources and Water Use Overview

Drinking Water Sources

San Juan County’s potable water needs are served by a large variety of public water systems and private exempt wells. Approximately, forty percent of the County’s population is served by Group A water systems (more than 14 connections), forty percent are served by private exempt wells, and the remaining twenty percent are connected to Group B water systems (3 to 14 connections).

The predominant fresh water source in San Juan County is groundwater. There are over 5,000 wells in the County. Between fifty-five and sixty percent of the county population is served by groundwater pumped from wells.

Approximately thirty-five percent of the County’s population relies upon surface water for their drinking water supply. The two largest community water systems in the County are the Town of Friday Harbor, which is supplied solely by surface water, and Eastsound Water Users Association, which utilizes a combination of surface and groundwater. A table listing the County’s largest water systems by connections is shown in Table 4.3.1 below.

Table 4.3.1 San Juan County’s Largest Water Systems

	Water System	Island	Ownership	2024 Reported Connections
1	Friday Harbor, Town of	San Juan	Town	1899
2	Eastsound Water Users Association	Orcas	Association	1265
3	Roche Harbor Water System Inc.	San Juan	Investor	626
4	Doe Bay Water Users Association	Orcas	Association	290
5	Rosario	Orcas	Investor	236
6	Fisherman Bay Water Association	Lopez	Private	169
7	Cape San Juan Water District	San Juan	Special District	159
8	Center Island Water System	Center	Private	145
9	Olga Water Users Inc/	Orcas	Private	130
10	Blakely Is. Maintenance Commission	Blakley	Private	120
11	Orcas Highlands Association, Inc.	Orcas	Association	117
12	Decatur Northwest	Decatur	Private	88
13	The Oaks Mobile Home Park	San Juan	Private	80
14	Spring Point	Orcas	Association	70

*Source: WA Department of Health, Sentry Drinking Water Database

Besides the number of connections, water systems are also classified by the number of temporary or transient users that are served. Notably, Mountain and Cascade Lakes together in 2017, supplied surface water for approximately 800,000 temporary users of the Moran State Park, Rosario, and Doe Bay water systems.

There are over a dozen desalination facilities creating potable water in San Juan County, serving approximately 500 connections. In addition, San Juan County has historically approved new single family home development utilizing hauled water and rainwater catchment. Catchment is commonly used to

augment a groundwater source. Because of its heavy reliance on local precipitation and infiltration for fresh water resources, the entire County is designated a Critical Aquifer Recharge Area.

Source Approval

San Juan County Code (SJCC) Chapter 8.06, administered by Health & Community Services (H&CS) contains minimum requirements for demonstrating a potable water source; as well as groundwater resource protection. The code applies to all potable water systems proposed for building permits and subdivisions. SJCC Chapter 8.06 complies with Growth Management Act (GMA) requirements for verification of water availability for building permits (RCW 19.27) and for subdivisions (RCW 58.17).

Water Requirements for Building

Prior to building permit approval, evidence of an adequate water supply must be provided in the permit application.

1. Community Water Systems - A written notice from the community water system purveyor is required verifying that a water connection is available.
2. Individual Wells - For individual well approvals, a water well report verifying well construction, water quality testing, and well yield testing are required. In addition, a water meter is required at the wellhead, and a 100-foot radius around the well establishing a sanitary control area. The following may also be required:
 - a. A seawater intrusion risk assessment is required where location and/or groundwater criteria indicate the potential for seawater intrusion.
 - b. If necessary, a hydrogeologic site evaluation performed by a Licensed Hydrogeologist is required.
3. Alternative water sources - Sources other than an individual well or connection to a public water system are also approved for a single-family residential building permit. Alternative sources require a recorded Operation and Maintenance covenant to be filed with the County Auditor. Alternative sources include shallow wells with unsatisfactory bacteriological tests; water systems yielding less than 200 gallons/day; hauled water systems; rainwater catchment; [seawater treatment/desalination](#); and wells needing treatment for arsenic, barium, [manganese](#) or fluoride.

Subdivision Requirements

An adequate water source for each new parcel is required prior to subdivision approval such as:

1. Connection to Community Water System. A written notice from the community water system purveyor is required to be submitted with the subdivision application. The letter must verify that a water connection is available. Water services must be installed to the property line prior to subdivision approval.
2. New Community Water System or Individual Well. Applicants must demonstrate a minimum capacity of 1,000 gallons per day/connection, provide a current bacteriological sample and a complete inorganic chemical analysis. Wells must be drilled and tested to ensure that water is available prior to the creation of new lots.

Public Water Systems

Public water systems are those that serve more than three residential connections. They can also consist of water systems serving one connection if the public has access to water (i.e. restaurant, store, or church). In order to protect water resources, the County has established stringent minimum requirements when developing new water supplies to serve new subdivisions.

The San Juan County Board of Health adopted the first local drinking water code in August 1996, establishing rules and regulations for individual water wells and public water systems. There have been six revisions of the code since then, resulting in the current SJCC Chapter 8.06 Water Wells and Water

Systems. This code adopts state drinking water and well construction rules by reference establishing standards for resource protection, monitoring, and management. [This is a climate change mitigation measure to hold smaller systems to the high standards of state regulations.](#)

Requirements for new public water systems are:

- Proposed sources of groundwater for public water systems within one-quarter mile of an existing water system service area must apply to that system for service prior to drilling;
- All new public water systems using groundwater must demonstrate a source capacity of 1,000 gallons per day (gpd)/connection, but can design the system based on 350 gallons per day (gpd)/connection; and
- Water systems in areas designated as critical water resource areas, as part of their water system plans, must include resource protection including:
 - A conservation plan;
 - A water shortage contingency plan; and
 - Watershed control, and management strategies such as monthly meter readings, static level measurements, comprehensive monitoring, and coordination of well pumping with other water systems.

Other Water Use Sources

San Juan County's agricultural sector relies on surface water from ponds, [streams](#), and groundwater for irrigation, livestock water, and livestock processing. According to the USDA Ag Census ([20222017](#)), there are [473347](#) acres of irrigated farmland in San Juan County out of the total [19,57148,402](#) actively farmed acres. The Washington State Department of Ecology maintains a database of water rights which includes agricultural use. There is limited available data on the quantity of water resources being used for irrigation and agriculture in the County. Irrigation requirements are estimated to be approximately 1 acre foot during the growing season for grass pasture and for vegetable production.

Other Industrial water uses consist of gravel mining operations and concrete manufacturing. It is presumed that the sources for these operations are groundwater. Similar to the agriculture sector, there is not good data on the quantity of water resources being used for this manufacturing sector in the County.

Agriculture Water Use

Forage production and livestock are the dominant agricultural practices in San Juan County. Small farm production of both vegetable and fruit crops is increasing. Over 13,000 acres has been designated as Agricultural Resource land. Without adequate water, this designation is meaningless.

With proper management [and an understanding through monitoring/metering](#), our intensively managed farmland and pasturelands provide ecosystem services such as water filtration and wildlife habitat. In light of these benefits, as well as social assets including cultural history and open view corridors, agricultural water usage must be factored into County water planning.

As the islands' populations have increased, the demands on groundwater have increased and will continue to do so with additional growth. The future of farming and food security in San Juan County will depend upon the continued access to, and wise use of, water.

Well Inventory

The County well inventory is quantified by the number of water well reports (well logs) on file. Well logs are available at H&CS or through the Department of Ecology website. Ecology has a record of approximately 5400 water well logs on file. All new wells must meet well site criteria to ensure that they are not impacted by potential sources of contamination.

Ground and Surface Water Protection

On-Site Sewage System Permitting and Operation & Maintenance

Health and Community Services (H&CS) implements SJCC Chapter 8.16 On-Site Sewage System (OSS) Disposal to protect public health by minimizing exposure to untreated sewage. This includes inadequately treated discharges from OSS that can affect surface and ground water. Permitting requirements for on-site sewage systems include vertical separation to groundwater and horizontal separation to surface water adopted by reference from WAC 246-272A. In addition, H&CS administers an Operation and Maintenance (O&M) program that exceeds the requirements outlined in WAC 246-272A by requiring ongoing O&M inspections county wide, increasing the frequency at which inspections are required for food service establishments, and requiring O&M upgrades to be installed at the time of property sale. [There is also potential for an increased threat to marine receiving waters due to septic system failures as a result of rising sea levels, increased flooding, and seawater intrusion in waterfront lots because of a changing climate.](#)

Seawater Intrusion

In 2007, the San Juan County Board of Health revised SJCC Chapter 8.06 to include a Seawater Intrusion Protection section. This ensures that projects that have a potential to cause or contribute to seawater intrusion are evaluated to determine their impacts on the groundwater resource prior to a project decision being made. If the project is determined to have an impact on groundwater, the Health Officer will approve with conditions designed to prevent degradation. Projects that cannot mitigate the impact of seawater intrusion on the groundwater resource may be modified or denied.

Water Monitoring

H&CS established groundwater quality monitoring networks in high priority areas of North Lopez and in Eastsound in 2008 utilizing grant funding. The network in Eastsound is managed and maintained by Eastsound Water Users Association (EWUA). The monitoring network on Lopez is monitored and maintained by H&CS staff at a low level with available staff and funding. The monitoring networks consist of data loggers installed in multiple wells, which gather static water level information. In addition, nitrate, chloride and conductivity parameters have been analyzed periodically since 2008 to assess impacts from seawater intrusion and human related nitrate loading to the aquifers. [Ongoing monitoring is informative for the County. For example, the recent analysis of North Lopez data showed elevated chloride in some wells. This demonstrates that seawater intrusion is not just a speculation; it is being observed and is likely to increase with increased groundwater pumping and sea level rise.](#)

Individual wells are required to monitor for water quality and submit that information to H&CS in order to obtain water availability approval for a building permit. ~~The water quality information is entered and stored in a database maintained by H&CS. The water quality sample results are scanned with the water availability application and maintained by H&CS.~~

Storm and Surface Water Management

The County established a Stormwater Utility (Utility) in 2005 to administer programs and projects to protect and improve water quality, water quantity management, and aquatic habitats. Storm water from impervious surfaces must be pre-treated and retained before discharge to natural surface waters (wetlands, streams, ponds). The County uses development design standards for storm water that follow the Department of Ecology's latest guidance, adapted and upgraded for conditions specific to San Juan County.

Watershed-scale system planning was completed in 2015 and is used, along with other technical and scientific information, to guide the Utility's Capital Improvement Program (CIP) for infrastructure upgrades to storm and surface waters. The projects are designed to retain fresh water on the landscape for groundwater recharge, manage excessive runoff, reduce bacteria and nutrient loading, and maintain cooler waters to buffer the impacts of climate change on water quality and cold water habitat. High precipitation events in the fall, winter, and spring have the potential to cause inundation, erosion, and damage to infrastructure. Appropriate drainage systems are needed in response to climate change, while reducing potential for water quality contamination from sediment, nutrient, and pathogen runoff.

The Utility works to ensure the storm and surface water system is adequately maintained and functional, in order to protect water quality, manage water quantity, and preserve aquatic habitats. Storm water runoff from impervious surfaces picks up contaminants that can impact our water quality if not properly treated. Protection and maintenance of the storm and surface water system also helps to reduce the risk of flooding of structures and roadways. Storm water infiltrates into groundwater, and drains to surface waters (streams, wetlands, ponds and their associated riparian areas) before entering the marine environment.

Since 2005, the Utility has largely focused on drainage planning, monitoring, and conveyance projects. In 2018, the County Council expanded the Utility beyond stormwater to fully address the community need to maintain water resources throughout the County. The Clean Water Utility will add water availability, water quality monitoring, aquifer protection, and protection of fish habitat to the existing stormwater planning, monitoring and conveyance programs. [The Clean Water Utility will also include riparian restoration and revegetation work to improve water quality and address climate resiliency](#)

Natural Resources

Fish, Wildlife, and Native Habitat

The complex geology of the San Juan Islands supports a diverse land cover that, in conjunction with our streams, wetlands and nearshore areas, supports a wide array of plants and animals. Our habitats consist of many islands that are in some cases small, disconnected, and often rocky, and for many of them protection is either recommended or is required by State or Federal law.

A stated goal of previous planning efforts is to use Best Available Science to ensure there is no net loss of the functions and values of wetlands and fish and wildlife habitat, giving special consideration to anadromous (migratory) and native fish.

[Climate change poses a threat to native habitat, impacting our fish and wildlife. Some of the potential impacts of climate change on habitat include: increased erosion due to flooding, storm surge, and sea level rise; loss of beaches and wetlands resulting from sea level rise coupled with armoring and development that prevents those habitats from being able to move further inland; harmful algal blooms resulting from warmer water temperatures and excessive nutrients. There are also instream flow and fish migration challenges caused by impoundments and water withdrawals from streams.](#)

Marine Waters - San Juan County Marine Stewardship Area

The marine waters of San Juan County were designated a Marine Stewardship Area (MSA) in 2004. The designation is designed to protect the unique and valuable marine resources of the islands, while allowing sustainable use to occur. A Marine Stewardship Area Plan, completed by the Marine Resources Committee in 2007 and approved by County Council, assessed conditions and recommended strategies

to protect and improve resource conditions. The work is consistent with some of the Shoreline Master Program development standards currently in place.

The Marine Stewardship Area designation includes the Islands' uplands, shorelines and marine waters throughout the County. The quality of the marine waters are influenced by the freshwater runoff from the Islands as well as boating and vessel traffic, and activities of neighboring jurisdictions.

The County's Salmon Recovery Program also leverages surface water management for habitat benefits to aquatic species. Additional [restoration and protection actions](#) ~~recovery planning~~ for salmonid and native freshwater fish [are](#) currently underway and will guide habitat restoration measures in high priority watersheds.

[Climate change poses a threat to marine ecosystems with potential impacts such as harmful algal blooms and intertidal die-offs as a result of excessive heat during low tides.](#)

- Revisions expected with the Critical Areas Ordinance update.
- Revisions expected with comments for the Agriculture Advisory Committee.
- Revisions expected to align with the new Climate Element.
- Results of updated USGS study will be reviewed to determine whether changes to this element need to be incorporated.

Water Resources Goals and Policies Matrix

Color Guide

Header

Goal

Policy

New Goal or Policy

Goal changing to a policy

Goal or policy being removed

Existing Goal / Policy #	Existing Goal / Policy language	Review notes	Changing? Yes or No	Reason for change	New Goal / Policy #	New Goal / Policy language
Goal 1	Protect and manage the quality and quantity of ground, surface, and marine waters by monitoring, preserving and enhancing hydrologic systems.		No		Goal 1	
Goal 2	Establish coordinated programs for monitoring water quality, water quantity and associated habitats and species and agricultural uses so that changes can be identified, and protection programs modified as necessary.		No		Goal 2	
Goal 3	Establish methods of funding the actions in this Element.		No		Goal 3	
Goal 4	Assign the policies included in this element to specific County department heads, who will establish a timeline and assign skilled staff to work on the development of the policies included in this Element.		Yes	Changed to a policy	Policy 7.3	Assign the policies included in this element to specific County department heads, who will establish a timeline and assign skilled staff to work on the development of the policies included in this Element.
Goal 5	Explore methods of monitoring and measuring the amount of fresh water used for domestic, industrial and agricultural purposes and characterize the amount of water available from ground water and surface water sources to enable water resource management.		Yes	Water Committee suggestion	Goal 4	Explore and implement methods of monitoring and measuring the amount of fresh water used for domestic, industrial and agricultural purposes and characterize the amount of water available from ground water and surface water sources to enable water resource management.
Goal 6	Promote water conservation to ensure the availability of freshwater resources.		No		Goal 5	

Goal 7	Support existing water users and water uses that are compliant with Codes.		Remove	Eliminating as this is assumed.		
Goal 8	Develop community outreach to inform the public of the rights and responsibilities associated with their use of water as a public resource.		No		Goal 6	
Goal 9	Ensure new development has adequate water availability prior to permitting to prevent impairment of existing users that include designated beneficial uses, and fish and wildlife habitat that rely on fresh water.		Yes	Changed to a policy	Policy 8.2	Ensure new development has adequate water availability prior to permitting to prevent impairment of existing users that include designated beneficial uses, and fish and wildlife habitat that rely on fresh water.
Goal 10	Coordinate water planning and protection efforts among County departments.		Yes	Changed to a policy	Policy 7.1	Coordinate water planning and protection efforts among County departments.
Goal 11	Encourage policies that support water availability in response to climate change.		Yes	Water Committee suggestion	Goal 8	Encourage policies that support water conservation and availability in response to climate change.
Goal 12	Protect and enhance wetlands, streams and their associated buffers and mitigate their conversion to other uses.		Remove	This was repeated as a policy and a goal, will be a policy only.		
			New Goal	New goal created to better nest the policies.	Goal 7	Enhance the sustainable management and protection of water resources, fish, and wildlife through collaborative planning and coordination.
Policy-1	Develop and maintain a County-wide water budget that tracks water use from residential, agricultural, commercial, and industrial uses.		No		Policy 2.2	
Policy-2	Review and update codes as necessary to address seawater intrusion, new water source approval, Group B system oversight and support, available alternative water sources, and water resource data acquisition.		Yes	Water Committee suggestion	Policy 4.3	Review and update codes as necessary to address seawater intrusion, contaminants , new water source approval, Group B system oversight and support, available alternative water sources, and water resource data acquisition.

Policy-3	Retain the services of a hydrogeologist to provide technical assistance to staff and property owners to protect ground and surface water and associated fish and wildlife habitat. The hydrogeologist would also support long-term monitoring, data collection, and trend analysis to ensure protection of water resources.		No		Policy 2.3	
Policy-4	Develop a plan to identify and protect property with particular value for impacting water quality, quantity and recharge.		Yes	Water Committee suggestion	Policy 2.1	Develop and implement a plan to identify and protect property with particular value for impacting water quality, quantity and recharge.
Policy-5	Develop and fund programs to a) reduce the use of harmful chemicals including pesticides and petroleum based fertilizers; b) encourage safer use and disposal of chemicals; and c) enhance hazardous waste disposal opportunities.		Yes	Water Committee suggestion	Policy 3.1	Develop and fund programs to a) reduce the use of harmful chemicals including pesticides and all fertilizers ; b) encourage safer use and disposal of chemicals; and c) enhance hazardous waste disposal opportunities; d) reduce bacteria and nutrients from entering streams.
Policy-6	Encourage the retention of healthy native soils, vegetation and forest cover.		No		Policy 1.1	
Policy-7	Ensure that stream, shoreline and wetland buffers and other mitigation measures are adequate to remove contaminants and ensure good water quality and habitat.		No		Policy 1.2	
Policy-8	Maintain or enhance the infiltration of runoff to ensure adequate recharge to streams, wetlands, and aquifers and to preserve subsurface and stream flows to nearshore waters.		No		Policy 1.3	
Policy-9	Protect and enhance wetlands, streams and their associated buffers and mitigate their conversion to other uses.		Yes	Water Committee suggestion	Policy 1.4	Protect, restore , and enhance wetlands, streams and their associated buffers and mitigate their conversion to other uses.
Policy-10	Establish and protect instream flows for anadromous and native fish to facilitate native fish passage.		Yes	Water Committee suggestion	Policy 1.5	Establish, protect, and restore instream flows for anadromous and native fish to facilitate fish passage.

Policy-11	Develop a water use efficiency program for the County's Group B water systems. This program will track annual water use and efficiency and require water systems to have a plan to achieve and maintain water use efficiency. The program will recognize systems with lowest water loss.		No		Policy 5.1	
Policy-12	Create incentives for all new and existing water users to install a water meter that is capable of electronically reporting water use data.		Yes	Water Committee suggestion	Policy 4.1	Create incentives for all new and existing water users to install a water meter and report data .
Policy-13	Require all water hauling permit holders to report source and volume of water trucked for potable water use by month to the County annually.		No		Policy 4.2	
Policy-14	Ensure that existing agricultural water rights on publicly held lands are maintained and opportunities for additional rights are considered to ensure that continued agricultural use is viable.		No		Policy 4.4	
Policy-15	Promote agricultural Best Management Practices to protect water quality and reduce negative impacts to agricultural activities.		Yes	Water Committee suggestion	Policy 1.6	Promote agricultural Best Management Practices to protect water quality and reduce negative impacts to agricultural activities .
Policy-16	Work cooperatively with State and Federal agencies and coordinate protection and management of water resources and fish and wildlife habitat in the County.		Yes	Water Committee suggestion	Policy 7.2	Work cooperatively with State and Federal agencies to coordinate protection and management of water resources and fish and wildlife habitat in the County.
Policy-17	Establish a publicly accessible water resources database on the County website.		Yes	Water Committee suggestion	Policy 6.1	Establish a publicly accessible water resources database and current program information on the County website.
Policy-18	Encourage low impact development practices such as rainwater catchment, onsite retention, water reuse and treatment of storm, and gray water.		No		Policy 8.1	
			New Policy	New Policy - Water Committee suggestion	Policy 2.4	Develop and implement a plan to identify septic systems vulnerable to sea level rise and increased flooding and devise alternatives so their failure does

						not harm fresh and marine receiving waters.
			New Policy	New Policy - Water Committee suggestion	Policy 2.5	Develop and implement a program to monitor emerging contaminants, including PFAS, in ground, surface, and marine waters.
			New Policy	New Policy - Water Committee suggestion	Policy 2.6	Conduct a comprehensive inventory of wells in the County to determine the total number and assess the percentage equipped with monitoring or metering capabilities.
			New Policy	New Policy - Water Committee suggestion	Policy 4.5	Expand metering requirements for Group B water systems to include detailed reporting on water use. Retain a consultant to analyze metering data and provide periodic updates and summaries to the County.
			New Policy	New Policy - Water Committee suggestion	Policy 4.6	Expand groundwater monitoring efforts to include detailed reporting on the volume of groundwater pumped annually.

We are suggesting a reordering and renumbering of the goals and policies so that they are nested and consistent with the other elements in the County's plan. Suggested reframing below. The goals and policies below reflect the changes described in the matrix above.

Goal 1: Protect and manage the quality and quantity of ground, surface, and marine waters by monitoring, preserving, and enhancing hydrologic systems.

- **Policy 1.1:** Encourage the retention of healthy native soils, vegetation, and forest cover.
- **Policy 1.2:** Ensure that stream, shoreline, and wetland buffers and other mitigation measures are adequate to remove contaminants and ensure good water quality and habitat.
- **Policy 1.3:** Maintain or enhance the infiltration of runoff to ensure adequate recharge to streams, wetlands, and aquifers and to preserve subsurface and stream flows to nearshore waters.
- **Policy 1.4:** Protect, restore, and enhance wetlands, streams and their associated buffers and mitigate their conversion to other uses.
- **Policy 1.5:** Establish, protect, and restore instream flows for anadromous and native fish to facilitate fish passage.
- **Policy 1.6:** Promote agricultural Best Management Practices to protect water quality and reduce negative impacts.

Goal 2: Establish coordinated programs for monitoring water quality, water quantity, associated habitats and species, and agricultural uses so that changes can be identified, and protection programs modified as necessary.

- **Policy 2.1:** Develop and implement a plan to identify and protect property with particular value for impacting water quality, quantity and recharge.
- **Policy 2.2:** Develop and maintain a County-wide water budget that tracks water use from residential, agricultural, commercial, and industrial uses.
- **Policy 2.3:** Retain the services of a hydrogeologist to provide technical assistance to staff and property owners to protect ground and surface water and associated fish and wildlife habitat.
- **Policy 2.4:** Develop and implement a plan to identify septic systems vulnerable to sea level rise and increased flooding and devise alternatives so their failure does not harm fresh and marine receiving waters.
- **Policy 2.5:** Develop and implement a program to monitor emerging contaminants, including PFAS, in ground, surface, and marine waters.
- **Policy 2.6:** Conduct a comprehensive inventory of wells in the County to determine the total number and assess the percentage equipped with monitoring or metering capabilities.

Goal 3: Establish methods of funding and implementing the actions in this Element.

- **Policy 3.1:** Develop and fund programs to a) reduce the use of harmful chemicals including pesticides and all fertilizers; b) encourage safer use and disposal of chemicals; and c) enhance hazardous waste disposal opportunities; d) reduce bacteria and nutrients from entering streams.

Goal 4: Explore and implement methods of monitoring and measuring the amount of fresh water used for domestic, industrial and agricultural purposes and characterize the amount of water available from ground water and surface water sources to enable water resource management.

- **Policy 4.1:** Create incentives for all new and existing water users to install a water meter and report data.
- **Policy 4.2:** Require all water hauling permit holders to report source and volume of water trucked for potable water use by month to the County annually.
- **Policy 4.3:** Review and update codes as necessary to address seawater intrusion, contaminants, new water source approval, Group B system oversight and support, available alternative water sources, and water resource data acquisition.
- **Policy 4.4:** Ensure that existing agricultural water rights on publicly held lands are maintained and opportunities for additional rights are considered to ensure that continued agricultural use is viable.
- **Policy 4.5:** Expand metering requirements for Group B water systems to include detailed reporting on water use. Retain a consultant to analyze metering data and provide periodic updates and summaries to the County.

- **Policy 4.6:** Expand groundwater monitoring efforts to include detailed reporting on the volume of groundwater pumped annually
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Goal 5: Promote water conservation to ensure the availability of freshwater resources.

- **Policy 5.1:** Develop a water use efficiency program for the County's Group B water systems. This program will track annual water use and efficiency and require water systems to have a plan to achieve and maintain water use efficiency. The program will recognize systems with lowest water loss.
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Goal 6: Develop community outreach to inform the public of the rights and responsibilities associated with their use of water as a public resource.

- **Policy 6.1:** Establish a publicly accessible water resources database and current program information on the County website.
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Goal 7: Enhance the sustainable management and protection of water resources, fish, and wildlife through collaborative planning and coordination.

- **Policy 7.1:** Coordinate water planning and protection efforts among County departments.
 - **Policy 7.2:** Work cooperatively with State and Federal agencies to coordinate protection and management of water resources and fish and wildlife habitat in the County.
 - **Policy 7.3:** Assign the policies included in this element to specific County department heads, who will establish a timeline and assign skilled staff to work on the development of the policies included in this Element.
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Goal 8: Encourage policies that support water conservation and availability in response to climate change.

- **Policy 8.1:** Encourage low-impact development practices such as rainwater catchment, onsite retention, water reuse, and treatment of storm and gray water.
- **Goal 8.2:** Ensure new development has adequate water availability prior to permitting to prevent impairment of existing users that include designated beneficial uses, and fish and wildlife habitat that rely on freshwater.

Attachment A

San Juan County Water Resource Planning Chronology 2000-2017

